EUR 4404 e
PART 2

EUROPEAN ATOMIC ENERGY COMMUNITY - EURATOM

IBM 1800 PROGRAMS FOR DATA PROCESSING AT THE ACCELERATORS OF THE CENTRAL BUREAU FOR NUCLEAR MEASUREMENTS

PART 2: INTERRUPT SERVICING PROGRAMS FOR DATA HANDLING AND REDUCTION

by

H. HORSTMANN and F. COLLING

1972

Joint Nuclear Research Centre
Geel Establishment - Belgium

Central Bureau for Nuclear Measurements - CBNM

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Besides controlling the data transfers between the analysers and the disk storage of the computer several programs also perform data reduction procedures, especially for total cross section measurements.

All programs are written in ASSEMBLER language for the Time-Sharing Executive System (TSX).

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ABSTRACT

This report describes a set of interrupt servicing programs for data transfers from a number of data acquisition stations at a Van de Graaff and an electron linear accelerator to an IBM 1800 computer. Furthermore it contains a description of several test routines which can be used to check the functional characteristics of the interface units connecting the data acquisition stations to the computer. The data acquisition stations are equipped with fast time-of-flight multi-channel analysers, and the source of most of the data to be collected and transferred to the computer are neutron cross section experiments.

Besides controlling the data transfers between the analysers and the disk storage of the computer several programs also perform data reduction procedures, especially for total cross section measurements.

All programs are written in ASSEMBLER language for the Time-Sharing Executive System (TSX).

KEYWORDS

PROGRAMMING
LINEAR ACCELERATORS
VAN DE GRAAFF ACCELERATORS
DATA ACQUISITION SYSTEMS
ON-LINE COMPUTERS
RECORDING SYSTEMS
MULTI-CHANNEL ANALYSERS
NEUTRONS
CROSS SECTIONS

CONTENTS

1. Introduction *)

The integrated data processing system (Fig. 1) of the Central Bureau for Nuclear Measurements (CBNM) has mainly been installed for neutron cross section measurements at a 90 MeV electron linear accelerator and a 3 MV Van de Graaff. The system is based on an IBM 1800 computer (32 K, 2 μsec cycle time, 4 disk drives: IBM 1810/A 3 and 1810/A1, 3 magnetic tapes IBM 2401) to which seven data acquisition stations are connected by special interface units.
Six of these data acquisition stations are equipped with fast time-of-flight multi-channel analysers (five of them having 4096 and one 1600 channels) and one with a GA 18/30 satellite computer.

The analyser computer interface units request computer interrupts for data transfers either automatically according to preset experimental conditions or by operator intervention. Having accepted an interrupt the computer controls the data transfer by sending special commands to and receiving status information from the corresponding interface unit, i. e. the computer takes over complete control of the data transfer. Several validity checks are made on the transferred data before they are stored into general disk files which are used later on for interactive data reduction and numerical analysis with respect to interesting physical parameters.

This report describes the interrupt servicing programs controlling the data transfers from the multi-channel analysers to the IBM 1800 computer and the subsequent data storage on disk. In several cases the disk storage operations are preceded by data reduction procedures, especially for neutron total cross section data. Furthermore this report contains a description of several test routines which can be used to check the functional characteristics of the analyser computer interface units in case of defects. All programs are written in ASSEMBLER language for the Time-Sharing Executive System (TSX). Programs supporting other features of the CBNM integrated data processing system, such as interactive data reduction by means of the interface units, satellite computer operation, off-line data reduction and analysis, are reported elsewhere ((1), (2), (3), (4), (5), (6)).

*) Manuscript received on February 2, 1972

2. Functional Characteristics of the Analyser Computer Interface Units

For a detailed description of the interface units connecting multi-channel analysers to the IBM 1800 computer the reader is referred to (7), (8). Only the main functional characteristics of the interface units will be outlined here.

Each analyser computer interface unit contains a memory of four read-only control words and nine counting resgisters (scalers), instruction and address decoders, and control circuitry for the supervision of the data accumulation in the analyser and for the data transfer to the computer. This transfer is done blockwise, each block having 256 channels. A control word, scaler word, or an analyser channel is read by the computer in two words of 16 bits each.

The interface unit is operated by computer commands sent out through a 16 bit digital register. The commands have the following format (Fig. 2b):

Bits 0 - 7:	operation code
Bits 8 - 11:	word address W (scaler word or control word) or address B of an analyser block
Bits 12 - 16:	address S of the data acquisition station (interface unit)

The function of an interface unit is explained by a description of the instruction set by which it is controlled. The bit configuration of an instruction is given in hexadecimal representation (X = not used). All computer commands are sent to the interface unit via a 16 bit digital output register (DOR1), and all data to and from the interface unit pass a 16 bit digital output register (DOR2) and a 16 bit digital input register (DIR) respectively.

14XS PRINT ALPHAMERIC
The computer informs the interface unit of station S that a message is to printed on the station typewriter. The message itself is transferred in data channel operation.

22WS READ FIRST 16 BITS OF WORD W
The computer informs the interface unit of station S that the first 16 bits of the interface word W (scaler word or control word) are to be read. The interface unit sends the required information to the input register of the computer from where it is read in direct program control.

23WS READ SECOND 16 BITS OF WORD W
The computer informs the interface unit of station S that the second 16 bits of the interface word W are to be read (cf. 22WS).

24WS WRITE WORD W
The computer informs the interface unit of station S that a computer word is to be written into the first or second group of 16 bits of the scaler with address W. The computer word contains an indicator specifying as destination the first or second group of 16 bits in the scaler word (32 bits). Register DOR2 is used for the transfer to the interface unit.

32BS READ ANALYSER BLOCK B
The computer informs the interface unit of station S that the analyser data block with address B is to be read. The data block is transferred to the computer in data channel operation with external synchronization.

34BS WRITE ANALYSER BLOCK B
The computer informs the interface unit of station S that the analyser data block with address B is to be written by the computer. The data block is transferred in data channel operation with external synchronization.

30BS CLEAR ANALYSER BLOCK B
The block with address B in the analyser of station S is cleared. If all blocks with the addresses B_1 through B_2 are to be cleared three computer operations have to follow each other immediately: $30B_1S$, reset of register DOR1, $30B_2S$.

42XS READ WORDS
The computer informs the interface unit of station S that the four control words and the nine scaler words are to be read. The words are transferred in data channel operation with external synchronization.

80XS CLEAR SCALERS
All scalers in the interface unit at station S are reset to zero.

A0XS PRINT WORDS
The four control words and up to nine scaler words of the interface unit at station S are printed on the station typewriter. Scaler printing starts with scaler 1 and ends with the first scaler having a 1 in bit position 16 (flag bit).

B0XS END OF INTERRUPT
The computer informs the interface unit at station S that the interrupt has been serviced.

E8XS DISABLE STATION S
The interface unit of station S is disabled to request computer interrupts.

F8XS ENABLE STATION S
The interface unit of station S is enabled to request computer interrupts.

A summary of computer commands for the analyser interface unit is given in Fig. 4.

For the four control words and the nine scaler words in each interface unit the following address assignment has been made:

Address 0: control word 1
" 1-9: scaler 1-9
" A: control word 3
" B: control word 4
" C, D, E: not used
" F: control word 2

3. Format Specifications for Analyser Data and Control Information of the Interface Unit

The experimental data accumulated in the core memories of the multi-channel analysers are in BCD format, i.e. 6 binary coded decimal digits per channel. These data are transferred to the digital input register (DIR) of the computer in the format shown in Fig. 2a. For the control words and the scaler words of the interface units the same format is used.

The 24 bits of the 6 decimal digits of an analyser channel or an interface word are split into two groups of 12 bits for two computer words: BCD1, BCD2, BCD3 in the first word and BCD4, BCD5, BCD6 in the second word. The remaining 4 bits in each 16 bit word are used for control information (Fig. 2a). Details of the format specifications are given below (Fig. 3).

3.1. Analyser channels and scaler words

Bit position 0 (flag bit F):

1. word: A 1 bit in a scaler word indicates that the 6 digit scaler value has to be multiplied by 10 before it is used in calculations.
2. word: The last scaler (up to 9) to be transferred to the computer and the last channel in each block of analyser data are marked by a 1 bit.

Bit position 1:

Odd parity of the 16 bit word.

Bit positions 2 and 3:

Bit 2 and 3 specify the first (00) or second (01) group of 3 decimal digits. By reserving two bits for this identification provision has been made for the transfer of information containing up to 64 bits (4 computer words). This is useful for multiparameter experiments.

The scaler words contain information characterising the experimental data.

Scaler 1: This counting register stops the data accumulation at the preset monitor count defined in control word 4. (When scaler 1 stops its content should agree with control word 4).

Scaler 2: Total count of the analyser spectrum.

Scaler 3-9: Optionally used.

For analyser channels and scaler words BCD1 is considered as the high order digit of a six digit number.

3.2. Control words

For bit positions 1, 2 and 3 there is no difference as compared to the analyser channels and scaler words. Bit position 0 (F) is explained together with a detailed description of the control words.

The analyser memory of 4096 channels (analyser words) is read out in 16 separately addressed blocks of 256 channels each. This group of 16 blocks is preceded by four control words and up to nine (flag bit !) scaler words identifying the spectrum.

The four control words contain information specifying the type of experimental data and the desired computer treatment. The information in the control words is related to the experimental equipment, the multichannel analyser, and several digit switches at the interface unit.

Control word 1 (address 0)

Control word 1 specifies the spectrum identification no. (3).

1. half-word:

F = reset indicator:

1 = clear analyser memory after it has been read (read destructive).

0 = do not change analyser memory (read non-destructive)

BCD1 (high order digit)) = group no. of spectrum identification
BCD2 (low order digit)) no.

BCD3 = 1st. experiment no.

2. half-word:

F = not used
BCD4 = 2nd. experiment no.
BCD5 (high order digit))
BCD6 (low order digit)) = serial no. of spectrum.

Control word 2 (address F)

1. half-word:

F = operation indicator:
1 = the interface unit is operated automatically.
0 = the interface unit is operated manually.

BCD1 = automatic type (3), always 1 (introduced for historical reasons).

BCD2 (high order digit)) = operation code, which indicates desired
BCD3 (low order digit)) computer operation for transferred data.

2. half-word:

F = not used

BCD4 (high order digit)) = address of analyser block.
BCD5 (low order digit)) (octal representation)

BCD6 = sample changer sequence indicator (for automatic sample changer operation).

Control word 3 (address A)

1. half-word:

F = not used

BCD1 (high order digit))
BCD2 (low order digit)) = no. of blocks in the spectrum.

BCD3 (high order digit) no. of 1st block in the spectrum.

2. half-word:

F = not used

BCD4 (low))
BCD5 (order)) no. of 1st block in the spectrum.
BCD6 (digits)) (Block numbering starts with 1.)

Control word 4 (address B)

The 6 BCD's contain the monitor count, by which the accumulation time of the analyser spectrum is defined (BCD1 = high order digit).

Bit positions 0 in both half-words are not used.

All scalers, control words 1, 3, 4, and the operation code of control word 2 can manually be adjusted by the operator of the data acquisition station.

4. Description of the Interrupt Servicing Program SUMON

The interrupt servicing program SUMON which controls the data transfers from the multi-channel analysers to the computer and manages the reduction and disk storage of the transferred spectra consists of three main subprograms DINPT, STORE, and SUMTO. SUMON is written as interrupt core load for the Time Sharing Executive System (TSX).

The description of SUMON given here outlines the main characteristics of the program, for more detailed information the reader is referred to the program listings which contain many additional comments. The list of error messages (cf. 5) may also be of interest in this context.

4.1. DINPT

The execution of SUMON always starts with a call for subroutine DINPT (cf. program listing SUMON). First of all the four control words and nine scalers are read in data channel operation (with external synchronization). Each control or scaler word is checked for parity errors and invalid digits. If an error is detected the control and scaler words are read again. If after two repetitions the error still persists interrupt servicing is terminated by error exit. The corresponding error message is printed on the interface typewriter and on the computer typewriter.

If the control and data words are correctly read they are decoded in order to provide DINPT with information about the type of data to be handled.
Next the analyser blocks are read in data channel operation (with external synchronization). Each analyser block is separately addressed by the computer, and is only accepted after it has been checked that its length is correct (flag bit on last word) and that it had been addressed correctly. Depending on the value of the operation code the analyser words are checked for parity errors and invalid digits or not. When all blocks of the spectrum have been accepted the analyser memory is cleared or not depending on the reset indicator (cf. 3). Then STORE or SUMTO is executed according to the value of the operation code as derived from control word 2.

4.2. STORE

Subroutine STORE is entered when the operation code is 1 or 3.
Operation code 1:
STORE has to store the correctly transferred spectrum under its identification number into a disk file which is common to all data acquisition stations and which can be used by off-line and interactive data reduction programs ((3), (1)).

First the spectrum is converted from BCD to double word binary format. If the operation indicator had been set to 1 (automatic operation) the total count of the spectrum as calculated by the program is compared to the total count read from scaler 2. In case of disagreement interrupt servicing is terminated by error exit.

If the total count check has had a positive result (or has been skipped) program STORE tries to write the spectrum into the reserved common disk file. This action can only be successfully completed if enough disk room is available. If this is not the case a message is sent to the interface typewriter of the station which initiated the interrupt and interrupt servicing is terminated without the spectrum being stored. If enough disk room is available the spectrum is stored and the interrupt servicing is finished.

Operation code 3:
Spectra transferred to the computer with the same identification no. are summed up. The summing procedure is started with a spectrum stored on disk with operation code 1. All spectra with the same identification no. sent subsequently to the computer with the operation code 3 will be added to the first spectrum.

4.3. SUMTO

Subroutine SUMTO is executed after DINPT if the operation code is 0. In this case the operator of the data acquisition station wants to measure a series of spectra with automatic sample changer operation. In this mode of operation spectra (4096 channels) belonging to different sample changer positions are transferred to the computer and added to the sums of previously transferred spectra for corresponding sample changer positions. SUMTO accepts 2, 3 or 4 different run types (spectra) in one sample changer sequence. The user specifies the number of run types in the sample changer sequence by the sample changer sequence indicator in control word 2:

Sample changer sequence indicator	Number of run types	Run type identification by 2nd exper. no.
2	2	0, 1
3	3	0, 1, 2
4	4	0, 1, 2, 3

Spectra belonging to different sample changer positions are identified by 0, 1, 2, 3 in the position of the 2nd experiment no. of the identification number.

When SUMTO is called the first time for a new identification number disk room is reserved in the file SPZNE(3) for as many runs as there are run types in the sample changer sequence specified. In addition to this a save area is reserved in SPZNE for each run type (see below !).

Control information which characterizes the experiment under consideration (identification no., sample changer sequence indicator, etc.) and which is necessary for the procedure of summing up all spectra of the same run type are stored in control sector CONSC (cf. 4.6.) on disk.

During each execution of SUMTO it is checked if the run type under consideration belongs to the specified sample changer sequence or not. If not the spectrum is suppressed. SUMTO also checks if the different run types of a sample changer sequence follow each other correctly, e.g. run type 1 may not directly be followed by run type 3. Spectra of the same run type may follow each other. This can occur when the count capacity of an analyser channel is exhausted before the preset count for the total spectrum has been reached. If the run types are out of sequence they are suppressed until the sample changer starts again with run type 0. During one sample changer sequence each correctly transferred spectrum is stored in a temporary area on disk.

If all spectra belonging to one sample changer sequence are stored in the temporary area run types 0 and 1 are checked for a correct "IN/OUT" ratio before all spectra of the sequence are added to the sums of the corresponding run types. This check is performed in the following way: The total count of the spectrum of run type 0 (called IN run) is divided by the total count of the spectrum of run type 1 (called OUT run). This ratio is then compared to the mean value of the IN/OUT ratios of all preceding sequences. In case the difference is greater than $\pm$ p % of the mean value the sequence under consideration is suppressed. The IN/OUT check itself can be suppressed for the first n sequences of an experiment. In this way a reasonable IN/OUT mean value can be calculated. n and p are specified by the operator of the interface unit (1).

Every fifth correct sequence the sums for the different run types are stored twice: in the normal way as after each correct sequence and into a save area. Therefore only up to five sequences may be lost if something goes wrong in a summing procedure. The identification numbers of the sums in the save area are defined by the computer by adding 50 to the serial no. in the identification no. which has been specified by the operator of the interface unit.

4.4. SUMON Error Messages

All error messages of SUMON which may be printed on an interface typewriter are listed below. Most of these messages are also printed on the IBM 1816 in the computer room (cf. program listings !).

A. DINPT and STORE

1) error word..: Call electronics engineer !
2) block numbers incorrect: The total number of blocks to be transferred and the no. of the analyser block to start with disagree.
3) no. of blocks greater 16: Spectra with more than 16 blocks cannot be transferred.
4) check interrupt assignment: The group no. of the spectrum to be transferred must be equal to the interrupt assignment no.

Analyser	Interrupt Assignment No.
TMC-Linac	01
TMC-VdG	10
INTERTECHN. I , Linac	02
INTERTECHN. II, Linac	09
INTERTECHN. III, Linac	04
SKIP, radioisotopes group	12

5) block.. cannot be addressed: Call electronics engineer !
6) length of block.. incorrect: Call electronics engineer !
7) word error block.., channel...: Call electronics engineer !
8) control word 4 and preset count disagree: This check is only made for automatic sample changer operation. Call electronics engineer !
9) incorrect automatic type: Call electronics engineer !
10) incorrect sample changer indicator: This check is only made for automatic sample changer operation. Call electronics engineer!
11) Check op. code: OP. CODE and position of level switch do not agree or OP. CODE is incorrect (1).
12) same id already used: The spectrum is not stored on disk. Repeat operation with other identification number.

13) no storage for this spectrum: In this case a spectrum with less overflow channels (= channels with a count higher than 65535) or with less blocks can still be stored. Use OP. CODE 18 to get information about available disk room (1).

14) total count difference greater 20: This check is made by STORE if automatic operation is specified. Call electronics engineer !

15) incorrect automatic type: For the transfer of spectra the automatic type must be 1. For change of automatic type call electronics engineer !

B. SUMTO

16) incorrect serial no. : The last two digits of the identification no. must be between 0 and 49.

17) total count difference greater 100: The total count for a spectrum as given in SCALER 1 does not agree with the total count calculated by the computer. The sequence in which this spectrum occurs is suppressed.

18) no disk storage for sums: The experiment cannot be started because there is not enough disk room available.
Delete spectra which are no more used.

19) incorrect in/out ratio, total no. of suppressed seq. = ...; total no. of correct seq. = ...: A sequence with incorrect IN/OUT ratio is suppressed.

20) incorrect sample changer start: The run type under consideration is suppressed. Each new sequence must start with run type 0.

21) run type incorrect: The run type of this spectrum does not belong to those specified for this experiment.

22) sample changer error: The run types do not follow each other correctly. The sequence in which this error occurs is suppressed.

23) no summing for small spectra: Check if block numbers are correct.

24) restart: You are using the identification number of the preceding experiment whilst the corresponding sums on disk have already been deleted. Use other identification no.

25) no more storage for sums: The experiment is stopped by the computer because the actual sums can no more be stored on disk. At this time only the sums in the save area are correct. Delete spectra which are no more used (including the incorrect actual sums) and restart with a new identification no.

26) no more storage to save sums: The experiment is stopped by the computer because the disk save area for the sums is too small. Delete spectra which are no more used and continue with same identification no.

4. 5. Subroutine Set of SUMON

The user written subroutines of the three main subroutines DINPT, STORE, and SUMTO of program SUMON (except those already published elsewhere) are described below. They may only be used in ASSEMBLER language calling programmes.

Subroutines published elsewhere:
DISKM, MDISK, MFLT, SPSRC, SUMT (3)
BLANK, CHIF, MOVE, MOVE1 (4)

Subroutines described here:
BIDEC
DECBY
DEBY8
FORMT
MOVEF
PER
RESET
TICON

BIDEC

Entry points with calling sequence:

```
CALL BIDEC
DC    ADDR1
DC    ADDR2
```

Subroutines called by BIDEC: None

Core locations used: 150 (96 hexadec.)

Description:

BIDEC converts a double binary word at address ADDR1 to 10 binary coded decimals and a sign which are stored into 11 memory locations starting at address ADDR2. The 10 BDC's are in words 1 to 10, word 1 containing the BCD of highest order. The sign is stored in word 11 : 0 = positive, 1 = negative.

DECBY

Entry point with calling sequence:

```
CALL DECBY
DC     ADDR
DC     N
```

Subroutines called by DECBY: None

Core locations used: 214 (D6 hexadec.)

Description:

DECBY converts a table of N double words in analyser format (cf. 3) to double word binary numbers. ADDR is the address of the first double word in the table.

DEBY8

Entry point with calling sequence:

```
CALL DECBY
DC     ADDR
DC     N
```

Subroutines called by DEBY8: None

Core locations used: 84 (54 hexadec.)

Description:

DEBY8 converts a table of N half-words in analyser format (3) to 16 bit binary numbers. ADDR is the address of the first half-word in the table. Each half-word contains the decimal digits BCD1, BCD2, and BCD3, BCD1 being the high-order digit (cf. Fig. 2a).

FORMT

Entry point with calling sequence:

```
CALL  FORMT
DC    ADDR
DC    N
```

Subroutines called by FORMT: BIDEC

Core locations used: 64 (40 hexadec.)

Description:

FORMT converts a table of N double word binary numbers to analyser format (cf. 3). ADDR is the address of the first double word in the table.

MOVEF

Entry point with calling sequence:

```
CALL  MOVEF
DC    ORG
DC    DEST
DC    N
```

Subroutines called by MOVEF: none

Core locations used: 32 (20 hexadec.)

Description:

MOVEF transfers N words from an area starting at ORG to an area starting at DEST. The address ORG must be greater than the address DEST in case the two areas overlap.

PER

Entry point with calling sequence:

```
CALL  PER
DC    ADDR
DC    N
DC    I
DC    NO
CALL+5  ERROR EXIT
CALL+6  NO-ERROR EXIT
```

Subroutines called by PER: None

Core locations used: 122 (6E hexadec.)

Description:

PER checks a table of N double words in analyser format (cf. 3) for parity errors and invalid digits. ADDR is the address of the first word in the table. I is 0 for a parity error and 1 for an invalid digit. NO is the number of the erroneous double word in the table. PER branches to CALL+5 if an error is found and to CALL+6 if no error has been detected.

RESET

Entry point with calling sequence:

```
CALL  RESET
DC    ADDR1
DC    ADDR2
```

Subroutines called by RESET: DAOP (TSX System)
TYPEN (TSX System)

Core locations used: 52 (34 hexadec.)

Description:

RESET checks if a digital or analog output data channel operation is terminated after a preset time or not. If the data channel operation is not terminated it is reset. Independent from the result of the check ADDR2 is the address for main program continuation.

ADDR1 is the address of the number of the data acquisition station (interface unit) involved in the data channel operation. This number must be in IBM 1053 typewriter code.

TICON

Entry point with calling sequence:

```
CALL  TICON
DC    ADDR
```

Subroutined called by TICON: BINDC (TSX System)
CLOCK (TSX System)
HOLPR (TSX System)

Core locations used: 18 (22 hexadec.)

Description:

TICON converts the day-time to IBM 1053 typewriter code in the format XX.XXX hours and stores the converted time into three memory locations starting at ADDR.

4.6. Disk Files for SUMON

The disk files used by DINPT, STORE, and SUMTO are described here. For the disk files belonging to the subroutines of DINPT, STORE, and SUMTO the reader is referred to the descriptions of the subroutines.

CONDI (1 sector)

CONDI is a control sector for DINPT and STORE. It contains the identification number of the spectrum being handled by DINPT or STORE and status information about the progress of work done by these programs. In case of a computer failure during the execution of DINPT or STORE CONDI delivers valuable information.

CONSC (1 sector)

CONSC is used by SUMTO to transfer information from one interrupt to the next one during automatic sample changer operation. CONSC contains the identification numbers for the spectra of the sample changer sequence, the sample changer sequence indicator, the total counts for the spectra of one sequence, indicators for the control of the sample changer, counters for the number of correct and the number of suppressed sequences, the numbers for the IN/OUT check, addresses for intermediate disk storage of spectra, etc. For each data acquisition station using SUMTO a disk file of this type (with a different name) is needed.

INSUM (104 sectors)

INSUM is used by SUMTO as intermediate storage for the spectra of one sample changer sequence (maximum 4 run types 0, 1, 2, 3). This storage is necessary because the single spectra can only be added to the sums of all previous spectra of the same run type when a sequence is terminated. It is only then when it can be checked if all spectra of a sequence are correct. For each data acquisition station using SUMTO a disk file of this type (with a different name) is needed.

SAVSP (26 sectors)

SAVSP is used by SUMTO as intermediate storage for the first run type of a sample changer sequence during the time the spectra of the preceding sequence are added to the corresponding sums on disk.

5. Test and Utility Programs

5.1. On-Line Interface Test Programs

The response of the interface units to computer commands (Fig. 4) and the exchange of data between the computer and the interface stations can be checked with a set of test routines. Together with a common header program these routines form the interrupt core-load ATEST which is called into execution through a programmed interrupt edited from the interrupt servicing routine IDOP (1). The different routines can be selected by specifying a certain operation code (OP. CODE 91-96) on the interface unit and sending a manual interrupt request on LEVEL II. All error messages are printed on the interface typewriter and the computer system printer.

The main test possibilities are:

- Read control words, read-write operation for scalers and analyser channels with any wanted bit combination contained in a pattern (cf. 5.1.7.).
- A continuous execution of tests to allow convenient on-line control of the interface hardware by the electronics engineers.
- Check interface typewriter, print out loaded pattern or write pattern blocks into multi-channel analyser memory.

5.1.1. Interface Typewriter Test - OPCODE 91 (PRAL1)

All characters in use are printed on the interface typewriter. A - Z, 0 - 9, / . , + SPACE - * = and line feed, shift to black and shift to red.

5.1.2. Read Write WORD Test - OPCODE 92 (WORD2)

This test comprises four steps

Step 1: The control word 1 (Fig. 3) and all scalers in use (up to flag bit) are read in direct program control and compared to the pattern stored on disk (cf. 5.1.7.). The user has therefore to introduce the pattern values in correct sequence in control word 1 and in the scalers. In case the read words and the pattern words disagree, both words are printed (see error messages).

Step 2: All pattern words are written into each scaler and read back in direct program control. Written and read words are compared and printed if an error is detected.

Step 3: Identical to step 2 except that transfers are done in data channel operation with external synchronization.

Finally the command PRINT WORDS is delivered.

A message is provided at the beginning and at the end of the test.

The test is interrupted if more than 5 errors are detected.

Error messages:

STEP 1 - 3
WRONG WORD No. (0 - 9)
PW = /CHEX/CHEX (Pattern word)
IW = /CHEX/CHEX (Interface word)
CHEX are 4 hexadecimal digits (Fig. 3)
C = Control bits (FP00 or FP01)
HEX = BCD1 - BCD3 and BCD4 - BCD6 respectively.

5.1.3. Transfer of Pattern Blocks - OP. CODE 93 (WBLC3)

The 16 (10)* double word pattern is used 16 (10) times to form a block of 256 (100)* channels. All 16 analyser blocks are fed with the same pattern block.

* SKIPP analyser with 16 blocks of 100 channels

5.1.4. Print Loaded Pattern - OP. CODE 94 (PATP4)

The pattern actually stored on disk is printed out on the interface typewriter.

5.1.5. Analyser Block Test - OP. CODE 95 (BLOC5)

This test comprises three steps.

Step 1: The 16 possible block addresses are delivered consecutively and the control word 2 block address indication is checked. In case of disagreement the addressed and the read block numbers are printed.

Step 2: A pattern block (cf. 5.1.3.) is written into each analyser block, read back and compared. The flag bit on the second word of the last double word in each block is also checked.

Step 3: The analyser is reset from block 3 to block 12 with two consecutive block reset commands.

The beginning and the end of the test are indicated on the printer. The test is interrupted if more than 5 errors are detected.

Error messages:

- Block addressing error:
  BLOCK No. 0 - 15
  BLOCK No. 0 - 15 (in red)
- Flag bit error:
  BLOCK No. 0 - 15
  INCORRECT BLOCK LENGTH
- Analyser channel error:
  BLOCK No. 0 - 15
  WRONG WORD NR 0 - 256 (100)
  PW = /CHEX/CHEX
  IW = /CHEX/CHEX

The INTERTECHNIQUE and TMC analysers are fed with a pattern of 5 decimal digits per channel.

5.1.6. Continuous Block Test - OP. CODE 96 (COBA6)

No error messages are provided in this routine but a desired test cycle is executed continuously. The user has several test options to be selected with the group no. contained in control word 1.

Step 1: The control word 1 is read and a test block of 256 (100) channels is formed, each channel containing 5 (6) decimal digits of the control word 1 as channel count.

Step 2:- Group no. < 10:
The test block is transmitted to the 16 analyser blocks and the program continues with step 3.

- 10 < group no. < 20:
All 16 analyser blocks are read into the computer and the program proceeds to step 3.

- Group no. > 20:
The program goes immediately to step 3.
Group no. and 1. experiment no. = 0 : all blocks of the analyser are reset to zero.

Step 3: If the group no. is negative, the test is terminated and the interrupt level is given free, otherwise the program returns to step 1.

5.1.7. Program to Load the Test Pattern on Disk (PATRN)

The test pattern is stored on disk by means of the non-process program PATRN. The 6 decimal digits of the 16 pattern double words have to be punched on 16 cards in the following format.

	FIRST WORD			SECOND WORD			WORD No.	
CARD COLUMN	10	11	12	20	21	22	79	80
	0-9	0-9	0-9	0-9	0-9	0-9	1 - 16	

The control bits (flag bit, parity bit, first or second word bits) are added by the loading program PATRN before the values are stored on disk.

5.2. Off-Line Interface Test Programs

The non-process programs WORDT and FEAT make continuous interface tests to enable convenient hardware control by the electronics engineers. Error messages are printed on the computer printers.

5.2.1. Continuous Word Test (WORDT)

The four control and the nine scaler double words are read in data channel operation with external synchronization. The first data block is memorized and printed. Any subsequently read data block differing from the first block is printed on the 1443 printer. After 16 errors have been detected, the program continuous to read without printing.

The number of the station to be tested is introduced via the DATA SWITCHES.

The computer can only get information from a station which is on-line i.e. the user must first request an interrupt on LEVEL II with OP. CODE 99 : The interrupt level is immediately left without giving an end-of-interrupt command to the station, leaving the unit on-line.

The interrupt program ENDIN (5.3.2.) is used to set the unit off-line after the test.

5.2.2. Front-End Adapter Test (FEAT)

The front-end adapter, which links the interface units to the computer, seperates the different ground potentials and enables two-way data exchange. The digital output register DOR2 (cf. 2) is switched via the front-end adapter to the digital input register DIR. The program writes into DOR2 special bit configurations in direct program control, reads back the DIR and compares the two registers. Both configurations are printed on the system printer if any discrepancy is found. All DATA SWITCHES in OFF position suppress the printing.

The test stops if 16 errors have been printed. To continue the test, press CONSOLE START.

5.3. General Utility Programs

The computer operator can prevent or enable any interface unit to request interrupts or can turn "off-line" an interface unit which, due to erroneous operation or due to tests (5.2.1.) did not recognize the "end-of-interrupt" command. Both programs are interrupt core loads to be called into execution by a CONSOLE INTERRUPT with a certain position of the SENSE SWITCHES.

5.3.1. Program to Enable or Disable Interface Stations (IFOP)

Press CONSOLE INTERRUPT with SENSE SWITCH 1 ON .
To enable interface units 1 - 15, set ON the corresponding DATA SWITCHES. All OFF-DATA SWITCHES mask the corresponding units. The current status of the "masked-unmasked" units is printed on the system printer.

5.3.2. Manual End-of-Interrupt Command (ENDIN)

Press CONSOLE INTERRUPT with SENSE SWITCH 0 ON and 1 ON. Set ON the DATA SWITCH corresponding to the interface unit to be addressed (1 - 15).
A message on the system printer specifies the executed operation and the unit number.

Acknowledgements

It is a pleasure for the authors to thank A. De Keyser for many useful discussions. In particular thanks go to C. Cervini for supplying subroutine PER.

6. References

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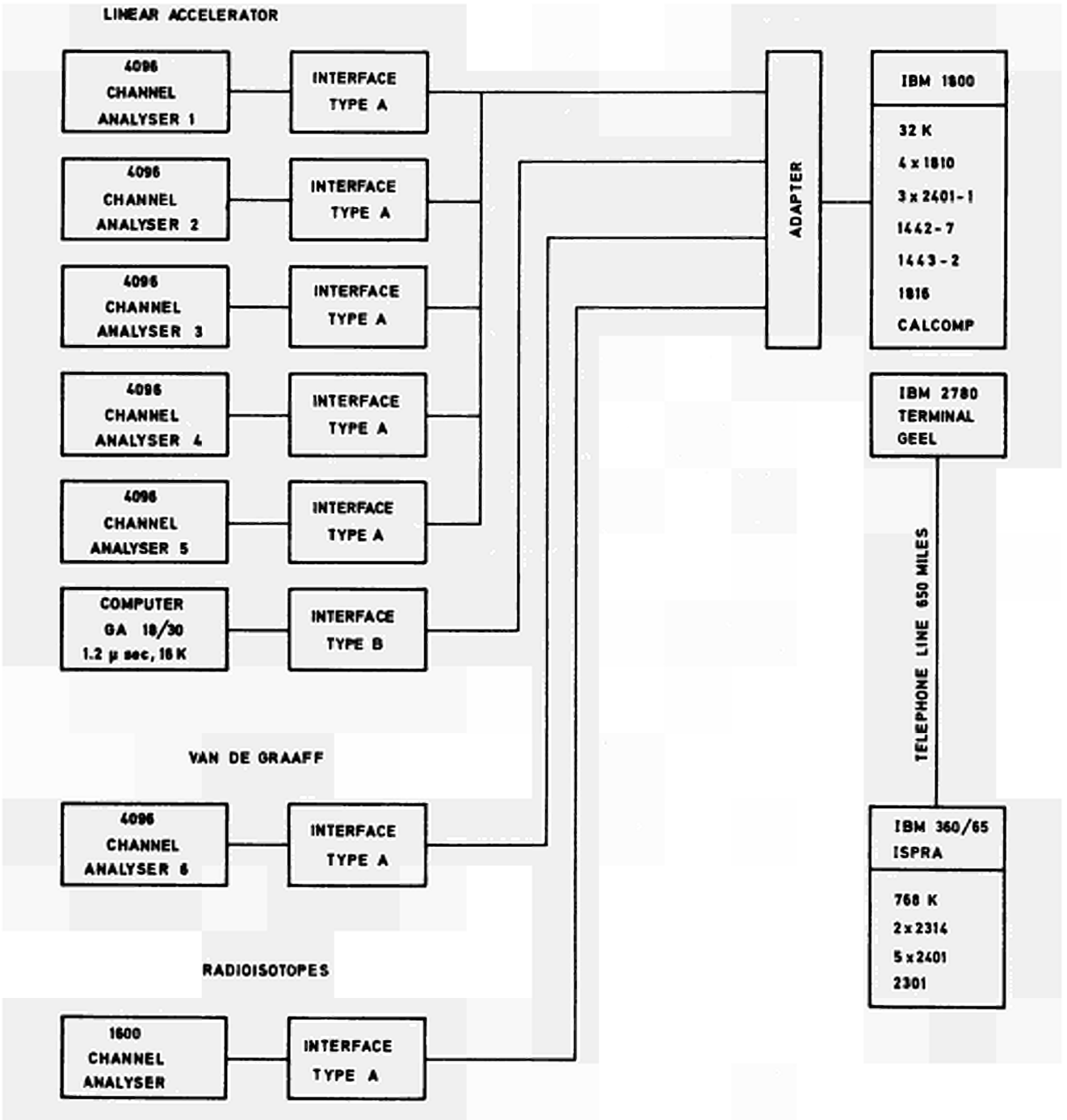
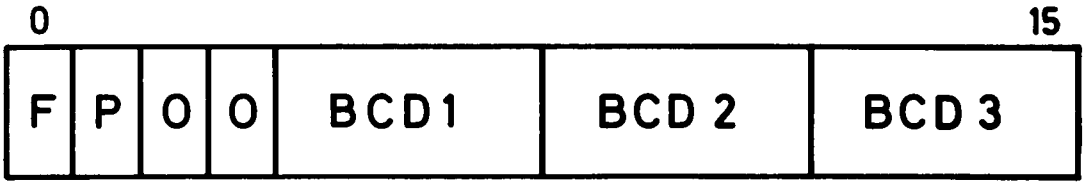
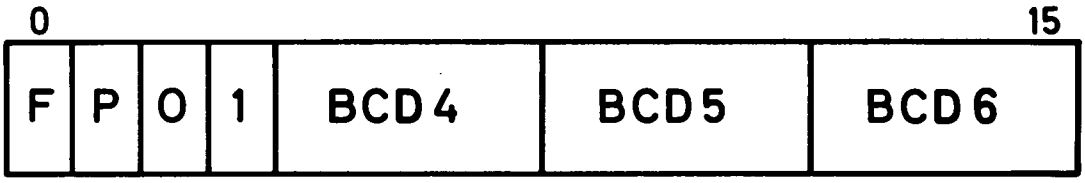


Fig. 1: C B N M DATA PROCESSING SYSTEM



FIRST WORD



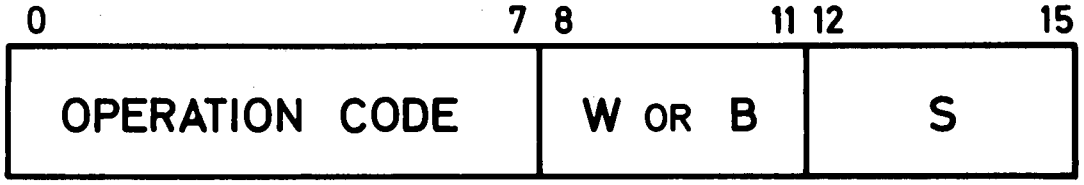
SECOND WORD

F = FLAG BIT

P = ODD PARITY OF 16 BIT WORD

BCD1-BCD6 = BINARY CODED DECIMALS

Fig. 2a General data format for digital input



W = WORD ADDRESS

B = BLOCK ADDRESS

S = STATION ADDRESS

Fig. 2b Format of control command for interface unit

GENERAL FORMAT

F1	P	0	0	BCD1	BCD2	BCD3

F2	P	0	1	BCD4	BCD5	BCD6

F1,F2: Flag bits
P: ODD parity of 16 bit word
BCD1 - BCD6: Binary coded decimals

ANALYSER CHANNEL OR SCALER WORD

F1	P	0	0	10^5	10^4	10^3

F2	P	0	1	10^2	10^1	10^0

F1 = 1: Scaler value to be multiplied by 10
F2 = 1: Last scaler or last channel in analyser block

CONTROL WORD 1 (ADDRESS 0)

F1	P	0	0	Group number 10^1	Group number 10^0	1. experiment no. 10^0

	P	0	1	2. experiment no. 10^0	Serial number 10^1	Serial number 10^0

F1 = 1: Read destructive

CONTROL WORD 2 (ADDRESS F)

F1	P	0	0	Not used	Operation code 10^1	Operation code 10^0

	P	0	1	Address of analyser block 8^1	Address of analyser block 8^0	Sample changer sequence indicator 10^0

F1 = 1: Automatic operation
F1 = 0: Manual operation

CONTROL WORD 3 (ADDRESS A)

	P	0	0	Number of blocks in the spectrum 10^1	Number of blocks in the spectrum 10^0	No. of first block in the spectrum 10^3

	P	0	1	Number of first block in the spectrum 10^2	Number of first block in the spectrum 10^1	Number of first block in the spectrum 10^0

CONTROL WORD 4 (ADDRESS B)

	P	0	0	Monitor count 10^5	Monitor count 10^4	Monitor count 10^3

	P	0	1	Monitor count 10^2	Monitor count 10^1	Monitor count 10^0

Fig.3 Format of analyser and interface words

Instruction Code	Function
1 4 X S	PRINT ALPHAMERIC
2 2 W S	READ FIRST 16 BITS OF WORD W
2 3 W S	READ SECOND 16 BITS OF WORD W
2 4 W S	WRITE WORD W
3 2 B S	READ ANALYSER BLOCK B
3 4 B S	WRITE ANALYSER BLOCK B
3 0 B S	CLEAR ANALYSER BLOCK B
4 2 X S	READ WORDS
8 0 X S	CLEAR SCALERS
A 0 X S	PRINT WORDS
B 0 X S	END OF INTERRUPT
E 8 X S	DISABLE STATION S
F 8 X S	ENABLE STATION S

S = station address

W = word address

B = block address

X = not used

Fig.4 Instruction set for the interface unit.

```
                         ********************************************** SUMON002
                         *     MAIN PROGRAM SUMON                     * SUMON003
                         ********************************************** SUMON004
0000 30 042555E3     START CALL     DINPT       DIGITAL INPUT OF SPECTRUM  SUMON005
0002 0  0000               DC       *-*         OPERATION CODE             SUMON006
0003 01 74000002           MDX   L  START+2,0                              SUMON007
0005 0  7002               MDX      A1                                     SUMON008
0006 30 229148D6           CALL     SUMTO       AUTOMATIC SAMPLE CHANGER   SUMON009
0008 30 228D6645     A1    CALL     STORE       STORE SPECTRUM             SUMON010
                         ********************************************** SUMON011
000A     0000              END      START                                  SUMON012

      NO ERRORS IN ABOVE ASSEMBLY.
SUMON
DUP FUNCTION COMPLETED
// DUP
*STORECIM I UA     1 SUMON SUMON
*LOCALDINPT,SUMTO,STORE
*CCEND
```

```
0000     042555E3          ENT     DINPT                                    DINPT002
                     ********************************************** DINPT003
                     *      ADDRESS ASSIGNMENT FOR COMMON           * DINPT004
                     ********************************************** DINPT005
DFFE                 SPEC  EQU      -8194                                    DINPT006
DFCE                 SCAL  EQU      -8242                                    DINPT007
DFBE                 IDEN  EQU      -8258                                    DINPT008
DFBC                 TABLE EQU      -8260                                    DINPT009
DDBC                 BLOCK EQU      -8772                                    DINPT010
DDBA                 AREA1 EQU      -8774                                    DINPT011
DD9E                 MESS  EQU      -8802                                    DINPT012
DD36                 BUFFR EQU      -8906                                    DINPT013
                     ********************************************** DINPT014
```

```
                                                                                DINPT016
                *************************************************               DINPT017
                *     SUBROUTINE DINPT                          *               DINPT018
                *************************************************               DINPT019
0000 0  0000    DINPT DC      *-*                                               DINPT020
                *-------------------------------------------------              DINPT021
0001 01 650003E9      LDX   L1 X            FIND PISW BIT OF INTERRUPT          DINPT022
0003 00 66800068      LDX   I2 104          XR2 TO LWA                          DINPT023
0005 0  C228          LD    X2 40           LOAD ADDR.OF WC/SA OF PROG          DINPT024
0006 0  D1BF          STO    1 BITNO-X      FOR BIT 0 OF PISW FROM ICL          DINPT025
0007 0  C226          LD    X2 38           TABLE AND SUBTRACT ADDR.            DINPT026
0008 0  91BF          S      1 BITNO-X      OF WC/SA OF PROG. FOR               DINPT027
0009 0  1801          SRA    1              INTERRUPTING PISW BIT.              DINPT028
000A 0  D1BF          STO    1 BITNO-X      DIFF.DIV.BY 2 IS PISW BIT.          DINPT029
                *-------------------------------------------------              DINPT030
000B 00 6600DFBC      LDX   L2 Y                                                DINPT031
000D 20 02255103      LIBF     BINDC        TYPEWRITER 1053 CODE FOR            DINPT032
000E 1  03FE          DC       OUTPT        MESSAGE *INTERRUPT START*           DINPT033
000F 20 085935D9      LIBF     HOLPR                                            DINPT034
0010 0  0000          DC       /0000                                            DINPT035
0011 1  0402          DC       OUTPT+4                                          DINPT036
0012 1  0422          DC       TM139                                            DINPT037
0013 0  0002          DC       2                                                DINPT038
                *-------------------------------------------------              DINPT039
0014 0  C1BF          LD     1 BITNO-X      IS BITNO EQUAL TO NO.               DINPT040
0015 0  B122          CMP    1 SPERN-X      OF SKIP ANALYSER                    DINPT041
0016 0  7010          MDX      A300         NO                                  DINPT042
0017 0  700F          MDX      A300         NO                                  DINPT043
                *-------------------------------------------------              DINPT044
0018 0  C129          LD     1 A200-X       YES(MODIFY DINPT)                   DINPT045
0019 01 D40002B5      STO    L A46+1                                            DINPT046
001B 0  C12A          LD     1 A201-X                                           DINPT047
001C 01 D40002E2      STO    L A48+3                                            DINPT048
001E 30 145A5140      CALL     MOVE                                             DINPT049
0020 1  0414          DC       A202                                             DINPT050
0021 1  02F2          DC       A58-2                                            DINPT051
0022 0  0006          DC       6                                                DINPT052
0023 0  C131          LD     1 A203-X                                           DINPT053
0024 0  D1FF          STO    1 BL513-X                                          DINPT054
0025 0  C132          LD     1 A204-X                                           DINPT055
0026 0  D10B          STO    1 LENGT-X                                          DINPT056
                *-------------------------------------------------              DINPT057
0027 20 23A17155 A300 LIBF     TYPEN        MESSAGE *INTERRUPT START*           DINPT058
0028 0  2001          DC       /2001        ON TYPEWRITER 1053                  DINPT059
0029 1  041D          DC       TM1-1                                            DINPT060
002A 0  0000          DC       0                                                DINPT061
                *-------------------------------------------------              DINPT062
002B 20 040565C0      LIBF     DAOP         RESET 16-BIT DIGITAL REGI-          DINPT063
002C 0  1000          DC       /1000        STER OUTPUT TO ZERO                 DINPT064
002D 1  03B4          DC       AREA2                                            DINPT065
002E 0  0000          DC       0                                                DINPT066
                *-------------------------------------------------              DINPT067
002F 0  C1FA          LD     1 B8-X         PREPARE COMMAND *READ               DINPT068
0030 0  81BF          A      1 BITNO-X      WORDS*                              DINPT069
0031 0  D1D1          STO    1 AREA3+2-X                                        DINPT070
                *-------------------------------------------------              DINPT071
0032 0  C10D          LD     1 MNPC-X                                           DINPT072
0033 0  D110          STO    1 NPC-X        COUNTER,NO. OF PAR. CHECKS          DINPT073
                *-------------------------------------------------              DINPT074
0034 0  C127          LD     1 WC33-X       PREPARE TABLE TO READ IN            DINPT075
```

```
0037 0  D20F          STO   2 SCAL-3-Y                                    DINPT077
                    *-------------------------------------------------    DINPT078
0038 20 024C1552    A1  LIBF    BLANK       CLEAR INPUT TABLE FOR       DINPT079
0039 0  DFCC            DC      SCAL-2      WORDS                       DINPT080
003A 0  0020            DC      32                                      DINPT081
                    *-------------------------------------------------    DINPT082
003B 01 44000374        BSI   L A310        COMMAND *READ WORDS*        DINPT083
                    *-------------------------------------------------    DINPT084
003D 20 042555C0        LIBF    DINP        READ WORDS,SINGLE ADDRESS,  DINPT085
003E 0  1005            DC      /1005       EXTERN. SYNCHRON.           DINPT086
003F 0  DFCA            DC      SCAL-4                                  DINPT087
0040 0  0000            DC      0                                       DINPT088
                    *-------------------------------------------------    DINPT089
0041 00 660000C8        LDX   L2 200        WAIT 200*10 MICROSECONDS    DINPT090
0043 0  1010        A2  SLA     16          )                           DINPT091
0044 0  72FF            MDX   2 -1          )=10 MICROSECONDS           DINPT092
0045 0  70FD            MDX     A2          )                           DINPT093
                    *-------------------------------------------------    DINPT094
0046 20 042555C0        LIBF    DINP        RESET DINP                  DINPT095
0047 0  4005            DC      /4005                                   DINPT096
                    *-------------------------------------------------    DINPT097
0048 30 17159000    A3  CALL    PER         PAR. CHECK OF WORDS         DINPT098
004A 0  DFCC            DC      SCAL-2                                  DINPT099
004B 0  0010            DC      16                                      DINPT100
004C 0  0000            DC      *-*         ERROR INDICATOR             DINPT101
004D 0  0000            DC      *-*         NO.OF DOUBLE WORD IN ERROR  DINPT102
004E 0  7002            MDX     A4          ERROR EXIT OF PER           DINPT103
004F 01 4C0000B3        BSC   L A5          NO-ERROR EXIT OF PER        DINPT104
                    *-------------------------------------------------    DINPT105
0051 01 74FF03F9    A4  MDX   I NPC,-1                                  DINPT106
0053 0  70E4            MDX     A1          READ WORDS AGAIN            DINPT107
0054 0  C0F8            LD      A3+5        PREPARE ERROR MESSAGE       DINPT108
0055 0  9113            S     1 ONE-X       *WORD ERROR*                DINPT109
0056 0  4008            BSI     A6                                      DINPT110
0057 0  C1ED            LD    1 ADAPR+7-X                               DINPT111
0058 0  D027            STO     A18                                     DINPT112
                    *-------------------------------------------------    DINPT113
0059 01 7400004C        MDX   L A3+4,0      CHECK FOR TYPE OF ERROR     DINPT114
005B 0  7013            MDX     A7          INVAL. DIGIT                DINPT115
                    *-------------------------------------------------    DINPT116
005C 0  C1E1            LD    1 ADTYP+8-X   PAR. ERROR                  DINPT117
005D 0  D01E            STO     A17                                     DINPT118
005E 0  7016            MDX     A13         ERROR EXIT                  DINPT119
                    *-------------------------------------------------    DINPT120
005F 0  0000        A6  DC      *-*         A6 ENTERED BY BSI A6        DINPT121
0060 20 02255103        LIBF    BINDC                                   DINPT122
0061 1  03FE            DC      OUTPT                                   DINPT123
                    *-------------------------------------------------    DINPT124
0062 0  C119            LD    1 OUTPT+4-X   CARD CODE FOR SCALER OR     DINPT125
0063 01 D4000517        STO   L AM61        CONTROL WORD NO.            DINPT126
0065 0  C11A            LD    1 OUTPT+5-X                               DINPT127
0066 01 D4000518        STO   L AM61+1                                  DINPT128
                    *-------------------------------------------------    DINPT129
0068 20 085935D9        LIBF    HOLPR       TYPEWRITER CODE FOR SCALER  DINPT130
0069 0  0000            DC      /0000       OR CONTROL WORD NO.         DINPT131
006A 1  0402            DC      OUTPT+4                                 DINPT132
006B 1  042D            DC      TM111                                   DINPT133
006C 0  0002            DC      2                                       DINPT134
006D 01 4C80005F        BSC   I A6                                      DINPT135
                    *-------------------------------------------------    DINPT136
006F 0  C1E2        A7  LD    1 ADTYP+9-X   INV. DIGIT                  DINPT137
```

```
0070 0  D00B          STO      A17                                          DINPT138
0071 01 C400042D      LD   L   TM111                                        DINPT139
0073 01 D4000437      STO  L   TM131                                        DINPT140
                  *-------------------------------------------------------- DINPT141
0075 0  C1F4      A13 LD     1 B1-X       PREPARE COMMAND *PRINT AL-       DINPT142
0076 0  81BF          A      1 BITNO-X    PHAMERIC*                        DINPT143
0077 0  D1D1          STO    1 AREA3+2-X                                   DINPT144
                  *-------------------------------------------------------- DINPT145
0078 01 44000374      BSI  L   A310        COMMAND *PRINT ALPHAMERIC*       DINPT146
                  *-------------------------------------------------------- DINPT147
007A 20 23A17155      LIBF     TYPEN       ERROR MESSAGE ON 1053            DINPT148
007B 0  2001          DC       /2001                                        DINPT149
007C 0  0000      A17 DC       *-*                                          DINPT150
007D 0  0000          DC       0                                            DINPT151
                  *-------------------------------------------------------- DINPT152
007E 20 040565C0      LIBF     DAOP        ERROR MESSAGE ON INTERFACE       DINPT153
007F 0  1310          DC       /1310       TYPEWRITER, SINGLE ADDR.,        DINPT154
0080 0  0000      A18 DC       *-*         EXTERNAL SYNCH.                  DINPT155
0081 0  0000          DC       0                                            DINPT156
                  *-------------------------------------------------------- DINPT157
0082 30 19162163      CALL     RESET      CHECK DC OPERATION                DINPT158
0084 1  0422          DC       TM139                                        DINPT159
0085 1  0086          DC       A90        GO TO A90                         DINPT160
                  *-------------------------------------------------------- DINPT161
0086 01 650003E9  A90 LDX  L1  X                                           DINPT162
0088 01 668003A8      LDX  I2  BITNO       PREPARE COMMAND FOR ALARM        DINPT163
008A 0  C1C7          LD     1 ALARM-X                                     DINPT164
008B 0  1A00          SRA    2                                             DINPT165
008C 0  D1D8          STO    1 AREA5+2-X                                   DINPT166
                  *-------------------------------------------------------- DINPT167
008D 20 040565C0      LIBF     DAOP        ALARM FOR INTERRUPT BITNO        DINPT168
008E 0  2000          DC       /2000                                        DINPT169
008F 1  03BF          DC       AREA5                                        DINPT170
0090 0  0000          DC       0                                            DINPT171
                  *-------------------------------------------------------- DINPT172
0091 30 23243595  A80 CALL     TICON       CONVERT TIME FOR MESSAGE         DINPT173
0093 1  043D          DC       TM153       *INTERRUPT EXIT*                 DINPT174
                  *-------------------------------------------------------- DINPT175
0094 20 23A17155  A19 LIBF     TYPEN       MESSAGE INTERRUPT EXIT           DINPT176
0095 0  2001          DC       /2001                                        DINPT177
0096 1  0438          DC       TM15-1                                       DINPT178
0097 0  0000          DC       0                                            DINPT179
                  *-------------------------------------------------------- DINPT180
0098 0  C1FB          LD     1 B14-X      PREPARE COMMAND *PRINT           DINPT181
0099 0  81BF          A      1 BITNO-X    WORDS*                           DINPT182
009A 0  D1D1          STO    1 AREA3+2-X                                   DINPT183
                  *-------------------------------------------------------- DINPT184
009B 01 44000374      BSI  L   A310        COMMAND *PRINT WORDS*            DINPT185
                  *-------------------------------------------------------- DINPT186
009D 0  C1FC          LD     1 B15-X      PREPARE COMMAND *END             DINPT187
009E 0  81BF          A      1 BITNO-X    OF INTERRUPT*                    DINPT188
009F 0  D1D1          STO    1 AREA3+2-X                                   DINPT189
                  *-------------------------------------------------------- DINPT190
00A0 01 44000374      BSI  L   A310        COMMAND *END OF INTERRUPT*       DINPT191
                  *-------------------------------------------------------- DINPT192
00A2 20 040565C0      LIBF     DAOP        COMMAND RESET                    DINPT193
00A3 0  1000          DC       /1000                                        DINPT194
00A4 1  0407          DC       RESET                                        DINPT195
00A5 0  0000          DC       0                                            DINPT196
                  *-------------------------------------------------------- DINPT197
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00A7 1  03A8                DC      BITNO                                   DINPT199
00A8 0  0008                DC      8                                       DINPT200
                          *-------------------------------------------------- DINPT201
00A9 20 04262495            LIBF    DISKN       STORE CONTROL SECTOR CONDI  DINPT202
00AA 0  3000                DC      /3000       ON DISK                     DINPT203
00AB 1  03A6                DC      COSEC                                   DINPT204
00AC 0  0000                DC      0                                       DINPT205
                          *-------------------------------------------------- DINPT206
00AD 20 04262495            LIBF    DISKN       TEST IF CONDI IS STORED     DINPT207
00AE 0  0100                DC      /0100                                   DINPT208
00AF 1  03A6                DC      COSEC                                   DINPT209
00B0 0  70FC                MDX     *-4                                     DINPT210
                          *-------------------------------------------------- DINPT211
00B1 30 09563167            CALL    INTEX                                   DINPT212
                          *-------------------------------------------------- DINPT213
00B3 0  62EE              A5  LDX   2 -18         A5=NO-ERROR EXIT OF PER     DINPT214
00B4 00 CE00DFE0            LDD   L2 SCAL+18      FIND FLAG BIT ON SCALER     DINPT215
00B6 0  1090                SLT     16                                      DINPT216
00B7 0  4828                BSC     Z+                                      DINPT217
00B8 0  700A                MDX     A20           FLAG BIT                  DINPT218
00B9 0  7202                MDX   2 2             NO FLAG BIT               DINPT219
00BA 0  70F9                MDX     A5+1                                    DINPT220
                          *-------------------------------------------------- DINPT221
00BB 0  C121                LD    1 SCNO-X        NO SCALER WITH FLAG BIT   DINPT222
00BC 00 D400DFC7            STO   L IDEN+9        NO. OF SCALERS (9) STORED DINPT223
                          *-------------------------------------------------- DINPT224
00BE 20 23A17155            LIBF    TYPEN       ERROR MESSAGE *NO FLAG ON   DINPT225
00BF 0  2001                DC      /2001       SCALERS*                    DINPT226
00C0 1  0444                DC      TM17-1                                  DINPT227
00C1 0  0000                DC      0                                       DINPT228
00C2 0  700A                MDX     A26                                     DINPT229
                          *-------------------------------------------------- DINPT230
00C3 01 6E000411          A20 STX   L2 XR2          CALCULATE NO. OF SCALERS  DINPT231
00C5 0  C128                LD    1 XR2-X                                   DINPT232
00C6 0  A10C                M     1 MIN-X                                   DINPT233
00C7 0  108F                SLT     15            Q INTO A AND DIVISION BY 2 DINPT234
00C8 0  D128                STO   1 XR2-X                                   DINPT235
00C9 0  C123                LD    1 TEN-X                                   DINPT236
00CA 0  9128                S     1 XR2-X                                   DINPT237
00CB 00 D400DFC7            STO   L IDEN+9        NO. OF SCALERS STORED     DINPT238
                          *-------------------------------------------------- DINPT239
00CD 00 6600DFBC          A26 LDX   L2 Y                                    DINPT240
00CF 0  CA10                LDD   2 IDEN+14-Y     SAVE CW1                  DINPT241
00D0 0  DA42                STD   2 SPEC-Y                                  DINPT242
                          *-------------------------------------------------- DINPT243
00D1 30 034D60D2            CALL    CLOCK       STORE TIME INTO FLAG SCALERDINPT244
00D3 1  03B7                DC      AREA2+3     OF INTERFACE UNIT           DINPT245
                          *-------------------------------------------------- DINPT246
00D4 30 06599523            CALL    FORMT                                   DINPT247
00D6 1  03B6                DC      AREA2+2                                 DINPT248
00D7 0  0001                DC      1                                       DINPT249
                          *-------------------------------------------------- DINPT250
00D8 0  C9CD                LDD   1 AREA2+2-X     TIME (BCD) INTO CONDI     DINPT251
00D9 0  D9C5                STD   1 TIME-X                                  DINPT252
                          *-------------------------------------------------- DINPT253
00DA 0  C20B                LD    2 IDEN+9-Y                                DINPT254
00DB 0  1004                SLA     4                                       DINPT255
00DC 0  81F7                A     1 B4-X          PREPARE COMMAND *WRITE    DINPT256
00DD 0  81BF                A     1 BITNO-X       FLAG SCALER*              DINPT257
00DE 0  D1D1                STO   1 AREA3+2-X                               DINPT258
                          *-------------------------------------------------- DINPT259
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00DF 0  6202          LDX   2 2                                        DINPT260
00E0 20 040565C0 A110 LIBF    DAOP       WRITE TIME ON DIGIT.OUTPUT  DINPT261
00E1 0  1000          DC      /1000                                    DINPT262
00E2 1  03B4          DC      AREA2                                    DINPT263
00E3 0  0000          DC      0                                        DINPT264
                      *-------------------------------------------------DINPT265
00E4 01 44000374      BSI   L  A310      COMMAND*WRITE FLAG SCALER*   DINPT266
                      *-------------------------------------------------DINPT267
00E6 0  72FF          MDX   2 -1                                       DINPT268
00E7 0  7001          MDX     A98                                      DINPT269
00E8 0  7003          MDX     A99                                      DINPT270
00E9 0  C1CE      A98 LD    1 AREA2+3-X                                DINPT271
00EA 0  D1CD          STO   1 AREA2+2-X                                DINPT272
00EB 0  70F4          MDX     A110                                     DINPT273
                      *-------------------------------------------------DINPT274
00EC 0  1010      A99 SLA     16                                       DINPT275
00ED 0  D1CD          STO   1 AREA2+2-X                                DINPT276
                      *-------------------------------------------------DINPT277
00EE 20 040565C0      LIBF    DAOP       RESET 16-BIT DIGITAL REGI-  DINPT278
00EF 0  1000          DC      /1000      STER OUTPUT TO ZERO         DINPT279
00F0 1  03B4          DC      AREA2                                    DINPT280
00F1 0  0000          DC      0                                        DINPT281
                      *-------------------------------------------------DINPT282
00F2 00 6600DFBC      LDX   L2 Y                                       DINPT283
                      *-------------------------------------------------DINPT284
00F4 0  C242          LD    2 SPEC-Y     DECODE 1ST.CONTROL WORD     DINPT285
00F5 0  4810          BSC     -                                        DINPT286
00F6 0  7003          MDX     A23                                      DINPT287
00F7 0  C113          LD    1 ONE-X                                    DINPT288
00F8 0  D211          STO   2 IDEN+15-Y  RESET INDICATOR=1           DINPT289
00F9 0  7002          MDX     A24                                      DINPT290
                      *-------------------------------------------------DINPT291
00FA 0  1010      A23 SLA     16                                       DINPT292
00FB 0  D211          STO   2 IDEN+15-Y  RESET INDICATOR=0           DINPT293
                      *-------------------------------------------------DINPT294
00FC 0  C242      A24 LD    2 SPEC-Y                                   DINPT295
00FD 0  E1C8          AND   1 AND1-X                                   DINPT296
00FE 0  1888          SRT     8                                        DINPT297
00FF 0  D204          STO   2 IDEN+2-Y                                 DINPT298
0100 0  1010          SLA     16                                       DINPT299
0101 0  1084          SLT     4                                        DINPT300
0102 0  D202          STO   2 IDEN-Y                                   DINPT301
0103 0  1010          SLA     16                                       DINPT302
0104 0  1084          SLT     4                                        DINPT303
0105 0  D203          STO   2 IDEN+1-Y   1ST. EXPER. NUMBER          DINPT304
                      *-------------------------------------------------DINPT305
0106 0  C204          LD    2 IDEN+2-Y                                 DINPT306
0107 0  A123          M     1 TEN-X                                    DINPT307
0108 0  1090          SLT     16                                       DINPT308
0109 0  8202          A     2 IDEN-Y                                   DINPT309
010A 0  D202          STO   2 IDEN-Y     INTERRUPT NO.(PISW-BIT)     DINPT310
                      *-------------------------------------------------DINPT311
010B 0  C243          LD    2 SPEC+1-Y                                 DINPT312
010C 0  E1C8          AND   1 AND1-X                                   DINPT313
010D 0  1888          SRT     8                                        DINPT314
010E 0  D204          STO   2 IDEN+2-Y   2ND. EXPER. NUMBER          DINPT315
010F 0  1010          SLA     16                                       DINPT316
0110 0  1084          SLT     4                                        DINPT317
0111 0  D206          STO   2 IDEN+4-Y                                 DINPT318
0112 0  1010          SLA     16                                       DINPT319
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0114 0 D205          STO   2 IDEN+3-Y                                    DINPT321
                *-------------------------------------------------------- DINPT322
0115 0 C206          LD    2 IDEN+4-Y                                    DINPT323
0116 0 A123          M     1 TEN-X                                       DINPT324
0117 0 1090          SLT     16                                          DINPT325
0118 0 8205          A     2 IDEN+3-Y                                    DINPT326
0119 0 D205          STO   2 IDEN+3-Y    SERIAL NUMBER                   DINPT327
                *-------------------------------------------------------- DINPT328
011A 0 C224          LD    2 SCAL+18-Y   DECODE 3RD. CONTROL WORD        DINPT329
011B 0 E1C8          AND   1 AND1-X                                      DINPT330
011C 0 1888          SRT     8                                           DINPT331
011D 0 D206          STO   2 IDEN+4-Y                                    DINPT332
011E 0 1010          SLA     16                                          DINPT333
011F 0 1084          SLT     4                                           DINPT334
0120 0 D207          STO   2 IDEN+5-Y                                    DINPT335
0121 0 1010          SLA     16                                          DINPT336
0122 0 1084          SLT     4                                           DINPT337
0123 0 D208          STO   2 IDEN+6-Y    1ST.DIG.OF NO.OF 1ST.BLOCK      DINPT338
                *-------------------------------------------------------- DINPT339
0124 0 C206          LD    2 IDEN+4-Y                                    DINPT340
0125 0 A123          M     1 TEN-X                                       DINPT341
0126 0 1090          SLT     16                                          DINPT342
0127 0 8207          A     2 IDEN+5-Y                                    DINPT343
0128 0 D207          STO   2 IDEN+5-Y    NUMBER OF BLOCKS                DINPT344
                *-------------------------------------------------------- DINPT345
0129 0 C225          LD    2 SCAL+19-Y                                   DINPT346
012A 0 E1C8          AND   1 AND1-X                                      DINPT347
012B 0 1888          SRT     8                                           DINPT348
012C 0 D209          STO   2 IDEN+7-Y    2ND.DIG.OF NO.OF 1ST.BLOCK      DINPT349
012D 0 1010          SLA     16                                          DINPT350
012E 0 1084          SLT     4                                           DINPT351
012F 0 D20A          STO   2 IDEN+8-Y    3RD.DIG.OF NO.OF 1ST.BLOCK      DINPT352
0130 0 1010          SLA     16                                          DINPT353
0131 0 1084          SLT     4                                           DINPT354
0132 0 D20D          STO   2 IDEN+11-Y   4TH.DIG.OF NO.OF 1ST.BLOCK      DINPT355
                *-------------------------------------------------------- DINPT356
0133 0 C208          LD    2 IDEN+6-Y                                    DINPT357
0134 0 A124          M     1 THOUS-X                                     DINPT358
0135 0 1090          SLT     16                                          DINPT359
0136 0 820D          A     2 IDEN+11-Y                                   DINPT360
0137 0 D20D          STO   2 IDEN+11-Y                                   DINPT361
0138 0 C209          LD    2 IDEN+7-Y                                    DINPT362
0139 0 A10A          M     1 HUNDR-X                                     DINPT363
013A 0 1090          SLT     16                                          DINPT364
013B 0 820D          A     2 IDEN+11-Y                                   DINPT365
013C 0 D20D          STO   2 IDEN+11-Y                                   DINPT366
013D 0 C20A          LD    2 IDEN+8-Y                                    DINPT367
013E 0 A123          M     1 TEN-X                                       DINPT368
013F 0 1090          SLT     16                                          DINPT369
0140 0 820D          A     2 IDEN+11-Y                                   DINPT370
0141 0 9113          S     1 ONE-X                                       DINPT371
0142 0 D208          STO   2 IDEN+6-Y    NO.OF 1ST BLOCK                 DINPT372
                *-------------------------------------------------------- DINPT373
0143 0 C22E          LD    2 SCAL+28-Y   DECODE 2ND. CONTR. WORD         DINPT374
0144 0 4810          BSC     -                                           DINPT375
0145 0 7003          MDX     A14                                         DINPT376
0146 0 C113          LD    1 ONE-X                                       DINPT377
0147 0 D210          STO   2 IDEN+14-Y   AUTOMAT.OPERATION               DINPT378
0148 0 7002          MDX     A12                                         DINPT379
                *-------------------------------------------------------- DINPT380
0149 0 1010     A14  SLA     16                                          DINPT381
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014A 0  D210          STO   2 IDEN+14-Y  MANUAL OPERATION                DINPT382
                    *-------------------------------------------------- DINPT383
014B 0  C22E        A12 LD    2 SCAL+28-Y                               DINPT384
014C 0  E1C8          AND   1 AND1-X                                    DINPT385
014D 0  1888          SRT     8                                         DINPT386
014E 0  D001          STO     *+1                                       DINPT387
014F 00 65000000      LDX   L1 *-*                                      DINPT388
0151 01 C50003EC      LD    L1 DECT1                                    DINPT389
0153 0  D20C          STO   2 IDEN+10-Y  AUTOM. TYPE                    DINPT390
                    *-------------------------------------------------- DINPT391
0154 01 650003E9      LDX   L1 X         CHECK OF AUTOM. TYPE           DINPT392
0156 0  B113        A101 CMP   1 ONE-X   (MUST BE 1)                    DINPT393
0157 0  7002          MDX     A100       INCORR. AUTOM.TYPE             DINPT394
0158 0  7001          MDX     A100       INCORR. AUTOM.TYPE             DINPT395
0159 0  7008          MDX     A102       AUTOM. TYPE=1                  DINPT396
                    *-------------------------------------------------- DINPT397
015A 0  C1E0        A100 LD    1 ADTYP+7-X PREPARE ERROR MESSAGE*IN-     DINPT398
015B 01 D400007C      STO   L A17        CORRECT AUTOM. TYPE*           DINPT399
015D 0  C1EC          LD    1 ADAPR+6-X                                 DINPT400
015E 01 D4000080      STO   L A18                                       DINPT401
0160 01 4C00021E      BSC   L A42                                       DINPT402
                    *-------------------------------------------------- DINPT403
0162 0  1010        A102 SLA     16                                     DINPT404
0163 0  1084          SLT     4                                         DINPT405
0164 0  D209          STO   2 IDEN+7-Y   INTERMEDIATE STORAGE           DINPT406
0165 0  1010          SLA     16                                        DINPT407
0166 0  1084          SLT     4                                         DINPT408
0167 0  D20F          STO   2 IDEN+13-Y                                 DINPT409
                    *-------------------------------------------------- DINPT410
0168 0  C209          LD    2 IDEN+7-Y                                  DINPT411
0169 0  A123          M     1 TEN-X                                     DINPT412
016A 0  1090          SLT     16                                        DINPT413
016B 0  820F          A     2 IDEN+13-Y                                 DINPT414
016C 0  D20F          STO   2 IDEN+13-Y  OPERATION CODE                 DINPT415
                    *-------------------------------------------------- DINPT416
016D 0  B133          CMP   1 ZERO-X     OP CODE CHECK (MUST BE 0,1     DINPT417
016E 0  7000          MDX     *          2 OR 3 )                       DINPT418
016F 0  7001          MDX     A120       0=AUTOM.SAMPLE CHANGER         DINPT419
0170 0  700C          MDX     A123       1=STORE WITH CHECK             DINPT420
0171 0  B126        A120 CMP   1 THREE-X  2=STORE WITHOUT CHECK          DINPT421
0172 0  7002          MDX     A122       3=AUTOMATIC SUM                DINPT422
0173 0  7000          MDX     *                                         DINPT423
0174 0  7010          MDX     A121                                      DINPT424
                    *-------------------------------------------------- DINPT425
0175 0  C1E5        A122 LD    1 ADTYP+12-X PREPARE ERROR MESSAGE        DINPT426
0176 01 D400007C      STO   L A17        *CHECK OP CODE*                DINPT427
0178 0  C1F0          LD    1 ADAPR+10-X                                DINPT428
0179 01 D4000080      STO   L A18                                       DINPT429
017B 01 4C00021E      BSC   L A42                                       DINPT430
                    *-------------------------------------------------- DINPT431
017D 0  C1BF        A123 LD    1 BITNO-X   OP CODE 0 ONLY ALLOWED FOR    DINPT432
017E 0  B125          CMP   1 TWO-X      BITNO=1 OR 2                   DINPT433
017F 0  70F5          MDX     A122                                      DINPT434
0180 0  7001          MDX     A124                                      DINPT435
0181 0  7003          MDX     A121                                      DINPT436
                    *-------------------------------------------------- DINPT437
0182 0  B113        A124 CMP   1 ONE-X                                  DINPT438
0183 0  7000          MDX     *                                         DINPT439
0184 0  70F0          MDX     A122                                      DINPT440
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0186 0  1884          SRT    4                                          DINPT443
0187 0  1010          SLA    16                                         DINPT444
0188 0  1084          SLT    4                                          DINPT445
0189 0  D20E          STO    2 IDEN+12-Y   SAMPLE CHANGER SEQUENCE      DINPT446
                    *-------------------------------------------------- DINPT447
018A 00 7400DFCB      MDX  L IDEN+13,0                                  DINPT448
018C 0  7015          MDX     A106        NO CHECK OF SA. CH. SEQ.     DINPT449
018D 0  C20E          LD    2 IDEN+12-Y   CHECK OF SAMPLE CHANGER      DINPT450
018E 0  B108          CMP   1 FOUR-X      SEQUENCE (MUST BE 2,3 OR 4)DINPT451
018F 0  700A          MDX     A103                                     DINPT452
0190 0  7001          MDX     A104                                     DINPT453
0191 0  7010          MDX     A106        SAMPLE CHANG. SEQ. = 4       DINPT454
                    *-------------------------------------------------- DINPT455
0192 0  B126  A104    CMP   1 THREE-X                                  DINPT456
0193 0  7006          MDX     A103        INCORR.                      DINPT457
0194 0  7001          MDX     A105                                     DINPT458
0195 0  700C          MDX     A106        SAMPLE CHANG. SEQ. = 3       DINPT459
                    *-------------------------------------------------- DINPT460
0196 0  B125  A105    CMP   1 TWO-X                                    DINPT461
0197 0  7002          MDX     A103        INCORR                       DINPT462
0198 0  7001          MDX     A103        INCORR                       DINPT463
0199 0  7008          MDX     A106        SAMPLE CHANG. SEQ. = 2       DINPT464
                    *-------------------------------------------------- DINPT465
019A 0  C1E3  A103    LD    1 ADTYP+10-X  PREPARE ERROR MESSAGE *IN-   DINPT466
019B 01 D400007C      STO  L  A17         CORRECT SAMPLE CHANGER IN-   DINPT467
019D 0  C1EE          LD    1 ADAPR+8-X   DICATOR*                     DINPT468
019E 01 D4000080      STO  L  A18                                      DINPT469
01A0 01 4C00021E      BSC  L  A42                                      DINPT470
                    *-------------------------------------------------- DINPT471
01A2 30 041430A8  A106  CALL    DECBY     DECODE 4TH.CONTROL WORD      DINPT472
01A4 0  DFE2            DC      SCAL+20   AND STORE INTO SPEC+100      DINPT473
01A5 0  0001            DC      1                                      DINPT474
01A6 0  CA26            LDD   2 SCAL+20-Y                              DINPT475
01A7 00 DC00E062        STD  L  SPEC+100                               DINPT476
                    *-------------------------------------------------- DINPT477
01A9 0  C20B          LD    2 IDEN+9-Y                                 DINPT478
01AA 0  D013          STO     A30                                      DINPT479
01AB 0  D019          STO     A31+1                                    DINPT480
01AC 0  D001          STO     *+1                                      DINPT481
01AD 00 65000000      LDX  L1 *-*         NO.OF SCALERS INTO XR1       DINPT482
                    *-------------------------------------------------- DINPT483
01AF 0  C212  A29     LD    2 SCAL-Y                                   DINPT484
01B0 0  4810          BSC     -                                        DINPT485
01B1 0  7004          MDX     A27         NO MULTIPLICATION BY 10      DINPT486
01B2 01 C40003FC      LD   L  ONE         MULTIPLICATION BY 10         DINPT487
01B4 0  D242          STO   2 SPEC-Y                                   DINPT488
01B5 0  7002          MDX     A28         INDICATOR 1 OR 0 IN SPEC-    DINPT489
01B6 0  1010  A27     SLA     16          AREA IN ORDER OF SCALERS     DINPT490
01B7 0  D242          STO   2 SPEC-Y      IN SCAL-AREA                 DINPT491
                    *-------------------------------------------------- DINPT492
01B8 0  7202  A28     MDX   2 2                                        DINPT493
01B9 0  71FF          MDX   1 -1                                       DINPT494
01BA 0  70F4          MDX     A29                                      DINPT495
                    *-------------------------------------------------- DINPT496
01BB 30 041430A8      CALL    DECBY       BCD TO BINARY CONVER-        DINPT497
01BD 0  DFCE          DC      SCAL        SION OF SCALERS              DINPT498
01BE 0  0000  A30     DC      *-*         NO. OF SCALERS               DINPT499
                    *-------------------------------------------------- DINPT500
01BF 00 6600DFBC      LDX  L2 Y                                        DINPT501
01C1 0  CA12          LDD   2 SCAL-Y      STORE PRESET COUNT INTO      DINPT502
01C2 00 DC00E064      STD  L  SPEC+102    SPEC+102, NO MULTIPL. BY 10DINPT503
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                                *-------------------------------------------------- DINPT504
01C4 00 65000000 A31    LDX   L1 *-*          NO. OF SCALERS                      DINPT505
01C6 0  6309     A34    LDX    3 9                                                DINPT506
01C7 0  C242            LD     2 SPEC-Y                                           DINPT507
01C8 0  4808            BSC      +                                                DINPT508
01C9 0  7005            MDX      A32                                              DINPT509
01CA 0  CA12            LDD    2 SCAL-Y       MULTIPLICATION BY 10                DINPT510
01CB 0  8A12     A33    AD     2 SCAL-Y                                           DINPT511
01CC 0  73FF            MDX    3 -1                                               DINPT512
01CD 0  70FD            MDX      A33                                              DINPT513
01CE 0  DA12            STD    2 SCAL-Y                                           DINPT514
01CF 0  7202     A32    MDX    2 2            NO MULTIPLICATION BY 10             DINPT515
01D0 0  71FF            MDX    1 -1                                               DINPT516
01D1 0  70F4            MDX      A34                                              DINPT517
                                *-------------------------------------------------- DINPT518
01D2 00 6600DFRC        LDX   L2 Y                                                DINPT519
01D4 01 650003E9        LDX   L1 X                                                DINPT520
01D6 00 67800067        LDX   I3 103                                              DINPT521
                                *-------------------------------------------------- DINPT522
01D8 00 CC00E062        LDD   L  SPEC+100      CONTROL WORD 4                      DINPT523
01DA 00 BC00E064        DCM   L  SPEC+102      PRESET COUNT                        DINPT524
01DC 0  7002            MDX      *+2           CW4 UNEQUAL PRESET COUNT            DINPT525
01DD 0  7001            MDX      *+1           CW4 UNEQUAL PRESET COUNT            DINPT526
01DE 0  700C            MDX      A8            CW4   EQUAL PRESET COUNT            DINPT527
                                *-------------------------------------------------- DINPT528
01DF 00 7400DFCC        MDX   L  IDEN+14,0     OPERATION CODE                      DINPT529
01E1 0  7001            MDX      *+1           AUTOM. OPERATION                    DINPT530
01E2 0  7008            MDX      A8            MANUAL OPERATION                    DINPT531
                                *-------------------------------------------------- DINPT532
01E3 0  C1E4            LD     1 ADTYP+11-X    PREPARE ERROR MESSAGE               DINPT533
01E4 01 D400007C        STO   L  A17           *PRESET COUNT AND CW4               DINPT534
01E6 0  C1EF            LD     1 ADAPR+9-X     DISAGREE*                           DINPT535
01E7 01 D4000080        STO   L  A18                                               DINPT536
01E9 01 4C00021E        BSC   L  A42           INTER. EXIT                         DINPT537
                                *-------------------------------------------------- DINPT538
01EB 20 024C1552 A8     LIBF     BLANK         CLEAR INTERFACE                     DINPT539
01EC 0  DFE0             DC      SCAL+18       WORDS A-F IN SCAL-                  DINPT540
01ED 0  000C             DC      12            AREA                                DINPT541
                                *-------------------------------------------------- DINPT542
01EE 0  C203            LD     2 IDEN+1-Y      WRITE CONTROL SECTOR CONDI          DINPT543
01EF 0  D1C0            STO    1 EXNO1-X       1ST. EXPER. NO.                     DINPT544
01F0 0  C204            LD     2 IDEN+2-Y                                          DINPT545
01F1 0  D1C1            STO    1 EXNO2-X       2ND. EXPER. NO.                     DINPT546
01F2 0  C205            LD     2 IDEN+3-Y                                          DINPT547
01F3 0  D1C2            STO    1 SERNO-X       SERIAL NO.                          DINPT548
01F4 0  C20C            LD     2 IDEN+10-Y                                         DINPT549
01F5 0  D1C3            STO    1 AUTYP-X       AUTOM. TYPE                         DINPT550
01F6 0  C113            LD     1 ONE-X                                             DINPT551
01F7 0  D1C4            STO    1 INSTA-X       INSTA=1,CONTROL WORDS AND           DINPT552
                        *                      SCALERS ARE READ                    DINPT553
                        *-------------------------------------------------- DINPT554
01F8 20 04262495        LIBF     DISKN         STORE CONTROL SECTOR CONDI          DINPT555
01F9 0  3000             DC      /3000         ON DISK                             DINPT556
01FA 1  03A6             DC      COSEC                                             DINPT557
01FB 0  0000             DC      0                                                 DINPT558
                                *-------------------------------------------------- DINPT559
01FC 20 04262495        LIBF     DISKN         TEST IF CONDI IS STORED             DINPT560
01FD 0  0100             DC      /0100                                             DINPT561
01FE 1  03A6             DC      COSEC                                             DINPT562
01FF 0  70FC            MDX      *-4                                               DINPT563
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0200 0  C207          LD    2 IDEN+5-Y   CHECK OF BLOCK NUMBERS      DINPT565
0201 0  B109          CMP   1 HEXDE-X                               DINPT566
0202 0  7062          MDX     A35        NO.OF BL. GREATER 16       DINPT567
0203 0  7008          MDX     A36        NO.OF BL. SMALLER 16       DINPT568
0204 0  C208          LD    2 IDEN+6-Y   NO.OF BL. EQUAL   16       DINPT569
0205 0  B133          CMP   1 ZERO-X                                DINPT570
0206 0  7011          MDX     A37        1ST BLOCK GREATER  0       DINPT571
0207 0  7010          MDX     A37        1ST BLOCK SMALLER  0       DINPT572
0208 0  C113          LD    1 ONE-X      1ST BLOCK EQUAL    0       DINPT573
0209 0  D206          STO   2 IDEN+4-Y   1ST GROUP OF 4096 CHANNELS  DINPT574
020A 0  D20D          STO   2 IDEN+11-Y  1 GROUP OF 4096 CHANNELS    DINPT575
020B 0  7061          MDX     A38        CONTINUE                   DINPT576
*-------------------------------------------------------------------DINPT577
020C 0  C207    A36   LD    2 IDEN+5-Y                               DINPT578
020D 0  4808          BSC     +                                      DINPT579
020E 0  7009          MDX     A37        NO. OF BLOCKS = 0          DINPT580
*-------------------------------------------------------------------DINPT581
020F 0  C109          LD    1 HEXDE-X                                DINPT582
0210 0  9208          S     2 IDEN+6-Y                               DINPT583
0211 0  B207          CMP   2 IDEN+5-Y                               DINPT584
0212 0  7001          MDX     A39        16-1ST.BL.GREATER NO.OF BL DINPT585
0213 0  7004          MDX     A37        16-1ST.BL.SMALLER NO.OF BL DINPT586
0214 0  1010    A39   SLA     16         16-1ST.BL.  EQUAL NO.OF BL DINPT587
0215 0  D206          STO   2 IDEN+4-Y                               DINPT588
0216 0  D20D          STO   2 IDEN+11-Y                              DINPT589
0217 0  7055          MDX     A38        CONTINUE                   DINPT590
*-------------------------------------------------------------------DINPT591
0218 0  C1D9    A37   LD    1 ADTYP-X    STORE ADDRESSES OF ERROR   DINPT592
0219 01 D400007C      STO   L A17        MESSAGE *TOT. NO.OF BLOCKS DINPT593
021B 0  C1E6          LD    1 ADAPR-X    AND NO. OF 1.BL. DISAGREE* DINPT594
021C 01 D4000080      STO   L A18                                    DINPT595
*-------------------------------------------------------------------DINPT596
021E 01 650003E9    A42   LDX   L1 X                                 DINPT597
0220 00 6600DFBC          LDX   L2 Y                                 DINPT598
0222 00 67800067          LDX   I3 103                               DINPT599
*-------------------------------------------------------------------DINPT600
0224 20 024C1552          LIBF    BLANK      PREPARE 1053 MESSAGE *ID* DINPT601
0225 0  DD9E              DC      MESS       MESS USED AS INTERMEDIATE DINPT602
0226 0  001C              DC      28         STORAGE                   DINPT603
*-------------------------------------------------------------------DINPT604
0227 0  C202          LD    2 IDEN-Y                                 DINPT605
0228 20 02255103      LIBF    BINDC                                  DINPT606
0229 1  03FE          DC      OUTPT                                  DINPT607
022A 0  C919          LDD   1 OUTPT+4-X                              DINPT608
022B 00 DC00DD9E      STD   L MESS                                   DINPT609
022D 0  C11D          LD    1 POINT-X                                DINPT610
022E 00 D400DDA0      STO   L MESS+2                                 DINPT611
*-------------------------------------------------------------------DINPT612
0230 0  C203          LD    2 IDEN+1-Y                               DINPT613
0231 20 02255103      LIBF    BINDC                                  DINPT614
0232 1  03FE          DC      OUTPT                                  DINPT615
0233 0  C11A          LD    1 OUTPT+5-X                              DINPT616
0234 00 D400DDA1      STO   L MESS+3                                 DINPT617
*-------------------------------------------------------------------DINPT618
0236 0  C204          LD    2 IDEN+2-Y                               DINPT619
0237 20 02255103      LIBF    BINDC                                  DINPT620
0238 1  03FE          DC      OUTPT                                  DINPT621
0239 0  C11A          LD    1 OUTPT+5-X                              DINPT622
023A 00 D400DDA2      STO   L MESS+4                                 DINPT623
*-------------------------------------------------------------------DINPT624
023C 0  C205          LD    2 IDEN+3-Y                               DINPT625
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023D 20 02255103          LIBF     BINDC                                  DINPT626
023E 1  03FE              DC       OUTPT                                  DINPT627
023F 0  C119              LD    1  OUTPT+4-X                               DINPT628
0240 00 D400DDA3          STO   L  MESS+5                                  DINPT629
0242 0  C11A              LD    1  OUTPT+5-X                               DINPT630
0243 00 D400DDA4          STO   L  MESS+6                                  DINPT631
                     *-------------------------------------------------    DINPT632
0245 0  C20C              LD    2  IDEN+10-Y                               DINPT633
0246 20 02255103          LIBF     BINDC                                  DINPT634
0247 1  03FE              DC       OUTPT                                  DINPT635
0248 0  C115              LD    1  OUTPT-X                                 DINPT636
0249 00 D400DDA9          STO   L  MESS+11                                 DINPT637
024B 0  C11A              LD    1  OUTPT+5-X                               DINPT638
024C 00 D400DDAA          STO   L  MESS+12                                 DINPT639
                     *-------------------------------------------------    DINPT640
024E 0  C208              LD    2  IDEN+6-Y                                DINPT641
024F 20 02255103          LIBF     BINDC                                  DINPT642
0250 1  03FE              DC       OUTPT                                  DINPT643
0251 0  C919              LDD   1  OUTPT+4-X                               DINPT644
0252 00 DC00DDB0          STD   L  MESS+18                                 DINPT645
                     *-------------------------------------------------    DINPT646
0254 0  C207              LD    2  IDEN+5-Y                                DINPT647
0255 20 02255103          LIBF     BINDC                                  DINPT648
0256 1  03FE              DC       OUTPT                                  DINPT649
0257 0  C919              LDD   1  OUTPT+4-X                               DINPT650
0258 00 DC00DDB8          STD   L  MESS+26                                 DINPT651
                     *-------------------------------------------------    DINPT652
025A 20 085935D9          LIBF     HOLPR                                  DINPT653
025B 0  0000              DC       /0000                                  DINPT654
025C 0  DD9E              DC       MESS                                   DINPT655
025D 1  045F              DC       TM211                                  DINPT656
025E 0  001C              DC       28          END OF MESSAGE PREPARATION DINPT657
                     *-------------------------------------------------    DINPT658
025F 20 23A17155          LIBF     TYPEN       MESSAGE ID,TYPE,ETC.       DINPT659
0260 0  2001              DC       /2001                                  DINPT660
0261 1  045D              DC       TM21-1                                 DINPT661
0262 0  0000              DC       0                                      DINPT662
                     *-------------------------------------------------    DINPT663
0263 01 4C000075          BSC   L  A13         INTER. EXIT                DINPT664
                     *-------------------------------------------------    DINPT665
0265 0  C1DA         A35  LD    1  ADTYP+1-X    STORE ADDRESSES OF ERROR   DINPT666
0266 01 D400007C          STO   L  A17         MESSAGE *NO. OF BLOCKS 16* DINPT667
0268 0  C1E7              LD    1  ADAPR+1-X                               DINPT668
0269 01 D4000080          STO   L  A18                                     DINPT669
026B 01 4C00021E          BSC   L  A42         INTER. EXIT                DINPT670
                     *-------------------------------------------------    DINPT671
026D 0  C202         A38  LD    2  IDEN-Y      COMPARE BITNO AND INTER.NO DINPT672
026E 0  B1BF              CMP   1  BITNO-X                                 DINPT673
026F 0  7002              MDX      A40         UNEQUAL                    DINPT674
0270 0  7001              MDX      A40         UNEQUAL                    DINPT675
0271 0  7008              MDX      A41         EQUAL                      DINPT676
                     *-------------------------------------------------    DINPT677
0272 0  C1DB         A40  LD    1  ADTYP+2-X    UNEQUAL                    DINPT678
0273 01 D400007C          STO   L  A17                                     DINPT679
0275 0  C1E8              LD    1  ADAPR+2-X                               DINPT680
0276 01 D4000080          STO   L  A18                                     DINPT681
0278 01 4C00021E          BSC   L  A42                                     DINPT682
                     *-------------------------------------------------    DINPT683
027A 20 024C1552     A41  LIBF     BLANK       RESET SPEC-AREA TO 0       DINPT684
027B 0  DFFE              DC       SPEC                                   DINPT685
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                *-------------------------------------------------------- DINPT687
027D 0  C208          LD    2 IDEN+6-Y    CALCULATE ADDR.OF 1ST BL.     DINPT688
027E 0  1004          SLA     4                                         DINPT689
027F 0  D1FE          STO   1 BLADD-X     STORAGE FOR BLOCK ADDR.       DINPT690
                *-------------------------------------------------------- DINPT691
0280 0  C1F6          LD    1 B3-X        PREPARE COMMAND FOR 2ND.      DINPT692
0281 0  81BF          A     1 BITNO-X     CONTROL WORD(2ND.HALF)AND     DINPT693
0282 0  81F1          A     1 ADCW2-X     STORE INTO COM1               DINPT694
0283 0  D101          STO   1 COM1-X                                    DINPT695
                *-------------------------------------------------------- DINPT696
0284 0  C1FF          LD    1 BL513-X     PREPARE TABLE TO READ IN      DINPT697
0285 00 D400DDBA      STO   L AREA1       ONE BLOCK OF ANALYSER DATA    DINPT698
0287 0  C1F2          LD    1 AD67-X                                    DINPT699
0288 00 D400DDBB      STO   L AREA1+1                                   DINPT700
                *-------------------------------------------------------- DINPT701
028A 0  C208          LD    2 IDEN+6-Y    CALCULATE STARTING ADDR.      DINPT702
028B 0  B133          CMP   1 ZERO-X      FOR STORAGE OF BLOCKS         DINPT703
028C 0  7002          MDX     A59         NO.OF 1ST BLOCK GREATER 0     DINPT704
028D 0  7001          MDX     A59         NO.OF 1ST BLOCK SMALLER 0     DINPT705
028E 0  7006          MDX     A56         NO.OF 1ST BLOCK EQUAL   0     DINPT706
                *-------------------------------------------------------- DINPT707
028F 0  A10B  A59     M     1 LENGT-X                                   DINPT708
0290 0  1090          SLT     16                                        DINPT709
0291 01 840002F7      A     L A58+3                                     DINPT710
0293 01 D40002F7      STO   L A58+3                                     DINPT711
                *-------------------------------------------------------- DINPT712
0295 00 6680DFC3  A56 LDX   I2 IDEN+5                                   DINPT713
                *-------------------------------------------------------- DINPT714
0297 0  C10D          LD    1 MNPC-X                                    DINPT715
0298 0  D110          STO   1 NPC-X       COUNTER,NO.OF PAR.CHECKS      DINPT716
0299 0  C10E          LD    1 MNTR-X                                    DINPT717
029A 0  D111          STO   1 NTR-X       COUNTER,NO.OF BL. LENGTH      DINPT718
029B 0  C10F          LD    1 MNBR-X      TESTS                         DINPT719
029C 0  D112          STO   1 NBR-X       COUNTER,NO.OF BL.ADDR.RDGS    DINPT720
                *-------------------------------------------------------- DINPT721
029D 0  C1F8          LD    1 B5-X        PREPARE COMMAND *READ BL.*    DINPT722
029E 0  81BF          A     1 BITNO-X                                   DINPT723
029F 0  81FE          A     1 BLADD-X                                   DINPT724
02A0 0  D1D1          STO   1 AREA3+2-X                                 DINPT725
02A1 0  D102          STO   1 CRBLO-X                                   DINPT726
                *-------------------------------------------------------- DINPT727
02A2 20 024C1552  A57 LIBF    BLANK       RESET DIG.INPUT TABLE FOR     DINPT728
02A3 0  DDBC          DC      BLOCK       1 BLOCK OF ANALYSER DATA      DINPT729
02A4 0  0200          DC      512                                       DINPT730
                *-------------------------------------------------------- DINPT731
02A5 01 44000374      BSI   L A310        COMMAND *READ BLOCK*          DINPT732
                *-------------------------------------------------------- DINPT733
02A7 20 042555C0      LIBF    DINP        READ ONE BL.OF ANAL.DATA      DINPT734
02A8 0  1005          DC      /1005       SINGL.ADDR.,EXTERN.SYNCHR.    DINPT735
02A9 0  DDBA          DC      AREA1                                     DINPT736
02AA 0  0000          DC      0                                         DINPT737
                *-------------------------------------------------------- DINPT738
02AB 00 67000BB8      LDX   L3 3000       WAIT 3000*10 MICROSEC         DINPT739
02AD 0  1010  A91     SLA     16          )                             DINPT740
02AE 0  73FF          MDX   3 -1          )=10 MICROSEC                 DINPT741
02AF 0  70FD          MDX     A91         )                             DINPT742
                *-------------------------------------------------------- DINPT743
02B0 00 67800067      LDX   I3 103                                      DINPT744
02B2 20 042555C0      LIBF    DINP        RESET DINP                    DINPT745
02B3 0  4005          DC      /4005                                     DINPT746
                *-------------------------------------------------------- DINPT747
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02B4 00 C400DFBB  A46   LD   L  BLOCK+511                                  DINPT748
02B6 0  4810            BSC      -                                         DINPT749
02B7 0  7001            MDX      A47          CHECK NO.OF TABLE READINGS   DINPT750
02B8 0  7004            MDX      A77          CONTINUE                     DINPT751
                *-------------------------------------------------------  DINPT752
02B9 01 74FF03FA  A47   MDX  I   NTR,-1                                    DINPT753
02BB 0  70E6            MDX      A57          READ AGAIN THIS BLOCK        DINPT754
02BC 0  7047            MDX      A49          ERROR MESS.*BLOCK LENGTH*    DINPT755
                *-------------------------------------------------------  DINPT756
02BD 0  C101      A77   LD     1 COM1-X       CHECK BLOCK ADDRESS          DINPT757
02BE 0  D1D1            STO    1 AREA3+2-X                                 DINPT758
                *-------------------------------------------------------  DINPT759
02BF 01 44000374        BSI  L   A310         COMMAND * READ 2ND.CONTR.    DINPT760
                *                             WORD(2ND.HALF)*              DINPT761
                *-------------------------------------------------------  DINPT762
02C1 20 042555C0        LIBF     DINP         READ 2ND.CONTROL WORD,       DINPT763
02C2 0  3000            DC       /3000        SEQUENTIAL,DPC               DINPT764
02C3 0  0043            DC       67                                        DINPT765
02C4 0  0000            DC       0                                         DINPT766
                *-------------------------------------------------------  DINPT767
02C5 0  E1C9            AND    1 AND2-X                                    DINPT768
02C6 0  1887            SRT      7                                         DINPT769
02C7 0  1801            SRA      1            BLOCK ADDR. SHIFTED 4        DINPT770
02C8 0  1087            SLT      7            POSITIONS LEFT               DINPT771
                *-------------------------------------------------------  DINPT772
02C9 0  B1FE            CMP    1 BLADD-X                                   DINPT773
02CA 0  7002            MDX      A43          UNEQUAL BLADD                DINPT774
02CB 0  7001            MDX      A43          UNEQUAL BLADD                DINPT775
02CC 0  7012            MDX      A48          EQUAL BLADD                  DINPT776
                *-------------------------------------------------------  DINPT777
02CD 01 74FF03FB  A43   MDX  I   NBR,-1                                    DINPT778
02CF 0  700C            MDX      A44          READ AGAIN THIS BLOCK.       DINPT779
                *-------------------------------------------------------  DINPT780
02D0 0  C1DC            LD     1 ADTYP+3-X    PREPARE MESSAGE *BLOCK       DINPT781
02D1 01 D400007C        STO  L   A17          CANNOT BE ADDRESSED*         DINPT782
02D3 0  C1E9            LD     1 ADAPR+3-X                                 DINPT783
02D4 01 D4000080        STO  L   A18                                       DINPT784
                *-------------------------------------------------------  DINPT785
02D6 01 44000387        BSI  L   CONV1        CONVERS.OF BLOCK NO.         DINPT786
02D8 1  0575            DC       AM111        CARD CODE ADDR.              DINPT787
02D9 1  048B            DC       TM271        1053 CODE ADDR.              DINPT788
02DA 01 4C00021E        BSC  L   A42          INTER. EXIT                  DINPT789
                *-------------------------------------------------------  DINPT790
02DC 0  C102      A44   LD     1 CRBLO-X                                   DINPT791
02DD 0  D1D1            STO    1 AREA3+2-X                                 DINPT792
02DE 0  70C3            MDX      A57                                       DINPT793
                *-------------------------------------------------------  DINPT794
02DF 30 17159000  A48   CALL     PER          PAR. CHECK OF BLOCK          DINPT795
02E1 0  DDBC            DC       BLOCK                                     DINPT796
02E2 0  0100            DC       256                                       DINPT797
02E3 0  0000            DC       *-*          ERROR INDICATOR              DINPT798
02E4 0  0000            DC       *-*          NO.OF ERRONEOUS DOUBL.WORD   DINPT799
02E5 0  7001            MDX      A50          ERROR EXIT OF PAR.CHECK      DINPT800
02E6 0  7008            MDX      A51          NO-ERROR EXIT OF PAR.CHECK   DINPT801
                *-------------------------------------------------------  DINPT802
02E7 01 74FF03F9  A50   MDX  I   NPC,-1                                    DINPT803
02E9 0  7001            MDX      A52          READ AGAIN THIS BLOCK        DINPT804
02EA 0  7025            MDX      A53          ERROR MESS. *PARITY CHECK*   DINPT805
02EB 0  C102      A52   LD     1 CRBLO-X                                   DINPT806
02EC 0  D1D1            STO    1 AREA3+2-X                                 DINPT807
02ED 01 4C0003A3        BSC  L   A57          READ AGAIN THIS BLOCK        DINPT808
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                                *-------------------------------------------------- DINPT809
02EF 0  C1FE        A51   LD     1 BLADD-X     PREPARE COMMAND*READ NEXT  DINPT810
02F0 0  8100              A      1 COM-X       BLOCK*                     DINPT811
02F1 0  D1FE              STO    1 BLADD-X                                DINPT812
                                *-------------------------------------------------- DINPT813
02F2 00 6700FE00          LDX   L3 -512       STORE BLOCK IN SPEC-AREA   DINPT814
02F4 00 CF00DFBC    A58   LDD   L3 BLOCK+512                             DINPT815
02F6 00 DF00E1FE          STD   L3 SPEC+512   THIS ADDR. IS CHANGED FOR  DINPT816
02F8 0  7302              MDX    3 +2         SMALL SPECTRA, C.F.A59+5   DINPT817
02F9 0  70FA              MDX     A58                                     DINPT818
                                *-------------------------------------------------- DINPT819
02FA 0  C0FC              LD      A58+3       CALCULATE ADDRESS FOR      DINPT820
02FB 0  810B              A      1 LENGT-X    FOLLOWING BLOCK IN SPEC    DINPT821
02FC 0  D0FA              STO     A58+3                                   DINPT822
                                *-------------------------------------------------- DINPT823
02FD 0  72FF              MDX    2 -1                                     DINPT824
02FE 0  7001              MDX     A54                                     DINPT825
02FF 0  705B              MDX     A55         ALL BLOCKS ARE READ         DINPT826
                                *-------------------------------------------------- DINPT827
0300 00 67800067    A54   LDX   I3 103                                   DINPT828
0302 01 4C000297          BSC   L  A56+2      READ NEXT BLOCK             DINPT829
                                *-------------------------------------------------- DINPT830
0304 0  C1DD        A49   LD     1 ADTYP+4-X   PREPARE ERROR MESSAGE       DINPT831
0305 01 D400007C          STO   L  A17        *INCORRECT BLOCK LENGTH*    DINPT832
0307 0  C1EA              LD     1 ADAPR+4-X                              DINPT833
0308 01 D4000080          STO   L  A18                                    DINPT834
                                *-------------------------------------------------- DINPT835
030A 01 44000387          BSI   L  CONV1      CONVERS. OF BLOCK NO.       DINPT836
030C 1  059F              DC      AM121       CARD CODE ADDR.             DINPT837
030D 1  04A1              DC      TM291       1053 CODE ADDR.             DINPT838
030E 01 4C00021E          BSC   L  A42                                    DINPT839
                                *-------------------------------------------------- DINPT840
0310 00 C400DFCB    A53   LD    L  IDEN+13    OP.CODE                     DINPT841
0312 0  B125              CMP    1 TWO-X                                  DINPT842
0313 0  7000              MDX     *                                       DINPT843
0314 0  7014              MDX     A531        READ WITH CHECK             DINPT844
                                *-------------------------------------------------- DINPT845
0315 0  C0CE              LD      A48+5       GET NO. OF ERRONEOUS CHAN.  DINPT846
0316 0  1001              SLA     1                                       DINPT847
0317 0  9125              S      1 TWO-X                                  DINPT848
0318 0  D001              STO     *+1                                     DINPT849
0319 00 65000000          LDX   L1 *-*                                    DINPT850
031B 01 CC000404          LDD   L  PAR                                    DINPT851
031D 00 DD00DDBC          STD   L1 BLOCK      CLEAR ERRONEOUS CHANNEL     DINPT852
                                *-------------------------------------------------- DINPT853
031F 01 650003E9          LDX   L1 X                                      DINPT854
0321 0  C0C2              LD      A48+5                                   DINPT855
0322 0  B113              CMP    1 ONE-X                                  DINPT856
0323 0  7000              MDX     *                                       DINPT857
0324 0  7001              MDX     A532                                    DINPT858
0325 0  70C9              MDX     A51                                     DINPT859
                                *-------------------------------------------------- DINPT860
0326 0  C113        A532  LD     1 ONE-X                                  DINPT861
0327 0  D110              STO    1 NPC-X                                  DINPT862
0328 0  70B6              MDX     A48                                     DINPT863
                                *-------------------------------------------------- DINPT864
0329 01 44000387    A531  BSI   L  CONV1      CONVERS. OF BLOCK NO.       DINPT865
032B 1  05BC              DC      AM131       CARD CODE ADDR.             DINPT866
032C 1  04AF              DC      TM311       1053 CODE ADDR.             DINPT867
                                *-------------------------------------------------- DINPT868
032D 01 C40002E4          LD    L  A48+5      CONVERS. OF CHAN. NO.       DINPT869
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032F 20 02255103          LIBF    BINDC                                    DINPT870
0330 1  03FE              DC      OUTPT                                    DINPT871
0331 0  C118              LD    1 OUTPT+3-X                                DINPT872
0332 01 D40005C6          STO   L AM132                                    DINPT873
0334 0  C119              LD    1 OUTPT+4-X                                DINPT874
0335 01 D40005C7          STO   L AM132+1                                  DINPT875
0337 0  C11A              LD    1 OUTPT+5-X                                DINPT876
0338 01 D40005C8          STO   L AM132+2                                  DINPT877
*-------------------------------------------------------------------------DINPT878
033A 20 085935D9          LIBF    HOLPR                                    DINPT879
033B 0  0000              DC      /0000                                    DINPT880
033C 1  0400              DC      OUTPT+2                                  DINPT881
033D 1  04B5              DC      TM312                                    DINPT882
033E 0  0004              DC      4                                        DINPT883
*-------------------------------------------------------------------------DINPT884
033F 0  C1EB              LD    1 ADAPR+5-X                                DINPT885
0340 01 D4000080          STO   L A18                                      DINPT886
0342 01 740002E3          MDX   L A48+4,0     ERROR INDICATOR PAR. CHECK   DINPT887
0344 0  7005              MDX     A69         INV. DIG.                    DINPT888
0345 0  C1DE              LD    1 ADTYP+5-X   PAR. ERR.                    DINPT889
0346 01 D400007C          STO   L A17                                      DINPT890
0348 01 4C00021E          BSC   L A42         INT. EXIT                    DINPT891
*-------------------------------------------------------------------------DINPT892
034A 0  C1DF          A69 LD    1 ADTYP+6-X   INVAL. DIGIT                 DINPT893
034B 01 D400007C          STO   L A17                                      DINPT894
034D 01 C40004AF          LD    L TM311                                    DINPT895
034F 01 D40004C0          STO   L TM331                                    DINPT896
0351 01 C40004B5          LD    L TM312                                    DINPT897
0353 01 D40004C6          STO   L TM332                                    DINPT898
0355 01 C40004B6          LD    L TM312+1                                  DINPT899
0357 01 D40004C7          STO   L TM332+1   END OF MESSAGE PREPARATION     DINPT900
0359 01 4C00021E          BSC   L A42         INT. EXIT                    DINPT901
*-------------------------------------------------------------------------DINPT902
035B 0  6202          A55 LDX   2 2                                        DINPT903
035C 00 67800067          LDX   I3 103                                     DINPT904
035E 00 7400DFCD          MDX   L IDEN+15,0   TEST OF RESET INDICATOR      DINPT905
0360 0  7001              MDX     A76         CLEAR ANALYSER MEMORY        DINPT906
0361 0  701D              MDX     A74         NO CLEARING                  DINPT907
*-------------------------------------------------------------------------DINPT908
0362 00 C400DFC4      A76 LD    L IDEN+6      1ST.BLOCK OF SPECTRUM        DINPT909
0364 0  1004              SLA     4                                        DINPT910
0365 0  81F9              A     1 B7-X        PREPARE COMMAND *CLEAR ANA   DINPT911
0366 0  81BF              A     1 BITNO-X     LYSER MEMORY*                DINPT912
0367 0  D1D1              STO   1 AREA3+2-X                                DINPT913
*-------------------------------------------------------------------------DINPT914
0368 01 44000374      A78 BSI   L A310        COMMAND *CLEAR ANALYSER*     DINPT915
*-------------------------------------------------------------------------DINPT916
036A 0  72FF              MDX   2 -1                                       DINPT917
036B 0  7001              MDX     A79                                      DINPT918
036C 0  7012              MDX     A74                                      DINPT919
036D 00 C400DFC3      A79 LD    L IDEN+5      NO.OF BLOCKS IN SPECTRUM     DINPT920
036F 0  9113              S     1 ONE-X                                    DINPT921
0370 0  1004              SLA     4                                        DINPT922
0371 0  81D1              A     1 AREA3+2-X                                DINPT923
0372 0  D1D1              STO   1 AREA3+2-X                                DINPT924
0373 0  70F4              MDX     A78                                      DINPT925
*-------------------------------------------------------------------------DINPT926
0374 0  0000          A310 DC       *-*                                    DINPT927
0375 20 040565C0          LIBF    DAOP        COMMAND RESET                DINPT928
0376 0  1000              DC      /1000                                    DINPT929
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0378 0  0000          DC      0                                          DINPT931
                    *-------------------------------------------------- DINPT932
0379 20 040565C0      LIBF    DAOP        INTERFACE COMMAND              DINPT933
037A 0  1000          DC      /1000                                      DINPT934
037B 1  03B8          DC      AREA3                                      DINPT935
037C 0  0000          DC      0                                          DINPT936
037D 01 4C800374      BSC   I A310                                       DINPT937
                    *-------------------------------------------------- DINPT938
037F 00 C400DFCB  A74 LD    L   IDEN+13     OPERATION CODE             DINPT939
0381 01 D4800000      STO   I   DINPT                                    DINPT940
0383 01 74010000      MDX   L   DINPT,1                                  DINPT941
0385 01 4C800000      BSC   I   DINPT       RETURN                       DINPT942
                    ********************************************** DINPT943
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                                                                                DINPT945
                *************************************************               DINPT946
                *     CONVERSION OF BLOCK NO.TO CARD AND 1053 CODE*               DINPT947
                *                                                 *               DINPT948
                *     BSI     CONV1                               *               DINPT949
                *     DC      ADDR.OF CARD CODE BLOCK NO.         *               DINPT950
                *     DC      ADDR.OF 1053 CODE BLOCK NO.         *               DINPT951
                *************************************************               DINPT952
0387 0  0000    CONV1 DC      *-*           CONVERSION OF BLOCK NO.TO             DINPT953
0388 01 C4800387      LD    I CONV1                                               DINPT954
038A 0  D010          STO     A66+1         CARD CODE,                            DINPT955
038B 0  8113          A     1 ONE-X                                               DINPT956
038C 0  D011          STO     A67+1         CARD CODE,                            DINPT957
038D 01 74010387      MDX   L CONV1,+1                                            DINPT958
038F 01 C4800387      LD    I CONV1         AND                                   DINPT959
0391 0  D010          STO     A68           1053 CODE.                            DINPT960
0392 01 74010387      MDX   L CONV1,+1      RETURN ADDR.                          DINPT961
                *-------------------------------------------------              DINPT962
0394 0  C1FE          LD    1 BLADD-X                                             DINPT963
0395 0  1804          SRA     4                                                   DINPT964
0396 0  8113          A     1 ONE-X                                               DINPT965
0397 20 02255103      LIBF    BINDC                                               DINPT966
0398 1  03FE          DC      OUTPT                                               DINPT967
0399 0  C119          LD    1 OUTPT+4-X                                           DINPT968
039A 00 D4000000 A66  STO   L *-*           ADDR. CARD CODE                       DINPT969
039C 0  C11A          LD    1 OUTPT+5-X                                           DINPT970
039D 00 D4000000 A67  STO   L *-*           (ADDR. CARD CODE)+1                   DINPT971
                *-------------------------------------------------              DINPT972
039F 20 085935D9      LIBF    HOLPR                                               DINPT973
03A0 0  0000          DC      /0000                                               DINPT974
03A1 1  0402          DC      OUTPT+4                                             DINPT975
03A2 0  0000    A68   DC      *-*                                                 DINPT976
03A3 0  0002          DC      2                                                   DINPT977
03A4 01 4C800387      BSC   I CONV1         END OF BLOCK CONVERSION               DINPT978
                **************************************************
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                                ********************************************** DINPT980
                                *     CONTROL SECTOR FOR DINPT AND STORE     * DINPT981
                                ********************************************** DINPT982
03A6      0000                        BSS   E   0                              DINPT983
03A6 31 03595109      COSEC     DSA       CONDI       DEFINE SECTOR ADDR. FOR  DINPT984
03A9                            ORG       COSEC       CONTROL SECTOR CONDI     DINPT985
03A6 0    0008                  DC        8           WORD COUNT               DINPT986
03A7                            ORG       COSEC+2                              DINPT987
03A8 0    0000        BITNO     DC        *-*         INTERRUPT NO.            DINPT988
03A9 0    0000        EXNO1     DC        *-*         1ST.EXPER.NO.            DINPT989
03AA 0    0000        EXNO2     DC        *-*         2ND.EXPER.NO.            DINPT990
03AB 0    0000        SERNO     DC        *-*         SERIAL NO.               DINPT991
03AC 0    0000        AUTYP     DC        *-*         AUTOMATIC TYPE           DINPT992
03AD 0    0000        INSTA     DC        *-*         STATUS OF INTERR. WORK   DINPT993
                                *                       1=CONTROL WORDS AND SCALERSDINPT994
                                *                         ARE READ (DINPT)       DINPT995
                                *                       2=START OF PROGR. STORE  DINPT996
                                *                       3=SPECTRUM IS STORED ON  DINPT997
                                *                         DISK                   DINPT998
03AE 00   00000000    TIME      DEC       0           TIME IN ANALYSER FORMAT  DINPT999
                                *                     (DINPT)                  DINPT000
                                ********************************************** DINPT001
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                                                                                DINPT003
                *      DINPT CONSTANTS                                          DINPT004
                ********************************************************       DINPT005
03B0 0  8000    ALARM  DC      /8000       1 IN BIT POS. 0, TO BE               DINPT006
                *                          SHIFTED TO POS. OF PISW-B.           DINPT007
03B1 0  0FFF    AND1   DC      /0FFF       0000111111111111                     DINPT008
03B2 0  0170    AND2   DC      /0170       0000000101110000                     DINPT009
03B4    0000           BSS  E  0                                                DINPT010
03B4 0  0002    AREA2  DC      2           DIGITAL OUTPUT TABLE                 DINPT011
03B5 0  007B           DC      123                                              DINPT012
03B6 0  0000           DC      0                                                DINPT013
03B7 0  0000           DC      0                                                DINPT014
03B8 0  0002    AREA3  DC      2           AREA FOR INTERFACE COMMAND           DINPT015
03B9 0  007C           DC      124         TERMINAL A6                          DINPT016
03BA 0  0000           DC      *-*         COMMAND                              DINPT017
03BC    0000           BSS  E  0                                                DINPT018
03BC 0  0002    AREA4  DC      2           DIG.INPUT TABLE FOR CW2              DINPT019
03BD 0  0043           DC      67                                               DINPT020
03BE 0  0000    ADDR   DC      *-*                                              DINPT021
03BF 0  0002    AREA5  DC      2           PULSE OUTPUT TABLE                   DINPT022
03C0 0  007D           DC      125                                              DINPT023
03C1 0  0000           DC      *-*                                              DINPT024
03C2 1  044F    ADTYP  DC      TM19-1      ADDRESSES OF MESSAGES                DINPT025
03C3 1  046D           DC      TM23-1      FOR 1053                             DINPT026
03C4 1  0478           DC      TM25-1                                           DINPT027
03C5 1  0486           DC      TM27-1                                           DINPT028
03C6 1  0497           DC      TM29-1                                           DINPT029
03C7 1  04A6           DC      TM31-1                                           DINPT030
03C8 1  04B7           DC      TM33-1                                           DINPT031
03C9 1  04DF           DC      TM73-1                                           DINPT032
03CA 1  0424           DC      TM11-1                                           DINPT033
03CB 1  042E           DC      TM13-1                                           DINPT034
03CC 1  04EC           DC      TM77-1                                           DINPT035
03CD 1  04C8           DC      TM71-1                                           DINPT036
03CE 1  04FE           DC      TM51-1                                           DINPT037
03CF 1  051A    ADAPR  DC      AM8         ADDRESSES OF MESSAGES                DINPT038
03D0 1  0535           DC      AM9         FOR ANALYSER TYPEWR.                 DINPT039
03D1 1  0551           DC      AM10                                             DINPT040
03D2 1  056C           DC      AM11                                             DINPT041
03D3 1  058C           DC      AM12                                             DINPT042
03D4 1  05AA           DC      AM13                                             DINPT043
03D5 1  05F5           DC      AM19                                             DINPT044
03D6 1  0507           DC      AM6                                              DINPT045
03D7 1  060C           DC      AM20                                             DINPT046
03D8 1  05CA           DC      AM26                                             DINPT047
03D9 1  062F           DC      AM7                                              DINPT048
03DA 0  00F0    ADCW2  DC      /00F0       ADDRESS OF CW2                       DINPT049
03DB 0  0043    AD67   DC      67          ADDR.OF DIG. INPUT                   DINPT050
03DC 0  2040    A8256  DC      8256        LENGTH OF SPECTRUM AREA              DINPT051
                *--------------------------------------------------------      DINPT052
                *      INTERFACE COMMANDS                                  *    DINPT053
03DD 0  1400    B1     DC      /1400       PRINT ALPHAMERIC ON INTER-           DINPT054
                *                          FACE TYPEWRITER                      DINPT055
03DE 0  2200    B2     DC      /2200       READ BIT  0-15 OF WORD               DINPT056
03DF 0  2300    B3     DC      /2300       READ BIT 16-32 OF WORD               DINPT057
03E0 0  2400    B4     DC      /2400       WRITE WORD (FIRST OR SEC.            DINPT058
                *                          HALF SPECIFIED BY BIT 3 OF           DINPT059
                *                          WORD TO BE TRANSMITTED)              DINPT060
03E1 0  3200    B5     DC      /3200       READ BLOCK                           DINPT061
03E2 0  3000    B7     DC      /3000       CLEAR BLOCK                          DINPT062
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03E4 0 A000          B14    DC       /A000        PRINT WORDS (CONTROL WORDS DINPT064
                     *                            AND SCALERS ON INTERFACE   DINPT065
                     *                            TYPEWRITER)                DINPT066
03E5 0 B000          B15    DC       /B000        END OF INTERRUPT           DINPT067
03E6 0 E800          B18    DC       /E800        DISABLE INTERRUPTS OF      DINPT068
                     *                            STATION SPECIFIED          DINPT069
                     *-------------------------------------------------------DINPT070
03E7 0 0000          BLADD  DC       *-*          STORAGE FOR BL.ADDR.       DINPT071
03E8 0 0201          BL513  DC       513          WORD COUNT FOR DIG.INP.    DINPT072
03E9 0 0010          COM    DC       /0010        USED FOR CALCULATING ADDR. DINPT073
                     *                            IN COMMANDS ON DIG. OUTPT. DINPT074
03EA 0 0000          COM1   DC       *-*          STORAGE,COMM. 2ND.CONTR.W. DINPT075
03EB 0 0000          CRBLO  DC       *-*                                     DINPT076
03EC 0 0000          DECT1  DC       0            4K,EXCEPT SIGMA TOTAL,BIN. DINPT077
03ED 0 0001                 DC       1            4K,SIGMA TOTAL,BIN.        DINPT078
03EE 0 0002                 DC       2            8K,SIGMA TOTAL,BIN.,1CH=1W DINPT079
03EF 0 0008          EIGHT  DC       8                                       DINPT080
03F0 0 0005          FIVE   DC       5                                       DINPT081
03F1 0 0004          FOUR   DC       4                                       DINPT082
03F2 0 0010          HEXDE  DC       16                                      DINPT083
03F3 0 0064          HUNDR  DC       100                                     DINPT084
03F4 0 0200          LENGT  DC       512          LENGTH OF BLOCK IN SPEC    DINPT085
03F5 0 FFFF          MIN    DC       -1                                      DINPT086
03F6 0 0003          MNPC   DC       3            MAX.NO.OF PAR.CHECKS       DINPT087
03F7 0 0003          MNTR   DC       3            MAX.NO.OF BL.LENGTH TESTS  DINPT088
03F8 0 0003          MNBR   DC       3            MAX.NO.OF BL.ADDR.CHECKS   DINPT089
03F9 0 0000          NPC    DC       *-*          COUNTER FOR NO.PAR.CHECKS  DINPT090
03FA 0 0000          NTR    DC       *-*          COUNTER FOR NO.OF TA.READ. DINPT091
03FB 0 0000          NBR    DC       *-*          COUNTER FOR BL.ADDR.READGS DINPT092
03FC 0 0001          ONE    DC       1                                       DINPT093
03FE   0006          OUTPT  BSS   E   6                                       DINPT094
0404 0 4000          PAR    DC       /4000                                   DINPT095
0405 0 4000                 DC       /4000                                   DINPT096
0406 0 8420          POINT  DC       /8420        CARD CODE PERIOD           DINPT097
0407 0 0002          RESET  DC       2            RESET COMMAND OUTPUT       DINPT098
0408 0 007C                 DC       124          TERMINAL A6                DINPT099
0409 0 0000                 DC       0            COMMAND                    DINPT100
040A 0 0009          SCNO   DC       9            MAX.NO.OF SCALERS          DINPT101
040B 0 000C          SPERN  DC       12                                      DINPT102
040C 0 000A          TEN    DC       10                                      DINPT103
040D 0 03E8          THOUS  DC       1000                                    DINPT104
040E 0 0002          TWO    DC       2                                       DINPT105
040F 0 0003          THREE  DC       3                                       DINPT106
0410 0 0021          WC33   DC       33                                      DINPT107
0411 0 0000          XR2    DC       *-*          INTERM.STORAGE FOR XR2     DINPT108
                     *-------------------------------------------------------DINPT109
0412 0 DE83          A200   DC       BLOCK+199    A200 - A204 USED TO MODIFY DINPT110
0413 0 0064          A201   DC       100          DINPT FOR BLOCKS OF 100    DINPT111
0414 00 6700FF38     A202   LDX   L3  -200         CHANNELS                   DINPT112
0416 00 CF00DE84            LDD   L3  BLOCK+200                              DINPT113
0418 00 DF00E0C6            STD   L3  SPEC+200                               DINPT114
041A 0 0009          A203   DC       201                                     DINPT115
041B 0 0008          A204   DC       200                                     DINPT116
                     *-------------------------------------------------------DINPT117
03E9                 X      EQU      COM                                     DINPT118
0FBC                 Y      EQU      TABLE                                   DINPT119
041C 0 0000          ZERO   DC       0                                       DINPT120
                     *******************************************************DINPT121
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041D 0  0006                ********************************************** DINPT123
041E    0008                *     DINPT MESSAGES FOR TYPEWRITER 1053       DINPT124
0422 0  0000                ********************************************** DINPT125
0423    0002                      DC      TM2-TM1                          DINPT126
0424    0000      TM1       DMES    '1R'BL12  B'E                            DINPT127
                  TM139     DC      *-*         BITNO                        DINPT128
                            DMES    '2X'E                                    DINPT129
                  TM2       BES     0                                        DINPT130
                  *-------------------------------------------------------- DINPT131
0424 0  0009                      DC      TM12-TM11                        DINPT132
0425    0010      TM11      DMES    'R'APAR.ERR.WORD 'E                      DINPT133
042D 0  0000      TM111     DC      *-*         NO.                          DINPT134
042E    0000      TM12      BES     0                                        DINPT135
                  *-------------------------------------------------------- DINPT136
042E 0  0009                      DC      TM14-TM13                        DINPT137
042F    0010      TM13      DMES    '2R'AINV.DIG.WORD 'E                     DINPT138
0437 0  0000      TM131     DC      *-*         NO.                          DINPT139
0438    0000      TM14      BES     0                                        DINPT140
                  *-------------------------------------------------------- DINPT141
0438 0  000B                      DC      TM16-TM15  INTERRUPT EXIT          DINPT142
0439    0008      TM15      DMES    'B'7X'E                                  DINPT143
043D    0003      TM153     BSS     3           TIME                         DINPT144
0440    0008                DMES    '2XDINPT'E                               DINPT145
0444    0000      TM16      BES     0                                        DINPT146
                  *-------------------------------------------------------- DINPT147
0444 0  000A                      DC      TM18-TM17                        DINPT148
0445    0014      TM17      DMES    'R'ANO FLAG ON SCALERS'E                 DINPT149
044F    0000      TM18      BES     0                                        DINPT150
                  *-------------------------------------------------------- DINPT151
044F 0  000D                      DC      TM20-TM19                        DINPT152
0450    001A      TM19      DMES    'R'A BLOCK NUMBERS INCORRECT'E           DINPT153
045D    0000      TM20      BES     0                                        DINPT154
                  *-------------------------------------------------------- DINPT155
045D 0  000F                      DC      TM22-TM21                        DINPT156
045E    0002      TM21      DMES    'B'E                                     DINPT157
045F    000E      TM211     BSS     14          ID,AUT.TYPE,1.BL.,NO.BL.     DINPT158
046D    0000      TM22      BES     0                                        DINPT159
                  *-------------------------------------------------------- DINPT160
046D 0  000A                      DC      TM24-TM23                        DINPT161
046E    0014      TM23      DMES    'R'ANO. OF BLOCKS   16'E                 DINPT162
0478    0000      TM24      BES     0                                        DINPT163
                  *-------------------------------------------------------- DINPT164
0478 0  000D                      DC      TM26-TM25                        DINPT165
0479    001A      TM25      DMES    'R'ACHECK INTERR. ASSIGNMENT'E           DINPT166
0486    0000      TM26      BES     0                                        DINPT167
                  *-------------------------------------------------------- DINPT168
0486 0  0010                      DC      TM28-TM27                        DINPT169
0487    0008      TM27      DMES    'R'ABLOCK 'E                             DINPT170
048B 0  0000      TM271     DC      *-*         BLOCK NO.                    DINPT171
048C    0016                DMES      CANNOT BE ADDRESSED'E                  DINPT172
0497    0000      TM28      BES     0                                        DINPT173
                  *-------------------------------------------------------- DINPT174
0497 0  000E                      DC      TM30-TM29                        DINPT175
0498    0012      TM29      DMES    'R'ALENGTH OF BLOCK 'E                   DINPT176
04A1 0  0000      TM291     DC      *-*         BLOCK NO.                    DINPT177
04A2    0008                DMES    'XINCORR.'E                              DINPT178
04A6    0000      TM30      BES     0                                        DINPT179
                  *-------------------------------------------------------- DINPT180
04A6 0  0010                      DC      TM32-TM31                        DINPT181
04A7    0010      TM31      DMES    'R'APAR.ERR.BLOCK 'E                     DINPT182
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04B0     000A          DMES     , CHAN. 'E                                DINPT184
04B5     0002  TM312  BSS      2           CHANNEL NO.                   DINPT185
04B7     0000  TM32   BES      0                                         DINPT186
               *-------------------------------------------------------- DINPT187
04B7 0   0010          DC       TM34-TM33                                 DINPT188
04B8     0010  TM33   DMES     'R'AINV.DIG.BLOCK 'E                      DINPT189
04C0 0   0000  TM331  DC       *-*         BLOCK NO.                     DINPT190
04C1     000A          DMES     , CHAN. 'E                                DINPT191
04C6     0002  TM332  BSS      2           CHANNEL NO.                   DINPT192
04C8     0000  TM34   BES      0                                         DINPT193
               *-------------------------------------------------------- DINPT194
04C8 0   0016          DC       TM72-TM71                                 DINPT195
04C9     0014  TM71   DMES     'R'ACONTROL WORD 4 AND'E                  DINPT196
04D3     0018          DMES     'R'APRESET COUNT DISAGREE'E               DINPT197
04DF     0000  TM72   BES      0                                         DINPT198
               *-------------------------------------------------------- DINPT199
04DF 0   000C          DC       TM74-TM73                                 DINPT200
04E0     0018  TM73   DMES     'R'AINCORR. AUTOMATIC TYPE'E              DINPT201
04EC     0000  TM74   BES      0                                         DINPT202
               *-------------------------------------------------------- DINPT203
04EC 0   0011          DC       TM78-TM77                                 DINPT204
04ED     0019  TM77   DMES     'R'AINCORR. SAMPLE CHANGER '              DINPT205
04F9     0009          DMES     INDICATOR'E                               DINPT206
04FE     0000  TM78   BES      0                                         DINPT207
               *-------------------------------------------------------- DINPT208
04FE 0   0008          DC       TM52-TM51                                 DINPT209
04FF     0010  TM51   DMES     'R'AINCORR.OP CODE'E                      DINPT210
0507     0000  TM52   BES      0                                         DINPT211
               ********************************************************* DINPT212
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                                ********************************************** DINPT214
                                *     MESSAGES FOR INTERFACE TYPEWRITER      * DINPT215
                                ********************************************** DINPT216
0507 0  0011    AM6     DC      17                                             DINPT217
0508 0  007B            DC      123                                            DINPT218
0509 0  0900            DC      /0900       RED                                DINPT219
050A 0  8100            DC      /8100       E                                  DINPT220
050B 0  4010            DC      /4010       R                                  DINPT221
050C 0  4010            DC      /4010       R                                  DINPT222
050D 0  4080            DC      /4080       O                                  DINPT223
050E 0  4010            DC      /4010       R                                  DINPT224
050F 0  0000            DC      /0000                                          DINPT225
0510 0  8420            DC      /8420       •                                  DINPT226
0511 0  2080            DC      /2080       W                                  DINPT227
0512 0  4080            DC      /4080       O                                  DINPT228
0513 0  4010            DC      /4010       R                                  DINPT229
0514 0  8200            DC      /8200       D                                  DINPT230
0515 0  8420            DC      /8420       •                                  DINPT231
0516 0  0000            DC      /0000                                          DINPT232
0517 0  0000    AM61    DC      *-*                                            DINPT233
0518 0  0000            DC      *-*                                            DINPT234
0519 0  0500            DC      /0500       BLACK                              DINPT235
                        *------------------------------------------------------ DINPT236
051A 0  001A    AM8     DC      26                                             DINPT237
051B 0  007B            DC      123                                            DINPT238
051C 0  0900            DC      /0900       RED                                DINPT239
051D 0  8800            DC      /8800       B                                  DINPT240
051E 0  4400            DC      /4400       L                                  DINPT241
051F 0  4080            DC      /4080       O                                  DINPT242
0520 0  8400            DC      /8400       C                                  DINPT243
0521 0  4800            DC      /4800       K                                  DINPT244
0522 0  0000            DC      /0000                                          DINPT245
0523 0  4100            DC      /4100       N                                  DINPT246
0524 0  2200            DC      /2200       U                                  DINPT247
0525 0  4200            DC      /4200       M                                  DINPT248
0526 0  8800            DC      /8800       B                                  DINPT249
0527 0  8100            DC      /8100       E                                  DINPT250
0528 0  4010            DC      /4010       R                                  DINPT251
0529 0  2800            DC      /2800       S                                  DINPT252
052A 0  0000            DC      /0000                                          DINPT253
052B 0  8010            DC      /8010       I                                  DINPT254
052C 0  4100            DC      /4100       N                                  DINPT255
052D 0  8400            DC      /8400       C                                  DINPT256
052E 0  4080            DC      /4080       O                                  DINPT257
052F 0  4010            DC      /4010       R                                  DINPT258
0530 0  4010            DC      /4010       R                                  DINPT259
0531 0  8100            DC      /8100       E                                  DINPT260
0532 0  8400            DC      /8400       C                                  DINPT261
0533 0  2400            DC      /2400       T                                  DINPT262
0534 0  0500            DC      /0500       BLACK                              DINPT263
                        *------------------------------------------------------ DINPT264
0535 0  001B    AM9     DC      27                                             DINPT265
0536 0  007B            DC      123                                            DINPT266
0537 0  0900            DC      /0900       RED                                DINPT267
0538 0  4100            DC      /4100       N                                  DINPT268
0539 0  4080            DC      /4080       O                                  DINPT269
053A 0  8420            DC      /8420       •                                  DINPT270
053B 0  0000            DC      /0000                                          DINPT271
053C 0  4080            DC      /4080       O                                  DINPT272
053D 0  8080            DC      /8080       F                                  DINPT273
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053F 0 8800          DC      /8800     B                    DINPT275
0540 0 4400          DC      /4400     L                    DINPT276
0541 0 4080          DC      /4080     O                    DINPT277
0542 0 8400          DC      /8400     C                    DINPT278
0543 0 4800          DC      /4800     K                    DINPT279
0544 0 2800          DC      /2800     S                    DINPT280
0545 0 0000          DC      /0000                          DINPT281
0546 0 8040          DC      /8040     G                    DINPT282
0547 0 4010          DC      /4010     R                    DINPT283
0548 0 8100          DC      /8100     E                    DINPT284
0549 0 9000          DC      /9000     A                    DINPT285
054A 0 2400          DC      /2400     T                    DINPT286
054B 0 8100          DC      /8100     E                    DINPT287
054C 0 4010          DC      /4010     R                    DINPT288
054D 0 0000          DC      /0000                          DINPT289
054E 0 1000          DC      /1000     1                    DINPT290
054F 0 0080          DC      /0080     6                    DINPT291
0550 0 0500          DC      /0500     BLACK                DINPT292
                *-------------------------------------------- DINPT293
0551 0 001A     AM10 DC      26                             DINPT294
0552 0 007B          DC      123                            DINPT295
0553 0 0900          DC      /0900     RED                  DINPT296
0554 0 8400          DC      /8400     C                    DINPT297
0555 0 8020          DC      /8020     H                    DINPT298
0556 0 8100          DC      /8100     E                    DINPT299
0557 0 8400          DC      /8400     C                    DINPT300
0558 0 4800          DC      /4800     K                    DINPT301
0559 0 0000          DC      /0000                          DINPT302
055A 0 8010          DC      /8010     I                    DINPT303
055B 0 4100          DC      /4100     N                    DINPT304
055C 0 2400          DC      /2400     T                    DINPT305
055D 0 8100          DC      /8100     E                    DINPT306
055E 0 4010          DC      /4010     R                    DINPT307
055F 0 8420          DC      /8420     .                    DINPT308
0560 0 0000          DC      /0000                          DINPT309
0561 0 9000          DC      /9000     A                    DINPT310
0562 0 2800          DC      /2800     S                    DINPT311
0563 0 2800          DC      /2800     S                    DINPT312
0564 0 8010          DC      /8010     I                    DINPT313
0565 0 8040          DC      /8040     G                    DINPT314
0566 0 4100          DC      /4100     N                    DINPT315
0567 0 4200          DC      /4200     M                    DINPT316
0568 0 8100          DC      /8100     E                    DINPT317
0569 0 4100          DC      /4100     N                    DINPT318
056A 0 2400          DC      /2400     T                    DINPT319
056B 0 0500          DC      /0500     BLACK                DINPT320
                *-------------------------------------------- DINPT321
056C 0 001F     AM11 DC      31                             DINPT322
056D 0 007B          DC      123                            DINPT323
056E 0 0900          DC      /0900     RED                  DINPT324
056F 0 8800          DC      /8800     B                    DINPT325
0570 0 4400          DC      /4400     L                    DINPT326
0571 0 4080          DC      /4080     O                    DINPT327
0572 0 8400          DC      /8400     C                    DINPT328
0573 0 4800          DC      /4800     K                    DINPT329
0574 0 0000          DC      /0000                          DINPT330
0575 0 0000     AM111 DC     *-*                            DINPT331
0576 0 0000          DC      *-*                            DINPT332
0577 0 0000          DC      /0000                          DINPT333
0578 0 8400          DC      /8400     C                    DINPT334
0579 0 9000          DC      /9000     A                    DINPT335
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057A 0  4100          DC      /4100       N                    DINPT336
057B 0  4100          DC      /4100       N                    DINPT337
057C 0  4080          DC      /4080       O                    DINPT338
057D 0  2400          DC      /2400       T                    DINPT339
057E 0  0000          DC      /0000                            DINPT340
057F 0  8800          DC      /8800       B                    DINPT341
0580 0  8100          DC      /8100       E                    DINPT342
0581 0  0000          DC      /0000                            DINPT343
0582 0  9000          DC      /9000       A                    DINPT344
0583 0  8200          DC      /8200       D                    DINPT345
0584 0  8200          DC      /8200       D                    DINPT346
0585 0  4010          DC      /4010       R                    DINPT347
0586 0  8100          DC      /8100       E                    DINPT348
0587 0  2800          DC      /2800       S                    DINPT349
0588 0  2800          DC      /2800       S                    DINPT350
0589 0  8100          DC      /8100       E                    DINPT351
058A 0  8200          DC      /8200       D                    DINPT352
058B 0  0500          DC      /0500       BLACK                DINPT353
                      *-------------------------------------------- DINPT354
058C 0  001D  AM12    DC      29                               DINPT355
058D 0  007B          DC      123                              DINPT356
058E 0  0900          DC      /0900       RED                  DINPT357
058F 0  4400          DC      /4400       L                    DINPT358
0590 0  8100          DC      /8100       E                    DINPT359
0591 0  4100          DC      /4100       N                    DINPT360
0592 0  8040          DC      /8040       G                    DINPT361
0593 0  2400          DC      /2400       T                    DINPT362
0594 0  8020          DC      /8020       H                    DINPT363
0595 0  0000          DC      /0000                            DINPT364
0596 0  4080          DC      /4080       O                    DINPT365
0597 0  8080          DC      /8080       F                    DINPT366
0598 0  0000          DC      /0000                            DINPT367
0599 0  8800          DC      /8800       B                    DINPT368
059A 0  4400          DC      /4400       L                    DINPT369
059B 0  4080          DC      /4080       O                    DINPT370
059C 0  8400          DC      /8400       C                    DINPT371
059D 0  4800          DC      /4800       K                    DINPT372
059E 0  0000          DC      /0000                            DINPT373
059F 0  0000  AM121   DC      *-*                              DINPT374
05A0 0  0000          DC      *-*                              DINPT375
05A1 0  0000          DC      /0000                            DINPT376
05A2 0  8010          DC      /8010       I                    DINPT377
05A3 0  4100          DC      /4100       N                    DINPT378
05A4 0  8400          DC      /8400       C                    DINPT379
05A5 0  4080          DC      /4080       O                    DINPT380
05A6 0  4010          DC      /4010       R                    DINPT381
05A7 0  4010          DC      /4010       R                    DINPT382
05A8 0  8420          DC      /8420       .                    DINPT383
05A9 0  0500          DC      /0500       BLACK                DINPT384
                      *-------------------------------------------- DINPT385
05AA 0  001F  AM13    DC      31                               DINPT386
05AB 0  007B          DC      123                              DINPT387
05AC 0  0900          DC      /0900       RED                  DINPT388
05AD 0  2080          DC      /2080       W                    DINPT389
05AE 0  4080          DC      /4080       O                    DINPT390
05AF 0  4010          DC      /4010       R                    DINPT391
05B0 0  8200          DC      /8200       D                    DINPT392
05B1 0  0000          DC      /0000                            DINPT393
05B2 0  8100          DC      /8100       E                    DINPT394
05B3 0  4010          DC      /4010       R                    DINPT395
05B4 0  4010          DC      /4010       R                    DINPT396
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05B5 0 8420          DC    /8420      .                DINPT397
05B6 0 8800          DC    /8800      B                DINPT398
05B7 0 4400          DC    /4400      L                DINPT399
05B8 0 4080          DC    /4080      O                DINPT400
05B9 0 8400          DC    /8400      C                DINPT401
05BA 0 4800          DC    /4800      K                DINPT402
05BB 0 0000          DC    /0000                       DINPT403
05BC 0 0000    AM131 DC    *-*                         DINPT404
05BD 0 0000          DC    *-*                         DINPT405
05BE 0 2420          DC    /2420      ,                DINPT406
05BF 0 0000          DC    /0000                       DINPT407
05C0 0 8400          DC    /8400      C                DINPT408
05C1 0 8020          DC    /8020      H                DINPT409
05C2 0 9000          DC    /9000      A                DINPT410
05C3 0 4100          DC    /4100      N                DINPT411
05C4 0 8420          DC    /8420      .                DINPT412
05C5 0 0000          DC    /0000                       DINPT413
05C6 0 0000    AM132 DC    *-*                         DINPT414
05C7 0 0000          DC    *-*                         DINPT415
05C8 0 0000          DC    *-*                         DINPT416
05C9 0 0500          DC    /0500      BLACK            DINPT417
*-------------------------------------------------------DINPT418
05CA 0 002A    AM26  DC    42                          DINPT419
05CB 0 007B          DC    123                         DINPT420
05CC 0 0900          DC    /0900      RED              DINPT421
05CD 0 8400          DC    /8400      C                DINPT422
05CE 0 4080          DC    /4080      O                DINPT423
05CF 0 4100          DC    /4100      N                DINPT424
05D0 0 2400          DC    /2400      T                DINPT425
05D1 0 4010          DC    /4010      R                DINPT426
05D2 0 8420          DC    /8420      .                DINPT427
05D3 0 0000          DC    /0000                       DINPT428
05D4 0 2080          DC    /2080      W                DINPT429
05D5 0 4080          DC    /4080      O                DINPT430
05D6 0 4010          DC    /4010      R                DINPT431
05D7 0 8200          DC    /8200      D                DINPT432
05D8 0 0000          DC    /0000                       DINPT433
05D9 0 0200          DC    /0200      4                DINPT434
05DA 0 0000          DC    /0000                       DINPT435
05DB 0 9000          DC    /9000      A                DINPT436
05DC 0 4100          DC    /4100      N                DINPT437
05DD 0 8200          DC    /8200      D                DINPT438
05DE 0 0300          DC    /0300                       DINPT439
05DF 0 4040          DC    /4040      P                DINPT440
05E0 0 4010          DC    /4010      R                DINPT441
05E1 0 8100          DC    /8100      E                DINPT442
05E2 0 2800          DC    /2800      S                DINPT443
05E3 0 8100          DC    /8100      E                DINPT444
05E4 0 2400          DC    /2400      T                DINPT445
05E5 0 0000          DC    /0000                       DINPT446
05E6 0 8400          DC    /8400      C                DINPT447
05E7 0 4080          DC    /4080      O                DINPT448
05E8 0 2200          DC    /2200      U                DINPT449
05E9 0 4100          DC    /4100      N                DINPT450
05EA 0 2400          DC    /2400      T                DINPT451
05EB 0 0000          DC    /0000                       DINPT452
05EC 0 8200          DC    /8200      D                DINPT453
05ED 0 8010          DC    /8010      I                DINPT454
05EE 0 2800          DC    /2800      S                DINPT455
05EF 0 9000          DC    /9000      A                DINPT456
05F0 0 8040          DC    /8040      G                DINPT457
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05F1 0 4010          DC    /4010    R                    DINPT458
05F2 0 8100          DC    /8100    E                    DINPT459
05F3 0 8100          DC    /8100    E                    DINPT460
05F4 0 0500          DC    /0500    BLACK                DINPT461
                *-------------------------------------------DINPT462
05F5 0 0016    AM19  DC    22                            DINPT463
05F6 0 007B          DC    123                           DINPT464
05F7 0 0900          DC    /0900    RED                  DINPT465
05F8 0 8010          DC    /8010    I                    DINPT466
05F9 0 4100          DC    /4100    N                    DINPT467
05FA 0 8400          DC    /8400    C                    DINPT468
05FB 0 4080          DC    /4080    O                    DINPT469
05FC 0 4010          DC    /4010    R                    DINPT470
05FD 0 4010          DC    /4010    R                    DINPT471
05FE 0 8420          DC    /8420    .                    DINPT472
05FF 0 0000          DC    /0000                         DINPT473
0600 0 9000          DC    /9000    A                    DINPT474
0601 0 2200          DC    /2200    U                    DINPT475
0602 0 2400          DC    /2400    T                    DINPT476
0603 0 4080          DC    /4080    O                    DINPT477
0604 0 4200          DC    /4200    M                    DINPT478
0605 0 8420          DC    /8420    .                    DINPT479
0606 0 0000          DC    /0000                         DINPT480
0607 0 2400          DC    /2400    T                    DINPT481
0608 0 2020          DC    /2020    Y                    DINPT482
0609 0 4040          DC    /4040    P                    DINPT483
060A 0 8100          DC    /8100    E                    DINPT484
060B 0 0500          DC    /0500    BLACK                DINPT485
                *-------------------------------------------DINPT486
060C 0 0022    AM20  DC    34                            DINPT487
060D 0 007B          DC    123                           DINPT488
060E 0 0900          DC    /0900    RED                  DINPT489
060F 0 8010          DC    /8010    I                    DINPT490
0610 0 4100          DC    /4100    N                    DINPT491
0611 0 8400          DC    /8400    C                    DINPT492
0612 0 4080          DC    /4080    O                    DINPT493
0613 0 4010          DC    /4010    R                    DINPT494
0614 0 4010          DC    /4010    R                    DINPT495
0615 0 8420          DC    /8420    .                    DINPT496
0616 0 2800          DC    /2800    S                    DINPT497
0617 0 9000          DC    /9000    A                    DINPT498
0618 0 4200          DC    /4200    M                    DINPT499
0619 0 4040          DC    /4040    P                    DINPT500
061A 0 4400          DC    /4400    L                    DINPT501
061B 0 8100          DC    /8100    E                    DINPT502
061C 0 0000          DC    /0000                         DINPT503
061D 0 8400          DC    /8400    C                    DINPT504
061E 0 8020          DC    /8020    H                    DINPT505
061F 0 9000          DC    /9000    A                    DINPT506
0620 0 4100          DC    /4100    N                    DINPT507
0621 0 8040          DC    /8040    G                    DINPT508
0622 0 8100          DC    /8100    E                    DINPT509
0623 0 4010          DC    /4010    R                    DINPT510
0624 0 0000          DC    /0000                         DINPT511
0625 0 8010          DC    /8010    I                    DINPT512
0626 0 4100          DC    /4100    N                    DINPT513
0627 0 8200          DC    /8200    D                    DINPT514
0628 0 8010          DC    /8010    I                    DINPT515
0629 0 8400          DC    /8400    C                    DINPT516
062A 0 9000          DC    /9000    A                    DINPT517
062B 0 2400          DC    /2400    T                    DINPT518
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062C 0  4080                    DC      /4080       O                   DINPT519
062D 0  4010                    DC      /4010       R                   DINPT520
062E 0  0500                    DC      /0500       BLACK               DINPT521
                        *-------------------------------------------    DINPT522
062F 0  0011            AM7     DC      17                              DINPT523
0630 0  007B                    DC      123                             DINPT524
0631 0  0900                    DC      /0900       RED                 DINPT525
0632 0  8400                    DC      /8400       C                   DINPT526
0633 0  8020                    DC      /8020       H                   DINPT527
0634 0  8100                    DC      /8100       E                   DINPT528
0635 0  8400                    DC      /8400       C                   DINPT529
0636 0  4800                    DC      /4800       K                   DINPT530
0637 0  0000                    DC      /0000                           DINPT531
0638 0  4080                    DC      /4080       O                   DINPT532
0639 0  4040                    DC      /4040       P                   DINPT533
063A 0  8420                    DC      /8420                           DINPT534
063B 0  0000                    DC      /0000                           DINPT535
063C 0  8400                    DC      /8400       C                   DINPT536
063D 0  4080                    DC      /4080       O                   DINPT537
063E 0  8200                    DC      /8200       D                   DINPT538
063F 0  8100                    DC      /8100       E                   DINPT539
0640 0  0500                    DC      /0500       BLACK               DINPT540
                        ********************************************    DINPT541
0642                            END                                     DINPT542

     NO ERRORS IN ABOVE ASSEMBLY.
DINPT
DUP FUNCTION COMPLETED
// END OF ALL JOBS
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0000    228D6645    STORE ENT     STORE                                          STORE002
                    ***********************************************              STORE003
                    *     ADDRESS ASSIGNMENT FOR COMMON                          STORE004
                    ***********************************************              STORE005
DFFE                SPEC  EQU     -8194                                          STORE006
DFCE                SCAL  EQU     -8242                                          STORE007
DFBE                IDEN  EQU     -8258                                          STORE008
DFBC                TABLE EQU     -8260                                          STORE009
DDBC                BLOCK EQU     -8772                                          STORE010
DDBA                AREA1 EQU     -8774                                          STORE011
DD9E                MESS  EQU     -8802                                          STORE012
DD36                BUFFR EQU     -8906                                          STORE013
BD36                SPEC1 EQU     -17098                                         STORE014
BD06                SCAL1 EQU     -17146                                         STORE015
BCF6                IDEN1 EQU     -17162                                         STORE016
BCF4                TABL1 EQU     -17164                                         STORE017
                    ***********************************************              STORE018
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                          ***************************************************** STORE020
0000 0  0000              STORE DC      *-*                                     STORE021
                          *---------------------------------------------------- STORE022
0001 01 65000230                LDX  L1 X                                       STORE023
0003 00 6600DFBC                LDX  L2 Y                                       STORE024
                          *---------------------------------------------------- STORE025
0005 0  C20C                    LD    2 IDEN&10-Y  CHECK AUTOMAT.TYPE           STORE026
0006 0  B127                    CMP   1 ONE-X      AUTOM.TYPE MUST BE 1         STORE027
0007 0  7002                    MDX     A150       INCORRECT                    STORE028
0008 0  7001                    MDX     A150       INCORRECT                    STORE029
0009 0  7008                    MDX     A151       AUTOM. TYPE = 1              STORE030
                          *---------------------------------------------------- STORE031
000A 0  C10D              A150  LD    1 ADTYP+6-X  PREPARE ERROR MESSAGE *IN-   STORE032
000B 01 D4000143                STO  L  A17        CORRECT AUTOM. TYPE*         STORE033
000D 0  C111                    LD    1 ADAPR+3-X                               STORE034
000E 01 D4000147                STO  L  A18                                     STORE035
0010 01 4C0000F4                BSC  L  A42                                     STORE036
                          *---------------------------------------------------- STORE037
0012 20 04262495          A151  LIBF    DISKN      READ CONTROL SECTOR CONDI    STORE038
0013 0  1000                    DC      /1000                                   STORE039
0014 1  0226                    DC      COSEC                                   STORE040
0015 0  0000                    DC      0                                       STORE041
                          *---------------------------------------------------- STORE042
0016 20 04262495                LIBF    DISKN      TEST IF CONDI IS READ        STORE043
0017 0  0100                    DC      /0100                                   STORE044
0018 1  0226                    DC      COSEC                                   STORE045
0019 0  70FC                    MDX     *-4                                     STORE046
                          *---------------------------------------------------- STORE047
001A 0  C137                    LD    1 TWO-X      INSTA=2 ,START OF PROGRAM    STORE048
001B 0  D1FD                    STO   1 INSTA-X    STORE                        STORE049
                          *---------------------------------------------------- STORE050
001C 20 04262495                LIBF    DISKN      STORE CONTROL SECTOR CONDI   STORE051
001D 0  3000                    DC      /3000      ON DISK                      STORE052
001E 1  0226                    DC      COSEC                                   STORE053
001F 0  0000                    DC      0                                       STORE054
                          *---------------------------------------------------- STORE055
0020 20 04262495                LIBF    DISKN      TEST IF CONDI IS STORED      STORE056
0021 0  0100                    DC      /0100                                   STORE057
0022 1  0226                    DC      COSEC                                   STORE058
0023 1  0020                    DC      *-4                                     STORE059
                          *---------------------------------------------------- STORE060
0024 0  C1F8                    LD    1 BITNO-X    BITNO IN TYPEWRITER CODE     STORE061
0025 20 02255103                LIBF    BINDC      INTO BITYP                   STORE062
0026 1  0258                    DC      OUTPT                                   STORE063
0027 20 085935D9                LIBF    HOLPR                                   STORE064
0028 0  0000                    DC      /0000                                   STORE065
0029 1  025C                    DC      OUTPT+4                                 STORE066
002A 1  0247                    DC      BITYP                                   STORE067
002B 0  0002                    DC      2                                       STORE068
                          *---------------------------------------------------- STORE069
002C 0  C1F8                    LD    1 BITNO-X    IS BITNO EQUAL TO NO. OF     STORE070
002D 0  B133                    CMP   1 SPERN-X    SKIP ANALYSER                STORE071
002E 0  7003                    MDX     A400       NO                           STORE072
002F 0  7002                    MDX     A400       NO                           STORE073
                          *---------------------------------------------------- STORE074
0030 0  C124                    LD    1 M200-X     YES(MODIFY STORE ROUTINE)    STORE075
0031 0  D125                    STO   1 M512-X                                  STORE076
                          *---------------------------------------------------- STORE077
0032 30 041430A8          A400  CALL    DECBY      BCD-BINARY CONVERSION OF     STORE078
0034 0  DFFE                    DC      SPEC       TOTAL SPECTRUM               STORE079
0035 0  1000                    DC      4096                                    STORE080
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0036 00 7401DFC4        MDX  L  IDEN+6,1    ADD 1 TO NO. OF 1ST. BL.   STORE081
*-------------------------------------------------------------------  STORE082
0038 00 7400DFCC        MDX  L  IDEN+14,0                               STORE083
003A 0  7001            MDX     *+1         AUTOM. OPERATION            STORE084
003B 0  701C            MDX     A94         MANUAL OPERATION            STORE085
*-------------------------------------------------------------------  STORE086
003C 0  10A0            SLT     32          CALCULATE TOTAL COUNT       STORE087
003D 00 6700E000        LDX  L3 -8192                                   STORE088
003F 00 8F00FFFE  A70   AD   L3 SPEC+8192                               STORE089
0041 0  7302            MDX  3  2                                       STORE090
0042 0  70FC            MDX     A70                                     STORE091
0043 0  DA24            STD  2  SCAL+18-Y   CALC.TOT. COUNT=SCALER 10  STORE092
*-------------------------------------------------------------------  STORE093
0044 00 67800067        LDX  I3 103                                     STORE094
*-------------------------------------------------------------------  STORE095
0046 0  9A14            SD   2  SCAL+2-Y    CHECK TOT.COUNT DIFFERENCE  STORE096
0047 0  4810            BSC     -                                       STORE097
0048 0  7003            MDX     A93         DIFF. POS.                  STORE098
0049 0  D934            STD  1  SUM-X       DIFF. INTO SUM              STORE099
004A 0  10A0            SLT     32                                      STORE100
004B 0  9934            SD   1  SUM-X                                   STORE101
004C 0  B922      A93   DCM  I  LIMPO-X                                 STORE102
004D 0  7002            MDX     A92         ERROR MESSAGE               STORE103
004E 0  7000            MDX     *                                       STORE104
004F 0  7008            MDX     A94                                     STORE105
*-------------------------------------------------------------------  STORE106
0050 0  C107      A92   LD   1  ADTYP-X                                 STORE107
0051 01 D4000143        STO  L  A17                                     STORE108
0053 0  C110            LD   1  ADAPR+2-X                               STORE109
0054 01 D4000147        STO  L  A18                                     STORE110
0056 01 4C0000F4        BSC  L  A42         INTER. EXIT                 STORE111
*-------------------------------------------------------------------  STORE112
0058 0  C207      A94   LD   2  IDEN+5-Y    NO.OF BLOCKS * 512          STORE113
0059 0  A125            M    1  M512-X                                  STORE114
005A 0  1090            SLT     16                                      STORE115
005B 0  D00F            STO     A202                                    STORE116
005C 0  C208            LD   2  IDEN+6-Y    NO.OF 1.BLOCK * 512         STORE117
005D 0  9127            S    1  ONE-X                                   STORE118
005E 0  A125            M    1  M512-X                                  STORE119
005F 0  1090            SLT     16                                      STORE120
0060 0  8112            A    1  ADDR-X      (ADDR)=SPEC                 STORE121
0061 0  D007            STO     A201                                    STORE122
*-------------------------------------------------------------------  STORE123
0062 0  C208            LD   2  IDEN+6-Y                                STORE124
0063 0  B127            CMP  1  ONE-X                                   STORE125
0064 0  7002            MDX     A200        NO.OF 1.BLOCK UNEQUAL 1     STORE126
0065 0  7001            MDX     A200                                    STORE127
0066 0  7007            MDX     A210        NO.OF 1.BLOCK EQUAL 1       STORE128
*-------------------------------------------------------------------  STORE129
0067 30 145A5146  A200  CALL    MOVEF                                   STORE130
0069 0  0000      A201  DC      *-*         ORIGIN                      STORE131
006A 0  DFFE            DC      SPEC        DESTINATION                 STORE132
006B 0  0000      A202  DC      *-*         NO.OF WORDS                 STORE133
006C 0  C127            LD   1  ONE-X       SET NO.OF 1ST.BLOCK = 1     STORE134
006D 0  D208            STO  2  IDEN+6-Y                                STORE135
*-------------------------------------------------------------------  STORE136
006E 0  C1F8      A210  LD   1  BITNO-X     IS BITNO EQUAL TO NO. OF    STORE137
006F 0  B133            CMP  1  SPERN-X     SKIP ANALYSER               STORE138
0070 0  7002            MDX     A401        NO                          STORE139
0071 0  7001            MDX     A401        NO                          STORE140
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```
0073 01 6680006B A401  LDX  I2 A202        COMPARE CHANNEL WITH 90000  STORE142
0075 00 CE00DFFC A213  LDD  L2 SPEC-2                                  STORE143
0077 0  B918           DCM   1 COMP-X                                  STORE144
0078 0  7002           MDX     A211        GREATER 90000               STORE145
0079 0  7004           MDX     A212        SMALLER 90000               STORE146
007A 0  7003           MDX     A212                                    STORE147
                       *-------------------------------------------    STORE148
007B 0  991A           A211  SD    1 C100-X                          STORE149
007C 00 DE00DFFC             STD   L2 SPEC-2     STORE COMPLEMENT     STORE150
                       *-------------------------------------------    STORE151
007E 0  72FE           A212  MDX   2 -2                               STORE152
007F 0  70F5                 MDX     A213                            STORE153
                       *-------------------------------------------    STORE154
0080 00 C400DFCB       A500  LD    L  IDEN+13      OPERATION CODE      STORE155
0082 0  B138                 CMP   1 THREE-X                         STORE156
0083 0  702F                 MDX     A300        STORE ONLY          STORE157
0084 0  702E                 MDX     A300        STORE ONLY          STORE158
                       *-------------------------------------------    STORE159
0085 30 04262494             CALL    DISKM       AUTOMATIC SUM       STORE160
0087 0  BCF6                 DC      IDEN1                           STORE161
0088 1  024C                 DC      ERIN        READ SPECTRUM FROM DISK STORE162
0089 0  DD36                 DC      BUFFR                           STORE163
008A 0  DFBE                 DC      IDEN                            STORE164
008B 1  0257                 DC      ONE         SPECTRUM DELETED    STORE165
                       *-------------------------------------------    STORE166
008C 01 7400024C             MDX   L ERIN,0                          STORE167
008E 0  7024                 MDX     A300        NEW SPECTRUM STORED ONLY STORE168
                       *-------------------------------------------    STORE169
008F 00 6600DFD0             LDX   L2 -8240      ADD NEW SPECTRUM TO SUM STORE170
0091 00 CE00FFFE       A501  LDD   L2 SCAL+8240  SPEC+SPEC1=SPEC      STORE171
0093 00 8E00DD36             AD    L2 SCAL1+8240 SCAL+SCAL1=SCAL     STORE172
0095 00 DE00FFFE             STD   L2 SCAL+8240                      STORE173
0097 0  7202                 MDX    2 2                              STORE174
0098 0  70F8                 MDX     A501                            STORE175
                       *-------------------------------------------    STORE176
0099 30 14109892             CALL    MDISK       STORE SUM ON DISK   STORE177
009B 0  DFBE                 DC      IDEN                            STORE178
009C 1  024C                 DC      ERIN                            STORE179
009D 0  DD36                 DC      BUFFR                           STORE180
009E 1  024D                 DC      FREE                            STORE181
                       *-------------------------------------------    STORE182
009F 01 7400024C             MDX   L ERIN,0                          STORE183
00A1 0  7023                 MDX     A72         ERROR EXIT          STORE184
                       *-------------------------------------------    STORE185
00A2 00 C400DFC1             LD    L  IDEN+3     NO SAVE SUM IF SERIAL STORE186
00A4 0  B126                 CMP   1 NINI-X      NO.EQUAL 99.        STORE187
00A5 0  701B                 MDX     A301                            STORE188
00A6 0  7001                 MDX     A502                            STORE189
00A7 0  7019                 MDX     A301                            STORE190
                       *-------------------------------------------    STORE191
00A8 00 7401BCF9       A502  MDX   L IDEN1+3,1   INCREASE SERIAL NO. BY 1 STORE192
00AA 00 7401DFC1             MDX   L IDEN+3,1                        STORE193
                       *-------------------------------------------    STORE194
00AC 30 04262494             CALL    DISKM       DELETE SUM IN SAVE AREA STORE195
00AE 0  BCF6                 DC      IDEN1                           STORE196
00AF 1  024C                 DC      ERIN                            STORE197
00B0 0  DD36                 DC      BUFFR                           STORE198
00B1 0  BCF6                 DC      IDEN1                           STORE199
00B2 1  0257                 DC      ONE                             STORE200
                       *-------------------------------------------    STORE201
                                                                      STORE202
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00B3 30 14109892  A300  CALL     MDISK       STORE SPECTRUM ON DISK      STORE203
00B5 0  DFBE            DC       IDEN                                    STORE204
00B6 1  024C            DC       ERIN                                    STORE205
00B7 0  DD36            DC       BUFFR                                   STORE206
00B8 1  024D            DC       FREE                                    STORE207
                      *-------------------------------------------------- STORE208
00B9 00 C400DFCB        LD    L  IDEN+13     OPERATION CODE              STORE209
00BB 0  B138            CMP   1  THREE-X                                 STORE210
00BC 0  7004            MDX      A301                                    STORE211
00BD 0  7003            MDX      A301                                    STORE212
00BE 00 74FFDFC1        MDX   I  IDEN+3,-1   SERIAL NO. MINUS 1         STORE213
00C0 0  7000            MDX      *                                       STORE214
                      *-------------------------------------------------- STORE215
00C1 01 7400024C  A301  MDX   L  ERIN,0                                  STORE216
00C3 0  7001            MDX      A72                                     STORE217
00C4 0  7012            MDX      A71          NO ERRORS,CONTINUE         STORE218
                      *-------------------------------------------------- STORE219
00C5 01 6680024C  A72   LDX   I2 ERIN         FIND TYPE OF ERROR         STORE220
00C7 0  C11C            LD    1  ERIN-X                                  STORE221
00C8 0  B120            CMP   1  FIVE-X                                  STORE222
00C9 0  7005            MDX      A73          GREATER 5                  STORE223
00CA 0  7004            MDX      A73          SMALLER 5                  STORE224
00CB 0  C10E            LD    1  ADAPR-X      EQUAL 5                    STORE225
00CC 01 D4000147        STO   L  A18          PREPARE ERROR MESSAGE FOR  STORE226
00CE 0  7003            MDX      A74          INTERFACE                  STORE227
00CF 0  C10F      A73   LD    1  ADAPR+1-X                               STORE228
00D0 01 D4000147        STO   L  A18                                     STORE229
00D2 01 C6000237  A74   LD    L2 ADTYP         PREPARE ERROR MESSAGE FOR  STORE230
00D4 01 D4000143        STO   L  A17          TYPEWRITER 1053            STORE231
00D6 0  701D            MDX      A42          INTER. EXIT                STORE232
                      *-------------------------------------------------- STORE233
00D7 0  C138      A71   LD    1  THREE-X      INSTA=3 ,SPECTRUM IS       STORE234
00D8 0  D1FD            STO   1  INSTA-X      STORED ON DISK             STORE235
                      *-------------------------------------------------- STORE236
00D9 20 04262495        LIBF     DISKN        STORE CONTROL SECTOR CONDI STORE237
00DA 0  3000            DC       /3000        ON DISK                    STORE238
00DB 1  0226            DC       COSEC                                   STORE239
00DC 0  0000            DC       0                                       STORE240
                      *-------------------------------------------------- STORE241
00DD 20 04262495        LIBF     DISKN        TEST IF CONDI IS STORED    STORE242
00DE 0  0100            DC       /0100                                   STORE243
00DF 1  0226            DC       COSEC                                   STORE244
00E0 1  00DD            DC       *-4                                     STORE245
                      *-------------------------------------------------- STORE246
00E1 30 03595244        CALL     CONID        CONVERSION OF ID TO CARD   STORE247
00E3 0  DFBE            DC       IDEN         CODE FOR INTERFACE MESS.   STORE248
00E4 1  02D9            DC       AM21                                    STORE249
                      *-------------------------------------------------- STORE250
00E5 0  C113            LD    1  B1-X         PREPARE COMMAND *PRINT AL- STORE251
00E6 0  81F8            A     1  BITNO-X      PHANUMERIC*                STORE252
00E7 0  D103            STO   1  AREA3+2-X                               STORE253
                      *-------------------------------------------------- STORE254
00E8 01 4400017A        BSI   L  A310         COMMAND *PRINT ALPHAMERIC* STORE255
                      *-------------------------------------------------- STORE256
00EA 20 040565C0        LIBF     DAOP         MESSAGE *ID ON DISK* ON    STORE257
00EB 0  1310            DC       /1310        INTERFACE TYPEWRITER       STORE258
00EC 1  02D7            DC       AM20                                    STORE259
00ED 0  0000            DC       0                                       STORE260
                      *-------------------------------------------------- STORE261
00EE 30 19162163        CALL     RESET        CHECK DC OPERATION         STORE262
00F0 1  0247            DC       BITYP                                   STORE263
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00F1 1  00F2          DC      A84         GO TO A84                      STORE264
                    *-------------------------------------------------- STORE265
00F2 01 74010262    A84   MDX   L SKIP,+1     SKIP ERROR MESSAGE       STORE266
                    *-------------------------------------------------- STORE267
00F4 00 6600DFBC    A42   LDX   L2 Y                                     STORE268
00F6 00 67800067          LDX   I3 103                                   STORE269
                    *-------------------------------------------------- STORE270
00F8 20 024C1552          LIBF    BLANK       PREPARE 1053 MESSAGE *ID*  STORE271
00F9 0  DD9E              DC      MESS        MESS= INTERM.STORAGE       STORE272
00FA 0  001C              DC      28                                     STORE273
                    *-------------------------------------------------- STORE274
00FB 0  C202              LD    2 IDEN-Y                                 STORE275
00FC 20 02255103          LIBF    BINDC                                  STORE276
00FD 1  0258              DC      OUTPT                                  STORE277
00FE 0  C92C              LDD   1 OUTPT+4-X                              STORE278
00FF 00 DC00DD9E          STD   L MESS                                   STORE279
0101 0  C12E              LD    1 POINT-X                                STORE280
0102 00 D400DDA0          STO   L MESS+2                                 STORE281
                    *-------------------------------------------------- STORE282
0104 0  C203              LD    2 IDEN+1-Y                               STORE283
0105 20 02255103          LIBF    BINDC                                  STORE284
0106 1  0258              DC      OUTPT                                  STORE285
0107 0  C12D              LD    1 OUTPT+5-X                              STORE286
0108 00 D400DDA1          STO   L MESS+3                                 STORE287
                    *-------------------------------------------------- STORE288
010A 0  C204              LD    2 IDEN+2-Y                               STORE289
010B 20 02255103          LIBF    BINDC                                  STORE290
010C 1  0258              DC      OUTPT                                  STORE291
010D 0  C12D              LD    1 OUTPT+5-X                              STORE292
010E 00 D400DDA2          STO   L MESS+4                                 STORE293
                    *-------------------------------------------------- STORE294
0110 0  C205              LD    2 IDEN+3-Y                               STORE295
0111 20 02255103          LIBF    BINDC                                  STORE296
0112 1  0258              DC      OUTPT                                  STORE297
0113 0  C12C              LD    1 OUTPT+4-X                              STORE298
0114 00 D400DDA3          STO   L MESS+5                                 STORE299
0116 0  C12D              LD    1 OUTPT+5-X                              STORE300
0117 00 D400DDA4          STO   L MESS+6                                 STORE301
                    *-------------------------------------------------- STORE302
0119 0  C20C              LD    2 IDEN+10-Y                              STORE303
011A 20 02255103          LIBF    BINDC                                  STORE304
011B 1  0258              DC      OUTPT                                  STORE305
011C 0  C128              LD    1 OUTPT-X                                STORE306
011D 00 D400DDA9          STO   L MESS+11                                STORE307
011F 0  C12D              LD    1 OUTPT+5-X                              STORE308
0120 00 D400DDAA          STO   L MESS+12                                STORE309
                    *-------------------------------------------------- STORE310
0122 0  C208              LD    2 IDEN+6-Y                               STORE311
0123 20 02255103          LIBF    BINDC                                  STORE312
0124 1  0258              DC      OUTPT                                  STORE313
0125 0  C92C              LDD   1 OUTPT+4-X                              STORE314
0126 00 DC00DDB0          STD   L MESS+18                                STORE315
                    *-------------------------------------------------- STORE316
0128 0  C207              LD    2 IDEN+5-Y                               STORE317
0129 20 02255103          LIBF    BINDC                                  STORE318
012A 1  0258              DC      OUTPT                                  STORE319
012B 0  C92C              LDD   1 OUTPT+4-X                              STORE320
012C 00 DC00DDB8          STD   L MESS+26                                STORE321
                    *-------------------------------------------------- STORE322
012E 20 085935D9          LIBF    HOLPR                                  STORE323
012F 0  0000              DC      /0000                                  STORE324
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0130 0  DD9E            DC      MESS                                    STORE325
0131 1  0217            DC      TM211                                   STORE326
0132 0  001C            DC      28              END OF MESSAGE PREPARATION STORE327
                *-------------------------------------------------------STORE328
0133 20 23A17155        LIBF    TYPEN           MESSAGE ID,TYPE,ETC.    STORE329
0134 0  2001            DC      /2001                                   STORE330
0135 1  0215            DC      TM21-1                                  STORE331
0136 0  0000            DC      0                                       STORE332
                *-------------------------------------------------------STORE333
0137 01 74000262        MDX  L  SKIP,0                                  STORE334
0139 0  7001            MDX     *+1                                     STORE335
013A 0  7001            MDX     A13             NO SKIP OF ERROR MESSAGE STORE336
013B 0  701C            MDX     A80             SKIP OF ERROR MESSAGE   STORE337
                *-------------------------------------------------------STORE338
013C 0  C113    A13     LD    1 B1-X            PREPARE COMMAND *PRINT AL- STORE339
013D 0  81F8            A     1 BITNO-X         PHAMERIC*               STORE340
013E 0  D103            STO   1 AREA3+2-X                               STORE341
                *-------------------------------------------------------STORE342
013F 01 4400017A        BSI  L  A310            COMMAND *PRINT ALPHAMERIC* STORE343
                *-------------------------------------------------------STORE344
0141 20 23A17155        LIBF    TYPEN           ERROR MESSAGE ON 1053   STORE345
0142 0  2001            DC      /2001                                   STORE346
0143 0  0000    A17     DC      *-*                                     STORE347
0144 0  0000            DC      0                                       STORE348
                *-------------------------------------------------------STORE349
0145 20 040565C0        LIBF    DAOP            ERROR MESSAGE ON INTERFACE STORE350
0146 0  1310            DC      /1310           TYPEWRITER, SINGLE ADDR., STORE351
0147 0  0000    A18     DC      *-*             EXTERNAL SYNCH.         STORE352
0148 0  0000            DC      0                                       STORE353
                *-------------------------------------------------------STORE354
0149 30 19162163        CALL    RESET           CHECK DC OPERATION      STORE355
014B 1  0247            DC      BITYP                                   STORE356
014C 1  014D            DC      A90             GO TO A90               STORE357
                *-------------------------------------------------------STORE358
014D 01 65000230 A90    LDX  L1 X                                       STORE359
014F 01 66800228        LDX  I2 BITNO           PREPARE COMMAND FOR ALARM STORE360
0151 0  C100            LD    1 ALARM-X                                 STORE361
0152 0  1A00            SRA   2                                         STORE362
0153 0  D106            STO   1 AREA5+2-X                               STORE363
                *-------------------------------------------------------STORE364
0154 20 040565C0        LIBF    DAOP            ALARM FOR INTERRUPT BITNO STORE365
0155 0  2000            DC      /2000                                   STORE366
0156 1  0234            DC      AREA5                                   STORE367
0157 0  0000            DC      0                                       STORE368
                *-------------------------------------------------------STORE369
0158 30 23243595 A80    CALL    TICON           CONVERT TIME FOR MESSAGE STORE370
015A 1  020E            DC      TM153           *INTERRUPT EXIT*        STORE371
                *-------------------------------------------------------STORE372
015B 20 23A17155 A19    LIBF    TYPEN           MESSAGE INTERRUPT EXIT  STORE373
015C 0  2001            DC      /2001                                   STORE374
015D 1  0209            DC      TM15-1                                  STORE375
015E 0  0000            DC      0                                       STORE376
                *-------------------------------------------------------STORE377
015F 0  C114            LD    1 B14-X           PREPARE COMMAND *PRINT  STORE378
0160 0  81F8            A     1 BITNO-X         WORDS*                  STORE379
0161 0  D103            STO   1 AREA3+2-X                               STORE380
                *-------------------------------------------------------STORE381
0162 01 4400017A        BSI  L  A310            COMMAND *PRINT WORDS*   STORE382
                *-------------------------------------------------------STORE383
0164 0  C115            LD    1 B15-X           PREPARE COMMAND *END    STORE384
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0166 0  D103          STO   1 AREA3+2-X                                  STORE386
                    *-------------------------------------------------- STORE387
0167 01 4400017A      BSI  L  A310        COMMAND *END OF INTERRUPT*     STORE388
                    *-------------------------------------------------- STORE389
0169 20 040565C0      LIBF    DAOP        COMMAND RESET                  STORE390
016A 0  1000          DC      /1000                                      STORE391
016B 1  025F          DC      RESET                                      STORE392
016C 0  0000          DC      0                                          STORE393
                    *-------------------------------------------------- STORE394
016D 20 024C1552      LIBF    BLANK       RESET CONTROL SECTOR CONDI     STORE395
016E 1  0228          DC      BITNO                                      STORE396
016F 0  0008          DC      8                                          STORE397
                    *-------------------------------------------------- STORE398
0170 20 04262495      LIBF    DISKN       STORE CONTROL SECTOR CONDI     STORE399
0171 0  3000          DC      /3000       ON DISK                        STORE400
0172 1  0226          DC      COSEC                                      STORE401
0173 0  0000          DC      0                                          STORE402
                    *-------------------------------------------------- STORE403
0174 20 04262495      LIBF    DISKN       TEST IF CONDI IS STORED        STORE404
0175 0  0100          DC      /0100                                      STORE405
0176 1  0226          DC      COSEC                                      STORE406
0177 1  0174          DC      *-4                                        STORE407
                    *-------------------------------------------------- STORE408
0178 30 09563167      CALL    INTEX                                      STORE409
                    *-------------------------------------------------- STORE410
017A 0  0000    A310  DC      *-*                                        STORE411
017B 20 040565C0      LIBF    DAOP        COMMAND RESET                  STORE412
017C 0  1000          DC      /1000                                      STORE413
017D 1  025F          DC      RESET                                      STORE414
017E 0  0000          DC      0                                          STORE415
                    *-------------------------------------------------- STORE416
017F 20 040565C0      LIBF    DAOP        INTERFACE COMMAND              STORE417
0180 0  1000          DC      /1000                                      STORE418
0181 1  0231          DC      AREA3                                      STORE419
0182 0  0000          DC      0                                          STORE420
0183 01 4C80017A      BSC  I  A310                                       STORE421
                    ********************************************** STORE422
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                                                                                STORE424
                *************************************************               STORE425
                *     CONVERSION OF NO.OF FREE PLACEC TO 1053 CODE*               STORE426
                *                                                 *               STORE427
                *     BSI     CONV2                               *               STORE428
                *     DC      ADDR.OF CONVERTED NO.,BSS 2         *               STORE429
                *************************************************               STORE430
0185 0  0000    CONV2 DC      *-*         CONVERSION OF NO.OF FREE              STORE431
0186 01 C4800185      LD    I CONV2       PLACES TO 1053 CODE                   STORE432
0188 0  D008          STO     A75                                               STORE433
0189 01 74010185      MDX   L CONV2,+1    RETURN ADDR.                          STORE434
018B 0  C11D          LD    1 FREE-X                                            STORE435
018C 20 02255103      LIBF    BINDC                                             STORE436
018D 1  0258          DC      OUTPT                                             STORE437
018E 20 085935D9      LIBF    HOLPR                                             STORE438
018F 0  0000          DC      /0000                                             STORE439
0190 1  025A          DC      OUTPT+2                                           STORE440
0191 0  0000    A75   DC      *-*                                               STORE441
0192 0  0004          DC      4                                                 STORE442
0193 01 4C800185      BSC   I CONV2       END OF CONVERSION ROUTINE             STORE443
                *************************************************               STORE444
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0195 0  000B          DC      TM36-TM35                                  STORE445
0196    0016          *       STORE MESSAGES FOR TYPEWRITER 1053         STORE446
01A1    0000          ********************************************       STORE447
                      DC      TM36-TM35                                  STORE448
                TM35  DMES    'R'ASAME ID ALREADY USED'E                 STORE449
                TM36  BES     0                                          STORE450
                      *-------------------------------------------       STORE451
01A1 0  000D          DC      TM38-TM37                                  STORE452
01A2    001A          TM37  DMES    'R'ANO FREE 13-SECTOR AREA 'E        STORE453
01AF    0000          TM38  BES     0                                    STORE454
                      *-------------------------------------------       STORE455
01AF 0  000D          DC      TM40-TM39                                  STORE456
01B0    001A          TM39  DMES    'R'ANO FREE 26-SECTOR AREA 'E        STORE457
01BD    0000          TM40  BES     0                                    STORE458
                      *-------------------------------------------       STORE459
01BD 0  0011          DC      TM42-TM41                                  STORE460
01BE    001E          TM41  DMES    'R'ANO STOR. FOR THIS SMALL SPEC'    STORE461
01CD    0004                DMES    TRUM'E                               STORE462
01CF    0000          TM42  BES     0                                    STORE463
                      *-------------------------------------------       STORE464
01CF 0  0016          DC      TM44-TM43                                  STORE465
01D0    001A          TM43  DMES    'R'AREQUIRED NO. OF OVERFLOW'E       STORE466
01DD    0012                DMES    'RSECTORS NOT FREE'E                 STORE467
01E6    0000          TM44  BES     0                                    STORE468
                      *-------------------------------------------       STORE469
01E6 0  000E          DC      TM56-TM55                                  STORE470
01E7    001C          TM55  DMES    'R'ATOT. COUNT DIFFERENCE   20'E     STORE471
01F5    0000          TM56  BES     0                                    STORE472
                      *-------------------------------------------       STORE473
01F5 0  0013          DC      TM74-TM73                                  STORE474
01F6    001A          TM73  DMES    'R'AINCORR. AUTOM. TYPE FOR '        STORE475
0203    000C                DMES    PROGR. STORE'E                       STORE476
0209    0000          TM74  BES     0                                    STORE477
                      *-------------------------------------------       STORE478
0209 0  000B          DC      TM16-TM15  INTERRUPT EXIT                  STORE479
020A    0008          TM15  DMES    'B'7X'E                              STORE480
020E    0003          TM153 BSS     3          TIME                      STORE481
0211    0008                DMES    '2XSTORE'E                           STORE482
0215    0000          TM16  BES     0                                    STORE483
                      *-------------------------------------------       STORE484
0215 0  000F          DC      TM22-TM21                                  STORE485
0216    0002          TM21  DMES    'B'E                                 STORE486
0217    000E          TM211 BSS     14         ID,AUT.TYPE,1.BL.,NO.BL.  STORE487
0225    0000          TM22  BES     0                                    STORE488
                      ********************************************       STORE489
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                                ************************************************* STORE491
                                *     CONTROL SECTOR FOR STORE AND DINPT        * STORE492
                                ************************************************* STORE493
0226     0000                         BSS   E  0                                    STORE494
0226 31  03595109              COSEC  DSA      CONDI       DEFINE SECTOR ADDR. FOR  STORE495
0229                                  ORG      COSEC       CONTROL SECTOR CONDI     STORE496
0226 0   0008                        DC       8                                     STORE497
0227                                  ORG      COSEC+2                               STORE498
0228 0   0000                 BITNO  DC       *-*         INTERRUPT NO. (DINPT)    STORE499
0229 0   0000                 EXNO1  DC       *-*         1ST.EXPER.NO. (DINPT)    STORE500
022A 0   0000                 EXNO2  DC       *-*         2ND.EXPER.NO. (DINPT)    STORE501
022B 0   0000                 SERNO  DC       *-*         SERIAL NO.    (DINPT)    STORE502
022C 0   0000                 AUTYP  DC       *-*         AUTOMATIC TYPE(DINPT)    STORE503
022D 0   0000                 INSTA  DC       *-*         STATUS OF INTERR. WORK   STORE504
                                *                         1=CONTROL WORDS AND SCALERSSTORE505
                                *                           ARE READ (DINPT)       STORE506
                                *                         2=START OF PROGR. STORE  STORE507
                                *                         3=SPECTRUM IS STORED ON  STORE508
                                *                           DISK                   STORE509
022E 00  00000000              TIME   DEC      0           TIME IN ANALYSER FORMAT  STORE510
                                *                         (DINPT)                  STORE511
                                ************************************************* STORE512
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                                                                                STORE514
                *************************************************               STORE515
                *     STORE CONSTANTS                           *               STORE516
                *************************************************               STORE517
0230 0  8000    ALARM DC      /8000       1 IN BIT POS. 0, TO BE                STORE518
                *                         SHIFTED TO POS. OF PISW-B.            STORE519
0231 0  0002    AREA3 DC      2           AREA FOR INTERFACE COMMAND            STORE520
0232 0  007C          DC      124         TERMINAL A6                           STORE521
0233 0  0000          DC      *-*         COMMAND                               STORE522
0234 0  0002    AREA5 DC      2           PULSE OUTPUT TABLE                    STORE523
0235 0  007D          DC      125                                               STORE524
0236 0  0000          DC      *-*                                               STORE525
0237 1  01E6    ADTYP DC      TM55-1      ADDR. OF TYPEWRITER MESS.             STORE526
0238 1  01A1          DC      TM37-1                                            STORE527
0239 1  01AF          DC      TM39-1                                            STORE528
023A 1  01BD          DC      TM41-1                                            STORE529
023B 1  01CF          DC      TM43-1                                            STORE530
023C 1  0195          DC      TM35-1                                            STORE531
023D 1  01F5          DC      TM73-1                                            STORE532
023E 1  0269    ADAPR DC      AM15        ADDR. OF INTERFACE MESS.              STORE533
023F 1  0281          DC      AM16                                              STORE534
0240 1  02A1          DC      AM18                                              STORE535
0241 1  02C0          DC      AM19                                              STORE536
0242 0  DFFE    ADDR  DC      SPEC                                              STORE537
                *-----------------------------------------------------          STORE538
                *     INTERFACE COMMANDS                                *       STORE539
0243 0  1400    B1    DC      /1400       PRINT ALPHAMERIC (ON INTER            STORE540
                *                         FACE TYPEWRITER)                      STORE541
0244 0  A000    B14   DC      /A000       PRINT WORDS (ON INTERFACE             STORE542
                *                         TYPEWRITER)                           STORE543
0245 0  B000    B15   DC      /B000       END OF INTERRUPT                      STORE544
0246 0  E800    B18   DC      /E800       DISABLE INTERRUPT BITNO               STORE545
                *-----------------------------------------------------          STORE546
0247 0  0000    BITYP DC      *-*         BITNO IN TYPEWRITER CODE              STORE547
0248 00 00015F90 COMP DEC     90000                                             STORE548
024A 00 000186A0 C100 DEC     100000                                            STORE549
024C 0  0000    ERIN  DC      *-*         ERROR INDICATOR FOR MDISK             STORE550
024D 0  0000    FREE  DC      *-*         NO.OF FREE 13-SECTOR PLACE            STORE551
024E 0  0000          DC      *-*         NO.OF FREE SECT.FOR SM.SPE            STORE552
024F 0  0000          DC      *-*         NO.OF FREE SECT.IN OV.AREA            STORE553
0250 0  0005    FIVE  DC      5                                                 STORE554
0252 00 00000014 LIMPO DEC    20          LIMIT FOR TOT.COUNT DIFF.             STORE555
0254 0  00C8    M200  DC      200                                               STORE556
0255 0  0200    M512  DC      512                                               STORE557
0256 0  0063    NINI  DC      99                                                STORE558
0257 0  0001    ONE   DC      1                                                 STORE559
0258    0006    OUTPT BSS   E 6                                                 STORE560
025E 0  8420    POINT DC      /8420       CARD CODE PERIOD                      STORE561
025F 0  0002    RESET DC      2           RESET COMMAND OUTPUT                  STORE562
0260 0  007C          DC      124         TERMINAL A6                           STORE563
0261 0  0000          DC      0           COMMAND                               STORE564
0262 0  0000    SKIP  DC      *-*         1=SKIP ERROR MESSAGE                  STORE565
                *                         0=NO SKIP OF ERROR MESS.              STORE566
0263 0  000C    SPERN DC      12                                                STORE567
0264 00 00000000 SUM  DEC     0           STORAGE FOR TOTAL COUNT               STORE568
0266 0  000A    TEN   DC      10                                                STORE569
0267 0  0002    TWO   DC      2                                                 STORE570
0268 0  0003    THREE DC      3                                                 STORE571
0230            X     EQU     ALARM                                             STORE572
DFBC            Y     EQU     TABLE                                             STORE573
                *************************************************               STORE574
```

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                                                                                STORE575
                *****************************************************           STORE576
                *     MESSAGES FOR INTERFACE TYPEWRITER             *           STORE577
                *****************************************************           STORE578
0269 0  0017    AM15    DC      23                                              STORE579
026A 0  007B            DC      123                                             STORE580
026B 0  0900            DC      /0900       RED                                 STORE581
026C 0  2800            DC      /2800       S                                   STORE582
026D 0  9000            DC      /9000       A                                   STORE583
026E 0  4200            DC      /4200       M                                   STORE584
026F 0  8100            DC      /8100       E                                   STORE585
0270 0  0000            DC      /0000                                           STORE586
0271 0  8010            DC      /8010       I                                   STORE587
0272 0  8200            DC      /8200       D                                   STORE588
0273 0  0000            DC      /0000                                           STORE589
0274 0  9000            DC      /9000       A                                   STORE590
0275 0  4400            DC      /4400       L                                   STORE591
0276 0  4010            DC      /4010       R                                   STORE592
0277 0  8100            DC      /8100       E                                   STORE593
0278 0  9000            DC      /9000       A                                   STORE594
0279 0  8200            DC      /8200       D                                   STORE595
027A 0  2020            DC      /2020       Y                                   STORE596
027B 0  0000            DC      /0000                                           STORE597
027C 0  2200            DC      /2200       U                                   STORE598
027D 0  2800            DC      /2800       S                                   STORE599
027E 0  8100            DC      /8100       E                                   STORE600
027F 0  8200            DC      /8200       D                                   STORE601
0280 0  0500            DC      /0500       BLACK                               STORE602
                *-----------------------------------------------------           STORE603
0281 0  001F    AM16    DC      31                                              STORE604
0282 0  007B            DC      123                                             STORE605
0283 0  0900            DC      /0900       RED                                 STORE606
0284 0  4100            DC      /4100       N                                   STORE607
0285 0  4080            DC      /4080       O                                   STORE608
0286 0  0000            DC      /0000                                           STORE609
0287 0  2800            DC      /2800       S                                   STORE610
0288 0  2400            DC      /2400       T                                   STORE611
0289 0  4080            DC      /4080       O                                   STORE612
028A 0  4010            DC      /4010       R                                   STORE613
028B 0  9000            DC      /9000       A                                   STORE614
028C 0  8040            DC      /8040       G                                   STORE615
028D 0  8100            DC      /8100       E                                   STORE616
028E 0  0000            DC      /0000                                           STORE617
028F 0  8080            DC      /8080       F                                   STORE618
0290 0  4080            DC      /4080       O                                   STORE619
0291 0  4010            DC      /4010       R                                   STORE620
0292 0  0000            DC      /0000                                           STORE621
0293 0  2400            DC      /2400       T                                   STORE622
0294 0  8020            DC      /8020       H                                   STORE623
0295 0  8010            DC      /8010       I                                   STORE624
0296 0  2800            DC      /2800       S                                   STORE625
0297 0  0000            DC      /0000                                           STORE626
0298 0  2800            DC      /2800       S                                   STORE627
0299 0  4040            DC      /4040       P                                   STORE628
029A 0  8100            DC      /8100       E                                   STORE629
029B 0  8400            DC      /8400       C                                   STORE630
029C 0  2400            DC      /2400       T                                   STORE631
029D 0  4010            DC      /4010       R                                   STORE632
029E 0  2200            DC      /2200       U                                   STORE633
029F 0  4200            DC      /4200       M                                   STORE634
02A0 0  0500            DC      /0500       BLACK
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02A1 0 001E  AM18  DC   30                                  STORE636
02A2 0 007B        DC   123                                 STORE637
02A3 0 0900        DC   /0900     RED                      STORE638
02A4 0 2400        DC   /2400     T                        STORE639
02A5 0 4080        DC   /4080     O                        STORE640
02A6 0 2400        DC   /2400     T                        STORE641
02A7 0 8420        DC   /8420     .                        STORE642
02A8 0 0000        DC   /0000                              STORE643
02A9 0 8400        DC   /8400     C                        STORE644
02AA 0 4080        DC   /4080     O                        STORE645
02AB 0 2200        DC   /2200     U                        STORE646
02AC 0 4100        DC   /4100     N                        STORE647
02AD 0 2400        DC   /2400     T                        STORE648
02AE 0 0000        DC   /0000                              STORE649
02AF 0 8200        DC   /8200     D                        STORE650
02B0 0 8010        DC   /8010     I                        STORE651
02B1 0 8080        DC   /8080     F                        STORE652
02B2 0 8080        DC   /8080     F                        STORE653
02B3 0 8420        DC   /8420     .                        STORE654
02B4 0 0000        DC   /0000                              STORE655
02B5 0 8040        DC   /8040     G                        STORE656
02B6 0 4010        DC   /4010     R                        STORE657
02B7 0 8100        DC   /8100     E                        STORE658
02B8 0 9000        DC   /9000     A                        STORE659
02B9 0 2400        DC   /2400     T                        STORE660
02BA 0 8100        DC   /8100     E                        STORE661
02BB 0 4010        DC   /4010     R                        STORE662
02BC 0 0000        DC   /0000                              STORE663
02BD 0 0800        DC   /0800     2                        STORE664
02BE 0 2000        DC   /2000     0                        STORE665
02BF 0 0500        DC   /0500     BLACK                    STORE666
                   *-------------------------------------- STORE667
02C0 0 0016  AM19  DC   22                                  STORE668
02C1 0 007B        DC   123                                 STORE669
02C2 0 0900        DC   /0900     RED                      STORE670
02C3 0 8010        DC   /8010     I                        STORE671
02C4 0 4100        DC   /4100     N                        STORE672
02C5 0 8400        DC   /8400     C                        STORE673
02C6 0 4080        DC   /4080     O                        STORE674
02C7 0 4010        DC   /4010     R                        STORE675
02C8 0 4010        DC   /4010     R                        STORE676
02C9 0 8420        DC   /8420     .                        STORE677
02CA 0 0000        DC   /0000                              STORE678
02CB 0 9000        DC   /9000     A                        STORE679
02CC 0 2200        DC   /2200     U                        STORE680
02CD 0 2400        DC   /2400     T                        STORE681
02CE 0 4080        DC   /4080     O                        STORE682
02CF 0 4200        DC   /4200     M                        STORE683
02D0 0 8420        DC   /8420     .                        STORE684
02D1 0 0000        DC   /0000                              STORE685
02D2 0 2400        DC   /2400     T                        STORE686
02D3 0 2020        DC   /2020     Y                        STORE687
02D4 0 4040        DC   /4040     P                        STORE688
02D5 0 8100        DC   /8100     E                        STORE689
02D6 0 0500        DC   /0500     BLACK                    STORE690
                   *-------------------------------------- STORE691
02D7 0 0010  AM20  DC   16                                  STORE692
02D8 0 007B        DC   123                                 STORE693
02D9   0007  AM21  BSS  7                                   STORE694
02E0 0 0000        DC   /0000                              STORE695
02E1 0 4080        DC   /4080     O                        STORE696
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02E2 0  4100            DC      /4100       N                   STORE697
02E3 0  0000            DC      /0000                           STORE698
02E4 0  8200            DC      /8200       D                   STORE699
02E5 0  8010            DC      /8010       I                   STORE700
02E6 0  2800            DC      /2800       S                   STORE701
02E7 0  4800            DC      /4800       K                   STORE702
                ********************************************** STORE703
02E8                    END                                     STORE704

     NO ERRORS IN ABOVE ASSEMBLY.
STORE
DUP FUNCTION COMPLETED
// END OF ALL JOBS
```

```
0000    229148D6          ENT     SUMTO                                          SUMT0002
                          ********************************************************SUMT0003
                          *     ADDRESS ASSIGNMENT FOR COMMON                    *SUMT0004
                          ********** ***************************************** *SUMT0005
DFFE                      SPEC  EQU     -8194                                    SUMT0006
DFCE                      SCAL  EQU     -8242                                    SUMT0007
DFBE                      IDEN  EQU     -8258                                    SUMT0008
DFBC                      TABLE EQU     -8260                                    SUMT0009
DDBC                      BLOCK EQU     -8772                                    SUMT0010
DDBA                      AREA1 EQU     -8774                                    SUMT0011
DD9E                      MESS  EQU     -8802                                    SUMT0012
DD36                      BUFFR EQU     -8906                                    SUMT0013
BD36                      SPEC1 EQU     -17098                                   SUMT0014
BD06                      SCAL1 EQU     -17146                                   SUMT0015
BCF6                      IDEN1 EQU     -17162                                   SUMT0016
BCF4                      TABL1 EQU     -17164                                   SUMT0017
BCEF                      SEQ40 EQU     -17169                                   SUMT0018
BCEB                      SEQ30 EQU     -17173                                   SUMT0019
BCE8                      SEQ20 EQU     -17176                                   SUMT0020
BCE6                      SEQ10 EQU     -17178                                   SUMT0021
                          ********************************************************SUMT0022
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                                                                                SUMT0024
0000 0  0000        SUMTO DC      *-*                                           SUMT0025
                    *-------------------------------------------------------    SUMT0026
0001 01 65000430          LDX   L1 X                                            SUMT0027
0003 00 6600DFBC          LDX   L2 Y                                            SUMT0028
                    *-------------------------------------------------------    SUMT0029
0005 30 145A5140          CALL  MOVE        STORE SAMPLE CHANGER INFOR          SUMT0030
0007 1  0456              DC    SEQEN       MATION INTO COMMON                  SUMT0031
0008 0  BCE6              DC    SEQ10                                           SUMT0032
0009 0  000E              DC    14                                              SUMT0033
                    *-------------------------------------------------------    SUMT0034
000A 0  C202              LD    2 IDEN-Y    PROGRAM CHANGE                      SUMT0035
000B 0  B135              CMP   1 TWO-X     FOR BITNO=2                         SUMT0036
000C 0  7000              MDX   *                                               SUMT0037
000D 0  7004              MDX   A210                                            SUMT0038
                    *-------------------------------------------------------    SUMT0039
000E 0  C1AD              LD    1 AB1+1-X   INSUM REPLACED                      SUMT0040
000F 0  D1D5              STO   1 ADRIN+1-X BY INSU1                            SUMT0041
0010 0  C1AF              LD    1 AB2+1-X   CONSC REPLACED                      SUMT0042
0011 0  D188              STO   1 COSEC+1-X BY CONS1                            SUMT0043
                    *-------------------------------------------------------    SUMT0044
0012 20 04262495    A210  LIBF    DISKN     READ CONTROL SECTOR                 SUMT0045
0013 0  1000              DC      /1000                                         SUMT0046
0014 1  03B7              DC      COSEC                                         SUMT0047
0015 0  0000              DC      0                                             SUMT0048
                    *-------------------------------------------------------    SUMT0049
0016 20 04262495    A143  LIBF    DISKN     TEST IF CONTROL SECTOR              SUMT0050
0017 0  0100              DC      /0100     IS READ                             SUMT0051
0018 1  03B7              DC      COSEC                                         SUMT0052
0019 0  70FC              MDX     A143                                          SUMT0053
                    *-------------------------------------------------------    SUMT0054
001A 0  C205              LD    2 IDEN+3-Y                                      SUMT0055
001B 0  B1F2              CMP   1 FIFTY-X                                       SUMT0056
001C 0  7002              MDX     A201      ERROR SERIAL NO.                    SUMT0057
001D 0  7009              MDX     A202      SERIAL NO.SMALLER 50                SUMT0058
001E 0  7000              MDX     A201      ERROR SERIAL NO.                    SUMT0059
                    *-------------------------------------------------------    SUMT0060
001F 0  C1C5        A201  LD    1 ADTYP+14-X ERROR MESSAGE                      SUMT0061
0020 01 D400036C          STO   L A17       *INCORRECT SERIAL NO.*              SUMT0062
0022 0  C1C8              LD    1 ADAPR+1-X                                     SUMT0063
0023 01 D4000370          STO   L A18                                           SUMT0064
0025 01 4C00031D          BSC   L A42       INTER.EXIT                          SUMT0065
                    *-------------------------------------------------------    SUMT0066
0027 00 7400DFC9    A202  MDX   L IDEN+11,0 CHECK IF SPECTRUM HAS 16            SUMT0067
0029 0  7008              MDX     A200      BLOCKS                              SUMT0068
002A 0  C1BC              LD    1 ADTYP+5-X                                     SUMT0069
002B 01 D400036C          STO   L A17                                           SUMT0070
002D 0  C1C9              LD    1 ADAPR+2-X                                     SUMT0071
002E 01 D4000370          STO   L A18                                           SUMT0072
0030 01 4C00031D          BSC   L A42       INTER. EXIT                         SUMT0073
                    *-------------------------------------------------------    SUMT0074
0032 0  C10D        A200  LD    1 ONE-X     INSTA=1, START OF PROGRAM           SUMT0075
0033 0  D1A5              STO   1 INSTA-X   SUMTO                               SUMT0076
                    *-------------------------------------------------------    SUMT0077
0034 0  C202              LD    2 IDEN-Y    COMPARE PRESENT AND PREVI-          SUMT0078
0035 0  B189              CMP   1 BITNO-X   OUS ID                              SUMT0079
0036 0  7013              MDX     A100      ID=INTER.NO.,                       SUMT0080
0037 0  7012              MDX     A100        1ST.EXP.NO.,                      SUMT0081
                    *-------------------------SERIAL NO.,-----------            SUMT0082
0038 0  C203              LD    2 IDEN+1-Y    AUTOM.TYPE,                       SUMT0083
0039 0  B18A              CMP   1 EXNO1-X     SAMPLE CHANG SEQUENCE             SUMT0084
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```
003A 0  700F            MDX     A100                                    SUMT0085
003B 0  700E            MDX     A100                                    SUMT0086
                *-------------------------------------------------------SUMT0087
003C 0  C205            LD    2 IDEN+3-Y                                SUMT0088
003D 0  B18B            CMP   1 SERNO-X                                 SUMT0089
003E 0  700B            MDX     A100                                    SUMT0090
003F 0  700A            MDX     A100                                    SUMT0091
                *-------------------------------------------------------SUMT0092
0040 0  C20C            LD    2 IDEN+10-Y                               SUMT0093
0041 0  B18C            CMP   1 AUTYP-X                                 SUMT0094
0042 0  7007            MDX     A100                                    SUMT0095
0043 0  7006            MDX     A100                                    SUMT0096
                *-------------------------------------------------------SUMT0097
0044 0  C20E            LD    2 IDEN+12-Y                               SUMT0098
0045 0  B18D            CMP   1 SACHA-X                                 SUMT0099
0046 0  7003            MDX     A100                                    SUMT0100
0047 0  7002            MDX     A100          PREPARATION OF NEW EXPER. SUMT0101
0048 01 4C0000F5        BSC   L A114         SKIP PREPARATION OF NEW EX SUMT0102
                *                             PERIMENT                  SUMT0103
                *-------------------------------------------------------SUMT0104
004A 20 024C1552 A100   LIBF    BLANK         CLEAR CONTROL SECTOR      SUMT0105
004B 1  03B9            DC      BITNO                                   SUMT0106
004C 0  0020            DC      32                                      SUMT0107
                *-------------------------------------------------------SUMT0108
004D 0  C202            LD    2 IDEN-Y        STORE PRESENT ID IN CONTR.SUMT0109
004E 0  D189            STO   1 BITNO-X       SECTOR                    SUMT0110
004F 0  C203            LD    2 IDEN+1-Y                                SUMT0111
0050 0  D18A            STO   1 EXNO1-X                                 SUMT0112
0051 0  C205            LD    2 IDEN+3-Y                                SUMT0113
0052 0  D18B            STO   1 SERNO-X                                 SUMT0114
0053 0  C20C            LD    2 IDEN+10-Y                               SUMT0115
0054 0  D18C            STO   1 AUTYP-X                                 SUMT0116
0055 0  C20E            LD    2 IDEN+12-Y                               SUMT0117
0056 0  D18D            STO   1 SACHA-X                                 SUMT0118
                *-------------------------------------------------------SUMT0119
0057 0  C1E6            LD    1 CSTEP-X       STORE SEQU. NO. FOR       SUMT0120
0058 0  D1A8            STO   1 CNO-X         FIRST SAVE OPERATION      SUMT0121
                *-------------------------------------------------------SUMT0122
0059 01 668003BC        LDX   I2 AUTYP                                  SUMT0123
005B 0  63FD    A102    LDX    3 -3           CALCULATE ADDRESSES OF 4  SUMT0124
005C 0  C1D5            LD     1 ADRIN+1-X    AREAS IN INSUM            SUMT0125
005D 0  D1A0            STO    1 ADDI1-X                                SUMT0126
005E 01 86000405 A104   A     L2 ADR4A-1                                SUMT0127
0060 01 D70003D4        STO   L3 ADDI1+4                                SUMT0128
0062 0  7301            MDX    3 1                                      SUMT0129
0063 0  70FA            MDX      A104                                   SUMT0130
0064 00 67800067        LDX   I3 103                                    SUMT0131
                *-------------------------------------------------------SUMT0132
0066 20 024C1552        LIBF    BLANK         STORE 0 IN SCAL1+SPEC1    SUMT0133
0067 0  BD06            DC      SCAL1                                   SUMT0134
0068 0  2030            DC      8240                                    SUMT0135
                *-------------------------------------------------------SUMT0136
0069 30 145A5140        CALL    MOVE          MOVE IDEN TO IDEN1        SUMT0137
006B 0  DFBE            DC      IDEN                                    SUMT0138
006C 0  BCF6            DC      IDEN1                                   SUMT0139
006D 0  0010            DC      16                                      SUMT0140
                *-------------------------------------------------------SUMT0141
006E 0  1010            SLA     16            AUTOM. TYPE OF SUM IS     SUMT0142
006F 00 D400BD00        STO   L IDEN1+10      SET TO 0                  SUMT0143
                *-------------------------------------------------------SUMT0144
0071 00 6780DFCA        LDX   I3 IDEN+12      STORE ADDR.OF INFORM.ABOUT SUMT0145
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0073 01 C7000408          LD    L3 ADRSE-1      SELECTED SAMPLE CHANGER SE SUMT0146
0075 0  D1A6              STO    1 SEADR-X      QUENCE INTO SEADR AND SEA- SUMT0147
0076 0  D1A7              STO    1 SEADR+1-X    DR+1                       SUMT0148
0077 00 67800067          LDX   I3 103                                     SUMT0149
                       *-------------------------------------------------- SUMT0150
0079 01 C6000418       A311 LD    L2 DECT2-1                               SUMT0151
007B 0  D00E              STO       A110+1                                SUMT0152
007C 00 D400BD01          STO   L   IDEN1+11       NO. OF GROUPS OF 4K INTO SUMT0153
                       *                           IDEN1+11               SUMT0154
007E 01 C48003D6          LD    I   SEADR                                  SUMT0155
0080 0  D001              STO       *+1                                    SUMT0156
0081 00 65000000          LDX   L1  *-*            (XR1)=NO.OF RUN TYPES IN SUMT0157
                       *                           SELECTED SAMPLE CHANG.SEQ. SUMT0158
                       *-------------------------------------------------- SUMT0159
0083 01 740103D6       A113 MDX   L   SEADR,+1                             SUMT0160
0085 01 C48003D6          LD    I   SEADR                                  SUMT0161
0087 00 D400BCF8          STO   L   IDEN1+2        STORE NO. RUN TYPE       SUMT0162
0089 00 66000000       A110 LDX   L2  *-*          (XR2)=NO.OF GROUPS OF 4K SUMT0163
008B 0  1010              SLA       16                                     SUMT0164
008C 00 D400BCFA          STO   L   IDEN1+4        GROUP NO.OF 4K =0        SUMT0165
008E 00 7401BCFA       A112 MDX   L   IDEN1+4,+1                           SUMT0166
0090 00 C400BCFA          LD    L   IDEN1+4        STORE NO. OF             SUMT0167
0092 01 9400043D          S     L   ONE            1ST. BLOCK INTO          SUMT0168
0094 0  1004              SLA       4              IDEN1+6                  SUMT0169
0095 01 8400043D          A     L   ONE                                     SUMT0170
0097 00 D400BCFC          STO   L   IDEN1+6                                 SUMT0171
                       *-------------------------------------------------- SUMT0172
0099 30 14109892          CALL      MDISK          STORE SPECTRUM WITH ALL  SUMT0173
009B 0  BCF6              DC        IDEN1          CHANNELS=0 ON DISK       SUMT0174
009C 1  041E              DC        ERIN                                    SUMT0175
009D 0  DD36              DC        BUFFR                                   SUMT0176
009E 1  0423              DC        FREE                                    SUMT0177
                       *-------------------------------------------------- SUMT0178
009F 01 7400041E          MDX   L   ERIN,0                                  SUMT0179
00A1 0  703A              MDX       A111           ERROR EXIT               SUMT0180
00A2 0  72FF              MDX    2  -1             NO ERROR                 SUMT0181
00A3 0  70EA              MDX       A112                                    SUMT0182
00A4 0  71FF              MDX    1  -1                                      SUMT0183
00A5 0  70DD              MDX       A113                                    SUMT0184
                       *-------------------------------------------------- SUMT0185
00A6 01 65000430          LDX   L1  X                                       SUMT0186
00A8 00 6600DFBC          LDX   L2  Y                                       SUMT0187
                       *-------------------------------------------------- SUMT0188
00AA 01 74000450          MDX   L   SKIP2,0                                 SUMT0189
00AC 0  7009              MDX       A310                                    SUMT0190
                       *-------------------------------------------------- SUMT0191
00AD 00 7432BCF9          MDX   L   IDEN1+3,50     ADD 50 TO SERIAL NO.     SUMT0192
                       *                           FOR SPECTRA IN SAVE AREA SUMT0193
                       *-------------------------------------------------- SUMT0194
00AF 0  C1A7              LD     1  SEADR+1-X                               SUMT0195
00B0 0  D1A6              STO    1  SEADR-X                                 SUMT0196
                       *-------------------------------------------------- SUMT0197
00B1 01 668003BC          LDX   I2  AUTYP                                   SUMT0198
00B3 01 74010450          MDX   L   SKIP2,1                                 SUMT0199
00B5 0  70C3              MDX       A311                                    SUMT0200
                       *-------------------------------------------------- SUMT0201
00B6 20 024C1552       A310 LIBF    BLANK          RESET SIND,TOTC,SCI (=13 SUMT0202
00B7 1  03BE              DC        SIND1          WORDS)                   SUMT0203
00B8 0  000D              DC        13                                      SUMT0204
                       *-------------------------------------------------- SUMT0205
```

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00BA 0  8189          A     1 BITNO-X     ALPHAMERIC*                    SUMTO207
00BB 0  D1B3          STO   1 AREA3+2-X                                  SUMTO208
*-------------------------------------------------------------------     SUMTO209
00BC 01 440003AA      BSI   L A400        COMMAND *PRINT ALPHAMERIC*     SUMTO210
*-------------------------------------------------------------------     SUMTO211
00BE 01 44000479      BSI   L CONV3       PREPARE MESSAGE*START OF       SUMTO212
00C0 1  03DA          DC    LIRAS         EXPERIMENT*                    SUMTO213
00C1 1  064F          DC    TM571         0/0 VALUE                      SUMTO214
00C2 1  076F          DC    AM191                                        SUMTO215
*-------------------------------------------------------------------     SUMTO216
00C3 01 44000479      BSI   L CONV3                                      SUMTO217
00C5 1  03D9          DC    TWENT         NO.OF SEQUENCES                SUMTO218
00C6 1  0656          DC    TM572                                        SUMTO219
00C7 1  0779          DC    AM192                                        SUMTO220
*-------------------------------------------------------------------     SUMTO221
00C8 0  1010          SLA   16            SUPPRESS FIRST TWO DIGITS      SUMTO222
00C9 01 D400076F      STO   L AM191       OF 0/0 VALUE IN INTERFACE      SUMTO223
00CB 01 D4000770      STO   L AM191+1     MESSAGE                        SUMTO224
*-------------------------------------------------------------------     SUMTO225
00CD 0  C1DE          LD    1 BLANK-X     SUPPRESS FIRST TWO DIGITS      SUMTO226
00CE 01 D400064F      STO   L TM571       OF 0/0 VALUE IN TYPEWRITER     SUMTO227
*                                         MESSAGE                        SUMTO228
*-------------------------------------------------------------------     SUMTO229
00D0 20 23A17155 A107 LIBF    TYPEN       MESSAGE *START OF EXPERI-      SUMTO230
00D1 0  2001          DC      /2001       MENT* ON 1053                  SUMTO231
00D2 1  0643          DC      TM57-1                                     SUMTO232
00D3 0  0000          DC      0                                          SUMTO233
*-------------------------------------------------------------------     SUMTO234
00D4 20 040565C0      LIBF    DAOP        MESSAGE *START OF EXPERIM.*    SUMTO235
00D5 0  1310          DC      /1310       ON INTERFACE TYPEWRITER        SUMTO236
00D6 1  0757          DC      AM19                                       SUMTO237
00D7 0  0000          DC      0                                          SUMTO238
*-------------------------------------------------------------------     SUMTO239
00D8 30 19162163      CALL    RESET       RESET DAOP                     SUMTO240
00DA 1  040D          DC      BITYP                                      SUMTO241
00DB 1  00F5          DC      A114        GO TO A114                     SUMTO242
*-------------------------------------------------------------------     SUMTO243
00DC 20 024C1552 A111 LIBF    BLANK       RESET ID IN CONTROL SECTOR     SUMTO244
00DD 1  03BA          DC      EXNO1       TO ZERO                        SUMTO245
00DE 0  0004          DC      4                                          SUMTO246
*-------------------------------------------------------------------     SUMTO247
00DF 01 65000430      LDX   L1 X                                         SUMTO248
*-------------------------------------------------------------------     SUMTO249
00E1 0  C1EE          LD    1 ERIN-X                                     SUMTO250
00E2 0  B1F1          CMP   1 FIVE-X                                     SUMTO251
00E3 0  7009          MDX     A347        GREATER 5                      SUMTO252
00E4 0  7008          MDX     A347        SMALLER 5                      SUMTO253
00E5 0  C1C7          LD    1 ADAPR-X     PREPARE ERROR MESSAGE          SUMTO254
00E6 01 D4000370      STO   L A18         *SAME ID ALREADY USED*         SUMTO255
00E8 0  C1B7          LD    1 ADTYP-X                                    SUMTO256
00E9 01 D400036C      STO   L A17                                        SUMTO257
00EB 01 4C00031D      BSC   L A42         ERROR EXIT                     SUMTO258
00ED 0  C1BF      A347 LD    1 ADTYP+8-X  PREPARE ERROR MESSAGE*NO       SUMTO259
00EE 01 D400036C      STO   L A17         DISK STORAGE FOR SUMS*         SUMTO260
00F0 0  C1CC          LD    1 ADAPR+5-X                                  SUMTO261
00F1 01 D4000370      STO   L A18                                        SUMTO262
*-------------------------------------------------------------------     SUMTO263
00F3 01 4C00031D      BSC   L A42         INTER. EXIT                    SUMTO264
*-------------------------------------------------------------------     SUMTO265
00F5 20 04262495 A114 LIBF    DISKN       STORE CONTROL SECTOR CONSC     SUMTO266
00F6 0  3000          DC      /3000       ON DISK                        SUMTO267
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00F7 1  03B7          DC      COSEC                                    SUMT0268
00F8 0  0000          DC      0                                        SUMT0269
                *-------------------------------------------------     SUMT0270
00F9 20 04262495      LIBF    DISKN       TEST IF CONSC IS STORED      SUMT0271
00FA 0  0100          DC      /0100                                    SUMT0272
00FB 1  03B7          DC      COSEC                                    SUMT0273
00FC 0  70FC          MDX     *-4                                      SUMT0274
                *-------------------------------------------------     SUMT0275
00FD 01 440004A3      BSI  L  SEQU                                     SUMT0276
00FF 0  7001          MDX     *+1                                      SUMT0277
0100 0  7002          MDX     A108        INTERMEDIATE WORK            SUMT0278
0101 01 4C000198      BSC  L  A129        NEW SEQUENCE                 SUMT0279
                *-------------------------------------------------     SUMT0280
0103 01 678003BC A108 LDX  I3 AUTYP       INTERMEDIATE WORK            SUMT0281
0105 01 C7000453      LD   L3 STIW-1                                   SUMT0282
0107 0  D003          STO     *+3                                      SUMT0283
                *-------------------------------------------------     SUMT0284
0108 00 67800067      LDX  I3 103                                      SUMT0285
                *-------------------------------------------------     SUMT0286
010A 00 4C000000      BSC  L  *-*         4K OR 8K PROGRAM             SUMT0287
                *-------------------------------------------------     SUMT0288
010C 30 041430A8 A115 CALL    DECBY       BCD-BIN.CONVERSION FOR 4K    SUMT0289
010E 0  DFFE          DC      SPEC                                     SUMT0290
010F 0  1000          DC      4096                                     SUMT0291
                *-------------------------------------------------     SUMT0292
0110 00 6700E000      LDX  L3 -8192       CALCULATION OF TOTAL COUNT   SUMT0293
0112 0  10A0          SLT     32                                       SUMT0294
0113 00 8F00FFFE      AD   L3 SPEC+8192                                SUMT0295
0115 0  7302          MDX  3  +2                                       SUMT0296
0116 0  70FC          MDX     *-4                                      SUMT0297
0117 01 DC000452      STD  L  SUM                                      SUMT0298
                *-------------------------------------------------     SUMT0299
0119 00 67800067      LDX  I3 103                                      SUMT0300
                *-------------------------------------------------     SUMT0301
011B 01 4400056C      BSI  L  TOTAL       CHECK TOTAL COUNT            SUMT0302
                *-------------------------------------------------     SUMT0303
011D 00 6780DFC0 A125 LDX  I3 IDEN+2                                   SUMT0304
011F 01 C70003D0      LD   L3 ADDI1       SECTOR ADDR.INTO TABLE+1     SUMT0305
0121 0  D201          STO  2  TABLE+1-Y   AND TABL1+1                  SUMT0306
0122 00 D400BCF5      STO  L  TABL1+1                                  SUMT0307
                *-------------------------------------------------     SUMT0308
0124 0  C1D8          LD   1  A8256-X     WORD COUNT INTO TABEL AND    SUMT0309
0125 0  D200          STO  2  TABLE-Y     TABL1                        SUMT0310
0126 00 D400BCF4      STO  L  TABL1                                    SUMT0311
                *-------------------------------------------------     SUMT0312
0128 01 C70003BE      LD   L3 SIND1                                    SUMT0313
012A 0  4820          BSC     Z                                        SUMT0314
012B 0  700A          MDX     A119        ADD 4K SPECTRUM TO INSUM     SUMT0315
                *-------------------------------------------------     SUMT0316
012C 0  C1DD          LD   1  ONE-X       STORE 4K SPECTR. INTO INSUM  SUMT0317
012D 01 D70003BE      STO  L3 SIND1                                    SUMT0318
                *-------------------------------------------------     SUMT0319
012F 00 67800067      LDX  I3 103                                      SUMT0320
                *-------------------------------------------------     SUMT0321
0131 20 04262495      LIBF    DISKN       STORE 4K SPECTRUM IN INSUM   SUMT0322
0132 0  3000          DC      /3000                                    SUMT0323
0133 0  DFBC    A127  DC      TABLE       =TABL1 FOR 8K                SUMT0324
0134 0  0000          DC      0                                        SUMT0325
0135 0  7021          MDX     A120        INTER.EXIT                   SUMT0326
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0138 20 04262495          LIBF    DISKN       ADD 4K SPECTRUM TO INSUM    SUMT0329
0139 0  1000              DC      /1000       READ INSUM INTO TABL1       SUMT0330
013A 0  BCF4        A130  DC      TABL1       =TABLE FOR 8K               SUMT0331
013B 0  0000              DC      0                                       SUMT0332
                    *-------------------------------------------------- SUMT0333
013C 20 04262495    A121  LIBF    DISKN       TEST IF TABL1 IS FILLED UP  SUMT0334
013D 0  0100              DC      /0100                                   SUMT0335
013E 0  BCF4              DC      TABL1                                   SUMT0336
013F 0  70FC              MDX     A121                                    SUMT0337
                    *-------------------------------------------------- SUMT0338
0140 0  62D0              LDX     2 -48                                   SUMT0339
0141 00 CE00DFFE    A330  LDD     L2 SCAL+48  SUM OF SCAL AND SCAL1       SUMT0340
0143 00 8E00BD36          AD      L2 SCAL1+48 INTO SCAL1                  SUMT0341
0145 00 DE00BD36          STD     L2 SCAL1+48                             SUMT0342
0147 0  7202              MDX     2 2                                     SUMT0343
0148 0  70F8              MDX     A330                                    SUMT0344
                    *-------------------------------------------------- SUMT0345
0149 00 6600E000          LDX     L2 -8192                                SUMT0346
014B 00 CE00FFFE    A122  LDD     L2 SPEC+8192  SUM OF SPEC AND SPEC1 INTU SUMT0347
014D 00 8E00DD36          AD      L2 SPEC1+8192 SPEC1                     SUMT0348
014F 00 DE00DD36          STD     L2 SPEC1+8192                           SUMT0349
0151 0  7202        A131  MDX     2 +2        =MDX    1 +1 FOR 8K         SUMT0350
0152 0  70F8              MDX     A122                                    SUMT0351
                    *-------------------------------------------------- SUMT0352
0153 20 04262495    A128  LIBF    DISKN       WRITE SPEC1 INTO INSUM      SUMT0353
0154 0  3000              DC      /3000                                   SUMT0354
0155 0  BCF4              DC      TABL1                                   SUMT0355
0156 0  0000              DC      0                                       SUMT0356
                    *-------------------------------------------------- SUMT0357
0157 01 7401044E    A120  MDX   L SKIP,+1     SKIP ERROR MESSAGES         SUMT0358
0159 01 4C00031D          BSC   L A42          INTER. EXIT                 SUMT0359
                    *-------------------------------------------------- SUMT0360
015B 30 04142A38    A116  CALL    DEBY8       BCD-BIN.CONVERSION FOR 8K,  SUMT0361
015D 0  DFFE              DC      SPEC        CONVERTED WORD IS AT PLACE  SUMT0362
015E 0  2000              DC      8192        OF BCD WORD                 SUMT0363
                    *-------------------------------------------------- SUMT0364
015F 00 6500E000          LDX     L1 -8192    STORE 8K CHANNELS IN ORDER  SUMT0365
0161 0  6200              LDX     2 0         OF ASCENDING CHANNEL NUM-   SUMT0366
0162 00 C500FFFE    A123  LD      L1 SPEC+8192 BERS INTO SPEC1            SUMT0367
0164 00 D600CD36          STO     L2 SPEC1+4096                           SUMT0368
0166 0  7201              MDX     2 +1                                    SUMT0369
0167 0  7102              MDX     1 +2                                    SUMT0370
0168 0  70F9              MDX     A123                                    SUMT0371
0169 00 6500E000          LDX     L1 -8192                                SUMT0372
016B 0  6200              LDX     2 0                                     SUMT0373
016C 00 C500FFFF    A124  LD      L1 SPEC+8193                            SUMT0374
016E 00 D600BD36          STO     L2 SPEC1                                SUMT0375
0170 0  7201              MDX     2 +1                                    SUMT0376
0171 0  7102              MDX     1 +2                                    SUMT0377
0172 0  70F9              MDX     A124                                    SUMT0378
                    *-------------------------------------------------- SUMT0379
0173 30 145A5140          CALL    MOVE                                    SUMT0380
0175 0  DFBE              DC      IDEN                                    SUMT0381
0176 0  BCF6              DC      IDEN1                                   SUMT0382
0177 0  0040              DC      64                                      SUMT0383
                    *-------------------------------------------------- SUMT0384
0178 30 229148C0          CALL    SUMT        CALCULATE TOTAL COUNT       SUMT0385
017A 1  0452              DC      SUM                                     SUMT0386
017B 0  BD36              DC      SPEC1                                   SUMT0387
017C 1  0418              DC      DECT1+1                                 SUMT0388
                    *-------------------------------------------------- SUMT0389
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017D 01 4400056C        BSI  L  TOTAL       CHECK TOTAL COUNT          SUMT0390
                *-------------------------------------------------     SUMT0391
017F 0  C012            LD      A126        CHANGE 4K PROGRAM TO BE    SUMT0392
0180 0  D0B2            STO     A127        USED AS 8K PROGRAM         SUMT0393
0181 0  C011            LD      A126+1                                 SUMT0394
0182 0  D0B7            STO     A130                                   SUMT0395
0183 0  6200            LDX   2 0                                      SUMT0396
0184 0  63FC            LDX   3 -4                                     SUMT0397
0185 01 C7000198        LD    L3 A126+6                                SUMT0398
0187 01 D6000148        STO   L2 A122                                  SUMT0399
0189 0  7202            MDX   2 2                                      SUMT0400
018A 0  7301            MDX   3 1                                      SUMT0401
018B 0  70F9            MDX     *-7                                    SUMT0402
018C 01 65000430        LDX   L1 X                                     SUMT0403
018E 00 6600DFBC        LDX   L2 Y                                     SUMT0404
0190 01 4C00011D        BSC   L  A125                                  SUMT0405
                *-------------------------------------------------     SUMT0406
0192 0  BCF4    A126    DC      TABL1       USED TO CHANGE 4K PROGRAM  SUMT0407
0193 0  DFBC            DC      TABLE       TO 8K PROGRAM              SUMT0408
0194 0  C600            DC      /C600       LD  L2                     SUMT0409
0195 0  8600            DC      /8600       A   L2                     SUMT0410
0196 0  D600            DC      /D600       STO L2                     SUMT0411
0197 0  7201            MDX   2 1                                      SUMT0412
                *-------------------------------------------------     SUMT0413
0198 01 740103CE A129   MDX   L  C,+1       SEQUENCE COUNTER INCR.BY 1 SUMT0414
                *-------------------------------------------------     SUMT0415
019A 01 65000430        LDX   L1 X                                     SUMT0416
019C 00 67800067        LDX   I3 103                                   SUMT0417
                *-------------------------------------------------     SUMT0418
019E 0  C1D8            LD    1  A8256-X                               SUMT0419
019F 00 D400DFBC        STO   L  TABLE                                 SUMT0420
01A1 0  C11D            LD    1  SASPC+1-X                             SUMT0421
01A2 00 D400DFBD        STO   L  TABLE+1                               SUMT0422
                *-------------------------------------------------     SUMT0423
01A4 20 04262495        LIBF    DISKN       STORE SPECTRUM INTO SAVE   SUMT0424
01A5 0  3000            DC      /3000                                  SUMT0425
01A6 0  DFBC            DC      TABLE                                  SUMT0426
01A7 0  0000            DC      0                                      SUMT0427
                *-------------------------------------------------     SUMT0420
01A8 30 141938C0        CALL    MFLT        CONVERT IN-TOT.COUNT AND   SUMT0429
01AA 1  03C2            DC      TOTC1       OUT-TOT.COUNT TO STANDARD  SUMT0430
01AB 1  0465            DC      TWO         PRECIS.FLOAT.POINT         SUMT0431
                *-------------------------------------------------     SUMT0432
01AC 0  C1AA            LD    1 LIRAS-X     CONVERT O/O VALUE FOR      SUMT0433
01AD 0  D1FF            STO   1 LIRAT+1-X   RATIO OF IN/OUT MEANVALUES SUMT0434
01AE 30 141938C0        CALL    MFLT        TO STANDARD PRECISION      SUMT0435
01B0 1  042E            DC      LIRAT       FLOATING POINT             SUMT0436
01B1 1  043D            DC      ONE                                    SUMT0437
                *-------------------------------------------------     SUMT0438
01B2 20 064C4000        LIBF    FLD                                    SUMT0439
01B3 1  042E            DC      LIRAT                                  SUMT0440
                *-------------------------------------------------     SUMT0441
01B4 20 06109940        LIBF    FDIV                                   SUMT0442
01B5 1  042A            DC      HUNDR                                  SUMT0443
                *-------------------------------------------------     SUMT0444
01B6 20 068A3580        LIBF    FSTO        DIVISION OF LIRAT          SUMT0445
01B7 1  042E            DC      LIRAT       BY 100                     SUMT0446
                *-------------------------------------------------     SUMT0447
01B8 0  C19E            LD    1 C-X                                    SUMT0448
01B9 0  1890            SRT     16                                     SUMT0449
01BA 0  D9E4            STD   1 CFLOA-X                                SUMT0450
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                                *-------------------------------------------------- SUMT0451
01BB 30 141938C0                CALL    MFLT        CONVERT C TO STANDARD PRE-  SUMT0452
01BD 1  0414                    DC      CFLOA       CISION FLOATING POINT       SUMT0453
01BE 1  043D                    DC      ONE                                     SUMT0454
                                *-------------------------------------------------- SUMT0455
01BF 20 064C4000                LIBF    FLD                                     SUMT0456
01C0 1  03C2                    DC      TOTC1                                   SUMT0457
                                *-------------------------------------------------- SUMT0458
01C1 20 06109940                LIBF    FDIV                                    SUMT0459
01C2 1  03C4                    DC      TOTC1+2                                 SUMT0460
                                *-------------------------------------------------- SUMT0461
01C3 20 068A3580                LIBF    FSTO                                    SUMT0462
01C4 1  0446                    DC      RATIO       RATIO IN/OUT THIS RUN       SUMT0463
                                *-------------------------------------------------- SUMT0464
01C5 20 06044100                LIBF    FADD                                    SUMT0465
01C6 1  03CC                    DC      INOUT                                   SUMT0466
                                *-------------------------------------------------- SUMT0467
01C7 20 068A3580                LIBF    FSTO                                    SUMT0468
01C8 1  03CC                    DC      INOUT       SUM OF RATIOS IN/OUT        SUMT0469
                                *-------------------------------------------------- SUMT0470
01C9 20 06109940                LIBF    FDIV                                    SUMT0471
01CA 1  0414                    DC      CFLOA                                   SUMT0472
                                *-------------------------------------------------- SUMT0473
01CB 20 068A3580                LIBF    FSTO                                    SUMT0474
01CC 1  0414                    DC      CFLOA       MEAN VAL.OF RATIO IN/OUT    SUMT0475
                                *-------------------------------------------------- SUMT0476
01CD 01 C40003CE                LD   L  C                                       SUMT0477
01CF 0  B1A9                    CMP    1 TWENT-X                                SUMT0478
01D0 0  7002                    MDX     A136        C GREATER PRESET NUMBER     SUMT0479
01D1 0  703C                    MDX     A135        C SMALLER PRESET NUMBER     SUMT0480
01D2 0  703B                    MDX     A135        C   EQUAL PRESET NUMBER     SUMT0481
                                *-------------------------------------------------- SUMT0482
01D3 20 064C4000        A136    LIBF    FLD                                     SUMT0483
01D4 1  0446                    DC      RATIO                                   SUMT0484
                                *-------------------------------------------------- SUMT0485
01D5 20 068A4080                LIBF    FSUB                                    SUMT0486
01D6 1  0414                    DC      CFLOA       MEAN VALUE                  SUMT0487
                                *-------------------------------------------------- SUMT0488
01D7 20 068A3580                LIBF    FSTO                                    SUMT0489
01D8 1  041C                    DC      DIFFR       RATIO- MEAN VALUE           SUMT0490
                                *-------------------------------------------------- SUMT0491
01D9 0  C9EC                    LDD    1 DIFFR-X                                SUMT0492
01DA 0  4810                    BSC     -                                       SUMT0493
01DB 0  7002                    MDX     A132                                    SUMT0494
                                *-------------------------------------------------- SUMT0495
01DC 20 06517A00                LIBF    FMPY        POS.(RATIO-M.VALUE)IN FAC   SUMT0496
01DD 1  0428                    DC      FLMIN                                   SUMT0497
                                *-------------------------------------------------- SUMT0498
01DE 20 06109940        A132    LIBF    FDIV                                    SUMT0499
01DF 1  0414                    DC      CFLOA       RATIO-M.VALUE/MEAN VALUE    SUMT0500
                                *-------------------------------------------------- SUMT0501
01E0 20 068A4080                LIBF    FSUB                                    SUMT0502
01E1 1  042E                    DC      LIRAT       TOL.DIFF. RATIO-MEAN VALUE  SUMT0503
                                *-------------------------------------------------- SUMT0504
01E2 20 068A3580                LIBF    FSTO                                    SUMT0505
01E3 1  0414                    DC      CFLOA                                   SUMT0506
                                *-------------------------------------------------- SUMT0507
01E4 0  C9E4                    LDD    1 CFLOA-X                                SUMT0508
01E5 0  4810                    BSC     -                                       SUMT0509
01E6 0  7001                    MDX     A133                                    SUMT0510
01E7 0  7026                    MDX     A135        ADD INSUM TO ON-LINE DISK   SUMT0511
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                                *-------------------------------------------------- SUMT0512
01E8 20 064C4000    A133  LIBF    FLD       SUBTRACT RATIO IN/OUT FROM SUMT0513
01E9 1  03CC              DC      INOUT     SUM OF RATIOS IN/OUT       SUMT0514
                                *-------------------------------------------------- SUMT0515
01EA 20 068A4080          LIBF    FSUB                                 SUMT0516
01EB 1  0446              DC      RATIO                                SUMT0517
                                *-------------------------------------------------- SUMT0518
01EC 20 068A3580          LIBF    FSTO                                 SUMT0519
01ED 1  03CC              DC      INOUT     END OF SUBTRACTION         SUMT0520
                                *-------------------------------------------------- SUMT0521
01EE 01 74FF03CE          MDX  I  C,-1                                 SUMT0522
01F0 0  7000              MDX     *                                    SUMT0523
                                *-------------------------------------------------- SUMT0524
01F1 01 740103CF          MDX  L  SS,+1     INCREASE COUNTER FOR SUP-  SUMT0525
                                *           PRESSED SEQUENCES BY 1     SUMT0526
                                *-------------------------------------------------- SUMT0527
01F3 01 44000479          BSI  L  CONV3     PREPARE ERROR MESSAGE FOR  SUMT0528
01F5 1  03CF              DC      SS        INCORR. IN/OUT-RATIO       SUMT0529
01F6 1  0691              DC      TM611                                SUMT0530
01F7 1  07D3              DC      AM211     CONVERSION OF SS,SUPPR.SE. SUMT0531
                                *-------------------------------------------------- SUMT0532
01F8 01 44000479          BSI  L  CONV3                                SUMT0533
01FA 1  03CE              DC      C                                    SUMT0534
01FB 1  06A2              DC      TM612                                SUMT0535
01FC 1  07F3              DC      AM212     CONVERSION OF  C,SEQU.NO.  SUMT0536
                                *-------------------------------------------------- SUMT0537
01FD 20 23A17155          LIBF    TYPEN     ERROR MESSAGE ON 1053      SUMT0538
01FE 0  2001              DC      /2001                                SUMT0539
01FF 1  0669              DC      TM61-1                               SUMT0540
0200 0  0000              DC      0                                    SUMT0541
                                *-------------------------------------------------- SUMT0542
0201 0  C1DF              LD    1 B1-X      PREPARE COMMAND B1 *PRINT  SUMT0543
0202 0  8189              A     1 BITNO-X   ALPHAMERIC*                SUMT0544
0203 0  D1B3              STO   1 AREA3+2-X                            SUMT0545
                                *-------------------------------------------------- SUMT0546
0204 01 440003AA          BSI  L  A400      COMMAND *PRINT ALPHAMERIC* SUMT0547
                                *-------------------------------------------------- SUMT0548
0206 20 040565C0          LIBF    DAOP      MESSAGE *INCORRECT IN/OUT- SUMT0549
0207 0  1310              DC      /1310     RATIO* ON INTERFACE TYPE-  SUMT0550
0208 1  079E              DC      AM21      WRITER                     SUMT0551
0209 0  0000              DC      0                                    SUMT0552
                                *-------------------------------------------------- SUMT0553
020A 30 19162163          CALL    RESET     RESET DAOP                 SUMT0554
020C 1  040D              DC      BITYP                                SUMT0555
020D 1  0267              DC      A300      GO TO A300                 SUMT0556
                                *-------------------------------------------------- SUMT0557
020E 0  C1A7        A135  LD    1 SEADR+1-X ADD INSUM TO DISK SPECTR.  SUMT0558
020F 0  D1A6              STO   1 SEADR-X                              SUMT0559
0210 01 C48003D6          LD    I SEADR                                SUMT0560
0212 0  D001              STO     *+1                                  SUMT0561
0213 00 66000000          LDX   L2 *-*      NO.OF RUN TYPES INTO XR2   SUMT0562
                                *-------------------------------------------------- SUMT0563
0215 0  C1D8              LD    1 A8256-X                              SUMT0564
0216 00 D400DFBC          STO   L TABLE                                SUMT0565
                                *-------------------------------------------------- SUMT0566
0218 01 C60003CF    A175  LD    L2 ADDI1-1                             SUMT0567
021A 00 D400DFBD          STO   L TABLE+1                              SUMT0568
021C 01 65000430          LDX   L1 X                                   SUMT0569
                                *-------------------------------------------------- SUMT0570
021E 20 04262495          LIBF    DISKN     INSUM SPECTRUM INTO SPEC   SUMT0571
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0220 0  DFBC            DC      TABLE       IN SEQUENCE)                SUMT0573
0221 0  0000            DC      0                                       SUMT0574
                *-------------------------------------------------      SUMT0575
0222 20 04262495 A140   LIBF    DISKN       TEST IF SPEC IS FILLED UP   SUMT0576
0223 0  0100            DC      /0100                                   SUMT0577
0224 0  DFBC            DC      TABLE                                   SUMT0578
0225 0  70FC            MDX     A140                                    SUMT0579
                *-------------------------------------------------      SUMT0580
0226 01 C40003BC        LD    L AUTYP                                   SUMT0581
0228 0  B135            CMP   1 TWO-X                                   SUMT0582
0229 0  7001            MDX     *+1         8K                          SUMT0583
022A 0  7005            MDX     A193        4K                          SUMT0584
022B 0  C135            LD    1 TWO-X       8K                          SUMT0585
022C 0  D005            STO     A186                                    SUMT0586
022D 0  C006            LD      A186+2                                  SUMT0587
022E 0  D01D            STO     A192+1                                  SUMT0588
022F 0  7005            MDX     A194                                    SUMT0589
0230 0  C002    A193    LD      A186+1                                  SUMT0590
0231 0  70FC            MDX     *-4                                     SUMT0591
                *-------------------------------------------------*     SUMT0592
0232 0  0000    A186    DC      *-*         IND.FOR GROUP 1 OR 2 , 8K   SUMT0593
0233 1  024D            DC      A190        4K PROGRAM PART             SUMT0594
0234 1  02B9            DC      A191        8K PROGRAM PART             SUMT0595
                *-------------------------------------------------*     SUMT0596
0235 30 04262494 A194   CALL    DISKM       READ SUM FROM ON-LINE DISK  SUMT0597
0237 0  BCF6            DC      IDEN1       INTO SPEC1                  SUMT0598
0238 1  041E            DC      ERIN                                    SUMT0599
0239 0  DD36            DC      BUFFR                                   SUMT0600
023A 0  DFBE            DC      IDEN                                    SUMT0601
023B 1  043D            DC      ONE         SPECTRUM DELETED            SUMT0602
                *-------------------------------------------------      SUMT0603
023C 01 7400041E        MDX   L ERIN,0                                  SUMT0604
023E 0  7001            MDX     A900        SPECTRUM NOT FOUND          SUMT0605
023F 0  700B            MDX     A192                                    SUMT0606
                *-------------------------------------------------      SUMT0607
0240 20 024C1552 A900   LIBF    BLANK       DELETE ID IN CONTROL SECT.  SUMT0608
0241 1  03BA            DC      EXN01                                   SUMT0609
0242 0  0005            DC      5                                       SUMT0610
                *-------------------------------------------------      SUMT0611
0243 0  C1C6            LD    1 ADTYP+15-X  MESSAGE *RESTART*           SUMT0612
0244 01 D400036C        STO   L A17                                     SUMT0613
0246 0  C1D2            LD    1 ADAPR+11-X                              SUMT0614
0247 01 D4000370        STO   L A18                                     SUMT0615
0249 01 4C00031D        BSC   L A42                                     SUMT0616
                *-------------------------------------------------      SUMT0617
024B 00 4C000000 A192   BSC   L *-*                                     SUMT0618
024D 00 6500DFD0 A190   LDX   L1 -8240                                  SUMT0619
024F 00 CD00FFFE A142   LDD   L1 SCAL+8240  SPEC + SPEC1 = SPEC1 AND    SUMT0620
0251 00 8D00DD36        AD    L1 SCAL1+8240 SCAL+SCAL1=SCAL1            SUMT0621
0253 00 DD00DD36        STD   L1 SCAL1+8240                             SUMT0622
0255 0  7102            MDX   1 +2                                      SUMT0623
0256 0  70F8            MDX     A142                                    SUMT0624
                *-------------------------------------------------      SUMT0625
0257 30 14109892        CALL    MDISK       STORE FINAL SUM ON DISK     SUMT0626
0259 0  BCF6            DC      IDEN1                                   SUMT0627
025A 1  041E            DC      ERIN                                    SUMT0628
025B 0  DD36            DC      BUFFR                                   SUMT0629
025C 1  0423            DC      FREE                                    SUMT0630
                *-------------------------------------------------      SUMT0631
025D 01 7400041E        MDX   L ERIN,0       TEST ERROR INDICATOR      SUMT0632
025F 0  7001            MDX     A901        ERROR EXIT,NO MORE STORAGE  SUMT0633
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0260 0  7002          MDX     A902                                    SUMT0634
0261 01 4C0002F6 A901 BSC  L  A161                                    SUMT0635
0263 01 65000430 A902 LDX  L1 X                                       SUMT0636
0265 0  72FF     A188 MDX   2 -1                                      SUMT0637
0266 0  70B1          MDX     A175      NEXT RUN TYPE OF SEQUENCE     SUMT0638
*-------------------------------------------------------------------- SUMT0639
0267 20 024C1552 A300 LIBF    BLANK     RESET SIND AND TOTC           SUMT0640
0268 1  03BE          DC      SIND1                                   SUMT0641
0269 0  000C          DC      12                                      SUMT0642
*-------------------------------------------------------------------- SUMT0643
026A 01 65000430      LDX  L1 X                                       SUMT0644
026C 0  C19E          LD   1  C-X       CHECK IF SUMS HAVE TO BE      SUMT0645
026D 0  B1A8          CMP  1  CNO-X     STORED IN SAVE AREA           SUMT0646
026E 0  702E          MDX     A314      NO SAVE OPERATION             SUMT0647
026F 0  702D          MDX     A314      NO SAVE OPERATION             SUMT0648
*-------------------------------------------------------------------- SUMT0649
0270 0  1010          SLA     16        0  INTO IDEN1+2 (RUN TYPE)    SUMT0650
0271 00 D400BCF8      STO  L  IDEN1+2                                 SUMT0651
*-------------------------------------------------------------------- SUMT0652
0273 0  C1A7          LD   1  SEADR+1-X                               SUMT0653
0274 0  D001          STO     *+1                                     SUMT0654
0275 00 66800000      LDX  I2 *-*       NO.OF RUN TYPES INTO XR2      SUMT0655
0277 0  7002          MDX     A362                                    SUMT0656
*-------------------------------------------------------------------- SUMT0657
0278 00 7401BCF8 A360 MDX  L  IDEN1+2,1 SAVE SUMS                     SUMT0658
027A 01 440005A7 A362 BSI  L  SAVE                                    SUMT0659
027C 01 7400041F      MDX  L  ERIN1,0                                 SUMT0660
027E 0  7001          MDX     A320                                    SUMT0661
027F 0  7002          MDX     A361                                    SUMT0662
0280 01 4C00030A A320 BSC  L  A321      NO MORE STOR.TO SAVE SUMS     SUMT0663
0282 0  72FF     A361 MDX   2 -1                                      SUMT0664
0283 0  70F4          MDX     A360                                    SUMT0665
*-------------------------------------------------------------------- SUMT0666
0284 01 7400044B      MDX  L  SAIN,0                                  SUMT0667
0286 0  7001          MDX     A313                                    SUMT0668
0287 0  7015          MDX     A314                                    SUMT0669
*-------------------------------------------------------------------- SUMT0670
0288 0  C1DF     A313 LD   1  B1-X       PREPARE COMMAND*PRINT         SUMT0671
0289 0  8189          A    1  BITNO-X    ALPHAMERIC*                   SUMT0672
028A 0  D1B3          STO  1  AREA3+2-X                               SUMT0673
*-------------------------------------------------------------------- SUMT0674
028B 01 44000479      BSI  L  CONV3     CONVERSION OF SEQ.NO.         SUMT0675
028D 1  03CE          DC      C                                       SUMT0676
028E 1  06A2          DC      TM612     NOT USED                      SUMT0677
028F 1  088D          DC      AM281                                   SUMT0678
*-------------------------------------------------------------------- SUMT0679
0290 01 440003AA      BSI  L  A400      COMMAND *PRINT ALPHAMERIC*    SUMT0680
*-------------------------------------------------------------------- SUMT0681
0292 20 040565C0      LIBF    DAOP      MESSAGE * NO.OF CORR.SEQ.*    SUMT0682
0293 0  1310          DC      /1310                                   SUMT0683
0294 1  088B          DC      AM28                                    SUMT0684
0295 0  0000          DC      0                                       SUMT0685
*-------------------------------------------------------------------- SUMT0686
0296 30 19162163      CALL    RESET     RESET DAOP                    SUMT0687
0298 1  040D          DC      BITYP                                   SUMT0688
0299 1  029A          DC      A600      GO TO A600                    SUMT0689
*-------------------------------------------------------------------- SUMT0690
029A 0  C1A8     A600 LD   1  CNO-X      INCREASE SEQUENCE NO. CNO     SUMT0691
029B 0  81E6          A    1  CSTEP-X    FOR NEXT SAVE UPERATION       SUMT0692
029C 0  D1A8          STO  1  CNO-X                                   SUMT0693
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02A3 20 04262495        LIBF    DISKN       READ 1ST.SPECTRUM OF NEXT   SUMT0700
02A4 0  1000            DC      /1000       SEQUENCE FROM SAVE AREA     SUMT0701
02A5 0  DFBC            DC      TABLE       ON DISK INTO MEMORY         SUMT0702
02A6 0  0000            DC      0                                       SUMT0703
*-------------------------------------------------------------------    SUMT0704
02A7 20 04262495        LIBF    DISKN                                   SUMT0705
02A8 0  0100            DC      /0100                                   SUMT0706
02A9 0  DFBC            DC      TABLE                                   SUMT0707
02AA 0  70FC            MDX     *-4                                     SUMT0708
*-------------------------------------------------------------------    SUMT0709
02AB 0  C135            LD    1 TWO-X       INSTA=2,SUMS ARE STORED     SUMT0710
02AC 0  D1A5            STO   1 INSTA-X     ON DISK                     SUMT0711
*-------------------------------------------------------------------    SUMT0712
02AD 20 04262495        LIBF    DISKN       STORE CONTROL SECTOR CONSC  SUMT0713
02AE 0  3000            DC      /3000       ON DISK                     SUMT0714
02AF 1  03B7            DC      COSEC                                   SUMT0715
02B0 0  0000            DC      0                                       SUMT0716
*-------------------------------------------------------------------    SUMT0717
02B1 20 04262495        LIBF    DISKN       TEST IF CONSC IS STORED     SUMT0718
02B2 0  0100            DC      /0100                                   SUMT0719
02B3 1  03B7            DC      COSEC                                   SUMT0720
02B4 0  70FC            MDX     *-4                                     SUMT0721
*-------------------------------------------------------------------    SUMT0722
02B5 00 6600DFBC        LDX   L2 Y                                      SUMT0723
02B7 01 4C000103        BSC   L  A108       INTERMEDIATE WORK           SUMT0724
*-------------------------------------------------------------------    SUMT0725
02B9 01 C4000232 A191   LD    L  A186                                   SUMT0726
02BB 0  B135            CMP   1 TWO-X                                   SUMT0727
02BC 0  7001            MDX     *+1         1ST. GROUP OF 4096 CHAN.    SUMT0728
02BD 0  7002            MDX     A195        2ND. GROUP OF 4096 CHAN.    SUMT0729
02BE 0  6300            LDX   3 0           1ST. GROUP OF 4096 CHAN.    SUMT0730
02BF 0  7002            MDX     *+2                                     SUMT0731
02C0 00 67001000 A195   LDX   L3 4096                                   SUMT0732
*-------------------------------------------------------------------    SUMT0733
02C2 00 6500E000        LDX   L1 -8192                                  SUMT0734
02C4 00 C700DFFE A184   LD    L3 SPEC       SPEC + SPEC1 = SPEC1        SUMT0735
02C6 0  1890            SRT     16                                      SUMT0736
02C7 00 8D00DD36        AD    L1 SPEC1+8192                             SUMT0737
02C9 00 DD00DD36        STD   L1 SPEC1+8192                             SUMT0738
02CB 0  7301            MDX   3 1                                       SUMT0739
02CC 0  7102            MDX   1 2                                       SUMT0740
02CD 0  70F6            MDX     A184                                    SUMT0741
*-------------------------------------------------------------------    SUMT0742
02CF 0  61D0            LDX   1 -48                                     SUMT0743
02CF 00 CD00DFFE A340   LDD   L1 SCAL+48    SCAL+SCAL1=SCAL1            SUMT0744
02D1 00 8D00BD36        AD    L1 SCAL1+48                               SUMT0745
02D3 00 DD00BD36        STD   L1 SCAL1+48                               SUMT0746
02D5 0  7102            MDX   1 2                                       SUMT0747
02D6 0  70F8            MDX     A340                                    SUMT0748
*-------------------------------------------------------------------    SUMT0749
02D7 00 67800067        LDX   I3 103                                    SUMT0750
02D9 30 14109892        CALL    MDISK       STORE FINAL SUM ON DISK     SUMT0751
02DB 0  BCF6            DC      IDEN1                                   SUMT0752
02DC 1  041E            DC      ERIN                                    SUMT0753
02DD 0  DD36            DC      BUFFR                                   SUMT0754
02DE 1  0423            DC      FREE                                    SUMT0755
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                *-------------------------------------------------------- SUMT0756
02DF 01 7400041E        MDX   L  ERIN,0       TEST ERROR INDICATOR       SUMT0757
02E1 0  7014            MDX      A161         ERROR EXIT,NO MORE STORAGE*SUMT0758
02E2 01 65000430        LDX   L1 X                                        SUMT0759
                *-------------------------------------------------------- SUMT0760
02E4 0  C19E            LD     1 C-X          CHECK IF SUM HAS TO        SUMT0761
02E5 0  B1A8            CMP    1 CNO-X        BE STORED INTO SAVE AREA   SUMT0762
02E6 0  7006            MDX      A325                                     SUMT0763
02E7 0  7005            MDX      A325                                     SUMT0764
02E8 01 440005A7        BSI   L  SAVE         SAVE SUMS                  SUMT0765
                *-------------------------------------------------------- SUMT0766
02EA 01 7400041F        MDX   L  ERIN1,0                                  SUMT0767
02EC 0  701D            MDX      A321                                     SUMT0768
02ED 01 74FF0232 A325   MDX   I  A186,-1                                 SUMT0769
02EF 0  7002            MDX      A187                                     SUMT0770
02F0 01 4C000265        BSC   L  A188         NEXT RUN TYPE              SUMT0771
02F2 00 7401DFC2 A187   MDX   L  IDEN+4,1                                 SUMT0772
02F4 01 4C000235        BSC   L  A194                                     SUMT0773
                *-------------------------------------------------------- SUMT0774
02F6 01 6780041E A161   LDX   I3 ERIN         NO MORE STORAGE FOR SUMS   SUMT0775
02F8 01 C70003E7        LD    L3 ADTYP                                    SUMT0776
02FA 01 D400036C        STO   L  A17                                      SUMT0777
02FC 01 C4000401        LD    L  ADAPR+10                                 SUMT0778
02FE 01 D4000370        STO   L  A18                                      SUMT0779
                *-------------------------------------------------------- SUMT0780
0300 00 67800067        LDX   I3 103                                      SUMT0781
0302 0  1010            SLA      16                                       SUMT0782
0303 01 D400044F        STO   L  SKIP1        ALARM                      SUMT0783
                *-------------------------------------------------------- SUMT0784
0305 20 23A17155        LIBF     TYPEN        MESSAGE ON 1053,NO MORE    SUMT0785
0306 0  2001            DC       /2001        STORAGE FOR SUMS           SUMT0786
0307 1  06CB            DC       TM69-1                                  SUMT0787
0308 0  0000            DC       0                                       SUMT0788
0309 0  7013            MDX      A42          INTER.EXIT                 SUMT0789
                *-------------------------------------------------------- SUMT0790
030A 01 6780041F A321   LDX   I3 ERIN1        NO MORE STORAGE TO SAVE    SUMT0791
030C 01 C70003E7        LD    L3 ADTYP        SUMS                       SUMT0792
030E 01 D400036C        STO   L  A17                                      SUMT0793
0310 01 C4000403        LD    L  ADAPR+12                                 SUMT0794
0312 01 D4000370        STO   L  A18                                      SUMT0795
                *-------------------------------------------------------- SUMT0796
0314 00 67800067        LDX   I3 103                                      SUMT0797
0316 0  1010            SLA      16                                       SUMT0798
0317 0  D11F            STO    1 SKIP1-X      ALARM                      SUMT0799
0318 0  D19A            STO    1 SCI-X        START WITH 1.RUN TYPE      SUMT0800
                *-------------------------------------------------------- SUMT0801
0319 20 23A17155        LIBF     TYPEN        MESSAGE ON 1053,NO MORE    SUMT0802
031A 0  2001            DC       /2001        STORAGE TO SAVE SUMS       SUMT0803
031B 1  06E9            DC       TM79-1                                  SUMT0804
031C 0  0000            DC       0                                       SUMT0805
                *-------------------------------------------------------- SUMT0806
031D 01 65000430 A42    LDX   L1 X                                        SUMT0807
031F 00 6600DFBC        LDX   L2 Y                                        SUMT0808
0321 00 67800067        LDX   I3 103                                      SUMT0809
                *-------------------------------------------------------- SUMT0810
0323 20 024C1552        LIBF     BLANK        PREPARE 1053 MESSAGE *ID*  SUMT0811
0324 0  DD9E            DC       MESS         MESS= INTERM.STORAGE       SUMT0812
0325 0  001C            DC       28                                      SUMT0813
                *-------------------------------------------------------- SUMT0814
0326 0  C202            LD     2 IDEN-Y                                  SUMT0815
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0328 1  043E          DC      OUTPT                                   SUMT0817
0329 0  C912          LDD   1 OUTPT+4-X                               SUMT0818
032A 00 DC00DD9E      STD   L MESS                                    SUMT0819
032C 0  C114          LD    1 POINT-X                                 SUMT0820
032D 00 D400DDA0      STO   L MESS+2                                  SUMT0821
                    *-------------------------------------------------SUMT0822
032F 0  C203          LD    2 IDEN+1-Y                                SUMT0823
0330 20 02255103      LIBF    BINDC                                   SUMT0824
0331 1  043E          DC      OUTPT                                   SUMT0825
0332 0  C113          LD    1 OUTPT+5-X                               SUMT0826
0333 00 D400DDA1      STO   L MESS+3                                  SUMT0827
                    *-------------------------------------------------SUMT0828
0335 0  C204          LD    2 IDEN+2-Y                                SUMT0829
0336 20 02255103      LIBF    BINDC                                   SUMT0830
0337 1  043E          DC      OUTPT                                   SUMT0831
0338 0  C113          LD    1 OUTPT+5-X                               SUMT0832
0339 00 D400DDA2      STO   L MESS+4                                  SUMT0833
                    *-------------------------------------------------SUMT0834
033B 0  C205          LD    2 IDEN+3-Y                                SUMT0835
033C 20 02255103      LIBF    BINDC                                   SUMT0836
033D 1  043E          DC      OUTPT                                   SUMT0837
033E 0  C112          LD    1 OUTPT+4-X                               SUMT0838
033F 00 D400DDA3      STO   L MESS+5                                  SUMT0839
0341 0  C113          LD    1 OUTPT+5-X                               SUMT0840
0342 00 D400DDA4      STO   L MESS+6                                  SUMT0841
                    *-------------------------------------------------SUMT0842
0344 0  C20C          LD    2 IDEN+10-Y                               SUMT0843
0345 20 02255103      LIBF    BINDC                                   SUMT0844
0346 1  043E          DC      OUTPT                                   SUMT0845
0347 0  C10E          LD    1 OUTPT-X                                 SUMT0846
0348 00 D400DDA9      STO   L MESS+11                                 SUMT0847
034A 0  C113          LD    1 OUTPT+5-X                               SUMT0848
034B 00 D400DDAA      STO   L MESS+12                                 SUMT0849
                    *-------------------------------------------------SUMT0850
034D 0  C208          LD    2 IDEN+6-Y                                SUMT0851
034E 20 02255103      LIBF    BINDC                                   SUMT0852
034F 1  043E          DC      OUTPT                                   SUMT0853
0350 0  C912          LDD   1 OUTPT+4-X                               SUMT0854
0351 00 DC00DDB0      STD   L MESS+18                                 SUMT0855
                    *-------------------------------------------------SUMT0856
0353 0  C207          LD    2 IDEN+5-Y                                SUMT0857
0354 20 02255103      LIBF    BINDC                                   SUMT0858
0355 1  043E          DC      OUTPT                                   SUMT0859
0356 0  C912          LDD   1 OUTPT+4-X                               SUMT0860
0357 00 DC00DDB8      STD   L MESS+26                                 SUMT0861
                    *-------------------------------------------------SUMT0862
0359 20 085935D9      LIBF    HOLPR                                   SUMT0863
035A 0  0000          DC      /0000                                   SUMT0864
035B 0  DD9E          DC      MESS                                    SUMT0865
035C 1  05D4          DC      TM211                                   SUMT0866
035D 0  001C          DC      28          END OF MESSAGE PREPARATION  SUMT0867
                    *-------------------------------------------------SUMT0868
035E 20 23A17155      LIBF    TYPEN       MESSAGE ID,TYPE,ETC.        SUMT0869
035F 0  2001          DC      /2001                                   SUMT0870
0360 1  05D2          DC      TM21-1                                  SUMT0871
0361 0  0000          DC      0                                       SUMT0872
                    *-------------------------------------------------SUMT0873
0362 01 7400044E      MDX   L SKIP,0      CHECK SKIP INDICATOR        SUMT0874
0364 0  7024          MDX     A80         SKIP ERROR MESS.AND ALARM   SUMT0875
                    *-------------------------------------------------SUMT0876
0365 0  C1DF        A13 LD    1 B1-X      PREPARE COMMAND *PRINT AL-  SUMT0877
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0366 0  8189          A     1 BITNO-X     PHAMERIC*                    SUMT0878
0367 0  D1B3          STO   1 AREA3+2-X                                SUMT0879
                     *-------------------------------------------------- SUMT0880
0368 01 440003AA      BSI   L A400        COMMAND *PRINT ALPHAMERIC*   SUMT0881
                     *-------------------------------------------------- SUMT0882
036A 20 23A17155      LIBF  TYPEN         ERROR MESSAGE ON 1053        SUMT0883
036B 0  2001          DC    /2001                                      SUMT0884
036C 0  0000     A17  DC    *-*                                        SUMT0885
036D 0  0000          DC    0                                          SUMT0886
                     *-------------------------------------------------- SUMT0887
036E 20 040565C0      LIBF  DAOP          ERROR MESSAGE ON INTERFACE   SUMT0888
036F 0  1310          DC    /1310         TYPEWRITER, SINGLE ADDR.,    SUMT0889
0370 0  0000     A18  DC    *-*           EXTERNAL SYNCH.              SUMT0890
0371 0  0000          DC    0                                          SUMT0891
                     *-------------------------------------------------- SUMT0892
0372 30 19162163      CALL  RESET         RESET DAOP                   SUMT0893
0374 1  040D          DC    BITYP                                      SUMT0894
0375 1  0376          DC    A90           GO TO A90                    SUMT0895
                     *-------------------------------------------------- SUMT0896
0376 01 65000430 A90  LDX   L1 X                                       SUMT0897
0378 01 7400044F      MDX   L  SKIP1,0    CHECK SKIP1 INDICATOR        SUMT0898
037A 0  700E          MDX      A80        SKIP ALARM                   SUMT0899
037B 01 668003B9      LDX   I2 BITNO      PREPARE COMMAND FOR ALARM    SUMT0900
037D 0  C1B0          LD    1 ALARM-X                                  SUMT0901
037E 0  1A00          SRA   2                                          SUMT0902
037F 0  D1B6          STO   1 AREA5+2-X                                SUMT0903
                     *-------------------------------------------------- SUMT0904
0380 20 040565C0      LIBF  DAOP          ALARM FOR INTERRUPT BITNO    SUMT0905
0381 0  2000          DC    /2000                                      SUMT0906
0382 1  03E4          DC    AREA5                                      SUMT0907
0383 0  0000          DC    0                                          SUMT0908
                     *-------------------------------------------------- SUMT0909
0384 0  C1E2          LD    1 B18-X       PREPARE COMMAND*DISABLE      SUMT0910
0385 0  8189          A     1 BITNO-X     STATION*                     SUMT0911
0386 0  D1B3          STO   1 AREA3+2-X                                SUMT0912
                     *-------------------------------------------------- SUMT0913
0387 01 440003AA      BSI   L A400        COMMAND*DISABLE STATION*     SUMT0914
                     *-------------------------------------------------- SUMT0915
0389 30 23243595 A80  CALL  TICON         CONVERT TIME FOR MESSAGE     SUMT0916
038B 1  05CB          DC    TM153         *INTERRUPT EXIT*             SUMT0917
                     *-------------------------------------------------- SUMT0918
038C 20 23A17155 A19  LIBF  TYPEN         MESSAGE INTERRUPT EXIT       SUMT0919
038D 0  2001          DC    /2001                                      SUMT0920
038E 1  05C6          DC    TM15-1                                     SUMT0921
038F 0  0000          DC    0                                          SUMT0922
                     *-------------------------------------------------- SUMT0923
0390 0  C1E0          LD    1 B14-X       PREPARE COMMAND *PRINT       SUMT0924
0391 0  8189          A     1 BITNO-X     WORDS*                       SUMT0925
0392 0  D1B3          STO   1 AREA3+2-X                                SUMT0926
                     *-------------------------------------------------- SUMT0927
0393 01 440003AA      BSI   L A400        COMMAND *PRINT WORDS*        SUMT0928
                     *-------------------------------------------------- SUMT0929
0395 0  C1E1          LD    1 B15-X       PREPARE COMMAND *END         SUMT0930
0396 0  8189          A     1 BITNO-X     OF INTERRUPT*                SUMT0931
0397 0  D1B3          STO   1 AREA3+2-X                                SUMT0932
                     *-------------------------------------------------- SUMT0933
0398 01 440003AA      BSI   L A400        COMMAND *END OF INTERRUPT*   SUMT0934
                     *-------------------------------------------------- SUMT0935
039A 20 040565C0      LIBF  DAOP          COMMAND RESET                SUMT0936
039B 0  1000          DC    /1000                                      SUMT0937
039C 1  0448          DC    RESET                                      SUMT0938
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039D 0  0000          DC      0                                          SUMT0939
                    *-------------------------------------------------- SUMT0940
039E 0  1010        A500  SLA     16        INSTA=0 FOR INTER. EXIT      SUMT0941
039F 0  D1A5              STO   1 INSTA-X                                SUMT0942
                    *-------------------------------------------------- SUMT0943
03A0 20 04262495          LIBF    DISKN     STORE CONTROL SECTOR CONSC   SUMT0944
03A1 0  3000              DC      /3000     ON DISK                      SUMT0945
03A2 1  03B7              DC      COSEC                                  SUMT0946
03A3 0  0000              DC      0                                      SUMT0947
                    *-------------------------------------------------- SUMT0948
03A4 20 04262495          LIBF    DISKN     TEST IF CONSC IS STORED      SUMT0949
03A5 0  0100              DC      /0100                                  SUMT0950
03A6 1  03B7              DC      COSEC                                  SUMT0951
03A7 0  70FC              MDX     *-4                                    SUMT0952
                    *-------------------------------------------------- SUMT0953
03A8 30 09563167          CALL    INTEX                                  SUMT0954
                    *-------------------------------------------------- SUMT0955
03AA 0  0000        A400  DC      *-*                                    SUMT0956
03AB 20 040565C0          LIBF    DAOP      COMMAND RESET                SUMT0957
03AC 0  1000              DC      /1000                                  SUMT0958
03AD 1  0448              DC      RESET                                  SUMT0959
03AE 0  0000              DC      0                                      SUMT0960
                    *-------------------------------------------------- SUMT0961
03AF 20 040565C0          LIBF    DAOP      INTERFACE COMMAND            SUMT0962
03B0 0  1000              DC      /1000                                  SUMT0963
03B1 1  03E1              DC      AREA3                                  SUMT0964
03B2 0  0000              DC      0                                      SUMT0965
03B3 01 4C8003AA          BSC   I A400                                   SUMT0966
                    ********************************************** SUMT0967
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                                      ************************************************** SUMT0969
                                      *     CONTROL SECTOR FOR SUMTO                   * SUMT0970
                                      ************************************************** SUMT0971
03B6     0000                               BSS   E  0                                    SUMT0972
03B6 0   0000                               DC       0          NOT USED                  SUMT0973
03B7 31  03595883          COSEC    DSA      CONSC      DEFINE SECTOR ADDR.FOR           SUMT0974
03BA                                ORG      COSEC      CONTROL SECTOR CONSC             SUMT0975
03B7 0   0023                       DC       35         WORD COUNT FOR CONSC             SUMT0976
03B8                                ORG      COSEC+2                                     SUMT0977
03B9 0   0000              BITNO    DC       *-*        INTERRUPT NO.                    SUMT0978
03BA 0   0000              EXNO1    DC       *-*        1ST.EXPER.NO.                    SUMT0979
03BB 0   0000              SERNO    DC       *-*        SERIAL NO.                       SUMT0980
03BC 0   0000              AUTYP    DC       *-*        AUTOMATIC TYPE                   SUMT0981
03BD 0   0000              SACHA    DC       *-*        SAMPLE CHANGER DEQUENCE          SUMT0982
03BE 0   0000              SIND1    DC       *-*        IN-AREA     0=FREE,1=3CCUP.      SUMT0983
03BF 0   0000                       DC       *-*        OUT-AREA    0=FREE,1=3CCUP.      SUMT0984
03C0 0   0000                       DC       *-*        B-IN-AREA   0=FREE,1=3CCUP.      SUMT0985
03C1 0   0000                       DC       *-*        B-OUT-AREA  0=FREE,1=3CCUP.      SUMT0986
03C2 00  00000000          TOTC1    DEC      0          TOTAL COUNT FOR IN-RUN           SUMT0987
03C4 00  00000000                   DEC      0          TOTAL COUNT FOR OUT-RUN          SUMT0988
03C6 00  00000000                   DEC      0          TOTAL COUNT FOR B-IN-RUN         SUMT0989
03C8 00  00000000                   DEC      0          TOTAL COUNT FOR B-OUT-RUN        SUMT0990
03CA 0   0000              SCI      DC       *-*        SEQUENCE CONTROL INDICATOR       SUMT0991
                           *                            0=START WITH 1ST RUN TYPE        SUMT0992
                           *                            1=NO CHECK FOR RUN TYPE          SUMT0993
03CC 00  00000000          INOUT    DEC      0          SUM OF RATIOS TOT.COUNT          SUMT0994
                           *                            FOR IN/TOT.COUNT FOR OUT         SUMT0995
03CE 0   0000              C        DC       0          SEQUENCE COUNTER                 SUMT0996
03CF 0   0000              SS       DC       0          NO.OF SUPPRESSED SEQUENCES       SUMT0997
03D0 0   0000              ADDI1    DC       *-*        INSUM,SEC.ADDR.     IN-AREA      SUMT0998
03D1 0   0000                       DC       *-*        INSUM,SEC.ADDR.    OUT-AREA      SUMT0999
03D2 0   0000                       DC       *-*        INSUM,SEC.ADDR.  B-IN-AREA       SUMT0000
03D3 0   0000                       DC       *-*        INSUM,SEC.ADDR. B-OUT-AREA       SUMT0001
03D4 0   0000              PSN      DC       *-*        PREVIOUS SEQUENCE NO.            SUMT0002
03D5 0   0000              INSTA    DC       *-*        INTERRUPT STATUS                 SUMT0003
                           *                            0=INTERR.EXIT                    SUMT0004
                           *                            1=START OF PROGR.SUMTO           SUMT0005
                           *                            2=SUMS ARE STORED ON DISK        SUMT0006
03D6 0   0000              SEADR    DC       *-*        ADDR.SEL.SAM.CH.SEQ.,MODIF       SUMT0007
03D7 0   0000                       DC       *-*        ADDR.SEL.SAM.CH.SEQ.,FIX         SUMT0008
03D8 0   0000              CNO      DC       *-*        AT SEQUENCE NO. CNO THE          SUMT0009
                           *                            SPECTRA ARE SAVED                SUMT0010
03D9 0   0000              TWENT    DC       *-*        NO.OF SEQ.FOR CALCULATION        SUMT0011
                           *                            OF IN/OUT-MEANVALUE              SUMT0012
03DA 0   0000              LIRAS    DC       0          0/0 DIFF. IN RATIO OF            SUMT0013
                           *                            IN/OUT-MEANVALUES                SUMT0014
03DB 0   0000                       DC       *-*        NOT USED                         SUMT0015
                                      ************************************************** SUMT0016
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                                ************************************************* SUMT0018
                                *     SUMTO CONSTANTS                           * SUMT0019
                                ************************************************* SUMT0020
03DC 31 09562931    AB1    DSA     INSU1                                          SUMT0021
03DF                       ORG     AB1+2                                          SUMT0022
03DE 31 035958B1    AB2    DSA     CONS1                                          SUMT0023
03E1                       ORG     AB2+2                                          SUMT0024
03E0 0  8000        ALARM  DC      /8000        1 IN BIT 0,TO BE SHIFTED          SUMT0025
                    *                           AT POSITION OF PISW-BIT           SUMT0026
03E1 0  0002        AREA3  DC      2            AREA FOR ANALYSER COMMANDS        SUMT0027
03E2 0  007C               DC      124          TERMINAL A6                       SUMT0028
03E3 0  0000               DC      *-*          COMMAND                           SUMT0029
03E4 0  0002        AREA5  DC      2            PULSE OUTPUT TABLE                SUMT0030
03E5 0  007D               DC      125                                            SUMT0031
03E6 0  0000               DC      *-*                                            SUMT0032
03E7 1  05E2        ADTYP  DC      TM35-1       ADDRESSES OF MESSAGES             SUMT0033
03E8 1  05EE               DC      TM37-1       FOR 1053                          SUMT0034
03E9 1  05FC               DC      TM39-1                                         SUMT0035
03EA 1  060A               DC      TM41-1                                         SUMT0036
03EB 1  061C               DC      TM43-1                                         SUMT0037
03EC 1  06D9               DC      TM77-1                                         SUMT0038
03ED 1  0633               DC      TM55-1                                         SUMT0039
03EE 1  0643               DC      TM57-1                                         SUMT0040
03EF 1  065B               DC      TM59-1                                         SUMT0041
03F0 1  0669               DC      TM61-1                                         SUMT0042
03F1 1  06A4               DC      TM63-1                                         SUMT0043
03F2 1  06B4               DC      TM65-1                                         SUMT0044
03F3 1  06BF               DC      TM67-1                                         SUMT0045
03F4 1  06CB               DC      TM69-1                                         SUMT0046
03F5 1  06F9               DC      TM71-1                                         SUMT0047
03F6 1  0704               DC      TM73-1                                         SUMT0048
03F7 1  070A        ADAPR  DC      AM15         ADDRESSES OF MESSAGES             SUMT0049
03F8 1  0723               DC      AM16         FOR INTERFACE TYPEWRITER          SUMT0050
03F9 1  0860               DC      AM27                                           SUMT0051
03FA 1  0737               DC      AM18                                           SUMT0052
03FB 1  0757               DC      AM19                                           SUMT0053
03FC 1  0782               DC      AM20                                           SUMT0054
03FD 1  079E               DC      AM21                                           SUMT0055
03FE 1  07F7               DC      AM22                                           SUMT0056
03FF 1  0816               DC      AM23                                           SUMT0057
0400 1  082C               DC      AM24                                           SUMT0058
0401 1  0844               DC      AM25                                           SUMT0059
0402 1  0880               DC      AM26                                           SUMT0060
0403 1  089B               DC      AM14                                           SUMT0061
0404 31 09562914    ADRIN  DSA     INSUM                                          SUMT0062
0407                       ORG     ADRIN+2                                        SUMT0063
0406 0  001A        ADR4A  DC      26  DP       4K SECT.LEN.,AREAS INSUM          SUMT0064
0407 0  001A               DC      26  SP       8K SECT.LEN.,AREAS INSUM          SUMT0065
0408 0  2040        A8256  DC      8256         LENGTH OF SPECTRUM AREA           SUMT0066
0409 0  BCE6        ADRSE  DC      SEQ10        ADDR.OF SPECIF.FOR S.C.S.1        SUMT0067
040A 0  BCE8               DC      SEQ20        ADDR.OF SPECIF.FOR S.C.S.2        SUMT0068
040B 0  BCEB               DC      SEQ30        ADDR.OF SPECIF.FOR S.C.S.3        SUMT0069
040C 0  BCEF               DC      SEQ40        ADDR.OF SPECIF.FOR S.C.S.4        SUMT0070
                    *                           S.C.S.=SAMPLE CHANG.SEQU.         SUMT0071
040D 0  21FC        BITYP  DC      /21FC        BITNO (=1) IN TYPEWR. CODE        SUMT0072
040E 0  2121        BLANK  DC      /2121        CODE FOR 2 BLANKS ON 1053         SUMT0073
                    *-------------------------------------------------            SUMT0074
                    *     INTERFACE COMMANDS                                  *  SUMT0075
040F 0  1400        B1     DC      /1400        PRINT ALPHAMERIC ON INTER-        SUMT0076
                    *                           FACE TYPEWRITER                   SUMT0077
0410 0  A000        B14    DC      /A000        PRINT WORDS (CONTROL WORDS        SUMT0078
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                                *                                AND SCALERS ON INTERFACE   SUMT0079
                                *                                TYPEWRITER)                SUMT0080
0411 0  B000          B15   DC       /B000      END OF INTERRUPT           SUMT0081
0412 0  E800          B18   DC       /E800      DISABLE STATION            SUMT0082
                                *-------------------------------------------------- SUMT0083
0414 00 00000000      CFLOA DEC      0          FLOATING POINT C           SUMT0084
0416 0  0005          CSTEP DC       5          EVERY CSTEP SEQUENCES      SUMT0085
                                *                THE SPECTRA ARE SAVED      SUMT0086
0417 0  0001          DECT1 DC       1          4K,SIGMA TOTAL,BIN.        SUMT0087
0418 0  0002                DC       2          8K,SIGMA TOTAL,BIN.,1CH=1W SUMT0088
0419 0  0001          DECT2 DC       1          1 GROUP OF 4K              SUMT0089
041A 0  0002                DC       2          2 GROUPS OF 4K             SUMT0090
041C 00 00000000      DIFFR DEC      0          RATIO-MEAN VALUE           SUMT0091
041E 0  0000          ERIN  DC       *-*        ERROR INDICATOR FOR MDISK  SUMT0092
041F 0  0000          ERIN1 DC       *-*        ERROR INDICATOR FOR SAVE   SUMT0093
                                *                OPERATION                  SUMT0094
0420 0  0000          ERRSW DC       *-*        USED FOR SUBR. SPSRC       SUMT0095
0421 0  0005          FIVE  DC       5                                     SUMT0096
0422 0  0032          FIFTY DC       50         USED FOR SAVING SUMS       SUMT0097
0423 0  0000          FREE  DC       *-*        NO.OF FREE 13-SECTOR PLACE SUMT0098
0424 0  0000                DC       *-*        NO.OF FREE SECT.FOR SM.SPE SUMT0099
0425 0  0000                DC       *-*        NO.OF FREE SECT.IN OV.AREA SUMT0100
0426 0  0004          FOUR  DC       4                                     SUMT0101
0428 00 C0000081      FLMIN DEC      -1.0                                  SUMT0102
042A 00 64000087      HUNDR DEC      100.                                  SUMT0103
042C 00 00000064      LIMPO DEC      100        LIMIT FOR TOT.COUNT DIFF.  SUMT0104
042E 00 00000000      LIRAT DEC      0          0/0 VALUE FOR RATIO OF     SUMT0105
                                *                IN/OUT MEANVALUES          SUMT0106
0430    000C          NRENT BSS      12         USED FOR SUBR. SPSRC       SUMT0107
043C 0  FFFF                DC       -1                                    SUMT0108
043D 0  0001          ONE   DC       1                                     SUMT0109
043E    0006          OUTPT BSS  E   6                                     SUMT0110
0444 0  8420          POINT DC       /8420      CARD CODE PERIOD           SUMT0111
0446 00 00000000      RATIO DEC      0          RATIO TOT.C.IN/TOT.C.OUT   SUMT0112
0448 0  0002          RESET DC       2          RESET COMMAND OUTPUT       SUMT0113
0449 0  007C                DC       124        TERMINAL A6                SUMT0114
044A 0  0000                DC       0          COMMAND                    SUMT0115
044B 0  0000          SAIN  DC       0          SAVE INDICATOR             SUMT0116
044C 31 22065897      SASPC DSA      SAVSP      INTERMEDIATE STORAGE FOR   SUMT0117
044F                        ORG      SASPC+2    ONE DP-SPECTRUM(8256WORDS) SUMT0118
044E 0  0000          SKIP  DC       0          =1,SKIP ER. MES.+ALARM     SUMT0119
                                *                =0,NO SKIP                 SUMT0120
044F 0  0001          SKIP1 DC       1          =1,SKIP ALARM              SUMT0121
                                *                =0,NO SKIP                 SUMT0122
0450 0  0000          SKIP2 DC       0          USED AT START OF EXPERIM.  SUMT0123
0452 00 00000000      SUM   DEC      0          STORAGE FOR TOTAL COUNT    SUMT0124
0454 1  010C          STIW  DC       A115       4K  PROGRAM ADDR.          SUMT0125
0455 1  015B                DC       A116       8K  PROGRAM ADDR.          SUMT0126
                                *-------------------------SPECIFICATIONS FOR S.C.S.1 SUMT0127
0456 0  0001          SEQEN DC       1          NO.OF RUN TYPES            SUMT0128
0457 0  0000                DC       0          NO.OF 1ST RUN TYPE         SUMT0129
                                *-------------------------SPECIFICATIONS FOR S.C.S.2 SUMT0130
0458 0  0002                DC       2          NO.OF RUN TYPES            SUMT0131
0459 0  0000                DC       0          NO.OF 1ST RUN TYPE         SUMT0132
045A 0  0001                DC       1          NO.OF 2ND RUN TYPE         SUMT0133
                                *-------------------------SPECIFICATIONS FOR S.C.S.3 SUMT0134
045B 0  0003                DC       3          NO.OF RUN TYPES            SUMT0135
045C 0  0000                DC       0          NO.OF 1ST RUN TYPE         SUMT0136
045D 0  0001                DC       1          NO.OF 2ND RUN TYPE         SUMT0137
045E 0  0002                DC       2          NO.OF 3RD RUN TYPE         SUMT0138
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045F 0 0004          DC    4          NO.OF RUN TYPES                    SUMTO140
0460 0 0000          DC    0          NO.OF 1ST RUN TYPE                 SUMTO141
0461 0 0001          DC    1          NO.OF 2ND RUN TYPE                 SUMTO142
0462 0 0002          DC    2          NO.OF 3RD RUN TYPE                 SUMTO143
0463 0 0003          DC    3          NO.OF 4TH RUN TYPE                 SUMTO144
                     *-------------------------------------------------- SUMTO145
0464 0 0001 TABNR    DC    1          USED FOR SUBR. SPSRC               SUMTO146
0465 0 0002 TWO      DC    2                                             SUMTO147
0466 0 0003 THREE    DC    3                                             SUMTO148
0467 0 0000 XR2      DC    *-*        INTERM.STORAGE FOR XR2             SUMTO149
0430        X        EQU   NRENT                                         SUMTO150
DFBC        Y        EQU   TABLE                                         SUMTO151
0468 0 0000 ZERO     DC    0                                             SUMTO152
                     ********************************************** SUMTO153
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                                                                                SUMT0155
                *************************************************               SUMT0156
                *     CONVERSION OF NO.OF FREE PLACEC TO 1053 CODE*               SUMT0157
                *                                                 *               SUMT0158
                *     BSI  L  CONV2                               *               SUMT0159
                *     DC      ADDR.OF CONVERTED NO.,BSS 2         *               SUMT0160
                *************************************************               SUMT0161
0469 0  0000    CONV2 DC      *-*         CONVERSION OF NO.OF FREE                SUMT0162
046A 01 C4800469      LD   I  CONV2       PLACES TO 1053 CODE                     SUMT0163
046C 0  D008          STO     A75                                                 SUMT0164
046D 01 74010469      MDX  L  CONV2,+1    RETURN ADDR.                            SUMT0165
046F 0  C1F3            LD     1 FREE-X                                         SUMT0166
0470 20 02255103      LIBF    BINDC                                               SUMT0167
0471 1  043E          DC      OUTPT                                               SUMT0168
0472 20 085935D9      LIBF    HOLPR                                               SUMT0169
0473 0  0000          DC      /0000                                               SUMT0170
0474 1  0440          DC      OUTPT+2                                             SUMT0171
0475 0  0000    A75   DC      *-*                                                 SUMT0172
0476 0  0004          DC      4                                                   SUMT0173
0477 01 4C800469      BSC  I  CONV2       END OF CONVERSION ROUTINE               SUMT0174
                *************************************************               SUMT0175
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                                                                                SUMT0176
*     CONVERSION OF BINARY NUMBER TO 4-DIGIT CARD                               * SUMT0177
*     AND TYPEWRITER CODE                                                       * SUMT0178
*                                                                               * SUMT0179
*     BSI  L  CONV3                                                             * SUMT0180
*     DC      ADDR.OF BINARY VALUE                                              * SUMT0181
*     DC      ADDR.OF TYPEWRITER CODE, BSS 2                                    * SUMT0182
*     DC      ADDR.OF CARD CODE                                                 * SUMT0183
*********************************************************************************SUMT0184
0479 0  0000      CONV3 DC      *-*                                               SUMT0185
047A 01 6E0004A0        STX   L2 A183+1                                         SUMT0186
047C 01 74020479        MDX   L  CONV3,+2                                       SUMT0187
047E 01 C4800479        LD    I  CONV3                                          SUMT0188
0480 0  D014            STO      A180+1                                         SUMT0189
0481 01 74FF0479        MDX   I  CONV3,-1                                       SUMT0190
0483 01 C4800479        LD    I  CONV3                                          SUMT0191
0485 0  D017            STO      A182                                           SUMT0192
*---------------------------------------------------------------------------- SUMT0193
0486 01 74FF0479        MDX   I  CONV3,-1                                       SUMT0194
0488 01 C4800479        LD    I  CONV3                                          SUMT0195
048A 0  D001            STO      *+1                                            SUMT0196
048B 00 C4000000        LD    L  *-*                                            SUMT0197
048D 20 02255103        LIBF     BINDC                                          SUMT0198
048E 1  043E            DC       OUTPT                                          SUMT0199
*---------------------------------------------------------------------------- SUMT0200
048F 01 74030479        MDX   L  CONV3,+3                                       SUMT0201
*---------------------------------------------------------------------------- SUMT0202
0491 0  62FC            LDX    2 -4                                             SUMT0203
0492 01 C6000444 A181   LD    L2 OUTPT+6                                        SUMT0204
0494 00 D4000000 A180   STO   L  *-*          CARD CODE ADDR.                   SUMT0205
0496 01 74010495        MDX   L  A180+1,+1                                      SUMT0206
0498 0  7201            MDX    2 1                                              SUMT0207
0499 0  70F8            MDX      A181                                           SUMT0208
*---------------------------------------------------------------------------- SUMT0209
049A 20 085935D9        LIBF     HOLPR                                          SUMT0210
049B 0  0000            DC       /0000                                          SUMT0211
049C 1  0440            DC       OUTPT+2                                        SUMT0212
049D 0  0000 A182       DC       *-*          TYPEWRITER CODE ADDR.             SUMT0213
049E 0  0004            DC       4                                              SUMT0214
*---------------------------------------------------------------------------- SUMT0215
049F 00 66000000 A183   LDX   L2 *-*                                           SUMT0216
*---------------------------------------------------------------------------- SUMT0217
04A1 01 4C800479        BSC   I  CONV3                                          SUMT0218
*********************************************************************************SUMT0219
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                                                                                SUMTO221
                *************************************************               SUMTO222
                *      CONTROL OF SAMPLE CHANGER SEQUENCE       *               SUMTO223
                *                                               *               SUMTO224
                *      BSI  L  SEQU                             *               SUMTO225
                *      BSI+1   NEW-SEQUENCE EXIT                *               SUMTO226
                *      BSI+2   INTERMEDIATE-WORK EXIT           *               SUMTO227
                *************************************************               SUMTO228
04A3 0  0000    SEQU  DC      *-*                                               SUMTO229
04A4 01 6D000562      STX   L1 FIN+1                                            SUMTO230
04A6 01 6E000564      STX   L2 XR22+1                                           SUMTO231
04A8 01 6F000566      STX   L3 XR3+1                                            SUMTO232
04AA 01 66000430      LDX   L2 X                                                SUMTO233
                *-------------------------------------------------              SUMTO234
04AC 0  C0F6          LD        SEQU                                            SUMTO235
04AD 01 D4000569      STO   L   NSEQU                                           SUMTO236
04AF 0  820D          A      2  ONE-X                                           SUMTO237
04B0 01 D400056A      STO   L   IWORK                                           SUMTO238
                *-------------------------------------------------              SUMTO239
04B2 01 C40003CA      LD    L   SCI                                             SUMTO240
04B4 0  4820          BSC       Z                                               SUMTO241
04B5 0  7018          MDX       A144          SCI=1,NO CHECK FOR RUN            SUMTO242
                *                             TYPE TO START WITH                SUMTO243
                *-------------------------------------------------              SUMTO244
04B6 0  C2A7          LD     2  SEADR+1-X                                       SUMTO245
04B7 0  D2A6          STO    2  SEADR-X                                         SUMTO246
04B8 01 740103D6      MDX   L   SEADR,+1      =ADDR.OF 1ST RUN TYPE             SUMTO247
                *-------------------------------------------------              SUMTO248
04BA 00 C400DFC0      LD    L   IDEN+2        2ND EXP.NO.                       SUMTO249
04BC 01 B48003D6      CMP   I   SEADR                                           SUMTO250
04BE 0  7005          MDX       A145          2ND EXP.NO.(=ACTUAL SEQU          SUMTO251
04BF 0  7004          MDX       A145          ENCE NO.)UNEQUAL 1ST SEQ          SUMTO252
                *                             UENCE NO.                         SUMTO253
04C0 0  D2A4          STO    2  PSN-X         2ND EXP.NO.=PSN                   SUMTO254
04C1 0  C20D          LD     2  ONE-X                                           SUMTO255
04C2 0  D29A          STO    2  SCI-X         SEQU.CONTR.INDIC.=1               SUMTO256
04C3 0  700A          MDX       A144                                            SUMTO257
                *-------------------------------------------------              SUMTO258
04C4 0  C2C1  A145    LD     2  ADTYP+10-X    PREPARE ERROR MESSAGE,            SUMTO259
04C5 01 D400036C      STO   L   A17           INCORR.SAMPLE CHANG.START         SUMTO260
04C7 0  C2CE          LD     2  ADAPR+7-X                                       SUMTO261
04C8 01 D4000370      STO   L   A18                                             SUMTO262
                *-------------------------------------------------              SUMTO263
04CA 01 7401044F      MDX   L   SKIP1,1       NO ALARM                          SUMTO264
04CC 01 4C00031D      BSC   L   A42           INTER. EXIT                       SUMTO265
                *-------------------------------------------------              SUMTO266
04CE 0  C2A7  A144    LD     2  SEADR+1-X                                       SUMTO267
04CF 0  D2A6          STO    2  SEADR-X                                         SUMTO268
04D0 01 C48003D6      LD    I   SEADR                                           SUMTO269
04D2 01 D400056B      STO   L   WORK                                            SUMTO270
                *-------------------------------------------------              SUMTO271
04D4 01 6580056B      LDX   I1  WORK          CHECK IF RUNTYPE BE-              SUMTO272
04D6 00 C400DFC0      LD    L   IDEN+2        LONGS TO SEQ.SELECTED             SUMTO273
04D8 01 740103D6  A146  MDX   L   SEADR,+1    BY SAMPLE CHAN.SEQ.INDI-          SUMTO274
04DA 01 B48003D6      CMP   I   SEADR         CATOR                             SUMTO275
04DC 0  7002          MDX       A147          UNEQUAL                           SUMTO276
04DD 0  7001          MDX       A147          UNEQUAL                           SUMTO277
04DE 0  7011          MDX       A148          EQUAL                             SUMTO278
04DF 0  71FF  A147    MDX    1  -1                                              SUMTO279
04E0 0  70F7          MDX       A146                                            SUMTO280
                *-------------------------------------------------              SUMTO281
04E1 0  C2C2          LD     2  ADTYP+11-X    PREPARE ERROR MESSAGE             SUMTO282
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04E2 01 D400036C        STO  L  A17          *RUN TYPE INCORR.*          SUMT0282
04E4 0  C2CF            LD   2  ADAPR+8-X                                SUMT0283
04E5 01 D4000370        STO  L  A18                                      SUMT0284
                *-------------------------------------------------------SUMT0285
04E7 20 024C1552        LIBF    BLANK        RESET SIND,TOTC,SCI         SUMT0286
04E8 1  03BE            DC      SIND1                                    SUMT0287
04E9 0  000D            DC      13                                       SUMT0288
                *-------------------------------------------------------SUMT0289
04EA 01 740103CF        MDX  L  SS,+1                                    SUMT0290
                *-------------------------------------------------------SUMT0291
04EC 01 7401044F        MDX  L  SKIP1,1      NO ALARM                    SUMT0292
04EE 01 4C00031D        BSC  L  A42          INTER. EXIT                 SUMT0293
                *-------------------------------------------------------SUMT0294
04F0 0  C2A7    A148    LD   2  SEADR+1-X    CALCULATE ADDR.OF 1ST       SUMT0295
04F1 0  820D            A    2  ONE-X        RUN TYPE IN SEQUENCE        SUMT0296
04F2 0  D2A6            STO  2  SEADR-X                                  SUMT0297
                *-------------------------------------------------------SUMT0298
04F3 00 C400DFC0        LD   L  IDEN+2                                   SUMT0299
04F5 01 B48003D6        CMP  I  SEADR                                    SUMT0300
04F7 0  7002            MDX     A149                                     SUMT0301
04F8 0  7001            MDX     A149                                     SUMT0302
04F9 0  700E            MDX     A151                                     SUMT0303
                *-------------------------------------------------------SUMT0304
04FA 01 740103D6    A149MDX  L  SEADR,+1    CALCULATE ADDR.OF 2ND RUN   SUMT0305
04FC 01 B48003D6        CMP  I  SEADR        TYPE                        SUMT0306
04FE 0  7002            MDX     A150                                     SUMT0307
04FF 0  7001            MDX     A150                                     SUMT0308
0500 0  7020            MDX     A153                                     SUMT0309
                *-------------------------------------------------------SUMT0310
0501 01 740103D6    A150MDX  L  SEADR,+1    CALCULATE ADDR.OF 3D RUN    SUMT0311
0503 01 B48003D6        CMP  I  SEADR        TYPE                        SUMT0312
0505 0  7039            MDX     A157                                     SUMT0313
0506 0  7038            MDX     A157                                     SUMT0314
0507 0  7028            MDX     A155                                     SUMT0315
                *-------------------------------------------------------SUMT0316
0508 0  C2A7    A151    LD   2  SEADR+1-X    CALCULATE ADDR OF LAST      SUMT0317
0509 01 848003D7        A    I  SEADR+1      RUN TYPE IN SEQUENCE        SUMT0318
050B 0  D2A6            STO  2  SEADR-X                                  SUMT0319
                *-------------------------------------------------------SUMT0320
050C 0  C2A4            LD   2  PSN-X                                    SUMT0321
050D 01 B48003D6        CMP  I  SEADR                                    SUMT0322
050F 0  7008            MDX     A152                                     SUMT0323
0510 0  7007            MDX     A152                                     SUMT0324
0511 00 C400DFC0        LD   L  IDEN+2                                   SUMT0325
0513 0  D2A4            STO  2  PSN-X                                    SUMT0326
0514 0  C054            LD      NSEQU                                    SUMT0327
0515 0  D08D            STO     SEQU                                     SUMT0328
0516 01 4C000561        BSC  L  FIN          START OF NEW SEQUENCE       SUMT0329
                *-------------------------------------------------------SUMT0330
0518 0  C2A7    A152    LD   2  SEADR+1-X    CALCULATE ADDR.OF 1ST       SUMT0331
0519 0  820D            A    2  ONE-X        RUN TYPE IN SEQUENCE        SUMT0332
051A 0  D2A6            STO  2  SEADR-X                                  SUMT0333
                *-------------------------------------------------------SUMT0334
051B 0  C2A4            LD   2  PSN-X                                    SUMT0335
051C 01 B48003D6        CMP  I  SEADR                                    SUMT0336
051E 0  702D            MDX     A159                                     SUMT0337
051F 0  702C            MDX     A159                                     SUMT0338
0520 0  703A            MDX     A160                                     SUMT0339
                *-------------------------------------------------------SUMT0340
0521 01 74FF03D6    A153MDX  I  SEADR,-1                                 SUMT0341
0523 0  C2A4            LD   2  PSN-X                                    SUMT0342
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0524 01 B48003D6          CMP  I  SEADR                                  SUMT0343
0526 0  7002              MDX     A154                                   SUMT0344
0527 0  7001              MDX     A154                                   SUMT0345
0528 0  7032              MDX     A160                                   SUMT0346
                     *-------------------------------------------------- SUMT0347
0529 01 740103D6    A154  MDX  L  SEADR,+1                               SUMT0348
052B 01 B48003D6          CMP  I  SEADR                                  SUMT0349
052D 0  701E              MDX     A159                                   SUMT0350
052E 0  701D              MDX     A159                                   SUMT0351
052F 0  702B              MDX     A160                                   SUMT0352
                     *-------------------------------------------------- SUMT0353
0530 01 74FF03D6    A155  MDX  I  SEADR,-1                               SUMT0354
0532 0  C2A4              LD   2  PSN-X                                  SUMT0355
0533 01 B48003D6          CMP  I  SEADR                                  SUMT0356
0535 0  7002              MDX     A156                                   SUMT0357
0536 0  7001              MDX     A156                                   SUMT0358
0537 0  7023              MDX     A160                                   SUMT0359
                     *-------------------------------------------------- SUMT0360
0538 01 740103D6    A156  MDX  L  SEADR,+1                               SUMT0361
053A 01 B48003D6          CMP  I  SEADR                                  SUMT0362
053C 0  700F              MDX     A159                                   SUMT0363
053D 0  700E              MDX     A159                                   SUMT0364
053E 0  701C              MDX     A160                                   SUMT0365
                     *-------------------------------------------------- SUMT0366
053F 0  C2A4        A157  LD   2  PSN-X                                  SUMT0367
0540 01 B48003D6          CMP  I  SEADR                                  SUMT0368
0542 0  7002              MDX     A158                                   SUMT0369
0543 0  7001              MDX     A158                                   SUMT0370
0544 0  7016              MDX     A160                                   SUMT0371
                     *-------------------------------------------------- SUMT0372
0545 01 740103D6    A158  MDX  L  SEADR,+1                               SUMT0373
0547 01 B48003D6          CMP  I  SEADR                                  SUMT0374
0549 0  7002              MDX     A159                                   SUMT0375
054A 0  7001              MDX     A159                                   SUMT0376
054B 0  700F              MDX     A160                                   SUMT0377
                     *-------------------------------------------------- SUMT0378
054C 0  C2C3        A159  LD   2  ADTYP+12-X PREPARE ERROR MESSAGE       SUMT0379
054D 01 D400036C          STO  L  A17         *SAMPLE CHANGER ERROR*     SUMT0380
054F 0  C2D0              LD   2  ADAPR+9-X                              SUMT0381
0550 01 D4000370          STO  L  A18                                    SUMT0382
                     *-------------------------------------------------- SUMT0383
0552 20 024C1552          LIBF    BLANK       RESET SIND,TOTC,SCI        SUMT0384
0553 1  03BE              DC      SIND1                                  SUMT0385
0554 0  000D              DC      13                                     SUMT0386
                     *-------------------------------------------------- SUMT0387
0555 01 740103CF          MDX  L  SS,+1                                  SUMT0388
                     *-------------------------------------------------- SUMT0389
0557 01 7401044F          MDX  L  SKIP1,1     NO ALARM                   SUMT0390
0559 01 4C00031D          BSC  L  A42         INTER. EXIT                SUMT0391
                     *-------------------------------------------------- SUMT0392
055B 00 C400DFC0    A160  LD   L  IDEN+2                                 SUMT0393
055D 0  D2A4              STO  2  PSN-X                                  SUMT0394
055E 0  C00B              LD      IWORK                                  SUMT0395
055F 01 D40004A3          STO  L  SEQU                                   SUMT0396
                     *-------------------------------------------------- SUMT0397
0561 00 65000000    FIN   LDX  L1 *-*                                    SUMT0398
0563 00 66000000    XR22  LDX  L2 *-*                                    SUMT0399
0565 00 67000000    XR3   LDX  L3 *-*                                    SUMT0400
0567 01 4C8004A3          BSC  I  SEQU                                   SUMT0401
                     *-------------------------------------------------- SUMT0402
0569 0  0000        NSEQU DC      *-*                                    SUMT0403
```

```
056A 0  0000          IWORK DC      *-*                                   SUMT0404
056B 0  0000          WORK  DC      *-*                                   SUMT0405
                      ********************************************** SUMT0406
```

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                                                                                SUMT0408
*****************************************************                           SUMT0409
*     COMPARISON OF ANALYSER AND COMPUTER TOTAL     *                           SUMT0410
*     COUNT                                         *                           SUMT0411
*                                                   *                           SUMT0412
*     BSI  L  TOTAL                                 *                           SUMT0413
*              BSI+1 = NO-ERROR EXIT                *                           SUMT0414
*****************************************************                           SUMT0415
056C 0  0000        TOTAL DC      *-*                                           SUMT0416
                    *-------------------------------------------------          SUMT0417
056D 01 6D00058D          STX  L1 REG1+1                                        SUMT0418
056F 01 6E00058F          STX  L2 REG2+1                                        SUMT0419
0571 01 6F000591          STX  L3 REG3+1                                        SUMT0420
                    *-------------------------------------------------          SUMT0421
0573 01 65000430          LDX  L1 X                                             SUMT0422
0575 00 6600DFBC          LDX  L2 Y                                             SUMT0423
                    *-------------------------------------------------          SUMT0424
0577 0  C204              LD    2 IDEN+2-Y    2ND EXP.NO. * 2 INTO XR3          SUMT0425
0578 0  1001              SLA     1                                             SUMT0426
0579 0  D001              STO     *+1                                           SUMT0427
057A 00 67000000          LDX  L3 *-*                                           SUMT0428
                    *-------------------------------------------------          SUMT0429
057C 0  C922              LDD   1 SUM-X                                         SUMT0430
057D 0  DA24              STD   2 SCAL+18-Y   CALC.TOT.COU.INTO SCALER10        SUMT0431
057E 0  9A14              SD    2 SCAL+2-Y    ANAL.TOT.COU.IS IN SCAL+2         SUMT0432
                    *-------------------------------------------------          SUMT0433
057F 0  4810              BSC     -                                             SUMT0434
0580 0  7003              MDX     A117        DIFFERENCE IS POS.                SUMT0435
0581 0  D922              STD   1 SUM-X       DIFFERENCE INTO SUM               SUMT0436
0582 0  10A0              SLT     32                                            SUMT0437
0583 0  9922              SD    1 SUM-X                                         SUMT0438
                    *-------------------------------------------------          SUMT0439
0584 0  B9FC        A117  DCM   1 LIMPO-X                                       SUMT0440
0585 0  700E              MDX     A118        ABS.DIFF. TOO GREAT(A118)         SUMT0441
0586 0  7000              MDX     *                                             SUMT0442
0587 0  CA24              LDD   2 SCAL+18-Y   ADD TOT.COUNT OF THIS RUN         SUMT0443
0588 01 8F0003C2          AD   L3 TOTC1       TO TOT.COUNT FOR ALL RUNS         SUMT0444
058A 01 DF0003C2          STD  L3 TOTC1       OF THIS TYPE                      SUMT0445
                    *-------------------------------------------------          SUMT0446
058C 00 65000000    REG1  LDX  L1 *-*                                           SUMT0447
058E 00 66000000    REG2  LDX  L2 *-*                                           SUMT0448
0590 00 67000000    REG3  LDX  L3 *-*                                           SUMT0449
0592 01 4C80056C          BSC  I  TOTAL       NO-ERROR EXIT                     SUMT0450
                    *-------------------------------------------------          SUMT0451
0594 00 67800067    A118  LDX  I3 103                                           SUMT0452
                    *-------------------------------------------------          SUMT0453
0596 20 024C1552          LIBF    BLANK       RESET SIND,TOTC,SCI               SUMT0454
0597 1  03BE              DC      SIND1                                         SUMT0455
0598 0  000D              DC      13                                            SUMT0456
                    *-------------------------------------------------          SUMT0457
0599 01 740103CF          MDX  L  SS,+1       INCREASE NO.OF SUPPR.SEQU.        SUMT0458
                    *-------------------------------------------------          SUMT0459
059B 01 65000430          LDX  L1 X                                             SUMT0460
059D 0  C1BD              LD    1 ADTYP+6-X                                     SUMT0461
059E 01 D400036C          STO  L  A17                                           SUMT0462
05A0 0  C1CA              LD    1 ADAPR+3-X                                     SUMT0463
05A1 01 D4000370          STO  L  A18                                           SUMT0464
                    *-------------------------------------------------          SUMT0465
05A3 01 7401044F          MDX  L  SKIP1,1     NO ALARM                          SUMT0466
05A5 01 4C00031D          BSC  L  A42         INTER. EXIT                       SUMT0467
                    *************************************************
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                                                                                SUMT0469
                *************************************************               SUMT0470
                *      SAVE OPERATION FOR SUMS                  *               SUMT0471
                *                                               *               SUMT0472
                *      BSI   L  SAVE                            *               SUMT0473
                *************************************************               SUMT0474
05A7 0  0000    SAVE  DC       *-*                                              SUMT0475
                *-----------------------------------------------                SUMT0476
05A8 30 04262494       CALL     DISKM       READ ACTUAL SUM FROM DISK           SUMT0477
05AA 0  BCF6           DC       IDEN1                                           SUMT0478
05AB 1  041E           DC       ERIN                                            SUMT0479
05AC 0  DD36           DC       BUFFR                                           SUMT0480
05AD 0  BCF6           DC       IDEN1                                           SUMT0481
05AE 1  0468           DC       ZERO        SPECTRUM NOT DELETED                SUMT0482
                *-----------------------------------------------                SUMT0483
05AF 00 7432BCF9       MDX   L  IDEN1+3,50  ADD 50 TO SERIAL NO.                SUMT0484
                *-----------------------------------------------                SUMT0485
05B1 0  C10D           LD     1 ONE-X       SAVE INDICATOR SAIN=1,USED          SUMT0486
05B2 0  D11B           STO    1 SAIN-X      TO CHANGE CNO                       SUMT0487
                *-----------------------------------------------                SUMT0488
05B3 30 225E2643       CALL     SPSRC       DELETE PREVIOUSLY SAVED             SUMT0489
05B5 0  BCF6           DC       IDEN1       SUM                                 SUMT0490
05B6 0  DD36           DC       BUFFR                                           SUMT0491
05B7 1  0464           DC       TABNR                                           SUMT0492
05B8 1  0430           DC       NRENT                                           SUMT0493
05B9 1  0420           DC       ERRSW                                           SUMT0494
05BA 1  043D           DC       ONE         SPECTRUM DELETED                    SUMT0495
                *-----------------------------------------------                SUMT0496
05BB 30 14109892       CALL     MDISK       STORE SUM INTO SAVE AREA            SUMT0497
05BD 0  BCF6           DC       IDEN1                                           SUMT0498
05BE 1  041F           DC       ERIN1                                           SUMT0499
05BF 0  DD36           DC       BUFFR                                           SUMT0500
05C0 1  0423           DC       FREE                                            SUMT0501
                *-----------------------------------------------                SUMT0502
05C1 00 74CEBCF9       MDX   I  IDEN1+3,-50                                     SUMT0503
05C3 0  7000           MDX      *                                               SUMT0504
05C4 01 4C8005A7       BSC   I  SAVE                                            SUMT0505
                *************************************************
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                                                                                SUMT0507
*     SUMTO MESSAGES FOR TYPEWRITER 1053                                        SUMT0508
*************************************************************                   SUMT0509
05C6 0  000B        DC      TM16-TM15  INTERRUPT EXIT                           SUMT0510
05C7    0008  TM15  DMES    'B'7X'E                                             SUMT0511
05CB    0003  TM153 BSS     3          TIME                                     SUMT0512
05CE    0008        DMES    '2XSUMTO'E                                          SUMT0513
05D2    0000  TM16  BES     0                                                   SUMT0514
*-------------------------------------------------------------                  SUMT0515
05D2 0  000F        DC      TM22-TM21                                           SUMT0516
05D3    0002  TM21  DMES    'B'E                                                SUMT0517
05D4    000E  TM211 BSS     14         ID,AUT.TYPE,1.BL.,NO.BL.                 SUMT0518
05E2    0000  TM22  BES     0                                                   SUMT0519
*-------------------------------------------------------------                  SUMT0520
05E2 0  000B        DC      TM36-TM35                                           SUMT0521
05E3    0016  TM35  DMES    'R'ASAME ID ALREADY USED'E                          SUMT0522
05EE    0000  TM36  BES     0                                                   SUMT0523
*-------------------------------------------------------------                  SUMT0524
05EE 0  000D        DC      TM38-TM37                                           SUMT0525
05EF    001A  TM37  DMES    'R'ANO FREE 13-SECTOR AREA 'E                       SUMT0526
05FC    0000  TM38  BES     0                                                   SUMT0527
*-------------------------------------------------------------                  SUMT0528
05FC 0  000D        DC      TM40-TM39                                           SUMT0529
05FD    001A  TM39  DMES    'R'ANO FREE 26-SECTOR AREA 'E                       SUMT0530
060A    0000  TM40  BES     0                                                   SUMT0531
*-------------------------------------------------------------                  SUMT0532
060A 0  0011        DC      TM42-TM41                                           SUMT0533
060B    001E  TM41  DMES    'R'ANO STOR. FOR THIS SMALL SPEC'                   SUMT0534
061A    0004        DMES    TRUM'E                                              SUMT0535
061C    0000  TM42  BES     0                                                   SUMT0536
*-------------------------------------------------------------                  SUMT0537
061C 0  0016        DC      TM44-TM43                                           SUMT0538
061D    001A  TM43  DMES    'R'AREQUIRED NO. OF OVERFLOW'E                      SUMT0539
062A    0012        DMES    'RSECTORS NOT FREE'E                                SUMT0540
0633    0000  TM44  BES     0                                                   SUMT0541
*-------------------------------------------------------------                  SUMT0542
0633 0  000F        DC      TM56-TM55                                           SUMT0543
0634    001E  TM55  DMES    'R'ATOT. COUNT DIFFERENCE   100'E                   SUMT0544
0643    0000  TM56  BES     0                                                   SUMT0545
*-------------------------------------------------------------                  SUMT0546
0643 0  0017        DC      TM58-TM57                                           SUMT0547
0644    0016  TM57  DMES    'R'BSTART OF EXPERIMENT'R'E                         SUMT0548
064F    0002  TM571 BSS     2            0/0 VALUE                              SUMT0549
0651    000A        DMES    '1X0/0'5X'E                                         SUMT0550
0656    0002  TM572 BSS     2            NO.OF SEQUENCES                        SUMT0551
0658    0006        DMES    '1XSEQ.'E                                           SUMT0552
065B    0000  TM58  BES     0                                                   SUMT0553
*-------------------------------------------------------------                  SUMT0554
065B 0  000D        DC      TM60-TM59                                           SUMT0555
065C    001A  TM59  DMES    'R'ANO DISK STORAGE FOR SUMS'E                      SUMT0556
0669    0000  TM60  BES     0                                                   SUMT0557
*-------------------------------------------------------------                  SUMT0558
0669 0  003A        DC      TM62-TM61                                           SUMT0559
066A    0018  TM61  DMES    'R'AINCORR. IN/OUT - RATIO'E                        SUMT0560
0676    0018        DMES    'RSEQUENCE IS SUPPRESSED'E                          SUMT0561
0682    001E        DMES    'R'BTOT. NO. OF SUPPR. SEQU.  = 'E                  SUMT0562
0691    0002  TM611 BSS     2                                                   SUMT0563
0693    001E        DMES    'R'BTOT. NO. OF CORRECT SEQU. = 'E                  SUMT0564
06A2    0002  TM612 BSS     2                                                   SUMT0565
06A4    0000  TM62  BES     0                                                   SUMT0566
*-------------------------------------------------------------                  SUMT0567
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06A4 0  000F            DC      TM64-TM63                                SUMT0568
06A5    001E    TM63    DMES    'R'AINCORR. SAMPLE CHANG. START'E        SUMT0569
06B4    0000    TM64    BES     0                                        SUMT0570
                *-------------------------------------------------------- SUMT0571
06B4 0  000A            DC      TM66-TM65                                SUMT0572
06B5    0014    TM65    DMES    'R'ARUN TYPE INCORRECT'E                 SUMT0573
06BF    0000    TM66    BES     0                                        SUMT0574
                *-------------------------------------------------------- SUMT0575
06BF 0  000B            DC      TM68-TM67                                SUMT0576
06C0    0016    TM67    DMES    'R'ASAMPLE CHANGER ERROR'E               SUMT0577
06CB    0000    TM68    BES     0                                        SUMT0578
                *-------------------------------------------------------- SUMT0579
06CB 0  000D            DC      TM70-TM69                                SUMT0580
06CC    001A    TM69    DMES    'R'ANO MORE STORAGE FOR SUMS'E           SUMT0581
06D9    0000    TM70    BES     0                                        SUMT0582
                *-------------------------------------------------------- SUMT0583
06D9 0  000F            DC      TM78-TM77                                SUMT0584
06DA    001E    TM77    DMES    'R'ANO SUMMING FOR SMALL SPECTRA'E       SUMT0585
06E9    0000    TM78    BES     0                                        SUMT0586
                *-------------------------------------------------------- SUMT0587
06E9 0  000F            DC      TM80-TM79                                SUMT0588
06EA    001E    TM79    DMES    'R'ANO MORE STORAGE TO SAVE SUMS'E       SUMT0589
06F9    0000    TM80    BES     0                                        SUMT0590
                *-------------------------------------------------------- SUMT0591
06F9 0  000A            DC      TM72-TM71                                SUMT0592
06FA    0014    TM71    DMES    'R'AINCORR.SERIAL NO.'E                  SUMT0593
0704    0000    TM72    BES     0                                        SUMT0594
                *-------------------------------------------------------- SUMT0595
0704 0  0005            DC      TM74-TM73                                SUMT0596
0705    000A    TM73    DMES    'R'ARESTART'E                            SUMT0597
070A    0000    TM74    BES     0                                        SUMT0598
                ********************************************************* SUMT0599
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                                                                                SUMT0601
                *****************************************************           SUMT0602
                *     MESSAGES FOR INTERFACE TYPEWRITER             *           SUMT0603
                *****************************************************           SUMT0604
070A 0  0018    AM15    DC      24                                              SUMT0605
070B 0  007B            DC      123                                             SUMT0606
070C 0  0900            DC      /0900       RED                                 SUMT0607
070D 0  2800            DC      /2800       S                                   SUMT0608
070E 0  9000            DC      /9000       A                                   SUMT0609
070F 0  4200            DC      /4200       M                                   SUMT0610
0710 0  8100            DC      /8100       E                                   SUMT0611
0711 0  0000            DC      /0000                                           SUMT0612
0712 0  8010            DC      /8010       I                                   SUMT0613
0713 0  8200            DC      /8200       D                                   SUMT0614
0714 0  0000            DC      /0000                                           SUMT0615
0715 0  9000            DC      /9000       A                                   SUMT0616
0716 0  4400            DC      /4400       L                                   SUMT0617
0717 0  4010            DC      /4010       R                                   SUMT0618
0718 0  8100            DC      /8100       E                                   SUMT0619
0719 0  9000            DC      /9000       A                                   SUMT0620
071A 0  8200            DC      /8200       D                                   SUMT0621
071B 0  2020            DC      /2020       Y                                   SUMT0622
071C 0  0000            DC      /0000                                           SUMT0623
071D 0  2200            DC      /2200       U                                   SUMT0624
071E 0  2800            DC      /2800       S                                   SUMT0625
071F 0  8100            DC      /8100       E                                   SUMT0626
0720 0  8200            DC      /8200       D                                   SUMT0627
0721 0  0500            DC      /0500       BLACK                               SUMT0628
0722 0  0300            DC      /0300       LINE FEED                           SUMT0629
                *---------------------------------------------------            SUMT0630
0723 0  0013    AM16    DC      19                                              SUMT0631
0724 0  007B            DC      123                                             SUMT0632
0725 0  0900            DC      /0900       RED                                 SUMT0633
0726 0  8010            DC      /8010       I                                   SUMT0634
0727 0  4100            DC      /4100       N                                   SUMT0635
0728 0  8400            DC      /8400       C                                   SUMT0636
0729 0  4080            DC      /4080       O                                   SUMT0637
072A 0  4010            DC      /4010       R                                   SUMT0638
072B 0  4010            DC      /4010       R                                   SUMT0639
072C 0  8420            DC      /8420       .                                   SUMT0640
072D 0  2800            DC      /2800       S                                   SUMT0641
072E 0  8100            DC      /8100       E                                   SUMT0642
072F 0  4010            DC      /4010       R                                   SUMT0643
0730 0  8010            DC      /8010       I                                   SUMT0644
0731 0  9000            DC      /9000       A                                   SUMT0645
0732 0  4400            DC      /4400       L                                   SUMT0646
0733 0  0000            DC      /0000                                           SUMT0647
0734 0  4100            DC      /4100       N                                   SUMT0648
0735 0  4080            DC      /4080       O                                   SUMT0649
0736 0  8420            DC      /8420       .                                   SUMT0650
                *---------------------------------------------------            SUMT0651
0737 0  001F    AM18    DC      31                                              SUMT0652
0738 0  007B            DC      123                                             SUMT0653
0739 0  0900            DC      /0900       RED                                 SUMT0654
073A 0  2400            DC      /2400       T                                   SUMT0655
073B 0  4080            DC      /4080       U                                   SUMT0656
073C 0  2400            DC      /2400       T                                   SUMT0657
073D 0  8420            DC      /8420       .                                   SUMT0658
073E 0  0000            DC      /0000                                           SUMT0659
073F 0  8400            DC      /8400       C                                   SUMT0660
0740 0  4080            DC      /4080       O                                   SUMT0661
0741 0  2200            DC      /2200       U
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0742 0 4100          DC    /4100     N                    SUMT0662
0743 0 2400          DC    /2400     T                    SUMT0663
0744 0 0000          DC    /0000                          SUMT0664
0745 0 8200          DC    /8200     D                    SUMT0665
0746 0 8010          DC    /8010     I                    SUMT0666
0747 0 8080          DC    /8080     F                    SUMT0667
0748 0 8080          DC    /8080     F                    SUMT0668
0749 0 8420          DC    /8420     .                    SUMT0669
074A 0 0000          DC    /0000                          SUMT0670
074B 0 8040          DC    /8040     G                    SUMT0671
074C 0 4010          DC    /4010     R                    SUMT0672
074D 0 8100          DC    /8100     E                    SUMT0673
074E 0 9000          DC    /9000     A                    SUMT0674
074F 0 2400          DC    /2400     T                    SUMT0675
0750 0 8100          DC    /8100     E                    SUMT0676
0751 0 4010          DC    /4010     R                    SUMT0677
0752 0 1000          DC    /1000     1                    SUMT0678
0753 0 2000          DC    /2000     0                    SUMT0679
0754 0 2000          DC    /2000     0                    SUMT0680
0755 0 0500          DC    /0500     BLACK                SUMT0681
0756 0 0300          DC    /0300     LINE FEED            SUMT0682
                *-------------------------------------------SUMT0683
0757 0 002A    AM19  DC    42                             SUMT0684
0758 0 007B          DC    123                            SUMT0685
0759 0 0500          DC    /0500     BLACK                SUMT0686
075A 0 2800          DC    /2800     S                    SUMT0687
075B 0 2400          DC    /2400     T                    SUMT0688
075C 0 9000          DC    /9000     A                    SUMT0689
075D 0 4010          DC    /4010     R                    SUMT0690
075E 0 2400          DC    /2400     T                    SUMT0691
075F 0 0000          DC    /0000                          SUMT0692
0760 0 4080          DC    /4080     O                    SUMT0693
0761 0 8080          DC    /8080     F                    SUMT0694
0762 0 0000          DC    /0000                          SUMT0695
0763 0 8100          DC    /8100     E                    SUMT0696
0764 0 2040          DC    /2040     X                    SUMT0697
0765 0 4040          DC    /4040     P                    SUMT0698
0766 0 8100          DC    /8100     E                    SUMT0699
0767 0 4010          DC    /4010     R                    SUMT0700
0768 0 8010          DC    /8010     I                    SUMT0701
0769 0 4200          DC    /4200     M                    SUMT0702
076A 0 8100          DC    /8100     E                    SUMT0703
076B 0 4100          DC    /4100     N                    SUMT0704
076C 0 2400          DC    /2400     T                    SUMT0705
076D 0 0300          DC    /0300     LINE FEED            SUMT0706
076E 0 0000          DC    /0000                          SUMT0707
076F 0 0000    AM191 DC    *-*                            SUMT0708
0770 0 0000          DC    *-*                            SUMT0709
0771 0 0000          DC    *-*                            SUMT0710
0772 0 0000          DC    *-*                            SUMT0711
0773 0 0000          DC    /0000                          SUMT0712
0774 0 2000          DC    /2000     0                    SUMT0713
0775 0 3000          DC    /3000     /                    SUMT0714
0776 0 2000          DC    /2000     0                    SUMT0715
0777 0 0000          DC    /0000                          SUMT0716
0778 0 0000          DC    /0000                          SUMT0717
0779 0 0000    AM192 DC    *-*                            SUMT0718
077A 0 0000          DC    *-*                            SUMT0719
077B 0 0000          DC    *-*                            SUMT0720
077C 0 0000          DC    *-*                            SUMT0721
077D 0 0000          DC    /0000                          SUMT0722
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077E 0 2800          DC    /2800     S                    SUMT0723
077F 0 8100          DC    /8100     E                    SUMT0724
0780 0 4020          DC    /4020     Q                    SUMT0725
0781 0 8420          DC    /8420     .                    SUMT0726
                *-------------------------------------------SUMT0727
0782 0 001B  AM20    DC    27                             SUMT0728
0783 0 007B          DC    123                            SUMT0729
0784 0 0900          DC    /0900     RED                  SUMT0730
0785 0 4100          DC    /4100     N                    SUMT0731
0786 0 4080          DC    /4080     O                    SUMT0732
0787 0 0000          DC    /0000                          SUMT0733
0788 0 8200          DC    /8200     D                    SUMT0734
0789 0 8010          DC    /8010     I                    SUMT0735
078A 0 2800          DC    /2800     S                    SUMT0736
078B 0 4800          DC    /4800     K                    SUMT0737
078C 0 0000          DC    /0000                          SUMT0738
078D 0 2800          DC    /2800     S                    SUMT0739
078E 0 2400          DC    /2400     T                    SUMT0740
078F 0 4080          DC    /4080     O                    SUMT0741
0790 0 4010          DC    /4010     R                    SUMT0742
0791 0 9000          DC    /9000     A                    SUMT0743
0792 0 8040          DC    /8040     G                    SUMT0744
0793 0 8100          DC    /8100     E                    SUMT0745
0794 0 0000          DC    /0000                          SUMT0746
0795 0 8080          DC    /8080     F                    SUMT0747
0796 0 4080          DC    /4080     O                    SUMT0748
0797 0 4010          DC    /4010     R                    SUMT0749
0798 0 0000          DC    /0000                          SUMT0750
0799 0 2800          DC    /2800     S                    SUMT0751
079A 0 2200          DC    /2200     U                    SUMT0752
079B 0 4200          DC    /4200     M                    SUMT0753
079C 0 2800          DC    /2800     S                    SUMT0754
079D 0 0500          DC    /0500     BLACK                SUMT0755
                *-------------------------------------------SUMT0756
079E 0 0058  AM21    DC    88                             SUMT0757
079F 0 007B          DC    123                            SUMT0758
07A0 0 0900          DC    /0900     RED                  SUMT0759
07A1 0 8010          DC    /8010     I                    SUMT0760
07A2 0 4100          DC    /4100     N                    SUMT0761
07A3 0 8400          DC    /8400     C                    SUMT0762
07A4 0 4080          DC    /4080     O                    SUMT0763
07A5 0 4010          DC    /4010     R                    SUMT0764
07A6 0 4010          DC    /4010     R                    SUMT0765
07A7 0 8420          DC    /8420     .                    SUMT0766
07A8 0 0000          DC    /0000                          SUMT0767
07A9 0 8010          DC    /8010     I                    SUMT0768
07AA 0 4100          DC    /4100     N                    SUMT0769
07AB 0 3000          DC    /3000     /                    SUMT0770
07AC 0 4080          DC    /4080     O                    SUMT0771
07AD 0 2200          DC    /2200     U                    SUMT0772
07AE 0 2400          DC    /2400     T                    SUMT0773
07AF 0 4000          DC    /4000     -                    SUMT0774
07B0 0 4010          DC    /4010     R                    SUMT0775
07B1 0 9000          DC    /9000     A                    SUMT0776
07B2 0 2400          DC    /2400     T                    SUMT0777
07B3 0 8010          DC    /8010     I                    SUMT0778
07B4 0 4080          DC    /4080     O                    SUMT0779
07B5 0 0500          DC    /0500     BLACK                SUMT0780
07B6 0 0300          DC    /0300     LINE FEED            SUMT0781
07B7 0 0000          DC    0                              SUMT0782
07B8 0 2400          DC    /2400     T                    SUMT0783
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07B9 0 4080          DC    /4080    OT
07BA 0 2400          DC    /2400
07BB 0 8420          DC    /8420    T.
07BC 0 0000          DC    /0000
07BD 0 4100          DC    /4100    NO.
07BE 0 4080          DC    /4080
07BF 0 8420          DC    /8420    O.
07C0 0 0000          DC    /0000
07C1 0 4080          DC    /4080    OF
07C2 0 8080          DC    /8080
07C3 0 0000          DC    /0000
07C4 0 2800          DC    /2800    SU
07C5 0 2200          DC    /2200
07C6 0 4040          DC    /4040    PP
07C7 0 4040          DC    /4040
07C8 0 4010          DC    /4010    R.
07C9 0 8420          DC    /8420
07CA 0 0000          DC    /0000
07CB 0 2800          DC    /2800    SE
07CC 0 8100          DC    /8100
07CD 0 4020          DC    /4020    QU
07CE 0 2200          DC    /2200
07CF 0 8420          DC    /8420    .=
07D0 0 0000          DC    /0000
07D1 0 00A0          DC    /00A0    =
07D2 0 0000          DC    /0000
07D3 0 0000 AM211    DC    *-*
07D4 0 0000          DC    *-*
07D5 0 0000          DC    *-*
07D6 0 0000          DC    *-*
07D7 0 0300          DC    /0300    LINE FEED
07D8 0 2400          DC    /2400    LT
07D9 0 4080          DC    /4080    OT
07DA 0 2400          DC    /2400
07DB 0 8420          DC    /8420    T.
07DC 0 0000          DC    /0000
07DD 0 4100          DC    /4100    NO.
07DE 0 4080          DC    /4080
07DF 0 8420          DC    /8420    O.
07E0 0 0000          DC    /0000
07E1 0 4080          DC    /4080    OF
07E2 0 8080          DC    /8080
07E3 0 0000          DC    /0000
07E4 0 8400          DC    /8400    CO
07E5 0 4080          DC    /4080
07E6 0 4010          DC    /4010    RR
07E7 0 4010          DC    /4010
07E8 0 8100          DC    /8100    EC
07E9 0 8400          DC    /8400
07EA 0 2400          DC    /2400    T
07EB 0 0000          DC    /0000
07EC 0 2800          DC    /2800    SE
07ED 0 8100          DC    /8100
07EE 0 4020          DC    /4020    QU
07EF 0 2200          DC    /2200
07F0 0 8420          DC    /8420    .=
07F1 0 00A0          DC    /00A0    =
07F2 0 0000          DC    /0000
07F3 0 0000 AM212    DC    *-*
07F4 0 0000          DC    *-*
07F5 0 0000          DC    *-*
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07F6 0  0000          DC      *-*                                     SUMT0845
                *-------------------------------------------------    SUMT0846
07F7 0  001E  AM22    DC      30                                      SUMT0847
07F8 0  007B          DC      123                                     SUMT0848
07F9 0  0900          DC      /0900       RED                         SUMT0849
07FA 0  8010          DC      /8010       I                           SUMT0850
07FB 0  4100          DC      /4100       N                           SUMT0851
07FC 0  8400          DC      /8400       C                           SUMT0852
07FD 0  4080          DC      /4080       O                           SUMT0853
07FE 0  4010          DC      /4010       R                           SUMT0854
07FF 0  4010          DC      /4010       R                           SUMT0855
0800 0  8420          DC      /8420       •                           SUMT0856
0801 0  0000          DC      /0000                                   SUMT0857
0802 0  2800          DC      /2800       S                           SUMT0858
0803 0  9000          DC      /9000       A                           SUMT0859
0804 0  4200          DC      /4200       M                           SUMT0860
0805 0  4040          DC      /4040       P                           SUMT0861
0806 0  4400          DC      /4400       L                           SUMT0862
0807 0  8100          DC      /8100       E                           SUMT0863
0808 0  0000          DC      /0000                                   SUMT0864
0809 0  8400          DC      /8400       C                           SUMT0865
080A 0  8020          DC      /8020       H                           SUMT0866
080B 0  9000          DC      /9000       A                           SUMT0867
080C 0  4100          DC      /4100       N                           SUMT0868
080D 0  8040          DC      /8040       G                           SUMT0869
080E 0  8420          DC      /8420       •                           SUMT0870
080F 0  0000          DC      /0000                                   SUMT0871
0810 0  2800          DC      /2800       S                           SUMT0872
0811 0  2400          DC      /2400       T                           SUMT0873
0812 0  9000          DC      /9000       A                           SUMT0874
0813 0  4010          DC      /4010       R                           SUMT0875
0814 0  2400          DC      /2400       T                           SUMT0876
0815 0  0500          DC      /0500       BLACK                       SUMT0877
                *-------------------------------------------------    SUMT0878
0816 0  0015  AM23    DC      21                                      SUMT0879
0817 0  007B          DC      123                                     SUMT0880
0818 0  0900          DC      /0900       RED                         SUMT0881
0819 0  4010          DC      /4010       R                           SUMT0882
081A 0  2200          DC      /2200       U                           SUMT0883
081B 0  4100          DC      /4100       N                           SUMT0884
081C 0  0000          DC      /0000                                   SUMT0885
081D 0  2400          DC      /2400       T                           SUMT0886
081E 0  2020          DC      /2020       Y                           SUMT0887
081F 0  4040          DC      /4040       P                           SUMT0888
0820 0  8100          DC      /8100       E                           SUMT0889
0821 0  0000          DC      /0000                                   SUMT0890
0822 0  8010          DC      /8010       I                           SUMT0891
0823 0  4100          DC      /4100       N                           SUMT0892
0824 0  8400          DC      /8400       C                           SUMT0893
0825 0  4080          DC      /4080       O                           SUMT0894
0826 0  4010          DC      /4010       R                           SUMT0895
0827 0  4010          DC      /4010       R                           SUMT0896
0828 0  8100          DC      /8100       E                           SUMT0897
0829 0  8400          DC      /8400       C                           SUMT0898
082A 0  2400          DC      /2400       T                           SUMT0899
082B 0  0500          DC      /0500       BLACK                       SUMT0900
                *-------------------------------------------------    SUMT0901
082C 0  0017  AM24    DC      23                                      SUMT0902
082D 0  007B          DC      123                                     SUMT0903
082E 0  0900          DC      /0900       RED                         SUMT0904
082F 0  2800          DC      /2800       S                           SUMT0905
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0830 0  9000          DC      /9000       A                   SUMT0906
0831 0  4200          DC      /4200       M                   SUMT0907
0832 0  4040          DC      /4040       P                   SUMT0908
0833 0  4400          DC      /4400       L                   SUMT0909
0834 0  8100          DC      /8100       E                   SUMT0910
0835 0  0000          DC      /0000                           SUMT0911
0836 0  8400          DC      /8400       C                   SUMT0912
0837 0  8020          DC      /8020       H                   SUMT0913
0838 0  9000          DC      /9000       A                   SUMT0914
0839 0  4100          DC      /4100       N                   SUMT0915
083A 0  8040          DC      /8040       G                   SUMT0916
083B 0  8100          DC      /8100       E                   SUMT0917
083C 0  4010          DC      /4010       R                   SUMT0918
083D 0  0000          DC      /0000                           SUMT0919
083E 0  8100          DC      /8100       E                   SUMT0920
083F 0  4010          DC      /4010       R                   SUMT0921
0840 0  4010          DC      /4010       R                   SUMT0922
0841 0  4080          DC      /4080       O                   SUMT0923
0842 0  4010          DC      /4010       R                   SUMT0924
0843 0  0500          DC      /0500       BLACK               SUMT0925
                      *-------------------------------------- SUMT0926
0844 0  001B  AM25    DC      27                              SUMT0927
0845 0  007B          DC      123                             SUMT0928
0846 0  0900          DC      /0900       RED                 SUMT0929
0847 0  4100          DC      /4100       N                   SUMT0930
0848 0  4080          DC      /4080       O                   SUMT0931
0849 0  0000          DC      /0000                           SUMT0932
084A 0  4200          DC      /4200       M                   SUMT0933
084B 0  4080          DC      /4080       O                   SUMT0934
084C 0  4010          DC      /4010       R                   SUMT0935
084D 0  8100          DC      /8100       E                   SUMT0936
084E 0  0000          DC      /0000                           SUMT0937
084F 0  2800          DC      /2800       S                   SUMT0938
0850 0  2400          DC      /2400       T                   SUMT0939
0851 0  4080          DC      /4080       O                   SUMT0940
0852 0  4010          DC      /4010       R                   SUMT0941
0853 0  9000          DC      /9000       A                   SUMT0942
0854 0  8040          DC      /8040       G                   SUMT0943
0855 0  8100          DC      /8100       E                   SUMT0944
0856 0  0000          DC      /0000                           SUMT0945
0857 0  8080          DC      /8080       F                   SUMT0946
0858 0  4080          DC      /4080       O                   SUMT0947
0859 0  4010          DC      /4010       R                   SUMT0948
085A 0  0000          DC      /0000                           SUMT0949
085B 0  2800          DC      /2800       S                   SUMT0950
085C 0  2200          DC      /2200       U                   SUMT0951
085D 0  4200          DC      /4200       M                   SUMT0952
085E 0  2800          DC      /2800       S                   SUMT0953
085F 0  0500          DC      /0500       BLACK               SUMT0954
                      *-------------------------------------- SUMT0955
0860 0  001F  AM27    DC      31                              SUMT0956
0861 0  007B          DC      123                             SUMT0957
0862 0  0900          DC      /0900       RED                 SUMT0958
0863 0  4100          DC      /4100       N                   SUMT0959
0864 0  4080          DC      /4080       O                   SUMT0960
0865 0  0000          DC      /0000                           SUMT0961
0866 0  2800          DC      /2800       S                   SUMT0962
0867 0  2200          DC      /2200       U                   SUMT0963
0868 0  4200          DC      /4200       M                   SUMT0964
0869 0  4200          DC      /4200       M                   SUMT0965
086A 0  8010          DC      /8010       I                   SUMT0966
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086B 0 4100          DC    /4100     N                    SUMT0967
086C 0 8040          DC    /8040     G                    SUMT0968
086D 0 0000          DC    /0000                          SUMT0969
086E 0 8080          DC    /8080     F                    SUMT0970
086F 0 4080          DC    /4080     O                    SUMT0971
0870 0 4010          DC    /4010     R                    SUMT0972
0871 0 0000          DC    /0000                          SUMT0973
0872 0 2800          DC    /2800     S                    SUMT0974
0873 0 4200          DC    /4200     M                    SUMT0975
0874 0 9000          DC    /9000     A                    SUMT0976
0875 0 4400          DC    /4400     L                    SUMT0977
0876 0 4400          DC    /4400     L                    SUMT0978
0877 0 0000          DC    /0000                          SUMT0979
0878 0 2800          DC    /2800     S                    SUMT0980
0879 0 4040          DC    /4040     P                    SUMT0981
087A 0 8100          DC    /8100     E                    SUMT0982
087B 0 8400          DC    /8400     C                    SUMT0983
087C 0 2400          DC    /2400     T                    SUMT0984
087D 0 4010          DC    /4010     R                    SUMT0985
087E 0 9000          DC    /9000     A                    SUMT0986
087F 0 0500          DC    /0500     BLACK                SUMT0987
                     *-------------------------------------SUMT0988
0880 0 000A    AM26  DC    10                             SUMT0989
0881 0 007B          DC    123                            SUMT0990
0882 0 0900          DC    /0900     RED                  SUMT0991
0883 0 3000          DC    /3000     R                    SUMT0992
0884 0 8100          DC    /8100     E                    SUMT0993
0885 0 2800          DC    /2800     S                    SUMT0994
0886 0 2400          DC    /2400     T                    SUMT0995
0887 0 9000          DC    /9000     A                    SUMT0996
0888 0 4010          DC    /4010     R                    SUMT0997
0889 0 2400          DC    /2400     T                    SUMT0998
088A 0 0500          DC    /0500     BLACK                SUMT0999
                     *-------------------------------------SUMT0000
088B 0 000F    AM28  DC    15                             SUMT0001
088C 0 007B          DC    123                            SUMT0002
088D 0 0000    AM281 DC    *-*                            SUMT0003
088E 0 0000          DC    *-*                            SUMT0004
088F 0 0000          DC    *-*                            SUMT0005
0890 0 0000          DC    *-*                            SUMT0006
0891 0 0000          DC    /0000                          SUMT0007
0892 0 8400          DC    /8400     C                    SUMT0008
0893 0 4080          DC    /4080     O                    SUMT0009
0894 0 4010          DC    /4010     R                    SUMT0010
0895 0 4010          DC    /4010     R                    SUMT0011
0896 0 8420          DC    /8420     •                    SUMT0012
0897 0 2800          DC    /2800     S                    SUMT0013
0898 0 8100          DC    /8100     E                    SUMT0014
0899 0 4020          DC    /4020     Q                    SUMT0015
089A 0 8420          DC    /8420     •                    SUMT0016
                     *-------------------------------------SUMT0017
089B 0 001F    AM14  DC    31                             SUMT0018
089C 0 007B          DC    123                            SUMT0019
089D 0 0900          DC    /0900     RED                  SUMT0020
089E 0 4100          DC    /4100     N                    SUMT0021
089F 0 4080          DC    /4080     O                    SUMT0022
08A0 0 0000          DC    /0000                          SUMT0023
08A1 0 4200          DC    /4200     M                    SUMT0024
08A2 0 4080          DC    /4080     O                    SUMT0025
08A3 0 4010          DC    /4010     R                    SUMT0026
08A4 0 8100          DC    /8100     E                    SUMT0027
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08A5 0  0000              DC      /0000                                 SUMT0028
08A6 0  2800              DC      /2800       S                         SUMT0029
08A7 0  2400              DC      /2400       T                         SUMT0030
08A8 0  4080              DC      /4080       O                         SUMT0031
08A9 0  4010              DC      /4010       R                         SUMT0032
08AA 0  9000              DC      /9000       A                         SUMT0033
08AB 0  8040              DC      /8040       G                         SUMT0034
08AC 0  8100              DC      /8100       E                         SUMT0035
08AD 0  0000              DC      /0000                                 SUMT0036
08AE 0  2400              DC      /2400       T                         SUMT0037
08AF 0  4080              DC      /4080       O                         SUMT0038
08B0 0  0000              DC      /0000                                 SUMT0039
08B1 0  2800              DC      /2800       S                         SUMT0040
08B2 0  9000              DC      /9000       A                         SUMT0041
08B3 0  2100              DC      /2100       V                         SUMT0042
08B4 0  8100              DC      /8100       E                         SUMT0043
08B5 0  0000              DC      /0000                                 SUMT0044
08B6 0  2800              DC      /2800       S                         SUMT0045
08B7 0  2200              DC      /2200       U                         SUMT0046
08B8 0  4200              DC      /4200       M                         SUMT0047
08B9 0  2800              DC      /2800       S                         SUMT0048
08BA 0  0500              DC      /0500       BLACK                     SUMT0049
                  ********************************************************SUMT0050
08BC                      END                                           SUMT0051

     NO ERRORS IN ABOVE ASSEMBLY.
SUMTO
DUP FUNCTION COMPLETED
// END OF ALL JOBS
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                *************************************************** BIDEC002
                *                                                 * BIDEC003
                *     CONVERSION OF ONE DOUBLE BINARY WORD TO 10  * BIDEC004
                *     BINARY CODED DECIMAL DIGITS AND SIGN        * BIDEC005
                *                                                 * BIDEC006
                *     CALL    BIDEC                               * BIDEC007
                *     DC      ADDR.OF DOUBLE BINARY WORD          * BIDEC008
                *     DC      ADDR.OF BSS 11 TO STORE THE 10 BCD'S* BIDEC009
                *             AND THE SIGN                        * BIDEC010
                *                                                 * BIDEC011
                *             THE 10 BCD'S ARE IN WORDS 1 TO 10.  * BIDEC012
                *             WORD 1 CONTAINS BCD OF HIGHEST ORDER* BIDEC013
                *             THE SIGN IS IN WORD 11.             * BIDEC014
                *             0 IN WORD 11 =  POS.SIGN            * BIDEC015
                *             1 IN WORD 11 =  NEG.SIGN            * BIDEC016
                *                                                 * BIDEC017
                *************************************************** BIDEC018
0000     02244143           ENT     BIDEC                          BIDEC019
0000 0   0000       BIDEC   DC      *-*                            BIDEC020
0001 01  6D00006A           STX  L1 END5+1                         BIDEC021
0003 01  6E00006C           STX  L2 END5+3                         BIDEC022
0005 01  6F00006E           STX  L3 END5+5                         BIDEC023
0007 01  65800000           LDX  I1 BIDEC                          BIDEC024
0009 0   C100               LD   1  0                              BIDEC025
000A 0   D066               STO     DWORD                          BIDEC026
000B 0   C101               LD   1  1                              BIDEC027
000C 0   907B               S       ONE1                           BIDEC028
000D 0   D064               STO     ARE                            BIDEC029
000E 01  74020000           MDX  L  BIDEC,+2                       BIDEC030
0010 01  CC800071           LDD  I  DWORD                          BIDEC031
0012 01  DC00008E           STD  L  WORK                           BIDEC032
0014 0   4810               BSC     -                              BIDEC033
0015 0   700F               MDX     POS                            BIDEC034
0016 01  740B0072           MDX  L  ARE,+11                        BIDEC035
0018 0   C06F               LD      ONE1                           BIDEC036
0019 01  D4800072           STO  I  ARE                            BIDEC037
001B 01  74F50072           MDX  I  ARE,-11                        BIDEC038
001D 0   C06E               LD      EXOR                           BIDEC039
001E 0   F070               EOR     WORK+1                         BIDEC040
001F 0   8068               A       ONE1                           BIDEC041
0020 0   1890               SRT     16                             BIDEC042
0021 0   C06A               LD      EXOR                           BIDEC043
0022 0   F06B               EOR     WORK                           BIDEC044
0023 0   D86A               STD     WORK                           BIDEC045
0024 0   7007               MDX     GO                             BIDEC046
0025 01  740B0072     POS   MDX  L  ARE,+11                        BIDEC047
0027 0   C062               LD      ZERO1                          BIDEC048
0028 01  D4800072           STO  I  ARE                            BIDEC049
002A 01  74F50072           MDX  I  ARE,-11                        BIDEC050
002C 0   630A       GO      LDX  3  10                             BIDEC051
002D 0   6100               LDX  1  0                              BIDEC052
002E 0   6200       R2      LDX  2  0                              BIDEC053
002F 0   C85E       R1      LDD     WORK                           BIDEC054
0030 01  9D000074           SD   L1 TABEL                          BIDEC055
0032 0   D85B               STD     WORK                           BIDEC056
0033 0   B856               DCM     ZERO1                          BIDEC057
0034 0   7002               MDX     Z1                             BIDEC058
0035 0   7003               MDX     Z2                             BIDEC059
0036 0   7021               MDX     Z3                             BIDEC060
0037 0   7201       Z1      MDX  2  +1                             BIDEC061
0038 0   70F6               MDX     R1                             BIDEC062
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0039 01 6E000090     Z2     STX   L2 STORI                                    BIDEC063
003B 0  C054                LD      STORI                                    BIDEC064
003C 0  4820                BSC     Z                                        BIDEC065
003D 0  700D                MDX     Z5                                       BIDEC066
003E 01 74010072     Z4     MDX   L   ARE,+1                                  BIDEC067
0040 0  C049                LD      ZERO1                                    BIDEC068
0041 01 D4800072            STO   I   ARE                                    BIDEC069
0043 0  C84A                LDD     WORK                                     BIDEC070
0044 01 8D000074            AD    L1  TABEL                                  BIDEC071
0046 0  D847                STD     WORK                                     BIDEC072
0047 0  7102                MDX    1  2                                      BIDEC073
0048 0  73FF                MDX    3  -1                                     BIDEC074
0049 0  70E4                MDX     R2                                       BIDEC075
004A 0  701E                MDX     END5                                     BIDEC076
004B 01 74010072     Z5     MDX   L   ARE,+1                                  BIDEC077
004D 0  C042                LD      STORI                                    BIDEC078
004E 01 D4800072            STO   I   ARE                                    BIDEC079
0050 0  C83D                LDD     WORK                                     BIDEC080
0051 01 8D000074            AD    L1  TABEL                                  BIDEC081
0053 0  D83A                STD     WORK                                     BIDEC082
0054 0  7102                MDX    1  2                                      BIDEC083
0055 0  73FF                MDX    3  -1                                     BIDEC084
0056 0  70D7                MDX     R2                                       BIDEC085
0057 0  7011                MDX     END5                                     BIDEC086
0058 0  7201         Z3     MDX    2  +1                                     BIDEC087
0059 01 74010072            MDX   L   ARE,+1                                  BIDEC088
005B 01 6E000090            STX   L2  STORI                                  BIDEC089
005D 0  C032                LD      STORI                                    BIDEC090
005E 01 D4800072            STO   I   ARE                                    BIDEC091
0060 0  73FF         END2   MDX    3  -1                                     BIDEC092
0061 0  7001                MDX     END1                                     BIDEC093
0062 0  7006                MDX     END5                                     BIDEC094
0063 01 74010072     END1   MDX   L   ARE,+1                                  BIDEC095
0065 0  C024                LD      ZERO1                                    BIDEC096
0066 01 D4800072            STO   I   ARE                                    BIDEC097
0068 0  70F7                MDX     END2                                     BIDEC098
0069 00 65000000     END5   LDX   L1  *-*                                    BIDEC099
006B 00 66000000            LDX   L2  *-*                                    BIDEC100
006D 00 67000000            LDX   L3  *-*                                    BIDEC101
006F 01 4C800000            BSC   I   BIDEC                                  BIDEC102
0071 0  0000         DWORD  DC        *-*          ADDR.OF DOUBLE WORD        BIDEC103
0072 0  0000         ARE    DC        *-*          ADDR.OF TABLE FOR DECIMALS BIDEC104
0074 00 3B9ACA00     TABEL  DEC       1000000000                              BIDEC105
0076 00 05F5E100            DEC       100000000                               BIDEC106
0078 00 00989680            DEC       10000000                                BIDEC107
007A 00 000F4240            DEC       1000000                                 BIDEC108
007C 00 000186A0            DEC       100000                                  BIDEC109
007E 00 00002710            DEC       10000                                   BIDEC110
0080 00 000003E8            DEC       1000                                    BIDEC111
0082 00 00000064            DEC       100                                     BIDEC112
0084 00 0000000A            DEC       10                                      BIDEC113
0086 00 00000001            DEC       1                                       BIDEC114
0088 0  0001         ONE1   DC        1                                       BIDEC115
008A 00 00000000     ZERO1  DEC       0                                       BIDEC116
008C 0  FFFF         EXOR   DC        /FFFF                                   BIDEC117
008E 00 00000000     WORK   DEC       0                                       BIDEC118
0090 0  0000         STORI  DC        0                                       BIDEC119
0091 0  0000         STORY  DC        0                                       BIDEC120
                     ********************************************************* BIDEC121
0092                        END                                              BIDEC122
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NO ERRORS IN ABOVE ASSEMBLY.

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                *****************************************************  DECBY002
                *                                                   *  DECBY003
                *     BCD TO BINARY CONVERSION (4K SPECTRUM)        *  DECBY004
                *                                                   *  DECBY005
                *     CALL    DECBY                                 *  DECBY006
                *     DC      ADDR.OF 1ST.DOUBLE WORD IN TABLE      *  DECBY007
                *     DC      NO.OF DOUBLE WORDS IN TABLE           *  DECBY008
                *                                                   *  DECBY009
                *     BINARY DOUBLE WORD IS STORED AT ADDRESS OF    *  DECBY010
                *     BCD DOUBLE WORD                               *  DECBY011
                *                                                   *  DECBY012
                *****************************************************  DECBY013
0000     041430A8       ENT     DECBY                                  DECBY014
0000 0   0000   DECBY   DC      *-*                                    DECBY015
                *-----------------------------------------------------  DECBY016
0001 01 6D00004D       STX  L1 XR1+1       SAVE INDEX REGISTERS       DECBY017
0003 01 6E00004F       STX  L2 XR2+1                                  DECBY018
0005 01 6F000051       STX  L3 XR3+1                                  DECBY019
                *-----------------------------------------------------  DECBY020
0007 01 65800000       LDX  I1 DECBY                                  DECBY021
0009 0  C100           LD    1 0                                      DECBY022
000A 0  9055           S       TAB1+2      SUBTRACT ONE               DECBY023
000B 0  D048           STO     ADDPL       ADDR. OF 1ST DOUBLE WORD   DECBY024
                *                          MINUS ONE                  DECBY025
000C 0  C101           LD    1 1                                      DECBY026
000D 0  D047           STO     NUMBR       NO.OF DOUBLE WORDS         DECBY027
000E 01 74020000       MDX  L  DECBY,+2                               DECBY028
                *-----------------------------------------------------  DECBY029
0010 01 67800055       LDX  I3 NUMBR                                  DECBY030
0012 01 66000056 RET2  LDX  L2 BCD         ADDR.OF BCD INTO XR2       DECBY031
0014 0  61FE           LDX   1 -2                                     DECBY032
                *-----------------------------------------------------  DECBY033
0015 01 74010054 RET1  MDX  L  ADDPL,+1                               DECBY034
0017 01 C4800054       LD   I  ADDPL       1ST. WORD OF DOUBLE WORD   DECBY035
0019 0  E042           AND     AND1                                   DECBY036
                *-----------------------------------------------------  DECBY037
001A 0  1888           SRT     8           1ST. BCD OF SINGLE WORD    DECBY038
001B 0  1001           SLA     1           MULTIPLY BY 2              DECBY039
001C 00 D6000000       STO  L2 0                                      DECBY040
                *-----------------------------------------------------  DECBY041
001E 0  1805           SRA     5           CLEAR ACCU                 DECBY042
001F 0  1084           SLT     4           2ND. BCD OF SINGLE WORD    DECBY043
0020 0  1001           SLA     1           MULTIPLY BY 2              DECBY044
0021 00 D6000001       STO  L2 1                                      DECBY045
                *-----------------------------------------------------  DECBY046
0023 0  1805           SRA     5           CLEAR ACCU                 DECBY047
0024 0  1084           SLT     4           3RD. BCD OF SINGLE WORD    DECBY048
0025 0  1001           SLA     1           MULTIPLY BY 2              DECBY049
0026 00 D6000002       STO  L2 2                                      DECBY050
                *-----------------------------------------------------  DECBY051
0028 0  7203           MDX   2 3                                      DECBY052
0029 0  7101           MDX   1 1                                      DECBY053
002A 0  70EA           MDX     RET1                                   DECBY054
                *-----------------------------------------------------  DECBY055
002B 0  C832           LDD     TAB1        CLEAR A+Q                  DECBY056
                *-----------------------------------------------------  DECBY057
002C 01 65800056       LDX  I1 BCD         BCD TO BINARY CONVERSION   DECBY058
002E 01 8D00005E       AD   L1 TAB1        OF DOUBLE WORD             DECBY059
0030 01 65800057       LDX  I1 BCD+1                                  DECBY060
0032 01 8D000072       AD   L1 TAB2                                   DECBY061
0034 01 65800058       LDX  I1 BCD+2                                  DECBY062
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0036 01 8D000086          AD    L1 TAB3                                    DECBY063
0038 01 65800059          LDX   I1 BCD+3                                   DECBY064
003A 01 8D00009A          AD    L1 TAB4                                    DECBY065
003C 01 6580005A          LDX   I1 BCD+4                                   DECBY066
003E 01 8D0000AE          AD    L1 TAB5                                    DECBY067
0040 01 6580005B          LDX   I1 BCD+5                                   DECBY068
0042 01 8D0000C2          AD    L1 TAB6                                    DECBY069
                     *-------------------------------------------------    DECBY070
0044 01 74FF0054          MDX   I  ADDPL,-1   STORE BINARY DOUBLE WORD     DECBY071
0046 01 DC800054          STD   I  ADDPL      AT ADDRESS OF BCD DOUBLE     DECBY072
0048 01 74010054          MDX   L  ADDPL,+1   WORD                         DECBY073
                     *-------------------------------------------------    DECBY074
004A 0  73FF              MDX    3 -1                                      DECBY075
004B 0  70C6              MDX      RET2                                    DECBY076
                     *-------------------------------------------------    DECBY077
004C 00 65000000     XR1  LDX   L1 *-*        RESTORE INDEX REGISTERS     DECBY078
004E 00 66000000     XR2  LDX   L2 *-*                                    DECBY079
0050 00 67000000     XR3  LDX   L3 *-*                                    DECBY080
                     *-------------------------------------------------    DECBY081
0052 01 4C800000          BSC   I  DECBY                                   DECBY082
                     *-------------------------------------------------    DECBY083
0054 0  0000         ADDPL DC       *-*                                   DECBY084
0055 0  0000         NUMBR DC       *-*                                   DECBY085
0056    0006         BCD   BSS      6                                     DECBY086
005C 0  0FFF         AND1  DC       /0FFF                                 DECBY087
                     *-------------------------------------------------    DECBY088
005E 00 00000000     TAB1  DEC      0          CONVERSION TABLES          DECBY089
0060 00 000186A0           DEC      100000                                DECBY090
0062 00 00030D40           DEC      200000                                DECBY091
0064 00 000493E0           DEC      300000                                DECBY092
0066 00 00061A80           DEC      400000                                DECBY093
0068 00 0007A120           DEC      500000                                DECBY094
006A 00 000927C0           DEC      600000                                DECBY095
006C 00 000AAE60           DEC      700000                                DECBY096
006E 00 000C3500           DEC      800000                                DECBY097
0070 00 000DBBA0           DEC      900000                                DECBY098
                     *-------------------------------------------------    DECBY099
0072 00 00000000     TAB2  DEC      0                                     DECBY100
0074 00 00002710           DEC      10000                                 DECBY101
0076 00 00004E20           DEC      20000                                 DECBY102
0078 00 00007530           DEC      30000                                 DECBY103
007A 00 00009C40           DEC      40000                                 DECBY104
007C 00 0000C350           DEC      50000                                 DECBY105
007E 00 0000EA60           DEC      60000                                 DECBY106
0080 00 00011170           DEC      70000                                 DECBY107
0082 00 00013880           DEC      80000                                 DECBY108
0084 00 00015F90           DEC      90000                                 DECBY109
                     *-------------------------------------------------    DECBY110
0086 00 00000000     TAB3  DEC      0                                     DECBY111
0088 00 000003E8           DEC      1000                                  DECBY112
008A 00 000007D0           DEC      2000                                  DECBY113
008C 00 00000BB8           DEC      3000                                  DECBY114
008E 00 00000FA0           DEC      4000                                  DECBY115
0090 00 00001388           DEC      5000                                  DECBY116
0092 00 00001770           DEC      6000                                  DECBY117
0094 00 00001B58           DEC      7000                                  DECBY118
0096 00 00001F40           DEC      8000                                  DECBY119
0098 00 00002328           DEC      9000                                  DECBY120
                     *-------------------------------------------------    DECBY121
009A 00 00000000     TAB4  DEC      0                                     DECBY122
009C 00 00000064           DEC      100                                   DECBY123
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009E 00 000000C8          DEC     200                                    DECBY124
00A0 00 0000012C          DEC     300                                    DECBY125
00A2 00 00000190          DEC     400                                    DECBY126
00A4 00 000001F4          DEC     500                                    DECBY127
00A6 00 00000258          DEC     600                                    DECBY128
00A8 00 000002BC          DEC     700                                    DECBY129
00AA 00 00000320          DEC     800                                    DECBY130
00AC 00 00000384          DEC     900                                    DECBY131
                        *-------------------------------------------------DECBY132
00AE 00 00000000  TAB5    DEC     0                                      DECBY133
00B0 00 0000000A          DEC     10                                     DECBY134
00B2 00 00000014          DEC     20                                     DECBY135
00B4 00 0000001E          DEC     30                                     DECBY136
00B6 00 00000028          DEC     40                                     DECBY137
00B8 00 00000032          DEC     50                                     DECBY138
00BA 00 0000003C          DEC     60                                     DECBY139
00BC 00 00000046          DEC     70                                     DECBY140
00BE 00 00000050          DEC     80                                     DECBY141
00C0 00 0000005A          DEC     90                                     DECBY142
                        *-------------------------------------------------DECBY143
00C2 00 00000000  TAB6    DEC     0                                      DECBY144
00C4 00 00000001          DEC     1                                      DECBY145
00C6 00 00000002          DEC     2                                      DECBY146
00C8 00 00000003          DEC     3                                      DECBY147
00CA 00 00000004          DEC     4                                      DECBY148
00CC 00 00000005          DEC     5                                      DECBY149
00CE 00 00000006          DEC     6                                      DECBY150
00D0 00 00000007          DEC     7                                      DECBY151
00D2 00 00000008          DEC     8                                      DECBY152
00D4 00 00000009          DEC     9                                      DECBY153
                        ************************************************DECBY154
00D6                      END                                            DECBY155
```

NO ERRORS IN ABOVE ASSEMBLY.

DECBY
DUP FUNCTION COMPLETED

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                        ************************************************* DEBY8002
                        *                                               * DEBY8004
                        *     BCD TO BINARY CONVERSION OF 8K SPECTRUM   * DEBY8005
                        *                                               * DEBY8006
                        *     CALL    DEBY8                             * DEBY8007
                        *     DC      ADDR.OF 1ST.WORD IN TABLE         * DEBY8008
                        *     DC      NO.OF WORDS IN TABLE              * DEBY8009
                        *                                               * DEBY8010
                        *     BINARY WORD IS STORED AT ADDR.OF BCD WORD * DEBY8011
                        *                                               * DEBY8012
                        ************************************************* DEBY8013
0000    04142A38            ENT     DEBY8                               DEBY8014
0000 0  0000        DEBY8   DC      *-*                                 DEBY8015
0001 01 6D000032            STX  L1 XR1+1                               DEBY8016
0003 01 6E000034            STX  L2 XR2+1                               DEBY8017
0005 01 65800000            LDX  I1 DEBY8                               DEBY8018
0007 0  C100                LD   1  0                                   DEBY8019
0008 0  902E                S       ONE                                 DEBY8020
0009 0  D02E                STO     ADDPL                               DEBY8021
000A 0  C101                LD   1  1                                   DEBY8022
000B 0  D02D                STO     NUMBR                               DEBY8023
000C 01 74020000            MDX  L  DEBY8,+2                            DEBY8024
000E 01 65800039            LDX  I1 NUMBR                               DEBY8025
0010 0  6200        RET2    LDX  2  0                                   DEBY8026
0011 01 74010038            MDX  L  ADDPL,+1                            DEBY8027
0013 01 C4800038            LD   I  ADDPL                               DEBY8028
0015 0  E027                AND     AND1                                DEBY8029
0016 0  1888                SRT     8                                   DEBY8030
0017 01 D600003A            STO  L2 BCD                                 DEBY8031
0019 0  1804                SRA     4           ZERO IN A               DEBY8032
001A 0  1084                SLT     4                                   DEBY8033
001B 0  7201                MDX  2  1                                   DEBY8034
001C 01 D600003A            STO  L2 BCD                                 DEBY8035
001E 0  1804                SRA     4           ZERO IN A               DEBY8036
001F 0  1084                SLT     4                                   DEBY8037
0020 0  7201                MDX  2  1                                   DEBY8038
0021 01 D600003A            STO  L2 BCD                                 DEBY8039
0023 0  1804                SRA     4           ZERO IN A               DEBY8040
0024 01 6680003A            LDX  I2 BCD                                 DEBY8041
0026 01 8600003E            A    L2 TAB1                                DEBY8042
0028 01 6680003B            LDX  I2 BCD+1                               DEBY8043
002A 01 86000048            A    L2 TAB2                                DEBY8044
002C 0  800F                A       BCD+2                               DEBY8045
002D 01 D4800038            STO  I  ADDPL                               DEBY8046
002F 0  71FF                MDX  1  -1                                  DEBY8047
0030 0  70DF                MDX     RET2                                DEBY8048
0031 00 65000000    XR1     LDX  L1 *-*                                 DEBY8049
0033 00 66000000    XR2     LDX  L2 *-*                                 DEBY8050
0035 01 4C800000            BSC  I  DEBY8                               DEBY8051
0037 0  0001        ONE     DC      1                                   DEBY8052
0038 0  0000        ADDPL   DC      *-*         ADDR.OF FIRST WORD      DEBY8053
0039 0  0000        NUMBR   DC      *-*                                 DEBY8054
003A    0003        BCD     BSS     3                                   DEBY8055
003D 0  0FFF        AND1    DC      /0FFF       0000111111111111        DEBY8056
003E 0  0000        TAB1    DC      0                                   DEBY8057
003F 0  0064                DC      100                                 DEBY8058
0040 0  00C8                DC      200                                 DEBY8059
0041 0  012C                DC      300                                 DEBY8060
0042 0  0190                DC      400                                 DEBY8061
0043 0  01F4                DC      500                                 DEBY8062
0044 0  0258                DC      600                                 DEBY8063
```

```
0045 0  02BC            DC      700                                     DEBY8064
0046 0  0320            DC      800                                     DEBY8065
0047 0  0384            DC      900                                     DEBY8066
0048 0  0000    TAB2    DC      0                                       DEBY8067
0049 0  000A            DC      10                                      DEBY8068
004A 0  0014            DC      20                                      DEBY8069
004B 0  001E            DC      30                                      DEBY8070
004C 0  0028            DC      40                                      DEBY8071
004D 0  0032            DC      50                                      DEBY8072
004E 0  003C            DC      60                                      DEBY8073
004F 0  0046            DC      70                                      DEBY8074
0050 0  0050            DC      80                                      DEBY8075
0051 0  005A            DC      90                                      DEBY8076
                ********************************************************DEBY8077
0052                    END                                             DEBY8078

     NO ERRORS IN ABOVE ASSEMBLY.
DEBY8
DUP FUNCTION COMPLETED
```

```
                        ************************************************** FORMT002
                        *                                                * FORMT003
                        *     CONVERSION OF DOUBLE WORD BINARY NUMBER TO  * FORMT004
                        *     DOUBLE WORD ANALYSER FORMAT                * FORMT005
                        *                                                * FORMT006
                        *     CALL    FORMT                              * FORMT007
                        *     DC      ADDR.OF 1ST.DOUBLE WORD IN TABLE TO * FORMT008
                        *             BE CONVERTED                       * FORMT009
                        *     DC      NO.OF DOUBLE WORDS IN TABLE        * FORMT010
                        *                                                * FORMT011
                        ************************************************** FORMT012
0000    06599523        FORMT ENT     FORMT                                FORMT013
0000 0  0000          FORMT DC      *-*                                    FORMT014
0001 01 6D000028        STX   L1 XR1+1                                     FORMT015
0003 01 65800000        LDX   I1 FORMT                                     FORMT016
0005 0  C100            LD     1 0                                         FORMT017
0006 0  9028            S       TWO                                        FORMT018
0007 0  D00A            STO     A2                                         FORMT019
0008 0  C101            LD     1 1                                         FORMT020
0009 0  D001            STO     A1+1                                       FORMT021
000A 00 65000000      A1    LDX   L1 *-*          NO.OF WORDS TO BE CONVERT. FORMT022
000C 01 74020000        MDX   L  FORMT,+2  RETURN ADDRESS                  FORMT023
000E 01 74020012      A3    MDX   L  A2,2                                  FORMT024
0010 30 02244143        CALL    BIDEC                                      FORMT025
0012 0  0000          A2    DC      *-*          ADDR.OF WORD TO BE CONVERT FORMT026
0013 1  0030            DC      ELEV                                       FORMT027
0014 0  C01F            LD      ELEV+4                                     FORMT028
0015 0  1008            SLA     8                                          FORMT029
0016 0  D025            STO     RESUL                                      FORMT030
0017 0  C01D            LD      ELEV+5                                     FORMT031
0018 0  1004            SLA     4                                          FORMT032
0019 0  8022            A       RESUL                                      FORMT033
001A 0  801B            A       ELEV+6                                     FORMT034
001B 0  D020            STO     RESUL                                      FORMT035
001C 0  C01A            LD      ELEV+7                                     FORMT036
001D 0  1008            SLA     8                                          FORMT037
001E 0  D01E            STO     RESUL+1                                    FORMT038
001F 0  C018            LD      ELEV+8                                     FORMT039
0020 0  1004            SLA     4                                          FORMT040
0021 0  801B            A       RESUL+1                                    FORMT041
0022 0  8016            A       ELEV+9                                     FORMT042
0023 0  800A            A       A4                                         FORMT043
0024 0  1890            SRT     16                                         FORMT044
0025 0  C016            LD      RESUL                                      FORMT045
0026 01 DC800012        STD   I  A2                                        FORMT046
0028 0  71FF            MDX    1 -1                                        FORMT047
0029 0  70E4            MDX     A3                                         FORMT048
002A 00 65000000      XR1   LDX   L1 *-*                                  FORMT049
002C 01 4C800000        BSC   I  FORMT                                     FORMT050
002E 0  1000          A4    DC      /1000                                FORMT051
002F 0  0002          TWO   DC      2                                    FORMT052
0030    000B          ELEV  BSS     11                                   FORMT053
003C    0002          RESUL BSS   E  2          CONVERTED DOUBLE WORD    FORMT054
                        ************************************************** FORMT055
003E                            END                                        FORMT056

     NO ERRORS IN ABOVE ASSEMBLY.
FORMT
DUP FUNCTION COMPLETED
// END OF ALL JOBS
```

```
                        ************************************************** MOVEF002
                        *                                                * MOVEF003
                        *                                                * MOVEF004
                        *     CALLING SEQUENCES                          * MOVEF005
                        *     -----------------                          * MOVEF006
                        *     CALL    MOVEF                              * MOVEF007
                        *     DC      ORG                                * MOVEF008
                        *     DC      DEST                               * MOVEF009
                        *     DC      N          WORD COUNT DIRECT       * MOVEF010
                        *                                                * MOVEF011
                        *     SUBR. MOVE TRANSFERS N WORDS FROM AN AREA  * MOVEF012
                        *     STARTING AT ORG TO AN AREA STARTING AT DEST.* MOVEF013
                        *     ADDRESS OF ORG MUST BE BREATER THAN ADDRESS * MOVEF014
                        *     OFDEST IN CASE THE TWO AREAS OVERLAP       * MOVEF015
                        *                                                * MOVEF016
                        ************************************************** MOVEF017
0000     145A5146       MOVEF ENT     MOVEF                               MOVEF018
0000 0   0000           MOVEF DC      0                                   MOVEF019
0001 0   6917                 STX   1 SV&1                                MOVEF020
0002 0   6A18                 STX   2 XR2+1                               MOVEF021
0003 01  65800000             LDX   I1 MOVEF                              MOVEF022
0005 0   6200                 LDX   2 0                                   MOVEF023
0006 0   C100                 LD    1 0                                   MOVEF024
0007 0   D00A                 STO     MV1&1                               MOVEF025
0008 0   C101                 LD    1 1                                   MOVEF026
0009 0   D00A                 STO     MV2&1                               MOVEF027
000A 0   C102                 LD    1 2                                   MOVEF028
000B 0   D001                 STO     *&1                                 MOVEF029
000C 00  65000000             LDX   L1 *-*                                MOVEF030
000E 0   7100                 MDX   1 0                                   MOVEF031
000F 0   7001                 MDX     MV1                                 MOVEF032
0010 0   7007                 MDX     SV                                  MOVEF033
0011 00  C6000000       MV1   LD    L2 *-*                                MOVEF034
0013 00  D6000000       MV2   STO   L2 *-*                                MOVEF035
0015 0   7201                 MDX   2 +1                                  MOVEF036
0016 0   71FF                 MDX   1 -1                                  MOVEF037
0017 0   70F9                 MDX     MV1                                 MOVEF038
0018 00  65000000       SV    LDX   L1 *-*                                MOVEF039
001A 00  66000000       XR2   LDX   L2 *-*                                MOVEF040
001C 01  74030000             MDX   L  MOVEF,3                            MOVEF041
001E 01  4C800000             BSC   I  MOVEF                              MOVEF042
                        ************************************************** MOVEF043
0020                          END                                         MOVEF044

    NO ERRORS IN ABOVE ASSEMBLY.
MOVEF
DUP FUNCTION COMPLETED
```

```
                                                                                
                *************************************************** PER   002
                *                                                     PER   003
                *     CHECK OF PARITY AND INVALID DIGITS            * PER   004
                *                                                   * PER   005
                *     CALL     PER                                  * PER   006
                *     DC       ADDR.OF 1ST.DOUBLE WORD IN TABLE     * PER   007
                *     DC       NO.OF DOUBLE WORDS IN TABLE          * PER   008
                *     DC       *-* ERROR INDICATOR                  * PER   009
                *              0= PAR.ERROR                         * PER   010
                *              1= INV.DIGIT                         * PER   011
                *     DC       *-* NO.OF ERRONEOUS DOUBLE WORD      * PER   012
                *     CALL+5   ERROR EXIT                           * PER   013
                *     CALL+6   NO ERROR EXIT                        * PER   014
                *                                                   * PER   015
                *************************************************** PER   016
0000    17159000        ENT      PER                                  PER   017
0000 0  0000    PER     DC       *-*                                  PER   018
0001 01 6D000043        STX   L1 XR1+1                                PER   019
0003 01 6E000045        STX   L2 XR2+1                                PER   020
0005 01 6F000047        STX   L3 XR3+1                                PER   021
0007 01 C4800000        LD    I  PER                                  PER   022
0009 0  905C            S        TAB1                                 PER   023
000A 0  D00C            STO      A2+1                                 PER   024
000B 01 74010000        MDX   L  PER,+1                               PER   025
000D 01 C4800000        LD    I  PER                                  PER   026
000F 0  D051            STO      COUNT                                PER   027
0010 0  1001            SLA      1                                    PER   028
0011 0  D001            STO      *+1                                  PER   029
0012 00 65000000        LDX   L1 *-*                                  PER   030
0014 0  C04D    A1      LD       TWO                                  PER   031
0015 0  D04D            STO      PART                                 PER   032
0016 00 C5000000    A2  LD    L1 *-*                                  PER   033
0018 0  D050            STO      COMO                                 PER   034
0019 0  188C            SRT      12                                   PER   035
001A 0  1010            SLA      16                                   PER   036
001B 0  1084            SLT      4                                    PER   037
001C 0  B048            CMP      NINE                                 PER   038
001D 0  7030            MDX      A4                                   PER   039
001E 0  1000            NOP                                           PER   040
001F 0  1010            SLA      16                                   PER   041
0020 0  1084            SLT      4                                    PER   042
0021 0  B043            CMP      NINE                                 PER   043
0022 0  702B            MDX      A4                                   PER   044
0023 0  1000            NOP                                           PER   045
0024 0  1010            SLA      16                                   PER   046
0025 0  1084            SLT      4                                    PER   047
0026 0  B03E            CMP      NINE                                 PER   048
0027 0  7026            MDX      A4                                   PER   049
0028 0  1000            NOP                                           PER   050
0029 0  1000            NOP                                           PER   051
002A 0  6210            LDX   2  16                                   PER   052
002B 0  C03D            LD       COMO                                 PER   053
002C 0  7001            MDX      A11                                  PER   054
002D 0  1001    IN      SLA      1                                    PER   055
002E 01 4C100032    A11 BSC   L  A90,-                               PER   056
0030 01 74010068        MDX   L  TEST,+1                              PER   057
0032 0  72FF    A90     MDX   2  -1                                   PER   058
0033 0  70F9            MDX      IN                                   PER   059
0034 0  C033            LD       TEST                                 PER   060
0035 01 4C040038        BSC   L  A10,E                                PER   061
0037 0  7023            MDX      A5                                   PER   062
```

```
0038 0  C02E        A10    LD       TAB1+1                    PER  063
0039 0  D02E               STO      TEST                      PER  064
003A 01 74FF0063           MDX   I  PART,-1                   PER  065
003C 0  700D               MDX      A6                        PER  066
003D 01 74FF0061           MDX   I  COUNT,-1                  PER  067
003F 0  700C               MDX      A7                        PER  068
0040 01 74040000           MDX   L  PER,+4                    PER  069
0042 00 65000000   XR1     LDX   L1 *-*                       PER  070
0044 00 66000000   XR2     LDX   L2 *-*                       PER  071
0046 00 67000000   XR3     LDX   L3 *-*                       PER  072
0048 01 4C800000           BSC   I  PER                       PER  073
004A 0  71FF       A6      MDX    1 -1                        PER  074
004B 0  70CA               MDX      A2                        PER  075
004C 0  71FF       A7      MDX    1 -1                        PER  076
004D 0  70C6               MDX      A1                        PER  077
004E 01 74010000   A4      MDX   L  PER,+1                    PER  078
0050 0  C015               LD       TAB1                      PER  079
0051 01 D4800000           STO   I  PER                       PER  080
0053 01 74010000   A8      MDX   L  PER,+1                    PER  081
0055 0  C00B               LD       COUNT                     PER  082
0056 01 D4800000           STO   I  PER                       PER  083
0058 01 74010000           MDX   L  PER,+1                    PER  084
005A 0  70E7               MDX      XR1                       PER  085
005B 01 74010000   A5      MDX   L  PER,+1                    PER  086
005D 0  C009               LD       TAB1+1                    PER  087
005E 01 D4800000           STO   I  PER                       PER  088
0060 0  70F2               MDX      A8                        PER  089
0061 0  0000       COUNT   DC       *-*                       PER  090
0062 0  0002       TWO     DC       2                         PER  091
0063 0  0000       PART    DC       *-*                       PER  092
0064 0  0000       PARIT   DC       *-*                       PER  093
0065 0  0009       NINE    DC       9                         PER  094
0066 0  0001       TAB1    DC       1                         PER  095
0067 0  0000               DC       0                         PER  096
0068 0  0000       TEST    DC       0                         PER  097
0069 0  0000       COMO    DC       0                         PER  098
006A 0  0000       CONT    DC       0                         PER  099
                   ********************************************** PER  100
006C               END                                        PER  101

     NO ERRORS IN ABOVE ASSEMBLY.
PER
DUP FUNCTION COMPLETED
```

```
                        ************************************************** RESET002
                        *                                                * RESET003
                        *     CHECK DATA CHANNEL OPERATION               * RESET004
                        *                                                * RESET005
                        *     CALL    RESET                              * RESET006
                        *     DC      ADDR. OF BITNO IN TYPEWRITER CODE  * RESET007
                        *     DC      ADDR. FOR PROGRAM CONTINUATION WITH * RESET008
                        *             OR WITHOUT RESET DAOP              * RESET009
                        *                                                * RESET010
                        ************************************************** RESET011
0000    19162163                ENT     RESET                              RESET012
0000 0  0000            RESET   DC      *-*                                RESET013
0001 01 6D000025                STX  L1 XR1+1                              RESET014
0003 01 6E000027                STX  L2 XR2+1                              RESET015
0005 01 6F000029                STX  L3 XR3+1                              RESET016
0007 00 67800067                LDX  I3 103                                RESET017
                        *-------------------------------------------------- RESET018
0009 0  621E                    LDX   2 30              TO BE CHANGED FOR LONGER   RESET019
000A 00 65004E20        A1000   LDX  L1 20000           CHECK TIMES        RESET020
000C 0  71FF                    MDX   1 -1                                 RESET021
000D 0  7012                    MDX     A1001           CHECK DAOP         RESET022
000E 0  72FF                    MDX   2 -1                                 RESET023
000F 0  70FA                    MDX     A1000                              RESET024
                        *-------------------------------------------------- RESET025
0010 01 65800000                LDX  I1 RESET           BITNO INTO TYPEWRITER     RESET026
0012 00 C5800000                LD   I1 0               MESSAGE            RESET027
0014 0  D01E                    STO     MESS                               RESET028
                        *-------------------------------------------------- RESET029
0015 20 040565C0                LIBF    DAOP            RESET OF DAOP      RESET030
0016 0  4310                    DC      /4310                              RESET031
                        *-------------------------------------------------- RESET032
0017 20 23A17155                LIBF    TYPEN           MESSAGE *DC-ERROR* RESET033
0018 0  2001                    DC      /2001                              RESET034
0019 1  002C                    DC      TM75-1                             RESET035
001A 0  0000                    DC      0                                  RESET036
                        *-------------------------------------------------- RESET037
001B 01 65800000        A1003   LDX  I1 RESET                              RESET038
001D 0  C101                    LD    1 1                                  RESET039
001E 0  D00C                    STO     XR4+1                              RESET040
001F 0  7004                    MDX     XR1             GO TO EXIT         RESET041
                        *-------------------------------------------------- RESET042
0020 20 040565C0        A1001   LIBF    DAOP            BUSY CHECK DAOP    RESET043
0021 0  0310                    DC      /0310                              RESET044
0022 0  70E9                    MDX     A1000+2         BUSY               RESET045
0023 0  70F7                    MDX     A1003           NOT BUSY           RESET046
                        *-------------------------------------------------- RESET047
0024 00 65000000        XR1     LDX  L1 *-*                                RESET048
0026 00 66000000        XR2     LDX  L2 *-*                                RESET049
0028 00 67000000        XR3     LDX  L3 *-*                                RESET050
002A 00 4C000000        XR4     BSC  L  *-*             EXIT               RESET051
                        *-------------------------------------------------- RESET052
002C 0  0007                    DC      TM76-TM75                          RESET053
002D    000C            TM75    DMES    'R'ADC-ERROR,A'E                   RESET054
0033 0  0000            MESS    DC      *-*             BITNO              RESET055
0034    0000            TM76    BES     0                                  RESET056
                        ************************************************** RESET057
0034                            END                                        RESET058

     NO ERRORS IN ABOVE ASSEMBLY.
RESET
DUP FUNCTION COMPLETED
```

```
                                ********************************************** TICON002
                                *                                            * TICON003
                                *     CONVERSION OF TIME TO 1053 CODE        * TICON004
                                *     TIME=DECIMAL VALUE  XX.XXX HOURS       * TICON005
                                *                                            * TICON006
                                *     CALL    TICON                          * TICON007
                                *     DC      ADDR.OF BSS 3 FOR CONVERTED TIME * TICON008
                                *                                            * TICON009
                                ********************************************** TICON010
0000     23243595               ENT     TICON                                 TICON011
0000 0   0000           TICON  DC      *-*                                   TICON012
0001 0   6B19                   STX   3 A10+1                                 TICON013
0002 00  67800067               LDX   I3 103                                  TICON014
0004 01  C4800000               LD    I TICON                                 TICON015
0006 0   D011                   STO     TYPE        ADDR.OF BSS 3 INTO TYPE   TICON016
0007 01  74010000               MDX   L TICON,+1                              TICON017
0009 30  034D60D2               CALL    CLOCK                                 TICON018
000B 1   001E                   DC      TIME                                  TICON019
000C 0   C011                   LD      TIME                                  TICON020
000D 20  02255103               LIBF    BINDC                                 TICON021
000E 1   001F                   DC      OUTPT                                 TICON022
000F 0   C010                   LD      OUTPT+1                               TICON023
0010 0   D00E                   STO     OUTPT                                 TICON024
0011 0   C00F                   LD      OUTPT+2                               TICON025
0012 0   D00D                   STO     OUTPT+1                               TICON026
0013 0   C011                   LD      PERIO                                 TICON027
0014 0   D00C                   STO     OUTPT+2                               TICON028
0015 20  085935D9               LIBF    HOLPR                                 TICON029
0016 0   0000                   DC      /0000                                 TICON030
0017 1   001F                   DC      OUTPT                                 TICON031
0018 0   0000           TYPE    DC      *-*                                   TICON032
0019 0   0006                   DC      6                                     TICON033
001A 00  67000000       A10     LDX   L3 *-*                                  TICON034
001C 01  4C800000               BSC   I TICON                                 TICON035
001E 0   0000           TIME    DC      *-*                                   TICON036
001F     0006           OUTPT   BSS     6                                     TICON037
0025 0   8420           PERIO   DC      /8420       CARD CODE PERIOD          TICON038
                                ********************************************** TICON039
0026                            END                                           TICON040

    NO ERRORS IN ABOVE ASSEMBLY.
TICON
DUP FUNCTION COMPLETED
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                         ****************************************************** ATEST002
                         *                                                    * ATEST003
                         * ATEST MAIN LOCAL FOR ROUTING OF FOLLOWING          * ATEST004
                         * ALL TEST PROGRAMS                                  * ATEST005
                         * OPCODE 91 - PRINT ALPHAMERIC (PRAL1)               * ATEST006
                         * OPCODE 92 - WORD TEST (WORD2)                      * ATEST007
                         * OPCODE 93 - WRITE AND CHECK PATTRN BL.(WBLC3)      * ATEST008
                         * OPCODE 94 - PATTERN PRINT OUT(PATP4)               * ATEST009
                         * OPCODE 95 - BLOC TEST (BLOC5)                      * ATEST010
                         * OPCODE 96 - CONTINUOUS BLOCK TRANSFER INTO         * ATEST011
                         *            ANALYZER (COBA6)                        * ATEST012
                         * OPCODE 98 - FREE                                   * ATEST013
                         * OPCODE 99-EXIT WITHOUT END OF INTERRUPT              ATEST014
                         *                                                    * ATEST015
                         ****************************************************** ATEST016
0000 00 6580009C         ATEST LDX   I1 156          POINT TO INSK. COMMON      ATEST017
                         * GET OPCOD AND BIT NR OF INSKEL.COMMON               ATEST018
0002 0  C1FF                   LD    1 -1                                      ATEST019
0003 0  D043                   STO     OPCOD                                   ATEST020
0004 0  C1FE                   LD    1 -2                                      ATEST021
0005 0  D042                   STO     BITNO                                   ATEST022
0006 0  1010                   SLA     16                                      ATEST023
0007 0  D042                   STO     BL100                                   ATEST024
                         * TEST OPCODE                                        ATEST025
0008 0  C03E                   LD      OPCOD                                   ATEST026
0009 0  9041                   S       C91                                     ATEST027
000A 01 4C280027               BSC   L AT20,+Z     JUMP IF SMALLER 91         ATEST028
000C 0  D001             AT08  STO     *+1                                     ATEST029
000D 00 65000000               LDX   L1 *-*                                    ATEST030
000F 01 9400004C               S     L  C8                                     ATEST031
0011 01 4C30002E               BSC   L  END,-Z     JUMP IF GREATER 99         ATEST032
0013 0  1010                   SLA      16         CLEAR ACCU                 ATEST033
0014 01 7400004A               MDX   L  BL100,0    100 CHANNELS               ATEST034
0016 0  C035                   LD       C8         YES                        ATEST035
0017 01 66800048         AT10  LDX   I2 BITNO                                  ATEST036
0019 01 4D80003B               BSC   I1 TESTP                                  ATEST037
001B 30 176414F1         PRAL1 CALL     PRAL1                                  ATEST038
001D 30 26599132         WORD2 CALL     WORD2                                  ATEST039
001F 30 260930F3         WBLC3 CALL     WBLC3                                  ATEST040
0021 30 170635F4         PATP4 CALL     PATP4                                  ATEST041
0023 30 024D60F5         BLOC5 CALL     BLOC5                                  ATEST042
0025 30 03582076         COBA6 CALL     COBA6                                  ATEST043
0027 0  C01F             AT20  LD       OPCOD                                  ATEST044
0028 0  9020                   S        C81                                    ATEST045
0029 01 4C28002E               BSC   L  END,+Z     JUMP IF SMALLER 81         ATEST046
002B 01 7401004A               MDX   L  BL100,+1   SET 100 IND.               ATEST047
002D 0  70DE                   MDX      AT08                                   ATEST048
                         * EXIT FOR 97+98                                     ATEST049
002E 20 040565C0         END   LIBF     DAOP                                   ATEST050
002F 0  1000                   DC       /1000      COMMAND RESET              ATEST051
0030 1  004D                   DC       RESET                                 ATEST052
0031 1  0044                   DC       ROUTI                                 ATEST053
0032 0  C020                   LD       COMD1                                 ATEST054
0033 0  E814                   OR       BITNO                                 ATEST055
0034 0  D01E                   STO      COMD1                                 ATEST056
0035 20 040565C0               LIBF     DAOP       END OF INTERRUPT           ATEST057
0036 0  1000                   DC       /1000                                 ATEST058
0037 1  0051                   DC       AREA1                                 ATEST059
0038 1  0044                   DC       ROUTI                                 ATEST060
0039 30 09563167         END1  CALL     INTEX                                  ATEST061
003B 1  001B             TESTP DC       PRAL1      91                         ATEST062
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003C 1  001D              DC      WORD2       92                              ATEST063
003D 1  001F              DC      WBLC3       93                              ATEST064
003E 1  0021              DC      PATP4       94                              ATEST065
003F 1  0023              DC      BLOC5       95                              ATEST066
0040 1  0025              DC      COBA6       96                              ATEST067
0041 1  002E              DC      END         97                              ATEST068
0042 1  002E              DC      END         98                              ATEST069
0043 1  0039              DC      END1        99 -EXIT WITHOUT END INT.       ATEST070
0044 0  0000        ROUTI DC      *-*                                         ATEST071
0045 01 4C800044          BSC   I ROUTI                                       ATEST072
0047 0  0000        OPCOD DC      *-*                                         ATEST073
0048 0  0000        BITNO DC      *-*                                         ATEST074
0049 0  0051        C81   DC      81                                          ATEST075
004A 0  0000        BL100 DC      0                                           ATEST076
004B 0  005B        C91   DC      91                                          ATEST077
004C 0  0008        C8    DC      8                                           ATEST078
004D 0  0003        RESET DC      3           DATA+                           ATEST079
004E 0  007B              DC      123         COMMAND OUT RESET               ATEST080
004F 0  0000              DC      0                                           ATEST081
0050 0  0000              DC                                                  ATEST082
0051 0  0002        AREA1 DC      2                                           ATEST083
0052 0  007C              DC      124                                         ATEST084
0053 0  B000        COMD1 DC      /B000       END OF INTERRUPT                ATEST085
0054 0  000C        C12   DC      12                                          ATEST086
0056    0000              END     ATEST                                       ATEST087
A 05 MAINLINE PROGRAM WITH NO NAME.

    NO ERRORS IN ABOVE ASSEMBLY.
D46   INOLD  ON
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                         ************************************************** PRAL1002
                         *                                                * PRAL1003
                         * INTERFACE TEST ROUTINE-PRAL1-                  * PRAL1004
                         * THIS ROUTINE PRINTS OUT ALL USED CHARACTERS    * PRAL1005
                         * ON INTERFACE TYPEWRITER                        * PRAL1006
                         *                                                * PRAL1007
                         ************************************************** PRAL1008
0000     176414F1              ENT     PRAL1                               PRAL1009
0000 0   0000          PRAL1  DC      *-*                                 PRAL1010
0001 0   6A6C                 STX   2 BITNO                               PRAL1011
                       * ADD STATION NR TO COMMANDS                       PRAL1012
0002 0   C02A                 LD      COMD1                               PRAL1013
0003 0   806A                 A       BITNO                               PRAL1014
0004 0   D028                 STO     COMD1                               PRAL1015
0005 0   C021                 LD      COMD2                               PRAL1016
0006 0   8067                 A       BITNO                               PRAL1017
0007 0   D01F                 STO     COMD2                               PRAL1018
                       * WRITE MESSAGE ON 1053                           PRAL1019
0008 20  040565C0      START  LIBF    DAOP      COMMAND *WRITE ALPHAMERIC* PRAL1020
0009 0   1000                 DC      /1000                               PRAL1021
000A 1   0025                 DC      AREA3                               PRAL1022
000B 1   0022                 DC      ROUTI                               PRAL1023
000C 20  040565C0             LIBF    DAOP      RANDOM, EXT.SYNCH.        PRAL1024
000D 0   1310                 DC      /1310                               PRAL1025
000E 1   002E                 DC      IM1                                 PRAL1026
000F 1   0022                 DC      ROUTI                               PRAL1027
0010 30  19162163             CALL    RESET                               PRAL1028
0012 1   002A                 DC      AREA4+2   ZERO= .. ON 1053          PRAL1029
0013 1   0014                 DC      PRA10                               PRAL1030
0014 20  23A17155      PRA10  LIBF    TYPEN                               PRAL1031
0015 0   2001                 DC      /2001                               PRAL1032
0016 1   0060                 DC      TM1-1                               PRAL1033
0017 0   0000                 DC      0                                   PRAL1034
0018 20  040565C0             LIBF    DAOP                                PRAL1035
0019 0   1000                 DC      /1000                               PRAL1036
001A 1   0028                 DC      AREA4                               PRAL1037
001B 1   0022                 DC      ROUTI                               PRAL1038
001C 20  040565C0             LIBF    DAOP                                PRAL1039
001D 0   1000                 DC      /1000                               PRAL1040
001E 1   002B                 DC      AREA5                               PRAL1041
001F 1   0022                 DC      ROUTI                               PRAL1042
0020 30  09563167             CALL    INTEX                               PRAL1043
0022 0   0000          ROUTI  DC      *-*                                 PRAL1044
0023 01  4C800022             BSC  I  ROUTI                               PRAL1045
0025 0   0002          AREA3  DC      2         AREA FOR INTERFACE COMMAND PRAL1046
0026 0   007C                 DC      124       ADDRESS                   PRAL1047
0027 0   1400          COMD2  DC      /1400     COMMAND*PRINT ALPHAMERIC* PRAL1048
0028 0   0002          AREA4  DC      2                                   PRAL1049
0029 0   007C                 DC      124                                 PRAL1050
002A 0   0000                 DC      0       COMMAND  RESET              PRAL1051
002B 0   0002          AREA5  DC      2                                   PRAL1052
002C 0   007C                 DC      124                                 PRAL1053
002D 0   8000          COMD1  DC      /8000   END  OF INTERRUPT           PRAL1054
002E 0   0031          IM1    DC      49                                  PRAL1055
002F 0   007B                 DC      123                                 PRAL1056
0030 0   9000                 DC      /9000     A                         PRAL1057
0031 0   8800                 DC      /8800     B                         PRAL1058
0032 0   8400                 DC      /8400     C                         PRAL1059
0033 0   8200                 DC      /8200     D                         PRAL1060
0034 0   8100                 DC      /8100     E                         PRAL1061
0035 0   8080                 DC      /8080     F                         PRAL1062
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0036 0  8040              DC      /8040       G                          PRAL1063
0037 0  8020              DC      /8020       H                          PRAL1064
0038 0  8010              DC      /8010       I                          PRAL1065
0039 0  5000              DC      /5000       J                          PRAL1066
003A 0  4800              DC      /4800       K                          PRAL1067
003B 0  4400              DC      /4400       L                          PRAL1068
003C 0  4200              DC      /4200       M                          PRAL1069
003D 0  4100              DC      /4100       N                          PRAL1070
003E 0  4080              DC      /4080       O                          PRAL1071
003F 0  4040              DC      /4040       P                          PRAL1072
0040 0  4020              DC      /4020       Q                          PRAL1073
0041 0  4010              DC      /4010       R                          PRAL1074
0042 0  2800              DC      /2800       S                          PRAL1075
0043 0  2400              DC      /2400       T                          PRAL1076
0044 0  2200              DC      /2200       U                          PRAL1077
0045 0  2100              DC      /2100       V                          PRAL1078
0046 0  2080              DC      /2080       W                          PRAL1079
0047 0  2040              DC      /2040       X                          PRAL1080
0048 0  2020              DC      /2020       Y                          PRAL1081
0049 0  2010              DC      /2010       Z                          PRAL1082
004A 0  0300              DC      /0300       LINE FEED                  PRAL1083
004B 0  0900              DC      /0900       SHIFT TO RED               PRAL1084
004C 0  2000              DC      /2000       0                          PRAL1085
004D 0  1000              DC      /1000       1                          PRAL1086
004E 0  0800              DC      /0800       2                          PRAL1087
004F 0  0400              DC      /0400       3                          PRAL1088
0050 0  0200              DC      /0200       4                          PRAL1089
0051 0  0100              DC      /0100       5                          PRAL1090
0052 0  0080              DC      /0080       6                          PRAL1091
0053 0  0040              DC      /0040       7                          PRAL1092
0054 0  0020              DC      /0020       8                          PRAL1093
0055 0  0010              DC      /0010       9                          PRAL1094
0056 0  0500              DC      /0500       SHIFT TO BLACK             PRAL1095
0057 0  0300              DC      /0300       LINE FEED                  PRAL1096
0058 0  3000              DC      /3000       /                          PRAL1097
0059 0  8420              DC      /8420       .                          PRAL1098
005A 0  2420              DC      /2420       ,                          PRAL1099
005B 0  80A0              DC      /80A0       +                          PRAL1100
005C 0  0000              DC      /0000       SPACE                      PRAL1101
005D 0  4000              DC      /4000       -                          PRAL1102
005E 0  4220              DC      /4220       *                          PRAL1103
005F 0  00A0              DC      /00A0       =                          PRAL1104
0060 0  000D              DC      TM2-TM1                                PRAL1105
0061    001A      TM1     DMES    '2R'TPRINT STANDARD MESSAGE'E          PRAL1106
006E    0000      TM2     BES     0                                      PRAL1107
006E 0  0000      BITNO   DC      *-*                                    PRAL1108
0070              ENDX    END                                            PRAL1109
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NO ERRORS IN ABOVE ASSEMBLY.

PRAL1
DUP FUNCTION COMPLETED

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                        ************************************************* WORD2002
                        *                                               * WORD2003
                        * INTERFACE TEST PROGRAM-WORD2                  * WORD2004
                        * WORD TEST                                     * WORD2005
                        *                                               * WORD2006
                        ************************************************* WORD2007
0000     26599132               ENT     WORD2                           WORD2008
0000 0   0000           WORD2  DC      *-*                              WORD2009
0001 01  6E000241               STX  L2 BITNO                           WORD2010
                        * ADD STATION NR TO COMMANDS                     WORD2011
0003 0   61F9                   LDX   1 -7                              WORD2012
0004 01  66000241               LDX  L2 R                               WORD2013
0006 01  C500C241       AGAIN  LD   L1 COMD1+7                          WORD2014
0008 0   8200                   A     2 BITNO-R                         WORD2015
0009 01  D5000241               STO  L1 COMD1+7                         WORD2016
000B 0   7101                   MDX   1 +1                              WORD2017
000C 0   70F9                   MDX     AGAIN                           WORD2018
                        * READ PATTERN FROM DISK                        WORD2019
000D 0   C2ED                   LD    2 WORDC-R                         WORD2020
000E 0   D2CB                   STO   2 SECTO-R     PREPARE DISK OPER.  WORD2021
000F 0   C2F4                   LD    2 C1-R        TEST1/1             WORD2022
0010 0   D2F8                   STO   2 T1SEQ-R                         WORD2023
0011 20  04262495               LIBF    DISKN                           WORD2024
0012 0   1000                   DC      /1000       READ PATTERN FROM   WORD2025
0013 1   020C                   DC      SECTO       DISK                WORD2026
0014 0   0000                   DC      0                               WORD2027
0015 20  04262495       A10    LIBF    DISKN                           WORD2028
0016 0   0100                   DC      /0100       BUSY TEST           WORD2029
0017 1   020C                   DC      SECTO                           WORD2030
0018 0   70FC                   MDX     A10                             WORD2031
                        * PRINT -BEGIN WORD TEST-                       WORD2032
0019 0   C2FB                   LD    2 COMD3-R     PRINT ALPHAMERIC    WORD2033
001A 0   D203                   STO   2 AREA1+2-R                       WORD2034
001B 20  040565C0               LIBF    DAOP                            WORD2035
001C 0   1000                   DC      /1000                           WORD2036
001D 1   0263                   DC      AREA4       RESET               WORD2037
001E 1   026A                   DC      ROUTI                           WORD2038
001F 20  040565C0               LIBF    DAOP                            WORD2039
0020 0   1000                   DC      /1000                           WORD2040
0021 1   0242                   DC      AREA1       COMMAND             WORD2041
0022 1   026A                   DC      ROUTI                           WORD2042
0023 20  040565C0               LIBF    DAOP                            WORD2043
0024 0   1310                   DC      /1310       DATA CHANNEL OP.    WORD2044
0025 1   02F9                   DC      BTEST       BEGIN WORD TEST MESS. WORD2045
0026 1   026A                   DC      ROUTI                           WORD2046
0027 30  19162163               CALL    RESET                           WORD2047
0029 1   0234                   DC      C0                              WORD2048
002A 1   002B                   DC      A11                             WORD2049
                        ************************************************* WORD2050
                        * STEP 1                                         WORD2051
                        *     READ THE CONTENTS OF ALL WORDS IN DIRECT    WORD2052
                        *     PROGRAM CONTROL AND COMPARE                 WORD2053
                        *     WITH THE PATTERN. PRINT OUT BOTH VALUES ONLY WORD2054
                        *     IN CASE OF A DETECTED FAULT.                WORD2055
                        *                                                 WORD2056
002B 0   61E0           A11    LDX   1 -32                              WORD2057
002C 0   C2F3                   LD    2 C0-R        START WITH WORD ZERO WORD2058
002D 0   D2EF                   STO   2 WORDN-R                         WORD2059
002E 01  66000023A      A13    LDX  L2 COMD1       GET ADDR. OF COMMAND 1 WORD2060
0030 0   6A09                   STX   2 A17+1                           WORD2061
0031 0   7003                   MDX     A15                             WORD2062
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0032 01 6600023B    A14   LDX  L2 COMD2      GET ADDR. OF COMMAND 2          WORD2063
0034 0  6A05              STX   2 A17+1                                      WORD2064
0035 01 66000241    A15   LDX  L2 R                                         WORD2065
0037 0  C2EF              LD    2 WORDN-R                                    WORD2066
0038 0  1004              SLA     4          WORD ADDRESS IN CORRECT PL      WORD2067
0039 00 84000000    A17   A    L  *-*        ADD COMMAND                     WORD2068
003B 0  D203              STO   2 AREA1+2-R                                  WORD2069
003C 20 040565C0          LIBF    DAOP                                       WORD2070
003D 0  1000              DC      /1000                                      WORD2071
003E 1  0263              DC      AREA4      COMMAND  RESET                  WORD2072
003F 1  026A              DC      ROUTI                                      WORD2073
0040 20 040565C0          LIBF    DAOP        COMMAND                        WORD2074
0041 0  1000              DC      /1000       READ WORD                      WORD2075
0042 1  0242              DC      AREA1                                      WORD2076
0043 1  026A              DC      ROUTI                                      WORD2077
0044 20 042555C0          LIBF    DINP        READ ONE WORD                  WORD2078
0045 0  2000              DC      /2000                                      WORD2079
0046 1  0246              DC      AREA2       DPC                            WORD2080
0047 1  026A              DC      ROUTI                                      WORD2081
0048 20 042555C0    A20   LIBF    DINP                                       WORD2082
0049 0  0000              DC      /0000       BUSY TEST                      WORD2083
004A 0  70FD              MDX     A20                                        WORD2084
004B 01 6D000231          STX   L1 SAVE1      CHECK XR1 CONTENT              WORD2085
004D 0  C2F0              LD    2 SAVE1-R                                    WORD2086
004E 01 4C040054          BSC   L  A25,E      BRANCH IF ODD,DOUBLE W.AV.     WORD2087
0050 0  C207              LD    2 ADDR-R                                     WORD2088
0051 0  D208              STO   2 ADDR+1-R    PREP.ERROR MESS.+DOUB.W.L.     WORD2089
0052 0  7101              MDX   1 +1        NEXT H.W.                        WORD2090
0053 0  70DE              MDX     A14       READ M.S. H. W.                  WORD2091
0054 0  CA07        A25   LDD   2 ADDR-R      LOAD COMPLETE WORD             WORD2092
0055 01 4C10005C          BSC   L  A29,-      BRANCH IF NOT LAST WORD        WORD2093
0057 0  F22C              EOR   2 MASK1-R     REM. FLAG BIT, CHANGE PAR.BI   WORD2094
0058 0  D207              STO   2 ADDR-R      PREPARE EV. ERROR MESS.        WORD2095
0059 0  C2F4              LD    2 C1-R                                       WORD2096
005A 0  D2F2              STO   2 LSI-R       SET LAST SCALER INDICATOR      WORD2097
005B 0  CA07              LDD   2 ADDR-R      GET COMPLETE WORD              WORD2098
005C 0  71FF        A29   MDX   1 -1        ASSURE EVEN PATTERN ADDR.        WORD2099
005D 01 BD00022E          DCM   L1 PATRN+32   COMPARE TO PATTERN DOUBLE W.   WORD2100
005F 0  7000              MDX     *           ERROR                          WORD2101
0060 0  7001              MDX     A21                                        WORD2102
0061 0  7002              MDX     A22                                        WORD2103
0062 01 4C00006E    A21   BSC   L  A50         ERROR DETECTED                WORD2104
0064 0  7102        A22   MDX   1 +2        RST. NEXT DOUBLE WORD ADDR       WORD2105
0065 0  7002              MDX     A33                                        WORD2106
0066 01 4C0000F1          BSC   L  B01        TEST 1/B                       WORD2107
0068 01 74010230    A33   MDX   L  WORDN,+1   NEXT DOUBLE WORD               WORD2108
006A 0  C2F2              LD    2 LSI-R       CHECK LAST SCALER INDICATOR    WORD2109
006B 01 4C2000F1          BSC   L  B01,Z    GO TO TEST B                     WORD2110
006D 0  70C0              MDX     A13       CONTINUE TEST-A                  WORD2111
                    ********************************************************WORD2112
                    *     PREPARATION  FOR  ERROR  MESSAGES.                 WORD2113
006E 01 66000241    A50   LDX  L2 R                                         WORD2114
0070 0  C2F8              LD    2 T1SEQ-R     TEST NR. FOR ERR. MESS.        WORD2115
0071 20 02255103          LIBF    BINDC       DEC MODE                       WORD2116
0072 1  026E              DC      OUTP2                                      WORD2117
0073 20 085935D9          LIBF    HOLPR       PRINTER CODE                   WORD2118
0074 0  0000              DC      /0000                                      WORD2119
0075 1  0272              DC      OUTP2+4                                    WORD2120
0076 1  0279              DC      TESTN                                      WORD2121
0077 0  0002              DC      2                                          WORD2122
0078 0  C232              LD    2 OUTP2+5-R                                  WORD2123
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0079 0  D265          STO  2 ITEST-R   TEST NUMBER FOR INTERFACE   WORD2124
007A 0  C2EF          LD   2 WORDN-R    WORD NR FOR ERR. MESS.    WORD2125
007B 20 02255103      LIBF   BINDC      CARD CODE                 WORD2126
007C 1  026E          DC     OUTP2                                WORD2127
007D 0  C231          LD   2 OUTP2+4-R                           WORD2128
007E 0  D272          STO  2 IM1-R                               WORD2129
007F 0  C232          LD   2 OUTP2+5-R                           WORD2130
0080 0  D273          STO  2 IM1+1-R                             WORD2131
0081 20 085935D9      LIBF   HOLPR      PRINTER CODE              WORD2132
0082 0  0000          DC     /0000                               WORD2133
0083 1  0272          DC     OUTP2+4                             WORD2134
0084 1  0281          DC     CM1                                 WORD2135
0085 0  0002          DC     2                                   WORD2136
                    * PREPARE TO PRINT OUT WRONG DOUBLE WORDS (XR1) WORD2137
0086 01 C500022E      LD   L1 PATRN+32  GET LSHW                  WORD2138
0088 0  1890          SRT    16         SAVE LSHW                 WORD2139
0089 0  7101          MDX  1 +1                                  WORD2140
008A 01 C500022E      LD   L1 PATRN+32  GET MSHW                  WORD2141
008C 0  71FF          MDX  1 -1         RESTORE XR1               WORD2142
008D 20 02255227      LIBF   BINHX      CARD CODE                 WORD2143
008E 1  02BB          DC     IM2                                 WORD2144
008F 20 085935D9      LIBF   HOLPR      PRINTER CODE              WORD2145
0090 0  0000          DC     /0000                               WORD2146
0091 1  02BB          DC     IM2                                 WORD2147
0092 1  028B          DC     CM2                                 WORD2148
0093 0  0004          DC     4                                   WORD2149
0094 0  1090          SLT    16         GET SECOND HALF WORD     WORD2150
0095 20 02255227      LIBF   BINHX                               WORD2151
0096 1  02C1          DC     IM2+6                               WORD2152
0097 20 085935D9      LIBF   HOLPR                               WORD2153
0098 0  0000          DC     /0000                               WORD2154
0099 1  02C1          DC     IM2+6                               WORD2155
009A 1  028D          DC     CM2+2                               WORD2156
009B 0  0004          DC     4                                   WORD2157
009C 0  C207          LD   2 ADDR-R     GET LSHW                  WORD2158
009D 0  1890          SRT    16         SAVE LSHW                 WORD2159
009E 0  C208          LD   2 ADDR+1-R   GET MSHW                  WORD2160
009F 20 02255227      LIBF   BINHX      CARD CODE                 WORD2161
00A0 1  02CB          DC     IM3                                 WORD2162
00A1 20 085935D9      LIBF   HOLPR      PRINTER CODE              WORD2163
00A2 0  0000          DC     /0000                               WORD2164
00A3 1  02CB          DC     IM3                                 WORD2165
00A4 1  0299          DC     CM3                                 WORD2166
00A5 0  0004          DC     4                                   WORD2167
00A6 0  1090          SLT    16         SEC. HALF.OF INTERF. WORD WORD2168
00A7 20 02255227      LIBF   BINHX                               WORD2169
00A8 1  02D1          DC     IM3+6                               WORD2170
00A9 20 085935D9      LIBF   HOLPR                               WORD2171
00AA 0  0000          DC     /0000                               WORD2172
00AB 1  02D1          DC     IM3+6                               WORD2173
00AC 1  029B          DC     CM3+2                               WORD2174
00AD 0  0004          DC     4                                   WORD2175
00AE 20 23A17155      LIBF   TYPEN      PRINT ON                  WORD2176
00AF 0  2001          DC     /2001       1053                    WORD2177
00B0 1  0274          DC     M1-1                                WORD2178
00B1 0  0000          DC     0                                   WORD2179
00B2 0  C2FB    A56   LD   2 COMD3-R     WRITE INTO SCALER         WORD2180
00B3 0  D203          STO  2 AREA1+2-R                           WORD2181
00B4 20 040565C0      LIBF   DAOP                                WORD2182
00B5 0  1000          DC     /1000                               WORD2183
00B6 1  0263          DC     AREA4       RESET                   WORD2184
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00B7 1  026A                DC      ROUTI                                   WORD2185
00B8 20 040565C0            LIBF    DAOP                                    WORD2186
00B9 0  1000                DC      /1000                                   WORD2187
00BA 1  0242                DC      AREA1       COMMAND                     WORD2188
00BB 1  026A                DC      ROUTI                                   WORD2189
00BC 20 040565C0            LIBF    DAOP                                    WORD2190
00BD 0  1310                DC      /1310       WRITE SINGLE ADD.           WORD2191
00BE 1  029D                DC      M3          EXT SYNC. DATA CHAN.        WORD2192
00BF 1  026A                DC      ROUTI                                   WORD2193
00C0 30 19162163            CALL    RESET                                   WORD2194
00C2 1  0234                DC      C0                                      WORD2195
00C3 1  00C4                DC      A55                                     WORD2196
00C4 01 74FF022F    A55     MDX  I  MNOAE,-1    NR OF ERRORS TEST           WORD2197
00C6 0  7018                MDX     A60                                     WORD2198
                    * TOO MANY ERRORS                                       WORD2199
00C7 20 23A17155            LIBF    TYPEN       TOO MANY ERRORS             WORD2200
00C8 0  2001                DC      /2001                                   WORD2201
00C9 1  031C                DC      M5-1                                    WORD2202
00CA 0  0000                DC      0                                       WORD2203
00CB 0  C2FB                LD   2  COMD3-R     PRINT ALPHAMERIC            WORD2204
00CC 0  D203                STO  2  AREA1+2-R                               WORD2205
00CD 20 040565C0            LIBF    DAOP                                    WORD2206
00CE 0  1000                DC      /1000                                   WORD2207
00CF 1  0263                DC      AREA4       RESET                       WORD2208
00D0 1  026A                DC      ROUTI                                   WORD2209
00D1 20 040565C0            LIBF    DAOP                                    WORD2210
00D2 0  1000                DC      /1000                                   WORD2211
00D3 1  0242                DC      AREA1       COMMAND                     WORD2212
00D4 1  026A                DC      ROUTI                                   WORD2213
00D5 20 040565C0            LIBF    DAOP                                    WORD2214
00D6 0  1310                DC      /1310                                   WORD2215
00D7 1  02D6                DC      M7                                      WORD2216
00D8 1  026A                DC      ROUTI                                   WORD2217
00D9 30 19162163    A57     CALL    RESET                                   WORD2218
00DB 1  0234                DC      C0                                      WORD2219
00DC 1  00DD                DC      A58                                     WORD2220
00DD 01 4C0001F8    A58     BSC  L  D10         EFFECTUATE END OF INTERRPT  WORD2221
                    * CONTINUE ACCORDING TEST-STEP                          WORD2222
00DF 0  C2F8        A60     LD   2  T1SEQ-R     CHECK TEST NR.              WORD2223
00E0 0  B2F4                CMP  2  C1-R                                    WORD2224
00E1 0  7000                MDX     *                                       WORD2225
00E2 0  7002                MDX     A51                                     WORD2226
00E3 01 4C000064            BSC  L  A22         CONTINUE TEST 1/A           WORD2227
00E5 0  B2F5        A51     CMP  2  C2-R        CHECK TEST NR.              WORD2228
00E6 0  7000                MDX     *                                       WORD2229
00E7 0  7002                MDX     A52                                     WORD2230
00E8 01 4C000157            BSC  L  B70         CONTINUE TEST 1/B           WORD2231
00EA 0  B2F6        A52     CMP  2  C3-R        CHECK TEST NR.              WORD2232
00EB 0  7000                MDX     *                                       WORD2233
00EC 0  7002                MDX     A53                                     WORD2234
00ED 01 4C0001C2            BSC  L  C44                                     WORD2235
00EF 01 4C0001F8    A53     BSC  L  D10                                     WORD2236
                    ********************************************************WORD2237
                    * STEP 2                                                WORD2238
                    *     WRITE SEQUENTIALLY ALL PATTERN VALUES             WORD2239
                    *     INTO THE SCALERS AND READ BACK THE VALUES         WORD2240
                    *     (WRITE/READ CYCLES) IN DIRECT PROGRAM CONTROL     WORD2241
                    *                                                       WORD2242
00F1 01 66000241    B01     LDX  L2 R                                       WORD2243
00F3 0  C2F4                LD   2  C1-R                                    WORD2244
00F4 0  D2EF                STO  2  WORDN-R     FIRST SCALER                WORD2245
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00F5 0  C2F5              LD    2 C2-R                              WORD2246
00F6 0  D2F8              STO   2 T1SEQ-R     SET TO TEST 2         WORD2247
00F7 0  C2F3              LD    2 C0-R                              WORD2248
00F8 0  D2F2              STO   2 LSI-R       CLEAR L.S.I.          WORD2249
00F9 0  61E0        B05   LDX   1 -32         32 HALF WORDS         WORD2250
00FA 0  C2F3              LD    2 C0-R                              WORD2251
00FB 0  D2F1              STO   2 SAVE2-R     START WITH WORD ZERO  WORD2252
00FC 01 66800232    B10   LDX  I2 SAVE2       RESTORE XR2           WORD2253
00FE 01 C600020E          LD   L2 PATRN                             WORD2254
0100 01 D400024C          STO  L  AREA3+2                           WORD2255
0102 01 C4000230          LD   L  WORDN       SCALER ADDRESS        WORD2256
0104 0  1004              SLA     4                                 WORD2257
0105 01 8400023D          A    L  COMD4       WRITE SCALER NI       WORD2258
0107 01 D4000244          STO  L  AREA1+2     COMMAND               WORD2259
0109 20 040565C0          LIBF    DAOP                              WORD2260
010A 0  1000              DC      /1000                             WORD2261
010B 1  0263              DC      AREA4       RESET                 WORD2262
010C 1  026A              DC      ROUTI                             WORD2263
010D 20 040565C0          LIBF    DAOP                              WORD2264
010E 0  1000              DC      /1000       WRITE SEQ. DPC.       WORD2265
010F 1  024A              DC      AREA3                             WORD2266
0110 1  026A              DC      ROUTI                             WORD2267
0111 20 040565C0          LIBF    DAOP                              WORD2268
0112 0  1000              DC      /1000       COMMAND WRITE         WORD2269
0113 1  0242              DC      AREA1                             WORD2270
0114 1  026A              DC      ROUTI                             WORD2271
0115 20 040565C0    B30   LIBF    DAOP                              WORD2272
0116 0  0000              DC      /0000       BUSY TEST             WORD2273
0117 0  70FD              MDX     B30                               WORD2274
0118 0  7201              MDX   2 +1                                WORD2275
0119 01 6E000232          STX  L2 SAVE2       CHECK XR2 CONT.       WORD2276
011B 01 C4000232          LD   L  SAVE2                             WORD2277
011D 01 4C0400FC          BSC  L  B10,E       BRANCH IF SEC. HALF WORD WORD2278
011F 01 6600023A          LDX  L2 COMD1       GET ADDR. OF COMMAND 1 WORD2279
0121 01 6E00012D          STX  L2 B40+1                             WORD2280
0123 0  7004              MDX     B35                               WORD2281
0124 01 6600023B    B33   LDX  L2 COMD2       GET ADDR. OF COMMAND 2 WORD2282
0126 01 6E00012D          STX  L2 B40+1                             WORD2283
0128 01 66000241    B35   LDX  L2 R                                 WORD2284
012A 0  C2EF              LD    2 WORDN-R                           WORD2285
012B 0  1004              SLA     4           COMMAND               WORD2286
012C 00 84000000    B40   A    L  *-*         READ                  WORD2287
012E 0  D203              STO   2 AREA1+2-R                         WORD2288
012F 20 040565C0          LIBF    DAOP                              WORD2289
0130 0  1000              DC      /1000                             WORD2290
0131 1  0263              DC      AREA4                             WORD2291
0132 1  026A              DC      ROUTI                             WORD2292
0133 20 040565C0          LIBF    DAOP                              WORD2293
0134 0  1000              DC      /1000       COMMAND               WORD2294
0135 1  0242              DC      AREA1                             WORD2295
0136 1  026A              DC      ROUTI                             WORD2296
0137 20 042555C0          LIBF    DINP                              WORD2297
0138 0  2000              DC      /2000       READ SEQ. DPC         WORD2298
0139 1  0246              DC      AREA2                             WORD2299
013A 1  026A              DC      ROUTI                             WORD2300
013B 20 042555C0    B50   LIBF    DINP                              WORD2301
013C 0  0000              DC      /0000       TEST                  WORD2302
013D 0  70FD              MDX     B50                               WORD2303
013E 01 6D000231          STX  L1 SAVE1       CHECK XR1 CONT.       WORD2304
0140 0  C2F0              LD    2 SAVE1-R                           WORD2305
0141 01 4C040147          BSC  L  B55,E       BR. IF ODD,DOUB.W.AVAIL. WORD2306
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0143 0  C207            LD    2 ADDR-R                                  WORD2307
0144 0  D208            STO   2 ADDR+1-R  PREPARE EV. ERR. MESS.+LOAD   WORD2308
0145 0  7101            MDX   1 +1                                      WORD2309
0146 0  70DD            MDX     B33       GET NEXT H. W.                WORD2310
0147 0  71FF     B55    MDX   1 -1        ASSURE EVEN PATT. ADDR.       WORD2311
0148 0  CA07            LDD   2 ADDR-R                                  WORD2312
0149 01 4C100150        BSC  L  B60,-                                   WORD2313
014B 0  F22C            EOR   2 MASK1-R    LAST SCALER                  WORD2314
014C 0  D207            STO   2 ADDR-R                                  WORD2315
014D 0  C2F4            LD    2 C1-R                                    WORD2316
014E 0  D2F2            STO   2 LSI-R      LAST SCALER INDIC.           WORD2317
014F 0  CA07            LDD   2 ADDR-R                                  WORD2318
0150 01 BD00022E B60    DCM  L1 PATRN+32                                WORD2319
0152 0  7000            MDX     *         ERROR                         WORD2320
0153 0  7001            MDX     B65                                     WORD2321
0154 0  7002            MDX     B70                                     WORD2322
0155 01 4C00006E B65    BSC  L  A50                                     WORD2323
0157 0  7102     B70    MDX   1 +2        GET NEXT PATTRN DOUBLE W.     WORD2324
0158 0  70A3            MDX     B10        CONTINUE TEST 1/B.           WORD2325
0159 01 74010230 B100   MDX  L  WORDN,+1   NEXT SCALER                  WORD2326
015B 0  C2F2            LD    2 LSI-R                                   WORD2327
015C 01 4C200161        BSC  L  C01,Z      NEXT TEST IF IT WAS LAST SCWORD2328
015E 01 74FF020A        MDX  I  MNS,-1    IN CASE NO FLAG BIT IS DETECWORD2329
0160 0  7098            MDX     B05       CONTINUE TEST-B NEXT SCALER WORD2330
                        ********************************************** WORD2331
                        * STEP 3            (DATA CHANNEL, TEST)      WORD2332
                        *      WRITE THE PATTERN CONTENTS INTO THE      WORD2333
                        *      SCALERS AND READ BACK THE CONTENTS OF ALL WORDWORD2334
                        *                                               WORD2335
0161 0  C2F4     C01    LD    2 C1-R                                    WORD2336
0162 0  D2EF            STO   2 WORDN-R    FIRST SCALER                 WORD2337
0163 0  C2F6            LD    2 C3-R                                    WORD2338
0164 0  D2F8            STO   2 T1SEQ-R    TEST 3                       WORD2339
0165 0  C2F3            LD    2 C0-R                                    WORD2340
0166 0  D2F2            STO   2 LSI-R                                   WORD2341
0167 0  61EE            LDX   1 -18        TEST FLAG BIT                WORD2342
0168 01 C5000222 C05    LD   L1 PATRN+20                                WORD2343
016A 0  D20B            STO   2 AREA3+2-R                               WORD2344
016B 0  C2EF            LD    2 WORDN-R                                 WORD2345
016C 0  1004            SLA     4                                       WORD2346
016D 0  82FC            A     2 COMD4-R    WRITE INTO SCALER            WORD2347
016E 0  D203            STO   2 AREA1+2-R                               WORD2348
016F 20 040565C0        LIBF    DAOP                                    WORD2349
0170 0  1000            DC      /1000                                   WORD2350
0171 1  0263            DC      AREA4                                   WORD2351
0172 1  026A            DC      ROUTI                                   WORD2352
0173 20 040565C0        LIBF    DAOP                                    WORD2353
0174 0  1000            DC      /1000      WRITE.SEC.DPC                WORD2354
0175 1  024A            DC      AREA3                                   WORD2355
0176 1  026A            DC      ROUTI                                   WORD2356
0177 20 040565C0        LIBF    DAOP                                    WORD2357
0178 0  1000            DC      /1000      COMMAND WRITE                WORD2358
0179 1  0242            DC      AREA1                                   WORD2359
017A 1  026A            DC      ROUTI                                   WORD2360
017B 20 040565C0 C10    LIBF    DAOP                                    WORD2361
017C 0  0000            DC      /0000                                   WORD2362
017D 0  70FD            MDX     C10                                     WORD2363
017E 0  7101            MDX   1 +1                                      WORD2364
017F 0  7001            MDX     C20                                     WORD2365
0180 0  7008            MDX     C25                                     WORD2366
0181 01 6D000231 C20    STX  L1 SAVE1      CHECK XR1 CONT.              WORD2367
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0183 0  C2F0           LD    2 SAVE1-R                                  WORD2368
0184 01 4C040168       BSC   L C05,E       BRANCH IF NEXT HALF WORD    WORD2369
0186 01 74010230       MDX   L WORDN,+1    NEW DOUBLE WORD             WORD2370
0188 0  70DF           MDX     C05                                       WORD2371
0189 0  C2FD     C25   LD    2 COMD5-R     READ WORDS(DC)              WORD2372
018A 0  D203           STO   2 AREA1+2-R                               WORD2373
018B 20 040565C0       LIBF    DAOP                                    WORD2374
018C 0  1000           DC      /1000                                   WORD2375
018D 1  0263           DC      AREA4                                   WORD2376
018E 1  026A           DC      ROUTI                                   WORD2377
018F 20 040565C0       LIBF    DAOP                                    WORD2378
0190 0  1000           DC      /1000       COMMAND READ                WORD2379
0191 1  0242           DC      AREA1                                   WORD2380
0192 1  026A           DC      ROUTI                                   WORD2381
0193 20 042555C0       LIBF    DINP        READ SING ADD.              WORD2382
0194 0  1005           DC      /1005       EXT. SYNCHR.                WORD2383
0195 1  024D           DC      TABLE                                   WORD2384
0196 1  0267           DC      TAEND                                   WORD2385
0197 00 66000FA0       LDX   L2 4000       WAIT 4000*10 MICROSECONDS   WORD2386
0199 0  1010           SLA     16                                      WORD2387
019A 0  72FF           MDX   2 -1                                      WORD2388
019B 0  70FD           MDX     *-3                                     WORD2389
019C 20 042555C0       LIBF    DINP        RESET CHANNEL               WORD2390
019D 0  4000           DC      /4000                                   WORD2391
019E 01 C4000234       LD    L C0                                      WORD2392
01A0 01 D4000230       STO   L WORDN       BEGIN WITH WORD ZERO        WORD2393
01A2 0  6200           LDX   2 0           BEGIN WITH FIRST WORD       WORD2394
01A3 0  61EC           LDX   1 -20                                     WORD2395
01A4 01 C600024F C37   LD    L2 DATAC                                  WORD2396
01A6 01 D4000249       STO   L ADDR+1      PREPARE DOUBLE W. LOAD      WORD2397
01A8 0  7201           MDX   2 +1                                      WORD2398
01A9 01 C600024F       LD    L2 DATAC                                  WORD2399
01AB 01 D4000248       STO   L ADDR        PREPARE LOAD OF COMPLETE W. WORD2400
01AD 01 4C1001B7       BSC   L C38,-       TEST FLAG BIT               WORD2401
01AF 01 F400026D       EOR   L MASK1       REMOVE FLAG BIT             WORD2402
01B1 01 D4000248       STO   L ADDR                                    WORD2403
01B3 01 C4000235       LD    L C1                                      WORD2404
01B5 01 D4000233       STO   L LSI         LAST SCALER INDICATOR       WORD2405
01B7 01 CC000248 C38   LDD   L ADDR        LOAD COMPLETE ADDR.         WORD2406
01B9 01 BD000222       DCM   L1 PATRN+20                               WORD2407
01BB 0  7000           MDX     *                                       WORD2408
01BC 0  7001           MDX     C40                                     WORD2409
01BD 0  7007           MDX     C45                                     WORD2410
01BE 0  71F4     C40   MDX   1 -12          RESTORE CORRECT PATRN WORD  WORD2411
01BF 0  6A04           STX   2 C42+1       SAVE XR2                    WORD2412
01C0 01 4C00006E       BSC   L A50         ERROR MESSAGE               WORD2413
01C2 0  710C     C44   MDX   1 +12          RESTORE PATTRN WORD         WORD2414
01C3 00 66000000 C42   LDX   L2 *-*         RELOAD XR2                  WORD2415
01C5 0  7201     C45   MDX   2 +1                                      WORD2416
01C6 0  7102           MDX   1 +2          NEXT DOUBLE WORD            WORD2417
01C7 0  7002           MDX     C50                                     WORD2418
01C8 01 4C0001D3       BSC   L D01         NEXT TEST                   WORD2419
01CA 01 C4000233 C50   LD    L LSI                                     WORD2420
01CC 01 4C2001D3       BSC   L D01,Z       BRANCH IF LAST SCALER       WORD2421
01CE 01 74010230       MDX   L WORDN,+1    NEXT  WORD                  WORD2422
01D0 01 74FF0209       MDX   I WNIDC,-1                                WORD2423
01D2 0  70D1           MDX     C37                                     WORD2424
                       ********************************************** WORD2425
                       *PRINT OUT -END OF WORD TEST IN D.C.H.          WORD2426
01D3 01 66000241 D01   LDX   L2 R                                      WORD2427
01D5 0  C2FB           LD    2 COMD3-R     PRINT ALPHAMERIC            WORD2428
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01D6 0  D203          STO   2 AREA1+2-R                                WORD2429
01D7 20 040565C0      LIBF    DAOP                                     WORD2430
01D8 0  1000          DC      /1000                                    WORD2431
01D9 1  0263          DC      AREA4       RESET                        WORD2432
01DA 1  026A          DC      ROUTI                                    WORD2433
01DB 20 040565C0      LIBF    DAOP                                     WORD2434
01DC 0  1000          DC      /1000                                    WORD2435
01DD 1  0242          DC      AREA1       COMMAND                      WORD2436
01DE 1  026A          DC      ROUTI                                    WORD2437
01DF 20 040565C0      LIBF    DAOP                                     WORD2438
01E0 0  1310          DC      /1310       DATA CHANNEL OPER.           WORD2439
01E1 1  030C          DC      ETEST       END WORD TEST.MESS.          WORD2440
01E2 1  026A          DC      ROUTI                                    WORD2441
01E3 30 19162163      CALL    RESET                                    WORD2442
01E5 1  0234          DC      C0                                       WORD2443
01E6 1  01E7          DC      D02                                      WORD2444
                    *   PRINT OUT ALL SCALERS                          WORD2445
01E7 0  C2FE        D02   LD    2 COMD7-R     PRINT OUT SCALERS        WORD2446
01E8 0  D203          STO   2 AREA1+2-R                                WORD2447
01E9 20 040565C0      LIBF    DAOP                                     WORD2448
01EA 0  1000          DC      /1000                                    WORD2449
01EB 1  0263          DC      AREA4                                    WORD2450
01EC 1  026A          DC      ROUTI                                    WORD2451
01ED 20 040565C0      LIBF    DAOP                                     WORD2452
01EE 0  1000          DC      /1000                                    WORD2453
01EF 1  0242          DC      AREA1                                    WORD2454
01F0 1  026A          DC      ROUTI                                    WORD2455
01F1 20 040565C0      LIBF    DAOP                                     WORD2456
01F2 0  0000          DC      /0000                                    WORD2457
01F3 0  70FD          MDX     *-3                                      WORD2458
01F4 20 23A17155      LIBF    TYPEN                                    WORD2459
01F5 0  2001          DC      /2001                                    WORD2460
01F6 1  0335          DC      M9-1                                     WORD2461
01F7 0  0000          DC      0                                        WORD2462
01F8 01 66000241    D10   LDX  L2 R                                    WORD2463
01FA 0  C2FF          LD    2 COMD8-R     END OF INTERRUPT           WORD2464
01FB 0  D203          STO   2 AREA1+2-R                                WORD2465
01FC 20 040565C0      LIBF    DAOP                                     WORD2466
01FD 0  1000          DC      /1000                                    WORD2467
01FE 1  0263          DC      AREA4                                    WORD2468
01FF 1  026A          DC      ROUTI                                    WORD2469
0200 20 040565C0      LIBF    DAOP                                     WORD2470
0201 0  1000          DC      /1000                                    WORD2471
0202 1  0242          DC      AREA1                                    WORD2472
0203 1  026A          DC      ROUTI                                    WORD2473
0204 20 040565C0      LIBF    DAOP                                     WORD2474
0205 0  0000          DC      /C000                                    WORD2475
0206 0  70FD          MDX     *-3                                      WORD2476
0207 30 09563167      CALL    INTEX                                    WORD2477
                    ************************************************** WORD2478
                    *         CONSTANTS                                WORD2479
0209 0  000A        WNIDC DC      10          WORD NUMBER IN DATA CHANNEL WORD2480
020A 0  0009        MNS   DC      9                                    WORD2481
020C    0000          BSS  E  0                                        WORD2482
020C 31 04152168    SECTO DSA     DEKEY                                WORD2483
020F                  ORG     SECTO+2                                  WORD2484
020E    0020        PATRN BSS     32                                   WORD2485
022E 0  0020        WORDC DC      32                                   WORD2486
022F 0  0005        MNOAE DC      5           MAX NR OF ALLOWED ERRORS WORD2487
0230 0  0000        WORDN DC      *-*                                  WORD2488
0231 0  0000        SAVE1 DC      *-*                                  WORD2489
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0232 0  0000          SAVE2 DC      *-*                                  WORD2490
0233 0  0000          LSI   DC      *-*        LAST SCALER INDIC.        WORD2491
0234 0  0000          C0    DC      0                                    WORD2492
0235 0  0001          C1    DC      1                                    WORD2493
0236 0  0002          C2    DC      2                                    WORD2494
0237 0  0003          C3    DC      3                                    WORD2495
0238 0  0004          C4    DC      4                                    WORD2496
0239 0  0000          T1SEQ DC      *-*        NR OF TEST WITHIN T1      WORD2497
023A 0  2200          COMD1 DC      /2200      READ FIRST HALF WORD      WORD2498
023B 0  2300          COMD2 DC      /2300      READ SEC.HALF WORD.       WORD2499
023C 0  1400          COMD3 DC      /1400      PRINT ALPHAMERIC          WORD2500
023D 0  2400          COMD4 DC      /2400     WRITE INTO SCALER          WORD2501
023E 0  4200          COMD5 DC      /4200     READ WORDS D.C.            WORD2502
023F 0  A000          COMD7 DC      /A000     PRINT WORDS                WORD2503
0240 0  B000          COMD8 DC      /B000     END OF INTERRUPT           WORD2504
0241 0  0000          BITNO DC      *-*                                  WORD2505
0241                  R     EQU     BITNO                                WORD2506
0242 0  0002          AREA1 DC      2                                    WORD2507
0243 0  007C                DC      124        COMP. COMMAND OUT         WORD2508
0244 0  0000                DC      *-*                                  WORD2509
0246    0000                BSS  E  0                                    WORD2510
0246 0  0002          AREA2 DC      2                                    WORD2511
0247 0  0043                DC      67                                   WORD2512
0248 0  0000          ADDR  DC      *-*                                  WORD2513
0249 0  0000                DC      *-*       STORAGE FOR SEC. WORD HALF WORD2514
024A 0  0002          AREA3 DC      2                                    WORD2515
024B 0  007B                DC      123        COMP. DATA OUT.           WORD2516
024C 0  0000                DC      *-*                                  WORD2517
024D 0  0015          TABLE DC      21                                   WORD2518
024E 0  0043                DC      67                                   WORD2519
024F    0014          DATAC BSS     20                                   WORD2520
0263 0  0003          AREA4 DC      3                                    WORD2521
0264 0  007B                DC      123                                  WORD2522
0265 0  0000                DC      0                                    WORD2523
0266 0  0000                DC      0                                    WORD2524
0267 0  0000          TAEND DC      *-*        RETURN LINK               WORD2525
0268 01 4C800267            BSC  I  TAEND                                WORD2526
026A 0  0000          ROUTI DC      *-*                                  WORD2527
026B 01 4C80026A            BSC  I  ROUTI                                WORD2528
026D 0  C000          MASK1 DC      /C000                                WORD2529
026E    0006          OUTP2 BSS     6                                    WORD2530
                      *       PRINTER MESSAGE                            WORD2531
0274 0  0028                DC      M2-M1                                WORD2532
0275    0008          M1    DMES    '2RTEST 'E                           WORD2533
0279 0  0000          TESTN DC      *-*                                  WORD2534
027A    000E                DMES    '3XWRONG WORD 'E                     WORD2535
0281 0  0000          CM1   DC      *-*          WORD NR                 WORD2536
0282    0012                DMES    '3XPATTERN WORD  /'E                 WORD2537
028B    0004          CM2   BSS     4                                    WORD2538
028F    0014                DMES    '3XINTERFACE WORD  /'E               WORD2539
0299    0004          CM3   BSS     4                                    WORD2540
029D    0000          M2    BES     0                                    WORD2541
                      *       INTERFACE MESSAGE                          WORD2542
029D 0  0038          M3    DC      56                                   WORD2543
029E 0  007B                DC      123                                  WORD2544
029F 0  0300                DC      /0300      LINE FEED                 WORD2545
02A0 0  0900                DC      /0900       RED                      WORD2546
02A1 0  2400                DC      /2400       T                        WORD2547
02A2 0  8100                DC      /8100      E                         WORD2548
02A3 0  2800                DC      /2800      S                         WORD2549
02A4 0  2400                DC      /2400      T                         WORD2550
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02A5 0 0000              DC    /0000     SPACE                WORD2551
02A6 0 0000   ITEST      DC    *-*       TEST NUMBER          WORD2552
02A7 0 0000              DC    /0000                          WORD2553
02A8 0 2080              DC    /2080      W                   WORD2554
02A9 0 4010              DC    /4010      R                   WORD2555
02AA 0 4080              DC    /4080      O                   WORD2556
02AB 0 4100              DC    /4100      N                   WORD2557
02AC 0 8040              DC    /8040      G                   WORD2558
02AD 0 0000              DC    /0000      SPACE               WORD2559
02AE 0 2080              DC    /2080      W                   WORD2560
02AF 0 4080              DC    /4080      O                   WORD2561
02B0 0 4010              DC    /4010      R                   WORD2562
02B1 0 8200              DC    /8200      D                   WORD2563
02B2 0 0000              DC    /0000      SPACE               WORD2564
02B3 0 0000   IM1        DC    *-*        WORD                WORD2565
02B4 0 0000              DC    *-*        NUMBER              WORD2566
02B5 0 0000              DC    /0000      SPACE               WORD2567
02B6 0 0000              DC    /0000                          WORD2568
02B7 0 4040              DC    /4040      P                   WORD2569
02B8 0 2080              DC    /2080      W                   WORD2570
02B9 0 0000              DC    /0000      SPACE               WORD2571
02BA 0 3000              DC    /3000      /                   WORD2572
02BB 0 0000   IM2        DC    *-*        HEX DEC             WORD2573
02BC 0 0000              DC    *-*        PATTERN             WORD2574
02BD 0 0000              DC    *-*        WORD                WORD2575
02BE 0 0000              DC    *-*        CONTENTS            WORD2576
02BF 0 0000              DC    /0000      SPACE               WORD2577
02C0 0 3000              DC    /3000      /                   WORD2578
02C1   0004              BSS   4                              WORD2579
02C5 0 0000              DC    /0000      SPACE               WORD2580
02C6 0 0000              DC    /0000                          WORD2581
02C7 0 8010              DC    /8010      I                   WORD2582
02C8 0 2080              DC    /2080      W                   WORD2583
02C9 0 0000              DC    /0000      SPACE               WORD2584
02CA 0 3000              DC    /3000      /                   WORD2585
02CB 0 0000   IM3        DC    *-*        HEX.DEC             WORD2586
02CC 0 0000              DC    *-*        INTERFACE           WORD2587
02CD 0 0000              DC    *-*        WORD                WORD2588
02CE 0 0000              DC    *-*        CONTS.              WORD2589
02CF 0 0000              DC    /0000                          WORD2590
02D0 0 3000              DC    /3000      /                   WORD2591
02D1   0004              BSS   4                              WORD2592
02D5 0 0500              DC    /0500      BLACK               WORD2593
02D6 0 0022   M7         DC    34                             WORD2594
02D7 0 007B              DC    123                            WORD2595
02D8 0 0300              DC    /0300      LINE FEED           WORD2596
02D9 0 0300              DC    /0300      LINE FEED           WORD2597
02DA 0 0900              DC    /0900      RED                 WORD2598
02DB 0 2400              DC    /2400      T                   WORD2599
02DC 0 8100              DC    /8100      E                   WORD2600
02DD 0 2800              DC    /2800      S                   WORD2601
02DE 0 2400              DC    /2400      T                   WORD2602
02DF 0 0000              DC    /0000                          WORD2603
02E0 0 8010              DC    /8010      I                   WORD2604
02E1 0 4100              DC    /4100      N                   WORD2605
02E2 0 2400              DC    /2400      T                   WORD2606
02E3 0 8100              DC    /8100      E                   WORD2607
02E4 0 4010              DC    /4010      R                   WORD2608
02E5 0 4040              DC    /4040      P                   WORD2609
02E6 0 2400              DC    /2400      T                   WORD2610
02E7 0 8200              DC    /8200      D                   WORD2611
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02E8 0  0000                DC      /0000       SPACE                WORD2612
02E9 0  2000                DC      /2000        0                   WORD2613
02EA 0  0100                DC      /0100        5                   WORD2614
02EB 0  0000                DC      /0000                            WORD2615
02EC 0  8200                DC      /8200        D                   WORD2616
02ED 0  8100                DC      /8100        E                   WORD2617
02EE 0  2400                DC      /2400        T                   WORD2618
02EF 0  8100                DC      /8100        E                   WORD2619
02F0 0  8400                DC      /8400        C                   WORD2620
02F1 0  0000                DC      /0000       SPACE                WORD2621
02F2 0  8100                DC      /8100        E                   WORD2622
02F3 0  4010                DC      /4010        R                   WORD2623
02F4 0  4010                DC      /4010        R                   WORD2624
02F5 0  4080                DC      /4080        O                   WORD2625
02F6 0  4010                DC      /4010        R                   WORD2626
02F7 0  2800                DC      /2800        S                   WORD2627
02F8 0  0500                DC      /0500       BLACK                WORD2628
02F9 0  0012        BTEST   DC      18                               WORD2629
02FA 0  007B                DC      123                              WORD2630
02FB 0  0300                DC      /0300        LINE FEED           WORD2631
02FC 0  0300                DC      /0300                            WORD2632
02FD 0  8800                DC      /8800        B                   WORD2633
02FE 0  8100                DC      /8100        E                   WORD2634
02FF 0  8040                DC      /8040        G                   WORD2635
0300 0  8010                DC      /8010        I                   WORD2636
0301 0  4100                DC      /4100        N                   WORD2637
0302 0  0000                DC      /0000                            WORD2638
0303 0  2080                DC      /2080        W                   WORD2639
0304 0  4080                DC      /4080        O                   WORD2640
0305 0  4010                DC      /4010        R                   WORD2641
0306 0  8200                DC      /8200        D                   WORD2642
0307 0  0000                DC      /0000                            WORD2643
0308 0  2400                DC      /2400        T                   WORD2644
0309 0  8100                DC      /8100        E                   WORD2645
030A 0  2800                DC      /2800        S                   WORD2646
030B 0  2400                DC      /2400        T                   WORD2647
030C 0  000F        ETEST   DC      15                               WORD2648
030D 0  007B                DC      123                              WORD2649
030E 0  0300                DC      /0300        LINE FEED           WORD2650
030F 0  8100                DC      /8100        E                   WORD2651
0310 0  4100                DC      /4100        N                   WORD2652
0311 0  8200                DC      /8200        D                   WORD2653
0312 0  0000                DC      /0000                            WORD2654
0313 0  2080                DC      /2080        W                   WORD2655
0314 0  4080                DC      /4080        O                   WORD2656
0315 0  4010                DC      /4010        R                   WORD2657
0316 0  8200                DC      /8200        D                   WORD2658
0317 0  0000                DC      /0000                            WORD2659
0318 0  2400                DC      /2400        T                   WORD2660
0319 0  8100                DC      /8100        E                   WORD2661
031A 0  2800                DC      /2800        S                   WORD2662
031B 0  2400                DC      /2400        T                   WORD2663
                    *           PRINTER MESSAGES                     WORD2664
031C 0  0018                DC      M6-M5                            WORD2665
031D    0012        M5      DMES    '2R'TTEST WITH MORE '            WORD2666
0326    000E                DMES    THAN 5 ERRORS '                  WORD2667
032D    0010                DMES    TEST INTERRUPTED'E               WORD2668
0335    0000        M6      BES     0                                WORD2669
0335 0  0015                DC      M10-M9                           WORD2670
0336    0014        M9      DMES    '2R'TEND OF TEST WITH '          WORD2671
0340    0016                DMES    FIXED PATTERN (TEST1)'E          WORD2672
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034B     0000          M10   BES     0                    WORD2673
034C                         END                          WORD2674

     NO ERRORS IN ABOVE ASSEMBLY.
WORD2
DUP FUNCTION COMPLETED
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                        *****************************************************  WBLC3002
                        *                                                   *  WBLC3003
                        * INTERFACE TEST ROUTINE-WBLC3-                     *  WBLC3004
                        * GENERATION OF A 4096 (1600) CHANNEL TEST-SPEC-    *  WBLC3005
                        * TRUM WITH THE PATTERN                             *  WBLC3006
                        * A 16 (10) WORD PATTERN IS WRITTEN 16 (10) TIMES   *  WBLC3007
                        * INTO ONE BLOC OF 256(100)CHANNELS. 16 PATTERN     *  WBLC3008
                        * BLOCKS ARE TRANSFERRED TO THE ANALYSER.(SKIPP     *  WBLC3009
                        * ANALYSER)                                         *  WBLC3010
                        *                                                   *  WBLC3011
                        *****************************************************  WBLC3012
0000     260930F3               ENT     WBLC3                                  WBLC3013
0000 0   0000           WBLC3  DC      *-*                                     WBLC3014
0001 01  6E000073               STX  L2 BITNO                                  WBLC3015
DFFE                    AREA2  EQU     -8194                                   WBLC3016
E000                    DATAC  EQU     -8192                                   WBLC3017
0003 01  6600007E               LDX  L2 R                                      WBLC3018
0005 0   4820                   BSC     Z           JUMP IF ZERO               WBLC3019
0006 0   7004                   MDX     A00                                    WBLC3020
0007 0   C2F5                   LD    2 BITNO-R                                WBLC3021
0008 0   B2F9                   CMP   2 C12-R                                  WBLC3022
0009 0   700B                   MDX     A01                                    WBLC3023
000A 0   700A                   MDX     A01                                    WBLC3024
                        * SKIP WITH 100 CH. PER BLOC                           WBLC3025
000B 0   C2FE           A00    LD    2 C201-R                                 WBLC3026
000C 0   D2F0                   STO   2 FIELD-R                                WBLC3027
000D 0   C200                   LD    2 PATRA-R                                WBLC3028
000E 0   82FD                   A     2 C20-R                                  WBLC3029
000F 0   D02B                   STO     B10+1                                  WBLC3030
0010 0   C2F6                   LD    2 AC10-R                                 WBLC3031
0011 0   D023                   STO     B02+1                                  WBLC3032
0012 0   C2FC                   LD    2 MC20-R                                 WBLC3033
0013 0   D025                   STO     B05+1                                  WBLC3034
0014 0   7009                   MDX     A05                                    WBLC3035
                        * TMC AND INTERTECHNIQUE 256 CH. PER BLOC              WBLC3036
0015 0   C2FF           A01    LD    2 C513-R                                 WBLC3037
0016 0   D2F0                   STO   2 FIELD-R                                WBLC3038
0017 0   C200                   LD    2 PATRA-R                                WBLC3039
0018 0   82FA                   A     2 C32-R                                  WBLC3040
0019 0   D021                   STO     B10+1                                  WBLC3041
001A 0   C2FB                   LD    2 MC32-R                                 WBLC3042
001B 0   D01D                   STO     B05+1                                  WBLC3043
001C 0   C2F7                   LD    2 AC16-R                                 WBLC3044
001D 0   D017                   STO     B02+1                                  WBLC3045
                        * ADD STATION ADDR. TO COMMANDS                        WBLC3046
001E 0   CAF0           A05 .  LDD   2 FIELD-R                                 WBLC3047
001F 00  DC00DFFE              STD  L  AREA2                                  WBLC3048
0021 0   C226                   LD    2 COMD1-R                                WBLC3049
0022 0   82F5                   A     2 BITNO-R                                WBLC3050
0023 0   D226                   STO   2 COMD1-R                                WBLC3051
0024 0   C227                   LD    2 COMD2-R                                WBLC3052
0025 0   82F5                   A     2 BITNO-R                                WBLC3053
0026 0   D227                   STO   2 COMD2-R                                WBLC3054
0027 0   C2EE                   LD    2 C0-R                                   WBLC3055
0028 0   D2EF                   STO   2 BLOCN-R     START WITH BLOC ZERO       WBLC3056
                        * READ PATTERN FROM DISK                               WBLC3057
0029 0   C224                   LD    2 WORDC-R                                WBLC3058
002A 0   D202                   STO   2 SECTO-R     PREP. DISK OP.             WBLC3059
002B 20  04262495               LIBF    DISKN       READ PATTERN FROM DISK     WBLC3060
002C 0   1000                   DC      /1000                                  WBLC3061
002D 1   0080                   DC      SECTO                                  WBLC3062
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002E 0  0000                DC      0                                       WBLC3063
002F 20 04262495  A10       LIBF    DISKN                                   WBLC3064
0030 0  0100                DC      /0100       BUSY TEST                   WBLC3065
0031 1  0080                DC      SECTO                                   WBLC3066
0032 0  70FC                MDX     A10                                     WBLC3067
                    * PREPARE A PATTERN BLOC OF 256 (100) CHANNELS     *    WBLC3068
                    * (512 (200) STORE PLACES) WITH THE 16 (10) WORD   *    WBLC3069
                    * PATTERN.                                         *    WBLC3070
0033 0  6200        B01     LDX   2 0           SEQ.STOR.NR.IN PATTERN BOC  WBLC3071
0034 00 C4000000    B02     LD    L *-*                                     WBLC3072
0036 01 D40000A3            STO   L NPBDC                                   WBLC3073
0038 00 65000000    B05     LDX   L1 *-*                                    WBLC3074
003A 00 CD000000    B10     LDD   L1 *-*                                    WBLC3075
003C 00 DE00E000            STD   L2 DATAC      STORE INTO AREA5.           WBLC3076
003E 0  7202                MDX    2 +2         NEXT STOR.FOR DOUBLE WORD   WBLC3077
003F 0  7102                MDX    1 +2                                     WBLC3078
0040 0  70F9                MDX     B10         NEXT WORD                   WBLC3079
0041 01 74FF00A3            MDX   I NPBDC,-1    16 BLOCS ARE REQUIRED       WBLC3080
0043 0  70F4                MDX     B05                                     WBLC3081
                    * READ OUT THE SAME BLOC-PATTERN OF 256 (100)      *    WBLC3082
                    * PATTERN WORDS 16 TIMES INTO AN ENTIRE MEMORY OF   *    WBLC3083
                    * 4096 (1600) CHANNELS                              *    WBLC3084
0044 0  C026                LD      C16                                     WBLC3085
0045 0  D05D                STO     NPBDC                                   WBLC3086
0046 0  C026        B20     LD      BLOCN                                   WBLC3087
0047 0  1004                SLA     4           ADJUST WORD ADDRESS         WBLC3088
0048 0  805B                A       COMD1       WRITE BLOC IN D.C.          WBLC3089
0049 0  D05E                STO     AREA1+2                                 WBLC3090
004A 20 040565C0            LIBF    DAOP                                    WBLC3091
004B 0  1000                DC      /1000                                   WBLC3092
004C 1  00A9                DC      AREA4       COMMAND RESET               WBLC3093
004D 1  0070                DC      ROUTI                                   WBLC3094
004E 20 040565C0            LIBF    DAOP                                    WBLC3095
004F 0  1000                DC      /1000                                   WBLC3096
0050 1  00A6                DC      AREA1       COMMAND                     WBLC3097
0051 1  0070                DC      ROUTI                                   WBLC3098
0052 20 040565C0            LIBF    DAOP                                    WBLC3099
0053 0  1310                DC      /1310       WRITE SINGL.ADD.DC.EXT.     WBLC3100
                    *                           SYNC.                       WBLC3101
0054 0  DFFE                DC      AREA2                                   WBLC3102
0055 1  0070                DC      ROUTI                                   WBLC3103
0056 30 19162163            CALL    RESET                                   WBLC3104
0058 1  006C                DC      C0                                      WBLC3105
0059 1  005A                DC      B25                                     WBLC3106
005A 01 7401006D    B25     MDX   L BLOCN,+1    NEXT 256-BLOC               WBLC3107
005C 01 74FF00A3            MDX   I NPBDC,-1    16 BLOCS TO BE TRNSF.       WBLC3108
005E 0  70E7                MDX     B20         START AGAIN                 WBLC3109
                    * END OF INTERRUPT                                      WBLC3110
005F 0  C045                LD      COMD2                                   WBLC3111
0060 0  D047                STO     AREA1+2                                 WBLC3112
0061 20 040565C0            LIBF    DAOP                                    WBLC3113
0062 0  1000                DC      /1000                                   WBLC3114
0063 1  00A9                DC      AREA4       RESET                       WBLC3115
0064 1  0070                DC      ROUTI                                   WBLC3116
0065 20 040565C0            LIBF    DAOP                                    WBLC3117
0066 0  1000                DC      /1000                                   WBLC3118
0067 1  00A6                DC      AREA1       COMMAND                     WBLC3119
0068 1  0070                DC      ROUTI                                   WBLC3120
0069 30 09563167            CALL    INTEX                                   WBLC3121
006B 0  0010        C16     DC      16                                      WBLC3122
006C 0  0000        C0      DC      0                                       WBLC3123
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006D 0  0000          BLOCN DC      *-*                                  WBLC3124
006E    0000                BSS   E 0                                    WBLC3125
006E 0  0000          FIELD DC      *-*                                  WBLC3126
006F 0  007B                DC      123                                  WBLC3127
0070 0  0000          ROUTI DC      *-*                                  WBLC3128
0071 01 4C800070            BSC   I ROUTI                                WBLC3129
0073 0  0000          BITNO DC      *-*                                  WBLC3130
0074 1  0076          AC10  DC      C10                                  WBLC3131
0075 1  006B          AC16  DC      C16                                  WBLC3132
0076 0  000A          C10   DC      10                                   WBLC3133
0077 0  000C          C12   DC      12                                   WBLC3134
0078 0  0020          C32   DC      32                                   WBLC3135
0079 0  FFE0          MC32  DC      -32                                  WBLC3136
007A 0  FFEC          MC20  DC      -20                                  WBLC3137
007B 0  0014          C20   DC      20                                   WBLC3138
007C 0  00C9          C201  DC      201                                  WBLC3139
007D 0  0201          C513  DC      513                                  WBLC3140
007E 1  0082          PATRA DC      PATRN                                WBLC3141
007E                  R     EQU     PATRA                                WBLC3142
0080    0000                BSS   E 0                                    WBLC3143
0080 31 04152168      SECTO DSA     DEKEY                                WBLC3144
0083                        ORG     SECTO+2                              WBLC3145
                      * PATRN AREA MUST BE ON THIS PLACE                  WBLC3146
0082    0020          PATRN BSS   E 32                                   WBLC3147
00A2 0  0020          WORDC DC      32                                   WBLC3148
00A3 0  0010          NPBDC DC      16                                   WBLC3149
00A4 0  3C00          COMD1 DC      /3C00       WRITE BLOC INDC          WBLC3150
00A5 0  B000          COMD2 DC      /B000       END OF INTERRUPT         WBLC3151
00A6 0  0002          AREA1 DC      2                                    WBLC3152
00A7 0  007C                DC      124         COMMAND OUT              WBLC3153
00A8 0  0000                DC      *-*                                  WBLC3154
00A9 0  0003          AREA4 DC      3                                    WBLC3155
00AA 0  007B                DC      123                                  WBLC3156
00AB 0  0000                DC      0                                    WBLC3157
00AC 0  0000                DC      0                                    WBLC3158
00AE                        END                                          WBLC3159

    NO ERRORS IN ABOVE ASSEMBLY.
WBLC3
DUP FUNCTION COMPLETED
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                        ************************************************* PATP4002
                        *                                               * PATP4003
                        * INTERFACE TEST ROUTINE-PATP4-                 * PATP4004
                        * ROUTINE TO PRINT THE LOADED                   * PATP4005
                        * PATTERN ON INTERFACE TYPE WRITER              * PATP4006
                        *                                               * PATP4007
                        ************************************************* PATP4008
0000     170635F4       ENT     PATP4                                    PATP4009
0000 0   0000   PATP4   DC      *-*                                      PATP4010
0001 0   6A71           STX   2 BITNO                                    PATP4011
0002 0   C073           LD      COMD1                                    PATP4012
0003 0   806F           A       BITNO                                    PATP4013
0004 0   D071           STO     COMD1                                    PATP4014
0005 0   C046           LD      COMD2                                    PATP4015
0006 0   806C           A       BITNO                                    PATP4016
0007 0   D044           STO     COMD2                                    PATP4017
0008 0   C044   COLI5   LD      WORDC                                    PATP4018
0009 0   D044           STO     SECTO     PREPARE DISK PERATION          PATP4019
                        *READ PATTERN FROM DISK                          PATP4020
000A 20  04262495       LIBF    DISKN                                    PATP4021
000B 0   1000           DC      /1000                                    PATP4022
000C 1   004E           DC      SECTO                                    PATP4023
000D 0   0000           DC      0                                        PATP4024
000E 20  04262495   A10 LIBF    DISKN                                    PATP4025
000F 0   0100           DC      /0100                                    PATP4026
0010 1   004E           DC      SECTO                                    PATP4027
0011 0   70FC           MDX     A10                                      PATP4028
                        *PRINT OUT-LOADED PATTERN-                       PATP4029
0012 20  040565C0       LIBF    DAOP                                     PATP4030
0013 0   1000           DC      /1000                                    PATP4031
0014 1   0096           DC      AREA4     RESET                          PATP4032
0015 1   0070           DC      ROUTI                                    PATP4033
0016 20  040565C0       LIBF    DAOP                                     PATP4034
0017 0   1000           DC      /1000                                    PATP4035
0018 1   0074           DC      AREA1     COMMAND-PRINT ALPHAMERIC       PATP4036
0019 1   0070           DC      ROUTI                                    PATP4037
001A 20  040565C0       LIBF    DAOP                                     PATP4038
001B 0   1310           DC      /1310     DATA CHANNEL OPERATION         PATP4039
001C 1   0077           DC      AREA2                                    PATP4040
001D 1   0070           DC      ROUTI                                    PATP4041
001E 30  19162163       CALL    RESET                                    PATP4042
0020 1   0098           DC      AREA4+2                                  PATP4043
0021 1   0022           DC      A19                                      PATP4044
                        *PRINT OUT PATTERN                               PATP4045
0022 0   61E0   A19     LDX   1 -32                                      PATP4046
0023 01  C5000070   A20 LD    L1 PATRN+32  GET LSHW                      PATP4047
0025 0   1890           SRT     16        SAVE LSHW                      PATP4048
0026 0   7101           MDX   1 +1                                       PATP4049
0027 01  C5000070       LD    L1 PATRN+32  GET MSHW                      PATP4050
0029 20  02255227       LIBF    BINHX                                    PATP4051
002A 1   008C           DC      IM1                                      PATP4052
002B 0   1090           SLT     16                                       PATP4053
002C 20  02255227       LIBF    BINHX                                    PATP4054
002D 1   0092           DC      IM2                                      PATP4055
002E 20  040565C0       LIBF    DAOP                                     PATP4056
002F 0   1000           DC      /1000                                    PATP4057
0030 1   0096           DC      AREA4     RESET                          PATP4058
0031 1   0070           DC      ROUTI                                    PATP4059
0032 20  040565C0       LIBF    DAOP                                     PATP4060
0033 0   1000           DC      /1000                                    PATP4061
0034 1   0074           DC      AREA1     COMMAND PRINT ALPHAMERIC       PATP4062
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0035  1  0070              DC      ROUTI                                  PATP4063
0036 20 040565C0          LIBF    DAOP                                   PATP4064
0037  0  1310              DC      /1310     DATA CHANNEL OPERATION       PATP4065
0038  1  0088              DC      AREA3                                  PATP4066
0039  1  0070              DC      ROUTI                                  PATP4067
003A 30 19162163          CALL    RESET                                  PATP4068
003C  1  0098              DC      AREA4+2                                PATP4069
003D  1  003E              DC      A25                                    PATP4070
003E  0  7101        A25   MDX   1 +1                                     PATP4071
003F  0  70E3              MDX     A20                                    PATP4072
0040 20 040565C0          LIBF    DAOP                                   PATP4073
0041  0  1000              DC      /1000                                  PATP4074
0042  1  0096              DC      AREA4     COMMAND RESET                PATP4075
0043  1  0070              DC      ROUTI                                  PATP4076
0044 20 040565C0          LIBF    DAOP                                   PATP4077
0045  0  1000              DC      /1000                                  PATP4078
0046  1  004A              DC      AREA5     END OF INTERRUPT             PATP4079
0047  1  0070              DC      ROUTI                                  PATP4080
0048 30 09563167          CALL    INTEX                                  PATP4081
004A  0  0002        AREA5 DC      2                                      PATP4082
004B  0  007C              DC      124       COMMAND OUT                  PATP4083
004C  0  B800        COMD2 DC      /B800     END OF INTERRUPT             PATP4084
004D  0  0020        WORDC DC      32                                     PATP4085
004E 31 04152168     SECTO DSA     DEKEY                                  PATP4086
0051               ORG     SECTO+2                                        PATP4087
0050     0020        PATRN BSS     32                                     PATP4088
0070  0  0000        ROUTI DC      *-*                                    PATP4089
0071 01 4C800070          BSC   I   ROUTI                                  PATP4090
0073  0  0000        BITNO DC      *-*                                    PATP4091
0074  0  0002        AREA1 DC      2                                      PATP4092
0075  0  007C              DC      124       COMMAND OUT                  PATP4093
0076  0  1400        COMD1 DC      /1400     PRINT ALPHAMERIC             PATP4094
0077  0  0010        AREA2 DC      16                                     PATP4095
0078  0  007B              DC      123                                    PATP4096
0079  0  0300              DC      /0300     LINE FEED                    PATP4097
007A  0  4400              DC      /4400     L                            PATP4098
007B  0  4080              DC      /4080     O                            PATP4099
007C  0  9000              DC      /9000     A                            PATP4100
007D  0  8200              DC      /8200     D                            PATP4101
007E  0  8100              DC      /8100     E                            PATP4102
007F  0  8200              DC      /8200     D                            PATP4103
0080  0  0000              DC      /0000                                  PATP4104
0081  0  4040              DC      /4040     P                            PATP4105
0082  0  9000              DC      /9000     A                            PATP4106
0083  0  2400              DC      /2400     T                            PATP4107
0084  0  2400              DC      /2400     T                            PATP4108
0085  0  8100              DC      /8100     E                            PATP4109
0086  0  4010              DC      /4010     R                            PATP4110
0087  0  4100              DC      /4100     N                            PATP4111
0088  0  000D        AREA3 DC      13                                     PATP4112
0089  0  007B              DC      123                                    PATP4113
008A  0  0300              DC      /0300     LINE FEED                    PATP4114
008B  0  3000              DC      /3000     /                            PATP4115
008C     0004        IM1   BSS     4                                      PATP4116
0090  0  0000              DC      /0000                                  PATP4117
0091  0  3000              DC      /3000     /                            PATP4118
0092     0004        IM2   BSS     4                                      PATP4119
0096  0  0003        AREA4 DC      3                                      PATP4120
0097  0  007B              DC      123       DATA OUT                     PATP4121
0098  0  0000              DC      0                                      PATP4122
0099  0  0000              DC      0                                      PATP4123
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009A                        END                                  PATP4124

     NO ERRORS IN ABOVE ASSEMBLY.
PATP4
DUP FUNCTION COMPLETED
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                                                                                BLOC5002
                                                                                BLOC5003
                                                                                BLOC5004
                                                                                BLOC5005
                                                                                BLOC5006
                                                                                BLOC5007
                                                                                BLOC5008
                                                                                BLOC5009
0000     024D60F5                                                               BLOC5010
0000 0   0000      BLOC5 DC      *-*                                           BLOC5011
0001 01  6E00038A          STX   L2 BITNO                                       BLOC5012
0003 01  6600038D          LDX   L2 R                                           BLOC5013
DFFE               AREA6 EQU     -8194                                         BLOC5014
E000               IDATA EQU     -8192                                         BLOC5015
E200               AREA5 EQU     -7680                                         BLOC5016
E202               DATAC EQU     -7678                                         BLOC5017
0005 0   4820            BSC     Z           JUMP IF ZERO                      BLOC5018
0006 0   7004            MDX     A01                                           BLOC5019
                   * PREPARE 100 OR 256 CHANNEL BLOC                            BLOC5020
0007 0   C2FD            LD    2 BITNO-R                                       BLOC5021
0008 0   B202            CMP   2 C12-R                                         BLOC5022
0009 0   7019            MDX     A05                                           BLOC5023
000A 0   7018            MDX     A05                                           BLOC5024
                   * SKIPP ANALYZER (100)                                       BLOC5025
000B 0   C223      A01   LD    2 C201-R                                        BLOC5026
000C 0   D217            STO   2 FIELT-R                                       BLOC5027
000D 0   D219            STO   2 FIELD-R                                       BLOC5028
000E 0   C225            LD    2 AC10-R                                        BLOC5029
000F 01  D40000CC        STO   L B02+1                                         BLOC5030
0011 01  D4000122        STO   L B23+1                                         BLOC5031
0013 0   C215            LD    2 PATRA-R                                       BLOC5032
0014 0   8228            A     2 C20-R                                         BLOC5033
0015 01  D40000D2        STO   L B10+1                                         BLOC5034
0017 01  D4000137        STO   L B32+1                                         BLOC5035
0019 01  D40001D0        STO   L A82+1                                         BLOC5036
001B 01  D40001D4        STO   L A83+1                                         BLOC5037
001D 0   C220            LD    2 MC20-R                                        BLOC5038
001E 01  D40000D0        STO   L B05+1                                         BLOC5039
0020 01  D4000129        STO   L B25+1                                         BLOC5040
0022 0   7017            MDX     A08                                           BLOC5041
                   * INTERTECHNIQUE OR TMC (256)                               BLOC5042
0023 0   C222      A05   LD    2 C513-R                                        BLOC5043
0024 0   D217            STO   2 FIELT-R                                       BLOC5044
0025 0   D219            STO   2 FIELD-R                                       BLOC5045
0026 0   C227            LD    2 AC16-R                                        BLOC5046
0027 01  D40000CC        STO   L B02+1                                         BLOC5047
0029 01  D4000122        STO   L B23+1                                         BLOC5048
002B 0   C215            LD    2 PATRA-R                                       BLOC5049
002C 0   8229            A     2 C32-R                                         BLOC5050
002D 01  D40000D2        STO   L B10+1                                         BLOC5051
002F 01  D4000137        STO   L B32+1                                         BLOC5052
0031 01  D40001D0        STO   L A82+1                                         BLOC5053
0033 01  D40001D4        STO   L A83+1                                         BLOC5054
0035 0   C221            LD    2 MC32-R                                        BLOC5055
0036 01  D40000D0        STO   L B05+1                                         BLOC5056
0038 01  D4000129        STO   L B25+1                                         BLOC5057
                   * PREPARE DATA FIELD IN COMMON.                             BLOC5058
003A 0   CA19      A08   LDD   2 FIELD-R                                       BLOC5059
003B 00  DC00E200        STD   L AREA5                                         BLOC5060
003D 0   CA17            LDD   2 FIELT-R                                       BLOC5061
003E 00  DC00DFFE        STD   L AREA6                                         BLOC5062
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                        * ADD STATION NR TO COMMANDS                                    BLOC5063
0040 0  61F9            LDX   1 -7                                                      BLOC5064
0041 01 C5000397    AGAIN LD    L1 COMD1+7                                              BLOC5065
0043 0  82FD              A     2 BITNO-R                                               BLOC5066
0044 01 D5000397          STO   L1 COMD1+7                                              BLOC5067
0046 0  7101              MDX   1 +1                                                    BLOC5068
0047 0  70F9              MDX     AGAIN                                                 BLOC5069
0048 0  C21E              LD    2 CO-R                                                  BLOC5070
0049 0  D2FA              STO   2 BLOCN-R     START WITH BLOCK NR. ZERO                 BLOC5071
                        * READ PATTERN FROM DISK                                        BLOC5072
004A 0  C2D1              LD    2 WORDC-R                                               BLOC5073
004B 0  D2D3              STO   2 SECTO-R                                               BLOC5074
004C 0  C21F              LD    2 C1-R          FIRST TEST                              BLOC5075
004D 0  D2FF              STO   2 T2SEQ-R                                               BLOC5076
004E 20 04262495          LIBF    DISKN       READ THE PATTERN WORDS FROM               BLOC5077
004F 0  1000              DC      /1000                                                 BLOC5078
0050 1  0360              DC      SECTO                                                 BLOC5079
0051 0  0000              DC      0                                                     BLOC5080
0052 20 04262495    A10   LIBF    DISKN                                                 BLOC5081
0053 0  0100              DC      /0100       BUSY TEST                                 BLOC5082
0054 1  0360              DC      SECTO                                                 BLOC5083
0055 0  70FC              MDX     A10                                                   BLOC5084
                        *PRINT OUT-BEGIN BLOCK TEST                                     BLOC5085
0056 0  C205              LD    2 COMD3-R       PRINT ALPHAMERIC                        BLOC5086
0057 0  D20C              STO   2 AREA1+2-R                                             BLOC5087
0058 20 040565C0          LIBF    DAOP                                                  BLOC5088
0059 0  1000              DC      /1000                                                 BLOC5089
005A 1  039E              DC      AREA4       RESET                                     BLOC5090
005B 1  03C7              DC      ROUTI                                                 BLOC5091
005C 20 040565C0          LIBF    DAOP                                                  BLOC5092
005D 0  1000              DC      /1000                                                 BLOC5093
005E 1  0397              DC      AREA1       COMMAND                                   BLOC5094
005F 1  03C7              DC      ROUTI                                                 BLOC5095
0060 20 040565C0          LIBF    DAOP                                                  BLOC5096
0061 0  1310              DC      /1310       WRITE SING.ADDR.EXT.SYNC.DC               BLOC5097
0062 1  02C9              DC      BTEST       BEGIN TEST                                BLOC5098
0063 1  03C7              DC      ROUTI                                                 BLOC5099
0064 30 19162163          CALL    RESET                                                 BLOC5100
0066 1  03AB              DC      CO                                                    BLOC5101
0067 1  006D              DC      A111                                                  BLOC5102
0068 0  C2FD              LD    2 BITNO-R                                               BLOC5103
0069 0  B202              CMP   2 C12-R                                                 BLOC5104
006A 0  7000              MDX     *                                                     BLOC5105
006B 0  7001              MDX     A111                                                  BLOC5106
006C 0  7026              MDX     A145                                                  BLOC5107
                        *MAKE A FIVE BIT PATTERN                                        BLOC5108
006D 0  61E1        A111  LDX   1 -31                                                   BLOC5109
006E 01 C5000382    A11   LD    L1 PATRN+32   GET MSHW                                  BLOC5110
0070 0  1008              SLA     8           REMOVE EV.PAR.BIT+10**5 DIGT              BLOC5111
0071 0  1808              SRA     8           RESTORE CORRECT BIT POS.                  BLOC5112
0072 01 D40003C0          STO   L SAVE                                                  BLOC5113
                        *GENERATE EV. PARITI BIT                                        BLOC5114
0074 0  6210              LDX   2 16                                                    BLOC5115
0075 01 C40003AB          LD    L CO                                                    BLOC5116
0077 01 D4000385          STO   L ND1         CLEAR NR OF DETEC. ONES                   BLOC5117
0079 01 C40003C0          LD    L SAVE        GET NEW PATTERN MSHW                      BLOC5118
007B 0  7004              MDX     A13                                                   BLOC5119
007C 01 74010385    A12   MDX   L ND1,+1      INCREASE NR OF DETECT.ONES                BLOC5120
007E 01 E4000383          AND   L MASK2       REMOVE PRESENT M.S.BIT                    BLOC5121
0080 0  1240        A13   SLCA  2                                                       BLOC5122
0081 01 4C20007C          BSC   L A12,Z       BRANCH IF NOT LAST BIT                    BLOC5123
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0083 01 C4000385          LD    L  ND1                                      BLOC5124
0085 01 4C04008D          BSC   L  A14,E      BRANCH IF ODD                 BLOC5125
0087 01 C40003C0          LD    L  SAVE                                     BLOC5126
0089 01 EC000384          OR    L  MASK3      ADD PARITY BIT                BLOC5127
008B 01 D40003C0          STO   L  SAVE                                     BLOC5128
008D 01 C40003C0    A14   LD    L  SAVE                                     BLOC5129
008F 01 D5000382          STO   L1 PATRN+32   STORE BACK NEW PATTERN HW     BLOC5130
0091 0  7102              MDX   1 +2         GET NEXT MSHW                 BLOC5131
0092 0  70DB              MDX     A11                                       BLOC5132
                    ************************************************      BLOC5133
                    ** STEP 1                                             BLOC5134
                    * WRITE BLOCK ADDRESS INTO INTERFACE AND READ BACK    BLOC5135
                    * THE SECOND HALF WORD OF THE STATUS WORD WHICH       BLOC5136
                    * CONTENTS THE NR OF BLOCKS TO BE TESTED              BLOC5137
0093 0  61F0        A145  LDX   1 -16                                       BLOC5138
0094 01 6600038D          LDX   L2 R                                        BLOC5139
0096 0  C2FA        A15   LD    2 BLOCN-R                                   BLOC5140
0097 0  1004              SLA     4           ADJUST CORRECT I.F.WORD ADDRBLOC5141
0098 0  8203              A     2 COMD1-R      WRITE BLOCK ADDRESS          BLOC5142
0099 0  D20C              STO   2 AREA1+2-R                                 BLOC5143
009A 0  C200              LD    2 C2-R                                      BLOC5144
009B 0  D2FE              STO   2 T1SEQ-R                                   BLOC5145
009C 20 040565C0          LIBF    DAOP                                      BLOC5146
009D 0  1000              DC      /1000                                     BLOC5147
009E 1  039E              DC      AREA4       COMMAND RESET                 BLOC5148
009F 1  03C7              DC      ROUTI                                     BLOC5149
00A0 20 040565C0          LIBF    DAOP                                      BLOC5150
00A1 0  1000              DC      /1000                                     BLOC5151
00A2 1  0397              DC      AREA1                                     BLOC5152
00A3 1  03C7              DC      ROUTI                                     BLOC5153
00A4 20 040565C0          LIBF    DAOP                                      BLOC5154
00A5 0  0000              DC      /0000                                     BLOC5155
00A6 0  70FD              MDX     *-3                                       BLOC5156
                    *READ STATUS WORD                                       BLOC5157
00A7 20 040565C0          LIBF    DAOP                                      BLOC5158
00A8 0  1000              DC      /1000                                     BLOC5159
00A9 1  039E              DC      AREA4       COMMAND RESET                 BLOC5160
00AA 1  03C7              DC      ROUTI                                     BLOC5161
00AB 0  C204              LD    2 COMD2-R      READ SECOND HALF OF STATUS   BLOC5162
00AC 0  D20C              STO   2 AREA1+2-R    WORD                         BLOC5163
00AD 20 040565C0          LIBF    DAOP                                      BLOC5164
00AE 0  1000              DC      /1000                                     BLOC5165
00AF 1  0397              DC      AREA1                                     BLOC5166
00B0 1  03C7              DC      ROUTI                                     BLOC5167
00B1 20 042555C0          LIBF    DINP                                      BLOC5168
00B2 0  2000              DC      /2000                                     BLOC5169
00B3 1  039A              DC      AREA2       DATA INPUT FIELD              BLOC5170
00B4 1  03C7              DC      ROUTI                                     BLOC5171
00B5 20 042555C0          LIBF    DINP                                      BLOC5172
00B6 0  0000              DC      /0000                                     BLOC5173
00B7 0  70FD              MDX     *-3                                       BLOC5174
                    * CONVERT OCTAL CODE                                    BLOC5175
00B8 0  C20F              LD    2 ADDR-R                                    BLOC5176
00B9 0  1004              SLA     4           DISCARD INDICATOR BITS        BLOC5177
00BA 0  188B              SRT     11          SAVE  8**0 BITD               BLOC5178
00BB 0  1801              SRA     1           DISCARD  2**4 BITS            BLOC5179
00BC 0  1083              SLT     3           TRUE BINARY FORM OBTAINED     BLOC5180
00BD 0  D2FC              STO   2 ISAVE-R      SAVE FOR PRINT OUT           BLOC5181
00BE 0  B2FA              CMP   2 BLOCN-R                                   BLOC5182
00BF 0  7000              MDX     *                                         BLOC5183
00C0 0  7001              MDX     A20                                       BLOC5184
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00C1 0  7002              MDX     A30                                    BLOC5185
00C2 01 4C000164  A20     BSC  L  A50         ERROR MESSAGE              BLOC5186
00C4 01 74010387  A30     MDX  L  BLOCN,+1    GET NEXT BLOC              BLOC5187
00C6 0  7101              MDX   1 +1                                     BLOC5188
00C7 0  70CE              MDX     A15         NEXT BLOCK                 BLOC5189
00C8 01 4C0000CA          BSC  L  B01         NEXT TEST                  BLOC5190
                          ********************************************** BLOC5191
                          ** STEP 2                                     BLOC5192
                          *WRITE THE OF 16 (10) WORDS, 16 (10) TIMES INTO A   BLOC5193
                          *BLOCK OF 256 (100) STORAGE PLACES.          BLOC5194
                          *WRITE OUT THE BLOCK INTO THE ANALYSER(D.C.) READ   BLOC5195
                          *BACK THE ENTIRE BLOCK (D.C.) AND COMPARE TO THE    BLOC5196
                          *PATTERN.                                    BLOC5197
                          *                                            BLOC5198
                          *                                            BLOC5199
                          *PHASE ONE...LOAD 16 TIMES THE COMPLETE PATTERN INTOBLOC5200
                          *AREA5                                       BLOC5201
00CA 0  6200      B01     LDX   2 0            SEQ.STORAGE NR. IN BLOCK PABLOC5202
00CB 00 C4000000  B02     LD    L *-*                                  BLOC5203
00CD 01 D40003BD          STO   L NPBDC                                BLOC5204
00CF 00 65000000  B05     LDX   L1 *-*                                 BLOC5205
00D1 00 CD000000  B10     LDD   L1 *-*          GET PATRN D.W.         BLOC5206
00D3 00 DE00E202          STD   L2 DATAC      STORE DOUBLE WORD IN AREA5  BLOC5207
00D5 0  7202              MDX    2 +2         NEXT STORAGE FOR DOUBLE WORDBLOC5208
00D6 0  7102              MDX    1 +2         NEXT PATTERN DOUBLE WORD    BLOC5209
00D7 0  70F9              MDX     B10                                    BLOC5210
00D8 01 74FF03BD          MDX   I NPBDC,-1    NUMBER OF PATTERN BLOCKS IN BLOC5211
                          *                   DATA CHANNEL IS DECREMENTED BLOC5212
00DA 0  70F4              MDX     B05         NEW PATTERN BLOCK          BLOC5213
                          *PHASE TWO...TRANSFER THE ENTIRE PATTERN BLOCK INTO BLOC5214
                          *                   THE ANALYSER , READ BACK ANDBLOC5215
                          *                   COMPARE TO PATTERN BLOCK   BLOC5216
00DB 01 6600038D          LDX   L2 R                                     BLOC5217
00DD 0  C21E              LD     2 C0-R        ENTIRE PATTERN BLOCK READY BLOC5218
00DE 0  D2FA              STO    2 BLOCN-R     BEGIN WITH BLOC ZERO       BLOC5219
00DF 0  C2FA      B20     LD     2 BLOCN-R     START TRANSFER TO I.F.     BLOC5220
00E0 0  1004              SLA      4          ADJUST WORD ADDRESS        BLOC5221
00E1 0  8206              A      2 COMD4-R     WRITE BLOCK( D.C. )        BLOC5222
00E2 0  D20C              STO    2 AREA1+2-R                              BLOC5223
00E3 20 040565C0          LIBF     DAOP                                   BLOC5224
00E4 0  1000              DC       /1000                                  BLOC5225
00E5 1  039E              DC       AREA4      COMMAND RESET               BLOC5226
00E6 1  03C7              DC       ROUTI                                  BLOC5227
00E7 20 040565C0          LIBF     DAOP                                   BLOC5228
00E8 0  1000              DC       /1000                                  BLOC5229
00E9 1  0397              DC       AREA1                                  BLOC5230
00EA 1  03C7              DC       ROUTI                                  BLOC5231
00EB 20 040565C0          LIBF     DAOP                                   BLOC5232
00EC 0  1310              DC       /1310      WRITE SINGL. ADDR. IN DC EXTBLOC5233
00ED 0  E200              DC       AREA5                                  BLOC5234
00EE 1  03C7              DC       ROUTI                                  BLOC5235
00EF 30 19162163          CALL     RESET                                  BLOC5236
00F1 1  03AB              DC       C0                                     BLOC5237
00F2 1  00F3              DC       B21                                    BLOC5238
00F3 0  C2FA      B21     LD     2 BLOCN-R                                BLOC5239
00F4 0  1004              SLA      4                                      BLOC5240
00F5 0  8207              A      2 COMD5-R     READ BLOCK IN D.C.         BLOC5241
00F6 0  D20C              STO    2 AREA1+2-R                              BLOC5242
00F7 20 040565C0          LIBF     DAOP                                   BLOC5243
00F8 0  1000              DC       /1000                                  BLOC5244
00F9 1  039E              DC       AREA4      COMMAND RESET               BLOC5245
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00FA 1  03C7              DC      ROUTI                                    BLOC5246
00FB 20 040565C0          LIBF    DAOP                                     BLOC5247
00FC 0  1000              DC      /1000                                    BLOC5248
00FD 1  0397              DC      AREA1                                    BLOC5249
00FE 1  03C7              DC      ROUTI                                    BLOC5250
00FF 20 042555C0          LIBF    DINP                                     BLOC5251
0100 0  1005              DC      /1005     READ SINGL. ADDR. EXT. SYNC.   BLOC5252
0101 0  DFFE              DC      AREA6                                    BLOC5253
0102 1  03C7              DC      ROUTI                                    BLOC5254
0103 00 65001388          LDX  L1 5000                                     BLOC5255
0105 0  1010              SLA     16         WAIT 5000*10 MICROSEC.        BLOC5256
0106 0  71FF              MDX   1 -1                                       BLOC5257
0107 0  70FD              MDX     *-3                                      BLOC5258
0108 20 042555C0          LIBF    DINP                                     BLOC5259
0109 0  4000              DC      /4000     RESET                          BLOC5260
010A 0  C200              LD    2 C2-R      FLAG BIT TEST                  BLOC5261
010B 0  D2FF              STO   2 T2SEQ-R                                  BLOC5262
010C 0  C2FD              LD    2 BITNO-R                                  BLOC5263
010D 0  B202              CMP   2 C12-R                                    BLOC5264
010E 0  7009              MDX     B22                                      BLOC5265
010F 0  7008              MDX     B22                                      BLOC5266
0110 00 C400E0C7          LD    L IDATA+199                                BLOC5267
0112 01 4C100164          BSC   L A50,-                                    BLOC5268
0114 0  F2F5              EOR   2 MASK1-R                                  BLOC5269
0115 00 D400E0C7          STO   L IDATA+199                                BLOC5270
0117 0  7007              MDX     B225                                     BLOC5271
0118 00 C400E1FF    B22   LD    L IDATA+511  GET LAST LESS SIGN. H.W.       BLOC5272
011A 01 4C100164          BSC   L A50,-     CHECK FLAG BIT ON LAST LSHW    BLOC5273
011C 0  F2F5              EOR   2 MASK1-R    REM.FL. BIT,CHANGE PAR.BIT    BLOC5274
011D 00 D400E1FF          STO   L IDATA+511                                BLOC5275
                    *COMPARISON WITH PATTERN                               BLOC5276
011F 0  C201        B225  LD    2 C3-R                                     BLOC5277
0120 0  D2FF              STO   2 T2SEQ-R                                  BLOC5278
0121 00 C4000000    B23   LD    L *-*                                      BLOC5279
0123 0  D230              STO   2 NPBDC-R    RESTORE 16 PATTERN READING    BLOC5280
0124 0  C21E              LD    2 C0-R                                     BLOC5281
0125 0  D21B              STO   2 BLOCA-R    CLEAR SEQ.BLOCK NR            BLOC5282
0126 0  C03B              LD      DATAA                                    BLOC5283
0127 0  D03B              STO     GETAD                                    BLOC5284
0128 00 65000000    B25   LDX  L1 *-*                                      BLOC5285
012A 01 C4800163    B30   LD    I GETAD                                    BLOC5286
012C 01 D400039D          STO   L ADDR+1     MSHW FROM I.F.                BLOC5287
012E 01 74010163          MDX   L GETAD,+1                                 BLOC5288
0130 01 C4800163          LD    I GETAD                                    BLOC5289
0132 01 D400039C          STO   L ADDR       LSHW FROM I.F.                BLOC5290
0134 01 CC00039C          LDD   L ADDR       GET COMPLETE ADDRESS          BLOC5291
0136 00 BD000000    B32   DCM  L1 *-*                                      BLOC5292
0138 0  7000              MDX     *                                        BLOC5293
0139 0  702A              MDX     A50        ERROR MESSAGE                 BLOC5294
013A 01 74010163    B35   MDX   L GETAD,+1                                 BLOC5295
013C 01 740103A8          MDX   L BLOCA,+1    NEXT LOC. IN REAL BLOCK      BLOC5296
013E 0  7102              MDX   1 +2         NEXT PATRN DOUBLE WORD        BLOC5297
013F 0  70EA              MDX     B30                                      BLOC5298
0140 01 74FF03BD          MDX   I NPBDC,-1   NEXT PATTERN READING          BLOC5299
0142 0  70E5              MDX     B25                                      BLOC5300
0143 01 74010387          MDX   L BLOCN,+1    NEXT BLOCK                   BLOC5301
0145 01 6600038D          LDX   L2 R                                       BLOC5302
0147 01 74FF03BF          MDX   I BLOCM,-1    DECREASE NR. OF BLOCK READI  BLOC5303
0149 0  7001              MDX     B40                                      BLOC5304
014A 0  7002              MDX     B50        END OF TEST, RESET BLOCK      BLOC5305
014B 01 4C0000DF    B40   BSC   L B20        CONTINUE TEST                 BLOC5306
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                                                                                BLOC5307
                        ** STEP 3                                               BLOC5308
014D 0  C201    B50     LD     2 C3-R          BEGIN RESET AT BLOCK 3           BLOC5309
014E 0  D2FA    B60     STO    2 BLOCN-R                                        BLOC5310
014F 0  1004            SLA    4                                                BLOC5311
0150 0  8208            A      2 COMD6-R       BLOCK RESET                      BLOC5312
0151 0  D20C            STO    2 AREA1+2-R                                      BLOC5313
0152 20 040565C0        LIBF     DAOP                                           BLOC5314
0153 0  1000            DC       /1000                                          BLOC5315
0154 1  039E            DC       AREA4                                          BLOC5316
0155 1  03C7            DC       ROUTI                                          BLOC5317
0156 20 040565C0        LIBF     DAOP                                           BLOC5318
0157 0  1000            DC       /1000                                          BLOC5319
0158 1  0397            DC       AREA1                                          BLOC5320
0159 1  03C7            DC       ROUTI                                          BLOC5321
015A 0  C2FA            LD     2 BLOCN-R                                        BLOC5322
015B 0  B201            CMP    2 C3-R                                           BLOC5323
015C 0  7000            MDX      *                                              BLOC5324
015D 0  7002            MDX      B70                                            BLOC5325
015E 0  C202            LD     2 C12-R         LAST BLOCK TO BE RESETTED        BLOC5326
015F 0  70EE            MDX      B60           RETURN TO RESET                  BLOC5327
0160 01 4C00020F  B70   BSC  L   A400          GO TO END OF TEST                BLOC5328
0162 0  E000      DATAA DC       IDATA                                          BLOC5329
0163 0  0000      GETAD DC       *-*                                            BLOC5330
                        ********************************************************BLOC5331
                        *PREPARATION OF THE ERROR MESSAGES                      BLOC5332
0164 01 74FF03BE  A50   MDX  I   MNOAE,-1      5 ERRORS ARE ALLOWED             BLOC5333
0166 0  7002            MDX      A51                                            BLOC5334
0167 01 4C000229        BSC  L   A500          TEST INTERRPT                    BLOC5335
0169 01 4400024C  A51   BSI  L   CONV                                           BLOC5336
016B 1  02EA            DC       IBLOC                                          BLOC5337
016C 1  0274            DC       BLOC                                           BLOC5338
016D 20 23A17155        LIBF     TYPEN                                          BLOC5339
016E 0  2001            DC       /2001                                          BLOC5340
016F 1  026C            DC       M1-1                                           BLOC5341
0170 0  0000            DC       0                                              BLOC5342
0171 0  C205            LD     2 COMD3-R       PRINT ALPHA MERIC                BLOC5343
0172 0  D20C            STO    2 AREA1+2-R                                      BLOC5344
0173 20 040565C0        LIBF     DAOP                                           BLOC5345
0174 0  1000            DC       /1000                                          BLOC5346
0175 1  039E            DC       AREA4         COMMAND RESET                    BLOC5347
0176 1  03C7            DC       ROUTI                                          BLOC5348
0177 20 040565C0        LIBF     DAOP                                           BLOC5349
0178 0  1000            DC       /1000                                          BLOC5350
0179 1  0397            DC       AREA1                                          BLOC5351
017A 1  03C7            DC       ROUTI                                          BLOC5352
017B 20 040565C0        LIBF     DAOP                                           BLOC5353
017C 0  1310            DC       /1310         WRITE SINGL. ADDR. DATA CH.      BLOC5354
017D 1  02DD            DC       IM1                                            BLOC5355
017E 1  03C7            DC       ROUTI                                          BLOC5356
017F 30 19162163        CALL     RESET                                          BLOC5357
0181 1  03AB            DC       C0                                             BLOC5358
0182 1  0183            DC       A52                                            BLOC5359
0183 0  C2FF    A52     LD     2 T2SEQ-R                                        BLOC5360
0184 0  B21F            CMP    2 C1-R                                           BLOC5361
0185 0  7000            MDX      *                                              BLOC5362
0186 0  7012            MDX      A60                                            BLOC5363
0187 01 74FF038B        MDX  I   T1SEQ,-1      DIRECT TO * OR *+1               BLOC5364
0189 0  7007            MDX      A55           PRINT READ BLOCN                 BLOC5365
018A 0  C2FB            LD     2 CSAVE-R        RESTORE REAL BLOCN             BLOC5366
018B 0  D2FA            STO    2 BLOCN-R                                        BLOC5367
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018C 0  C21D              LD    2 BLACK-R                                  BLOC5368
018D 01 D40002E0          STO   L MESGE                                    BLOC5369
018F 01 4C0000C4          BSC   L A30          NEXT BLOCK TEST             BLOC5370
0191 0  C2FA        A55   LD    2 BLOCN-R                                  BLOC5371
0192 0  D2FB              STO   2 CSAVE-R      SAVE REAL BLOCN             BLOC5372
0193 0  C2FC              LD    2 ISAVE-R      LOAD READ BLOCN             BLOC5373
0194 0  D2FA              STO   2 BLOCN-R      FOR PRINTER MESS. ONLY      BLOC5374
0195 0  C21C              LD    2 RED-R        RED FOR WRONG BLOCN         BLOC5375
0196 01 D40002E0          STO   L MESGE                                    BLOC5376
0198 0  70CB              MDX     A50                                      BLOC5377
0199 0  B200        A60   CMP   2 C2-R                                     BLOC5378
019A 0  7000              MDX     *                                        BLOC5379
019B 0  7020              MDX     A80          RETURN TO TEST 1            BLOC5380
019C 20 23A17155    A65   LIBF    TYPEN        TEST FLAG BIT TEST 2        BLOC5381
019D 0  2001              DC      /2001                                    BLOC5382
019E 1  0275              DC      M3-1                                     BLOC5383
019F 0  0000              DC      0             INCORRECT BLOCK LENGTH     BLOC5384
01A0 0  C205              LD    2 COMD3-R      PRINT ALPHAMERIC            BLOC5385
01A1 0  D20C              STO   2 AREA1+2-R                                BLOC5386
01A2 20 040565C0          LIBF    DAOP                                     BLOC5387
01A3 0  1000              DC      /1000                                    BLOC5388
01A4 1  039E              DC      AREA4        COMMAND RESET               BLOC5389
01A5 1  03C7              DC      ROUTI                                    BLOC5390
01A6 20 040565C0          LIBF    DAOP                                     BLOC5391
01A7 0  1000              DC      /1000                                    BLOC5392
01A8 1  0397              DC      AREA1                                    BLOC5393
01A9 1  03C7              DC      ROUTI                                    BLOC5394
01AA 20 040565C0          LIBF    DAOP                                     BLOC5395
01AB 0  1310              DC      /1310        WRITE SINGL. ADDR. D.C. EXT.BLOC5396
01AC 1  02EC              DC      IM2                                      BLOC5397
01AD 1  03C7              DC      ROUTI                                    BLOC5398
01AE 30 19162163          CALL    RESET                                    BLOC5399
01B0 1  03AB              DC      C0                                       BLOC5400
01B1 1  01B2              DC      A66                                      BLOC5401
01B2 01 74010387    A66   MDX   L BLOCN,+1     NEXT BLOCK                  BLOC5402
01B4 01 74FF03BF          MDX   I BLOCM,-1     CHECK MAX. NR. OF TESTS     BLOC5403
01B6 0  7001              MDX     A70                                      BLOC5404
01B7 0  7002              MDX     A71                                      BLOC5405
01B8 01 4C0000DF    A70   BSC   L B20          NEXT BLOCK                  BLOC5406
01BA 01 4C00020F    A71   BSC   L A400         END OF TEST                 BLOC5407
01BC 0  B201        A80   CMP   2 C3-R                                     BLOC5408
01BD 0  7000              MDX     *                                        BLOC5409
01BE 0  7050              MDX     A400                                     BLOC5410
01BF 0  C21B        A81   LD    2 BLOCA-R      REAL LOCATION IN BLOCK      BLOC5411
01C0 20 02255103          LIBF    BINDC        CARD CODE                   BLOC5412
01C1 1  03C1              DC      OUTP2                                    BLOC5413
01C2 0  C236              LD    2 OUTP2+2-R                                BLOC5414
01C3 0  D292              STO   2 IM5-R                                    BLOC5415
01C4 0  C237              LD    2 OUTP2+3-R                                BLOC5416
01C5 0  D293              STO   2 IM5+1-R                                  BLOC5417
01C6 0  C238              LD    2 OUTP2+4-R                                BLOC5418
01C7 0  D294              STO   2 IM5+2-R                                  BLOC5419
01C8 0  C239              LD    2 OUTP2+5-R                                BLOC5420
01C9 0  D295              STO   2 IM5+3-R                                  BLOC5421
01CA 20 085935D9          LIBF    HOLPR        PRINTER CODE                BLOC5422
01CB 0  0000              DC      /0000                                    BLOC5423
01CC 1  03C3              DC      OUTP2+2                                  BLOC5424
01CD 1  0289              DC      CM1                                      BLOC5425
01CE 0  0004              DC      4                                        BLOC5426
01CF 00 C5000000    A82   LD    L1 *-*          GET LSHW                    BLOC5427
01D1 0  1890              SRT     16           STORE IN QQ                 BLOC5428
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01D2 0  7101                MDX   1 +1                                  BLOC5429
01D3 00 C5000000    A83     LD   L1 *-*          GET MSHW               BLOC5430
01D5 0  71FF                MDX   1 -1          RESTORE XR1            BLOC5431
01D6 20 02255227            LIBF    BINHX       CARD CODE              BLOC5432
01D7 1  0328                DC      IM6                                BLOC5433
01D8 20 085935D9            LIBF    HOLPR       PRINTER CIDE           BLOC5434
01D9 0  0000                DC      /0000                              BLOC5435
01DA 1  0328                DC      IM6                                BLOC5436
01DB 1  0293                DC      CM2                                BLOC5437
01DC 0  0004                DC      4                                  BLOC5438
01DD 0  1090                SLT     16                                 BLOC5439
01DE 20 02255227            LIBF    BINHX                              BLOC5440
01DF 1  032E                DC      IM6+6                              BLOC5441
01E0 20 085935D9            LIBF    HOLPR                              BLOC5442
01E1 0  0000                DC      /0000                              BLOC5443
01E2 1  032E                DC      IM6+6                              BLOC5444
01E3 1  0295                DC      CM2+2                              BLOC5445
01E4 0  0004                DC      4                                  BLOC5446
01E5 0  C20F                LD    2 ADDR-R      GET LSHW               BLOC5447
01E6 0  1890                SRT     16          STORE IN Q             BLOC5448
01E7 0  C210                LD    2 ADDR+1-R    GET MSHW               BLOC5449
01E8 20 02255227            LIBF    BINHX                              BLOC5450
01E9 1  0337                DC      IM7                                BLOC5451
01EA 20 085935D9            LIBF    HOLPR                              BLOC5452
01EB 0  0000                DC      /0000                              BLOC5453
01EC 1  0337                DC      IM7                                BLOC5454
01ED 1  02A0                DC      CM3                                BLOC5455
01EE 0  0004                DC      4                                  BLOC5456
01EF 0  1090                SLT     16                                 BLOC5457
01F0 20 02255227            LIBF    BINHX                              BLOC5458
01F1 1  033D                DC      IM7+6                              BLOC5459
01F2 20 085935D9            LIBF    HOLPR                              BLOC5460
01F3 0  0000                DC      /0000                              BLOC5461
01F4 1  033D                DC      IM7+6                              BLOC5462
01F5 1  02A2                DC      CM3+2                              BLOC5463
01F6 0  0004                DC      4                                  BLOC5464
01F7 20 23A17155            LIBF    TYPEN       PRINT ON 1053 PRINTER  BLOC5465
01F8 0  2001                DC      /2001                              BLOC5466
01F9 1  0282                DC      M5-1                               BLOC5467
01FA 0  0000                DC      0                                  BLOC5468
01FB 0  C205                LD    2 COMD3-R                            BLOC5469
01FC 0  D20C                STO   2 AREA1+2-R                          BLOC5470
01FD 20 040565C0            LIBF    DAOP                               BLOC5471
01FE 0  1000                DC      /1000                              BLOC5472
01FF 1  039E                DC      AREA4                              BLOC5473
0200 1  03C7                DC      ROUTI                              BLOC5474
0201 20 040565C0            LIBF    DAOP                               BLOC5475
0202 0  1000                DC      /1000                              BLOC5476
0203 1  0397                DC      AREA1                              BLOC5477
0204 1  03C7                DC      ROUTI                              BLOC5478
0205 20 040565C0            LIBF    DAOP                               BLOC5479
0206 0  1310                DC      /1310       WRITE SING. ADDR. EXT. SYNC.BLOC5480
0207 1  0311                DC      M20                                BLOC5481
0208 1  03C7                DC      ROUTI                              BLOC5482
0209 30 19162163            CALL    RESET                              BLOC5483
020B 1  03AB                DC      C0                                 BLOC5484
020C 1  020D                DC      A100                               BLOC5485
020D 01 4C00013A    A100    BSC  L  B35         CONTINUE PATTERN COMPARISON BLOC5486
                    * END OF TEST MESSAGE                              BLOC5487
020F 20 23A17155    A400    LIBF    TYPEN                              BLOC5488
0210 0  2001                DC      /2001                              BLOC5489
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0211 1  02B7              DC      M11-1                                   BLOC5490
0212 0  0000              DC      0                                       BLOC5491
0213 01 6600038D          LDX  L2 R                                       BLOC5492
0215 0  C205              LD    2 COMD3-R     PRINT ALPHAMERIC            BLOC5493
0216 0  D20C              STO   2 AREA1+2-R                               BLOC5494
0217 20 040565C0          LIBF    DAOP                                    BLOC5495
0218 0  1000              DC      /1000                                   BLOC5496
0219 1  039E              DC      AREA4       COMMAND RESET               BLOC5497
021A 1  03C7              DC      ROUTI                                   BLOC5498
021B 20 040565C0          LIBF    DAOP                                    BLOC5499
021C 0  1000              DC      /1000                                   BLOC5500
021D 1  0397              DC      AREA1                                   BLOC5501
021E 1  03C7              DC      ROUTI                                   BLOC5502
021F 20 040565C0          LIBF    DAOP                                    BLOC5503
0220 0  1310              DC      /1310       WRITE IN D.C. SINGL. ADDR.  BLOC5504
0221 1  0301              DC      IM4                                     BLOC5505
0222 1  03C7              DC      ROUTI                                   BLOC5506
0223 30 19162163          CALL    RESET                                   BLOC5507
0225 1  03AB              DC      C0                                      BLOC5508
0226 1  0227              DC      A450                                    BLOC5509
0227 01 4C000240  A450    BSC  L  A600        END OF INTERRUPT            BLOC5510
                  * END OF TEST -5 DETECTED ERRORS- MESSAGE               BLOC5511
0229 20 23A17155  A500    LIBF    TYPEN                                   BLOC5512
022A 0  2001              DC      /2001                                   BLOC5513
022B 1  02A4              DC      TEND-1                                  BLOC5514
022C 0  0000              DC      0                                       BLOC5515
022D 0  C205              LD    2 COMD3-R     PRINT ALPHAMERIC            BLOC5516
022E 0  D20C              STO   2 AREA1+2-R                               BLOC5517
022F 20 040565C0          LIBF    DAOP                                    BLOC5518
0230 0  1000              DC      /1000                                   BLOC5519
0231 1  039E              DC      AREA4       COMMAND RESET               BLOC5520
0232 1  03C7              DC      ROUTI                                   BLOC5521
0233 20 040565C0          LIBF    DAOP                                    BLOC5522
0234 0  1000              DC      /1000                                   BLOC5523
0235 1  0397              DC      AREA1                                   BLOC5524
0236 1  03C7              DC      ROUTI                                   BLOC5525
0237 20 040565C0          LIBF    DAOP                                    BLOC5526
0238 0  1310              DC      /1310       WRITE SINGL. ADDR. EXT. SYNCBLOC5527
0239 1  0342              DC      IEND                                    BLOC5528
023A 1  03C7              DC      ROUTI                                   BLOC5529
023B 30 19162163          CALL    RESET                                   BLOC5530
023D 1  03AB              DC      C0                                      BLOC5531
023E 1  023F              DC      A550                                    BLOC5532
023F 0  7000      A550    MDX     A600                                    BLOC5533
                  *                           END OF INTERRUPT            BLOC5534
0240 0  C209      A600    LD    2 COMD8-R      END OF INTERRUPT           BLOC5535
0241 0  D20C              STO   2 AREA1+2-R                               BLOC5536
0242 20 040565C0          LIBF    DAOP                                    BLOC5537
0243 0  1000              DC      /1000                                   BLOC5538
0244 1  039E              DC      AREA4       RESET                       BLOC5539
0245 1  03C7              DC      ROUTI                                   BLOC5540
0246 20 040565C0          LIBF    DAOP                                    BLOC5541
0247 0  1000              DC      /1000                                   BLOC5542
0248 1  0397              DC      AREA1       COMMAND                     BLOC5543
0249 1  03C7              DC      ROUTI                                   BLOC5544
024A 30 09563167          CALL    INTEX                                   BLOC5545
                  *COVERSION OF BLOCK NR. INTO CARD-CODE AND 1053 PRINBLOC5546
                  *CALLING SEQUENCE                                       BLOC5547
                  *       BSI   L CONV                                    BLOC5548
                  *       DC      ADDR.OF CARD-CODE BLOCK NR.(BSS2)       BLOC5549
                  *       DC      ADDR.OF1053-CODE BLOCK NR.(1WORD)       BLOC5550
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024C 0  0000          CONV  DC      *-*         RETURN ADDRESS                    BLOC5551
024D 01 6600038D            LDX   L2 R                                            BLOC5552
024F 01 C480024C            LD    I  CONV       CARD CODE ADDRESS                 BLOC5553
0251 01 D4000261            STO   L  CONV1+1                                      BLOC5554
0253 0  821F                A      2 C1-R        STORAGE OF SECOND DIGIT           BLOC5555
0254 0  D00F                STO      CONV2+1                                      BLOC5556
0255 01 7401024C            MDX   L  CONV,+1     1053-PRINTER ADDRSS               BLOC5557
0257 01 C480024C            LD    I  CONV                                         BLOC5558
0259 0  D00E                STO      CONV3                                        BLOC5559
025A 01 7401024C            MDX   L  CONV,+1     RETURN ADDRESS                    BLOC5560
025C 0  C2FA                LD     2 BLOCN-R     BLOCK NR. TO BE CONVERTED         BLOC5561
025D 20 02255103            LIBF     BINDC                                        BLOC5562
025E 1  03B7                DC       OUTPT                                        BLOC5563
025F 0  C22E                LD     2 OUTPT+4-R                                    BLOC5564
0260 00 D4000000      CONV1 STO   L  *-*          ADDRESS CARD CODE                 BLOC5565
0262 0  C22F                LD     2 OUTPT+5-R                                    BLOC5566
0263 00 D4000000      CONV2 STO   L  *-*          ADDRESS CARD-CODE                 BLOC5567
0265 20 085935D9            LIBF     HOLPR                                        BLOC5568
0266 0  0000                DC       /0000                                        BLOC5569
0267 1  03BB                DC       OUTPT+4                                      BLOC5570
0268 0  0000          CONV3 DC       *-*          ADDRESS PRINTER-CODE              BLOC5571
0269 0  0002                DC       2                                            BLOC5572
026A 01 4C80024C            BSC   I  CONV         END OF CONVERSION                 BLOC5573
                      *  PRINTER AND INTERFACE MESSAGES                           BLOC5574
026C 0  0008                DC       M2-M1                                        BLOC5575
026D    000E          M1    DMES     'RBLOCK NUMBER 'E                            BLOC5576
0274 0  0000          BLOC  DC       *-*                                          BLOC5577
0275    0000          M2    BES      0                                            BLOC5578
0275 0  000C                DC       M4-M3                                        BLOC5579
0276    0018          M3    DMES     'RINCORRECT BLOCK LENGTH 'E                  BLOC5580
0282    0000          M4    BES      0                                            BLOC5581
0282 0  0021                DC       M6-M5                                        BLOC5582
0283    000C          M5    DMES     'RWRONG WORD 'E                              BLOC5583
0289    0002          CM1   BSS      2            WORD NR.                        BLOC5584
028B    0010                DMES     'RPATTERN WORD  /'E                          BLOC5585
0293    0004          CM2   BSS      4                                            BLOC5586
0297    0012                DMES     'RINTERFACE WORD  /'E                        BLOC5587
02A0    0004          CM3   BSS      4                                            BLOC5588
02A4    0000          M6    BES      0                                            BLOC5589
02A4 0  0012                DC       END-TEND                                     BLOC5590
02A5    0024          TEND  DMES     '2R'TTEST INTERRUPTED-5 DETECTED ERRORBLOC5591
02B7    0000          END   BES      0                                            BLOC5592
02B7 0  0011                DC       M12-M11                                      BLOC5593
02B8    0022          M11   DMES     'R'TEND OF BLOCK TEST WITH PATTERN 'E        BLOC5594
02C9    0000          M12   BES      0                                            BLOC5595
02C9 0  0013          BTEST DC       19                                           BLOC5596
02CA 0  007B                DC       123                                          BLOC5597
02CB 0  0300                DC       /0300       LINE FEED                        BLOC5598
02CC 0  0300                DC       /0300                                        BLOC5599
02CD 0  8800                DC       /8800       B                                BLOC5600
02CE 0  8100                DC       /8100       E                                BLOC5601
02CF 0  8040                DC       /8040       G                                BLOC5602
02D0 0  8010                DC       /8010       I                                BLOC5603
02D1 0  4100                DC       /4100       N                                BLOC5604
02D2 0  0000                DC       /0000                                        BLOC5605
02D3 0  8800                DC       /8800       B                                BLOC5606
02D4 0  4400                DC       /4400       L                                BLOC5607
02D5 0  4080                DC       /4080       O                                BLOC5608
02D6 0  8400                DC       /8400       C                                BLOC5609
02D7 0  4800                DC       /4800       K                                BLOC5610
02D8 0  0000                DC       /0000                                        BLOC5611
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02D9 0  2400          DC      /2400     T                          BLOC5612
02DA 0  8100          DC      /8100     E                          BLOC5613
02DB 0  2800          DC      /2800     S                          BLOC5614
02DC 0  2400          DC      /2400     T                          BLOC5615
02DD 0  000E    IM1   DC      14                                   BLOC5616
02DE 0  007B          DC      123                                  BLOC5617
02DF 0  0300          DC      /0300     LINE FEED                  BLOC5618
02E0 0  0500    MESGE DC      /0500      SHIFT TO BLACK            BLOC5619
02E1 0  8800          DC      /8800     B                          BLOC5620
02E2 0  4400          DC      /4400     L                          BLOC5621
02E3 0  4080          DC      /4080     O                          BLOC5622
02E4 0  8400          DC      /8400     C                          BLOC5623
02E5 0  4800          DC      /4800     K                          BLOC5624
02E6 0  0000          DC      /0000                                BLOC5625
02E7 0  4100          DC      /4100     N                          BLOC5626
02E8 0  4010          DC      /4010     R                          BLOC5627
02E9 0  0000          DC      /0000                                BLOC5628
02EA 0  0000    IBLOC DC      *-*       BLOCK NR.  10**1           BLOC5629
02EB 0  0000          DC      *-*       BLOCK NR.  10**0           BLOC5630
02EC 0  0014    IM2   DC      20                                   BLOC5631
02ED 0  007B          DC      123                                  BLOC5632
02EE 0  8010          DC      /8010     I                          BLOC5633
02EF 0  4100          DC      /4100     N                          BLOC5634
02F0 0  8400          DC      /8400     C                          BLOC5635
02F1 0  4080          DC      /4080     O                          BLOC5636
02F2 0  4010          DC      /4010     R                          BLOC5637
02F3 0  4010          DC      /4010     R                          BLOC5638
02F4 0  0000          DC      /0000                                BLOC5639
02F5 0  8800          DC      /8800     B                          BLOC5640
02F6 0  4400          DC      /4400     L                          BLOC5641
02F7 0  4080          DC      /4080     O                          BLOC5642
02F8 0  8400          DC      /8400     C                          BLOC5643
02F9 0  4800          DC      /4800     K                          BLOC5644
02FA 0  0000          DC      /0000                                BLOC5645
02FB 0  4400          DC      /4400     L                          BLOC5646
02FC 0  8100          DC      /8100     E                          BLOC5647
02FD 0  4100          DC      /4100     N                          BLOC5648
02FE 0  8040          DC      /8040     G                          BLOC5649
02FF 0  2400          DC      /2400     T                          BLOC5650
0300 0  8020          DC      /8020     H                          BLOC5651
0301 0  000F    IM4   DC      15                                   BLOC5652
0302 0  007B          DC      123                                  BLOC5653
0303 0  8100          DC      /8100     E                          BLOC5654
0304 0  4100          DC      /4100     N                          BLOC5655
0305 0  8200          DC      /8200     D                          BLOC5656
0306 0  0000          DC      /0000                                BLOC5657
0307 0  8800          DC      /8800     B                          BLOC5658
0308 0  4400          DC      /4400     L                          BLOC5659
0309 0  4080          DC      /4080     O                          BLOC5660
030A 0  8400          DC      /8400     C                          BLOC5661
030B 0  4800          DC      /4800     K                          BLOC5662
030C 0  0000          DC      /0000                                BLOC5663
030D 0  2400          DC      /2400     T                          BLOC5664
030E 0  8100          DC      /8100     E                          BLOC5665
030F 0  2800          DC      /2800     S                          BLOC5666
0310 0  2400          DC      /2400     T                          BLOC5667
0311 0  0030    M20   DC      48                                   BLOC5668
0312 0  007B          DC      123                                  BLOC5669
0313 0  0900          DC      /0900     RED                        BLOC5670
0314 0  2080          DC      /2080     W                          BLOC5671
0315 0  4010          DC      /4010     R                          BLOC5672
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0316 0  4080                DC      /4080     O                              BLOC5673
0317 0  4100                DC      /4100     N                              BLOC5674
0318 0  8040                DC      /8040     G                              BLOC5675
0319 0  0000                DC      /0000                                    BLOC5676
031A 0  2080                DC      /2080     W                              BLOC5677
031B 0  4080                DC      /4080     O                              BLOC5678
031C 0  4010                DC      /4010     R                              BLOC5679
031D 0  8200                DC      /8200     D                              BLOC5680
031E 0  0000                DC      /0000                                    BLOC5681
031F 0  0000          IM5   DC      *-*       WORD NR. 10**3                 BLOC5682
0320 0  0000                DC      *-*       WORD NR. 10**2                 BLOC5683
0321 0  0000                DC      *-*       WORD NR.  10**1                BLOC5684
0322 0  0000                DC      *-*       WORD NR.  10**0                BLOC5685
0323 0  0000                DC      /0000                                    BLOC5686
0324 0  4040                DC      /4040     P                              BLOC5687
0325 0  2080                DC      /2080     W                              BLOC5688
0326 0  0000                DC      /0000                                    BLOC5689
0327 0  3000                DC      /3000     /                              BLOC5690
0328    0004          IM6   BSS     4         LSHW HEX DEC PATTERN WORD      BLOC5691
032C 0  0000                DC      /0000                                    BLOC5692
032D 0  3000                DC      /3000                                    BLOC5693
032E    0004                BSS     4         MSHW HEX DEC PATTERN WORD      BLOC5694
0332 0  0000                DC      /0000                                    BLOC5695
0333 0  8010                DC      /8010     I                              BLOC5696
0334 0  2080                DC      /2080     W                              BLOC5697
0335 0  0000                DC      /0000                                    BLOC5698
0336 0  3000                DC      /3000     /                              BLOC5699
0337    0004          IM7   BSS     4         LSHW HEX DEC INTERFACE WORD    BLOC5700
033B 0  0000                DC      /0000                                    BLOC5701
033C 0  3000                DC      /3000     /                              BLOC5702
033D    0004                BSS     4         MSHW HEX DEC INTERFACE WORD    BLOC5703
0341 0  0500                DC      /0500     BLACK                          BLOC5704
0342 0  001B          IEND  DC      27                                       BLOC5705
0343 0  007B                DC      123                                      BLOC5706
0344 0  2400                DC      /2400     T                              BLOC5707
0345 0  8100                DC      /8100     E                              BLOC5708
0346 0  2800                DC      /2800     S                              BLOC5709
0347 0  2400                DC      /2400     T                              BLOC5710
0348 0  0000                DC      /0000                                    BLOC5711
0349 0  8010                DC      /8010     I                              BLOC5712
034A 0  4100                DC      /4100     N                              BLOC5713
034B 0  2400                DC      /2400     T                              BLOC5714
034C 0  8100                DC      /8100     E                              BLOC5715
034D 0  4010                DC      /4010     R                              BLOC5716
034E 0  0000                DC      /0000                                    BLOC5717
034F 0  2000                DC      /2000      0                             BLOC5718
0350 0  0100                DC      /0100      5                             BLOC5719
0351 0  0000                DC      /0000                                    BLOC5720
0352 0  8200                DC      /8200     D                              BLOC5721
0353 0  8100                DC      /8100     E                              BLOC5722
0354 0  2400                DC      /2400     T                              BLOC5723
0355 0  8100                DC      /8100     E                              BLOC5724
0356 0  8400                DC      /8400     C                              BLOC5725
0357 0  0000                DC      /0000                                    BLOC5726
0358 0  8100                DC      /8100     E                              BLOC5727
0359 0  4010                DC      /4010     R                              BLOC5728
035A 0  4010                DC      /4010     R                              BLOC5729
035B 0  4080                DC      /4080     O                              BLOC5730
035C 0  4010                DC      /4010     R                              BLOC5731
035D 0  2800                DC      /2800     S                              BLOC5732
035E 0  0020          WORDC DC      32                                       BLOC5733
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0360     0000                BSS  E  0                                          BLOC5734
0360 31  04152168    SECTO   DSA     DEKEY                                      BLOC5735
0363                 SECTO   ORG     SECTO+2                                    BLOC5736
0362     0020        PATRN   BSS     32                                         BLOC5737
0382 0   C000        MASK1   DC      /C000                                      BLOC5738
0383 0   7FFF        MASK2   DC      /7FFF                                      BLOC5739
0384 0   4000        MASK3   DC      /4000                                      BLOC5740
0385 0   0000        ND1     DC      *-*                                        BLOC5741
0386 0   0000        WORDN   DC      *-*                                        BLOC5742
0387 0   0000        BLOCN   DC      *-*                                        BLOC5743
0388 0   0000        CSAVE   DC      *-*                                        BLOC5744
0389 0   0000        ISAVE   DC      *-*                                        BLOC5745
038A 0   0000        BITNO   DC      *-*                                        BLOC5746
038B 0   0000        T1SEQ   DC      *-*                                        BLOC5747
038C 0   0000        T2SEQ   DC      *-*        SEQUENTIAL TEST NR. OF TEST     BLOC5748
038D 0   0002        C2      DC      2                                          BLOC5749
038E 0   0003        C3      DC      3                                          BLOC5750
038F 0   000C        C12     DC      12                                         BLOC5751
0390 0   3400        COMD1   DC      /3400      WRITE BLOCK ADDRESS             BLOC5752
0391 0   23F0        COMD2   DC      /23F0      2ND HALF OF STATUS WORD         BLOC5753
0392 0   1400        COMD3   DC      /1400      PRINT ALPHAMERIC                BLOC5754
0393 0   3400        COMD4   DC      /3400      WRITE BLOCK IN D.C.             BLOC5755
0394 0   3200        COMD5   DC      /3200      READ BLOCK IN D.C.              BLOC5756
0395 0   3000        COMD6   DC      /3000      BLOCK RESET                     BLOC5757
0396 0   B000        COMD8   DC      /B000      END OF INTERRUPT                BLOC5758
0397 0   0002        AREA1   DC      2                                          BLOC5759
0398 0   007C                DC      124        COMMAND OUT                     BLOC5760
0399 0   0000                DC      *-*                                        BLOC5761
039A     0000                BSS  E  0                                          BLOC5762
039A 0   0002        AREA2   DC      2                                          BLOC5763
039B 0   0043                DC      67                                         BLOC5764
039C 0   0000        ADDR    DC      *-*                                        BLOC5765
039D 0   0000                DC      *-*        STORAGE FOR SEC. HALF WORD      BLOC5766
039E 0   0003        AREA4   DC      3                                          BLOC5767
039F 0   007B                DC      123        DATA OUT                        BLOC5768
03A0 0   0000                DC      0                                          BLOC5769
03A1 0   0000                DC      0                                          BLOC5770
03A2 1   0362        PATRA   DC      PATRN                                      BLOC5771
03A4     0000                BSS  E  0                                          BLOC5772
03A4 0   0000        FIELT   DC      *-*                                        BLOC5773
03A5 0   0043                DC      67                                         BLOC5774
03A6 0   0000        FIELD   DC      *-*                                        BLOC5775
03A7 0   007B                DC      123                                        BLOC5776
03A8 0   0000        BLOCA   DC      0          RUNNING ADDR. IN REAL BLOC      BLOC5777
03A9 0   0900        RED     DC      /0900      SHIFT TO RED                    BLOC5778
03AA 0   0500        BLACK   DC      /0500      SHIFT TO BLACK                  BLOC5779
03AB 0   0000        C0      DC      0                                          BLOC5780
03AC 0   0001        C1      DC      1                                          BLOC5781
03AD 0   FFEC        MC20    DC      -20                                        BLOC5782
03AE 0   FFE0        MC32    DC      -32                                        BLOC5783
03AF 0   0201        C513    DC      513                                        BLOC5784
03B0 0   00C9        C201    DC      201                                        BLOC5785
03B1 0   000A        C10     DC      10                                         BLOC5786
03B2 1   03B1        AC10    DC      C10                                        BLOC5787
03B3 0   0010        C16     DC      16                                         BLOC5788
03B4 1   03B3        AC16    DC      C16                                        BLOC5789
03B5 0   0014        C20     DC      20                                         BLOC5790
03B6 0   0020        C32     DC      32                                         BLOC5791
03B7     0006        OUTPT   BSS     6                                          BLOC5792
03BD 0   0010        NPBDC   DC      16         NR. OF PATTERN BLOCKS IN D.C    BLOC5793
03BE 0   0005        MNOAE   DC      5          MAX. NR. OF ALLOVED ERRORS      BLOC5794
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03BF 0  0010          BLOCM DC       16        NR. OF BLOCKS TO BE TESTED  BLOC5795
03C0 0  0000          SAVE  DC       *-*                                   BLOC5796
03C1    0006          OUTP2 BSS      6                                     BLOC5797
03C7 0  0000          ROUTI DC       *-*                                   BLOC5798
03C8 01 4C8003C7            BSC  I   ROUTI                                 BLOC5799
038D                  R     EQU      C2                                    BLOC5800
03CA                        END                                            BLOC5801
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NO ERRORS IN ABOVE ASSEMBLY.

BLOC5
DUP FUNCTION COMPLETED

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                        ************************************************* COBA6002
                        *                                               * COBA6003
                        * INTERFACE TEST ROUTINE-COBA6-                 * COBA6004
                        * COBA6=CONTINUOUS BLOC TEST WITH ANALYSER      * COBA6005
                        * THIS PROGRAM READS THE CONTROL WORD NR1(GROUP NR* COBA6006
                        * ,FIRST + SECOND EXP. NR.+SERIAL NR) AND CONTI- * COBA6007
                        * NUOUSLY TRANSFERS BLOCS OF 256 (100) CHANNELS  * COBA6008
                        * CONTAINING THE SET ID INTO THE ANALYZER.       * COBA6009
                        * THE MODIFICATIONS OF THE CONTROL WORD ARE      * COBA6010
                        * IMMEDIATELY RECOGNIZED BY THE PROGRAM.        * COBA6011
                        * IF GROUP NR SMALLER 10, BLOCS ARE WRITTEN     * COBA6012
                        * IF GROUP NR SMALLER 20, BLOCS ARE READ        * COBA6013
                        * IF GROUP NR GREATER 20, CONTR.WORD1 IS READ   * COBA6014
                        * CONTIN.                                       * COBA6015
                        * IF GROUP NR AND 1.EXP.NR=0, ALL BLOCKS ARE    * COBA6016
                        * RESETTED                                      * COBA6017
                        * A NEG. GROUP NR TERMINATES THE TEST           * COBA6018
                        *                                               * COBA6019
                        ************************************************* COBA6020
0000     03582076               ENT     COBA6                          COBA6021
0000 0   0000          COBA6    DC      *-*                            COBA6022
0001 01  6E0000CD               STX  L2 BITNO       SAVE BITNO         COBA6023
DFFE                    AREA5    EQU     -8194                         COBA6024
DFFF                    DIO      EQU     -8193                         COBA6025
E000                    BLOC     EQU     -8192                         COBA6026
0003 01  660000DB               LDX  L2 R                              COBA6027
0005 0   4820                  BSC     Z           JUMP IF ZERO       COBA6028
0006 0   7004                  MDX     A03                            COBA6029
0007 0   C2F2                  LD   2  BITNO-R                        COBA6030
0008 0   B2F6                  CMP  2  C12-R                          COBA6031
0009 0   7000                  MDX     *                              COBA6032
000A 0   7002                  MDX     A05                            COBA6033
000B 0   C21A          A03     LD   2  FIELT-R     SKIPP ANAL.        COBA6034
000C 0   7001                  MDX     *+1                            COBA6035
000D 0   C21B          A05     LD   2  FIELD-R                        COBA6036
000E 00  D400DFFE              STO  L  AREA5                          COBA6037
0010 0   61FA          A06     LDX  1  -6                             COBA6038
                        * ADD STATION BIT TO COMMANDS                  COBA6039
0011 01  C50000DB      AGAIN   LD   L1 COMD1+6                        COBA6040
0013 0   EAF2                  OR   2  BITNO-R                        COBA6041
0014 01  D50000DB              STO  L1 COMD1+6                        COBA6042
0016 0   7101                  MDX  1  +1                             COBA6043
0017 0   70F9                  MDX     AGAIN                          COBA6044
                        * READ GROUP NR TO GET THE FUNCTION            COBA6045
                        * TO BE EXECUTED                               COBA6046
0018 0   61FE          A10     LDX  1  -2                             COBA6047
0019 0   C2F3                  LD   2  CO-R                           COBA6048
001A 0   D2F9                  STO  2  WORDN-R                        COBA6049
001B 01  660000D6      A13     LDX  L2 COMD2                          COBA6050
001D 01  6E00002A              STX  L2 A17+1                          COBA6051
001F 0   7004                  MDX     A15                            COBA6052
0020 01  660000D5      A14     LDX  L2 COMD1                          COBA6053
0022 01  6E00002A              STX  L2 A17+1                          COBA6054
0024 01  C40000D4      A15     LD   L  WORDN                          COBA6055
0026 01  660000DB              LDX  L2 R                              COBA6056
0028 0   1004                  SLA     4                              COBA6057
0029 00  EC000000      A17     OR   L  *-*                            COBA6058
002B 0   D205                  STO  2  AREA1+2-R                      COBA6059
002C 20  040565C0              LIBF    DAOP                           COBA6060
002D 0   1000                  DC      /1000                          COBA6061
002E 1   00E1                  DC      AREA4       C. RESET           COBA6062
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002F 1  00E5                DC      ROUTI                                   COBA6063
0030 20 040565C0            LIBF    DAOP                                    COBA6064
0031 0  1000                DC      /1000                                   COBA6065
0032 1  00DE                DC      AREA1       COMMAND READ WORD           COBA6066
0033 1  00E5                DC      ROUTI                                   COBA6067
0034 20 042555C0            LIBF    DINP        READ FIRST-WORD             COBA6068
0035 0  2000                DC      /2000                                   COBA6069
0036 1  00EA                DC      AREA2                                   COBA6070
0037 1  00E5                DC      ROUTI                                   COBA6071
0038 20 042555C0    A20     LIBF    DINP                                    COBA6072
0039 0  0000                DC      0                                       COBA6073
003A 0  70FD                MDX     A20                                     COBA6074
003B 01 6D0000E8            STX   L1 SAVE1                                  COBA6075
003D 0  C20D                LD    2 SAVE1-R                                 COBA6076
003E 01 4C040044            BSC   L A25,E                                   COBA6077
0040 0  C211                LD    2 ADDR-R                                  COBA6078
0041 0  D212                STO   2 ADDR+1-R                                COBA6079
0042 0  7101                MDX   1 +1                                      COBA6080
0043 0  70DC                MDX     A14                                     COBA6081
                    * COMPARE IF STILL SAME FUNCTION                        COBA6082
0044 0  CA11        A25     LDD   2 ADDR-R                                  COBA6083
0045 0  BA15                DCM   2 OLDAR-R                                 COBA6084
0046 0  7000                MDX     *           NOT SAME                    COBA6085
0047 0  7001                MDX     A30         NOT SAME                    COBA6086
0048 0  700D                MDX     A100        SAME                        COBA6087
0049 0  6200        A30     LDX   2 0           NOT SAME COMPL.ONE BLOCK    COBA6088
004A 00 65000100    A31     LDX   L1 256        WITH ID NR.                 COBA6089
004C 01 CC0000EC            LDD   L ADDR                                    COBA6090
004E 01 DC0000F0            STD   L OLDAR                                   COBA6091
0050 00 DE00E000    A40     STD   L2 BLOC                                   COBA6092
0052 0  7202                MDX   2 +2                                      COBA6093
0053 0  71FF                MDX   1 -1                                      COBA6094
0054 0  70FB                MDX     A40         NEXT ADDR BLOCK COMPLETED.  COBA6095
0055 0  10A0                SLT     32                                      COBA6096
0056 01 660000DB    A100    LDX   L2 R                                      COBA6097
0058 0  C211                LD    2 ADDR-R                                  COBA6098
0059 0  B201                CMP   2 ZERO-R                                  COBA6099
005A 0  7000                MDX     *                                       COBA6100
005B 0  7018                MDX     A300                                    COBA6101
005C 0  C2F4                LD    2 C1-R                                    COBA6102
005D 0  D200                STO   2 SECON-R                                 COBA6103
005E 0  C2FF                LD    2 COMDE-R                                 COBA6104
005F 0  D205                STO   2 AREA1+2-R                               COBA6105
                    *ERASE COMMAND FROM BLOCK 1 TO BLOCK 16                 COBA6106
0060 20 040565C0    ERASE   LIBF    DAOP                                    COBA6107
0061 0  1000                DC      /1000                                   COBA6108
0062 1  00E1                DC      AREA4                                   COBA6109
0063 1  00E5                DC      ROUTI                                   COBA6110
0064 20 040565C0            LIBF    DAOP                                    COBA6111
0065 0  1000                DC      /1000                                   COBA6112
0066 1  00DE                DC      AREA1                                   COBA6113
0067 1  00E5                DC      ROUTI                                   COBA6114
0068 01 74FF00DB            MDX   I SECON,-1                                COBA6115
006A 0  7004                MDX     A350                                    COBA6116
006B 0  C2FF                LD    2 COMDE-R                                 COBA6117
006C 0  EA02                OR    2 HOOF0-R                                 COBA6118
006D 0  D205                STO   2 AREA1+2-R                               COBA6119
006E 0  70F1                MDX     ERASE                                   COBA6120
006F 0  4020        A350    BSI     LOOP                                    COBA6121
0070 0  C211        A400    LD    2 ADDR-R                                  COBA6122
0071 01 4C2800C1            BSC   L FIN,+Z                                  COBA6123
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0073 0  70A4              MDX     A10                                          COBA6124
                        *IF GROUP NR SMALLER 10, BLOCKS ARE WRITTEN            COBA6125
                        *IF GROUP NR SMALLER 20, BLOCKS ARE READ               COBA6126
                        *IF GROUP NR GREATER 20, ID IS READ CONTINUOUSLY       COBA6127
0074 0  C211        A300  LD    2 ADDR-R                                       COBA6128
0075 0  1004              SLA     4           DISCARD CONTROL BITS             COBA6129
0076 0  180C              SRA     12          10**1 OF GROUP NR                COBA6130
0077 01 4C200083          BSC   L A110,Z                                       COBA6131
0079 01 650000D8          LDX   L1 COMDW                                       COBA6132
007B 01 6D00009D          STX   L1 COMD+1                                      COBA6133
007D 0  1010              SLA     16                                           COBA6134
007E 0  D219              STO   2 READ-R                                       COBA6135
007F 0  C213              LD    2 DO-R                                         COBA6136
0080 00 D400DFFF          STO   L DIO                                          COBA6137
0082 0  7015              MDX     A200                                         COBA6138
0083 0  B2F4        A110  CMP   2 C1-R                                         COBA6139
0084 0  70EB              MDX     A400                                         COBA6140
0085 0  7000              MDX     *                                            COBA6141
0086 01 650000D9          LDX   L1 COMDR                                       COBA6142
0088 01 6D00009D          STX   L1 COMD+1                                      COBA6143
008A 0  C2F4              LD    2 C1-R                                         COBA6144
008B 0  D219              STO   2 READ-R                                       COBA6145
008C 0  C214              LD    2 DI-R                                         COBA6146
008D 00 D400DFFF          STO   L DIO                                          COBA6147
008F 0  7008              MDX     A200                                         COBA6148
0090 0  0000        LOOP  DC      *-*                                          COBA6149
0091 00 65001388          LDX   L1 5000                                        COBA6150
0093 0  1010              SLA     16                                           COBA6151
0094 0  71FF              MDX   1 -1                                           COBA6152
0095 0  70FD              MDX     *-3                                          COBA6153
0096 01 4C800090          BSC   I LOOP                                         COBA6154
                        *EXECUTE ASKED FUNCTION                                COBA6155
0098 0  C2F3        A200  LD    2 C0-R                                         COBA6156
0099 0  D217              STO   2 BLOCN-R                                      COBA6157
009A 0  C217        A150  LD    2 BLOCN-R                                      COBA6158
009B 0  1004              SLA     4                                            COBA6159
009C 00 EC000000    COMD  OR    L *-*                                          COBA6160
009E 0  D205              STO   2 AREA1+2-R                                    COBA6161
009F 20 040565C0          LIBF    DAOP                                         COBA6162
00A0 0  1000              DC      /1000                                        COBA6163
00A1 1  00E1              DC      AREA4                                        COBA6164
00A2 1  00E5              DC      ROUTI                                        COBA6165
00A3 20 040565C0          LIBF    DAOP                                         COBA6166
00A4 0  1000              DC      /1000                                        COBA6167
00A5 1  00DE              DC      AREA1                                        COBA6168
00A6 1  00E5              DC      ROUTI                                        COBA6169
00A7 0  C219              LD    2 READ-R                                       COBA6170
00A8 01 4C1800AF          BSC   L W,+-                                         COBA6171
00AA 20 042555C0          LIBF    DINP                                         COBA6172
00AB 0  1005              DC      /1005                                        COBA6173
00AC 0  DFFE              DC      AREA5                                        COBA6174
00AD 1  00E5              DC      ROUTI                                        COBA6175
00AE 0  7004              MDX     WAIT                                         COBA6176
00AF 20 040565C0    W     LIBF    DAOP                                         COBA6177
00B0 0  1310              DC      /1310                                        COBA6178
00B1 0  DFFE              DC      AREA5                                        COBA6179
00B2 1  00E5              DC      ROUTI                                        COBA6180
00B3 0  40DC        WAIT  BSI     LOOP                                         COBA6181
00B4 20 042555C0          LIBF    DINP                                         COBA6182
00B5 0  4000              DC      /4000       RESET                            COBA6183
00B6 01 740100F2          MDX   L BLOCN,+1                                     COBA6184
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00B8  0  C217              LD     2 BLOCN-R                                COBA6185
00B9  0  B2F7              CMP    2 C16-R                                  COBA6186
00BA  0  7001              MDX      *+1                                    COBA6187
00BB  0  70DE              MDX      A150          NEXT BLOCK               COBA6188
00BC  0  CA15              LDD    2 OLDAR-R                                COBA6189
00BD 01 4C2800C1           BSC  L   FIN,+Z        JUMP IF NEG.             COBA6190
00BF 01 4C000018           BSC  L   A10                                    COBA6191
00C1  0  C2FC        FIN   LD     2 COMD3-R                                COBA6192
00C2  0  D205              STO    2 AREA1+2-R                              COBA6193
00C3 20 040565C0           LIBF     DAOP                                   COBA6194
00C4  0  1000              DC       /1000                                  COBA6195
00C5  1  00E1              DC       AREA4                                  COBA6196
00C6  0  0000              DC       0                                      COBA6197
00C7 20 040565C0           LIBF     DAOP                                   COBA6198
00C8  0  1000              DC       /1000                                  COBA6199
00C9  1  00DE              DC       AREA1                                  COBA6200
00CA  0  0000              DC       0                                      COBA6201
00CB 30 09563167           CALL     INTEX                                  COBA6202
00CD  0  0000        BITNO DC       *-*                                    COBA6203
00CE  0  0000        C0    DC       0                                      COBA6204
00CF  0  0001        C1    DC       1                                      COBA6205
00D0  0  0003        C3    DC       3                                      COBA6206
00D1  0  000C        C12   DC       12                                     COBA6207
00D2  0  0010        C16   DC       16                                     COBA6208
00D3  0  00C9        C201  DC       201                                    COBA6209
00D4  0  0000        WORDN DC       *-*                                    COBA6210
00D5  0  2200        COMD1 DC       /2200         READ FIRST H.W.          COBA6211
00D6  0  2300        COMD2 DC       /2300         READ SECOND HW           COBA6212
00D7  0  B000        COMD3 DC       /B000         END OF INTERRUPT         COBA6213
00D8  0  3400        COMDW DC       /3400         WRITE BLOCK IN D.C.      COBA6214
00D9  0  3200        COMDR DC       /3200         READ BLOCK IN D.C.       COBA6215
00DA  0  3000        COMDE DC       /3000         ERASE BLOCK              COBA6216
00DB  0  0000        SECON DC       *-*                                    COBA6217
00DC  0  0000        ZERO  DC       0                                      COBA6218
00DD  0  00F0        H00F0 DC       /00F0                                  COBA6219
00DE  0  0002        AREA1 DC       2                                      COBA6220
00DF  0  007C              DC       124           COMMAND OUT              COBA6221
00E0  0  0000              DC       *-*                                    COBA6222
00E1  0  0003        AREA4 DC       3                                      COBA6223
00E2  0  007B              DC       123           COMMAND RESET            COBA6224
00E3  0  0000              DC       0                                      COBA6225
00E4  0  0000              DC       0                                      COBA6226
00E5  0  0000        ROUTI DC       0                                      COBA6227
00E6 01 4C8000E5           BSC  I   ROUTI                                  COBA6228
00E8  0  0000        SAVE1 DC       *-*                                    COBA6229
00EA     0000              BSS  E   0                                      COBA6230
00EA  0  0002        AREA2 DC       2                                      COBA6231
00EB  0  0043              DC       67                                     COBA6232
00EC  0  0000        ADDR  DC       *-*                                    COBA6233
00ED  0  0000              DC       *-*           STOR.                    COBA6234
00EE  0  007B        DO    DC       123           DIGITAL OUTPUT           COBA6235
00EF  0  0043        DI    DC       67            DIGITAL INPUT            COBA6236
00F0     0002        OLDAR BSS  E   2                                      COBA6237
00F2  0  0000        BLOCN DC       0                                      COBA6238
00F3  0  FFFF        HFFFF DC       /FFFF                                  COBA6239
00F4  0  0000        READ  DC       *-*                                    COBA6240
00F5  0  00C9        FIELT DC       201                                    COBA6241
00F6  0  0201        FIELD DC       513                                    COBA6242
00DB                 R     EQU      SECON                                  COBA6243
00F8                       END      START                                  COBA6244
```

NO ERRORS IN ABOVE ASSEMBLY.

```
                        ************************************************** PATRN002
                        * OFF-LINE PROGRAM PATRN                         * PATRN003
                        ************************************************** PATRN004
                        * THIS PROGRAM READS THE BIT PATTERN FOR THE     * PATRN005
                        * 16 DOUBLE WORDS FROM CARDS, CONVERTS TO        * PATRN006
                        * BINARY CODE, ASSURES CORRECT WORD FORMAT       * PATRN007
                        * INDICATOR, ADDS EVENTUAL ODD PARITY BIT AND    * PATRN008
                        * STORES THE WHOLE PATTERN ON DISK INTO THE      * PATRN009
                        * FILE DEKEY.                                    * PATRN010
                        ************************************************** PATRN011
                        *                                                * PATRN012
                        *    CARD FORMAT                                 * PATRN013
                        *                                                * PATRN014
                        * 10    11     12     20   21   22     79   80   * PATRN015
                        *                                                * PATRN016
                        * X     X      X      X    X    X      X    X    * PATRN017
                        *                                                * PATRN018
                        * FIRST HALF WORD     SECOND HALF WORD SEQ.WORD N.* PATRN019
                        *                                                * PATRN020
                        * 3X(0/9)            3X(0/9)          01/16      * PATRN021
                        *                                                * PATRN022
                        ************************************************** PATRN023
0000 0  C066            PATRN LD      WORDC      PREPARE                  PATRN024
0001 0  D07D                  STO     SECTO      DISK STOR.               PATRN025
0002 0  C065                  LD      C16        MAXIMUM NR OF            PATRN026
0003 0  D065                  STO     MNPC       PATTERN CARDS            PATRN027
0004 0  C065                  LD      C1         SEQ. PATT.               PATRN028
0005 0  D076                  STO     SPCN       CARD NR.                 PATRN029
0006 0  D071                  STO     SPN        FIRST PLACE OF STORAGE   PATRN030
                        * READ PATTERN CARDS                             PATRN031
0007 20 03059115        A01   LIBF    CARDN                               PATRN032
0008 0  1000                  DC      /1000      READ ONE                 PATRN033
0009 1  00A1                  DC      AREA1      PATTERN CARD             PATRN034
000A 0  0000                  DC      0                                   PATRN035
000B 20 03059115        A02   LIBF    CARDN                               PATRN036
000C 0  0000                  DC      /0000      TEST                     PATRN037
000D 0  70FD                  MDX     A02                                 PATRN038
000E 01 C40000F0              LD   L  DATA1-2                             PATRN039
0010 0  D05F                  STO     INPT1+4    LOAD SEQ.                PATRN040
0011 01 C40000F1              LD   L  DATA1-1    CARD NR.                 PATRN041
0013 0  D05D                  STO     INPT1+5                             PATRN042
0014 20 040C2255              LIBF    DCBIN      CONVERT                  PATRN043
0015 1  006C                  DC      INPT1                               PATRN044
0016 0  9065                  S       SPCN       LOAD INT. NR.            PATRN045
0017 01 4C200061              BSC  L  ERM1,Z     ERROR IF NOT ZERO        PATRN046
0019 0  C051                  LD      C2                                  PATRN047
001A 0  D062                  STO     WFI        WORD FRACT. INDIC.       PATRN048
001B 0  610A                  LDX   1 10                                  PATRN049
001C 0  7001                  MDX     A12                                 PATRN050
001D 0  6114            A10   LDX   1 20                                  PATRN051
001E 0  62FD            A12   LDX   2 -3                                  PATRN052
001F 01 C50000A1        A15   LD   L1 AREA1      TRANSFER 3               PATRN053
0021 01 D6000076              STO  L2 INPT2+4    CARD CHARACT.            PATRN054
0023 0  7101                  MDX   1 +1         TO INPT2                 PATRN055
0024 0  7201                  MDX   2 +1                                  PATRN056
0025 0  70F9                  MDX     A15                                 PATRN057
0026 0  C057                  LD      CRDZO                               PATRN058
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0027 0  D04A              STO     INPT2                                  PATRN059
0028 20 089C2255          LIBF    HXBIN                                  PATRN060
0029 1  0072              DC      INPT2                                  PATRN061
002A 01 74FF007D          MDX  I  WFI,-1                                 PATRN062
002C 0  7001              MDX     A20                                    PATRN063
002D 0  E849              OR      MASK1       SECOND HALF                PATRN064
002E 01 66800078  A20     LDX  I2 SPN         SEQ.PATTR.NR.              PATRN065
0030 01 D6000081          STO  L2 PATR                                   PATRN066
0032 01 74FF0078          MDX  I  SPN,-1      NEXT AVAIL. STORAGE        PATRN067
0034 0  7000              MDX     *           DUMMY FOR FIRST H.W.       PATRN068
0035 0  C047              LD      WFI                                    PATRN069
0036 01 4C04001D          BSC  L  A10,E       IF ODD,READ FIRST HALF WORD PATRN070
0038 01 74040078          MDX  L  SPN,+4      NEXT PATTERN ADDR. FOR MSHW PATRN071
003A 0  7000              MDX     *                                      PATRN072
003B 01 7401007C          MDX  L  SPCN,+1                                PATRN073
003D 01 74FF0069          MDX  I  MNPC,-1                                PATRN074
003F 0  70C7              MDX     A01         NEXT CARD                  PATRN075
                  * GENERATE CONTROL BITS                                PATRN076
0040 0  61E0              LDX   1 -32         LAST CARD                  PATRN077
0041 0  C034      A22     LD      CO          NO. DETEC. 1.              PATRN078
0042 0  D036              STO     ND1         PARITY-UP. ON              PATRN079
0043 0  6210              LDX   2 16          32 WORDS OF                PATRN080
0044 01 C50000A1          LD    L1 PATR+32                               PATRN081
0046 0  7003              MDX     A30         16 BITS                    PATRN082
0047 01 74010079  A25     MDX  L  ND1,+1                                 PATRN083
0049 0  E030              AND     MASK2                                  PATRN084
004A 0  1240      A30     SLCA  2                                        PATRN085
004B 01 4C200047          BSC  L  A25,Z       BRANCH IF NOT LAST BIT     PATRN086
004D 0  C02B              LD      ND1                                    PATRN087
004E 01 4C040055          BSC  L  A32,E       BRANCH IF ODD              PATRN088
0050 01 C50000A1          LD    L1 PATR+32                               PATRN089
0052 0  E828              OR      MASK3       ADD PAR. BIT               PATRN090
0053 01 D50000A1          STO   L1 PATR+32                               PATRN091
0055 0  7101      A32     MDX   1 +1                                     PATRN092
0056 0  70EA              MDX     A22         NEXT WORD                  PATRN093
                  * WRITE ON DISK                                        PATRN094
0057 20 04262495          LIBF    DISKN                                  PATRN095
0058 0  3000              DC      /3000       LOAD ON DISK               PATRN096
0059 1  007F              DC      SECTO                                  PATRN097
005A 0  0000              DC      0                                      PATRN098
005B 20 04262495  A35     LIBF    DISKN       BUSY                       PATRN099
005C 0  0100              DC      /0100       TEST                       PATRN100
005D 1  007F              DC      SECTO                                  PATRN101
005E 0  70FC              MDX     A35                                    PATRN102
005F 30 059C98C0          EXIT                                           PATRN103
0061 20 23A17155  ERM1    LIBF    TYPEN                                  PATRN104
0062 0  2001              DC      /2001                                  PATRN105
0063 1  00F2              DC      TM1-1                                  PATRN106
0064 0  0000              DC      0                                      PATRN107
0065 30 059C98C0          EXIT                                           PATRN108
                  * CONSTANTS                                            PATRN109
0067 0  0020      WORDC   DC      32                                     PATRN110
0068 0  0010      C16     DC      16                                     PATRN111
0069 0  0000      MNPC    DC      *-*                                    PATRN112
006A 0  0001      C1      DC      1                                      PATRN113
006B 0  0002      C2      DC      2                                      PATRN114
006C    0006      INPT1   BSS     6                                      PATRN115
```

```
0072     0004          INPT2 BSS     4                                  PATRN116
0076 0   0000          CO    DC      0                                  PATRN117
0077 0   1000          MASK1 DC      /1000                              PATRN118
0078 0   0000          SPN   DC      *-*                                PATRN119
0079 0   0000          ND1   DC      *-*                                PATRN120
007A 0   7FFF          MASK2 DC      /7FFF                              PATRN121
007B 0   4000          MASK3 DC      /4000                              PATRN122
007C 0   0000          SPCN  DC      *-*                                PATRN123
007D 0   0000          WFI   DC      *-*                                PATRN124
007E 0   2000          CRDZO DC      /2000                              PATRN125
007F 31  04152168      SECTO DSA     DEKEY                              PATRN126
0082                         ORG     SECTO+2                            PATRN127
0081     0020          PATR  BSS     32                                 PATRN128
00A1 0   0050          AREA1 DC      80                                 PATRN129
00F2     0050          DATA1 BES     80                                 PATRN130
00F2 0   000B                DC      TM2-TM1                            PATRN131
00F3     0016          TM1   DMES    '2RWRONG CARD SEQUENCE'E           PATRN132
00FE     0000          TM2   BES     0                                  PATRN133
00FE     0000                END     PATRN                              PATRN134
```

NO ERRORS IN ABOVE ASSEMBLY.

PATRN
DUP FUNCTION COMPLETED

```
                        ************************************************** ENDIN002
                        *                                                * ENDIN003
                        * SUBROUTINE-ENDIN-                              * ENDIN004
                        * END OF INTERRUPT FOR DETERMINED INTERFACE      * ENDIN005
                        * STATION                                        * ENDIN006
                        *                                                * ENDIN007
                        ************************************************** ENDIN008
0000     05544255               ENT     ENDIN                            ENDIN009
0000 0   0000           ENDIN DC      *-*                                ENDIN010
                        * PRINT MESSAGE ON SYSTEM PRINTER                 ENDIN011
0001 20  23A17155              LIBF    TYPEN                            ENDIN012
0002 0   2001                  DC      /2001                            ENDIN013
0003 1   003D                  DC      MES1-1                           ENDIN014
0004 0   0000                  DC      0                                ENDIN015
0005 0   1010                  SLA     16                               ENDIN016
0006 0   D034                  STO     XR1                              ENDIN017
                        * READ DATA SWITCHES                             ENDIN018
0007 0   0820                  XIO     DATSW                            ENDIN019
0008 0   6110                  LDX   1 16                               ENDIN020
0009 0   1140                  SLCA  1 0                                ENDIN021
000A 01  4C18001A              BSC  L  END10,+-                         ENDIN022
000C 0   692E                  STX   1 XR1                              ENDIN023
000D 0   C02E                  LD      C16                              ENDIN024
000E 0   902C                  S       XR1                              ENDIN025
000F 0   D02B                  STO     XR1                              ENDIN026
0010 0   E819                  OR      EOI                              ENDIN027
0011 0   D025                  STO     MASK+2                           ENDIN028
                        * EXECUTE END OF INTERRUPT                       ENDIN029
0012 20  040565C0              LIBF    DAOP                             ENDIN030
0013 0   1000                  DC      /1000                            ENDIN031
0014 1   0031                  DC      AREA                             ENDIN032
0015 1   0038                  DC      ROUTI                            ENDIN033
0016 20  040565C0              LIBF    DAOP                             ENDIN034
0017 0   1000                  DC      /1000                            ENDIN035
0018 1   0035                  DC      MASK                             ENDIN036
0019 1   0038                  DC      ROUTI                            ENDIN037
                        * PRINT EXECUTED OPERATION                       ENDIN038
001A 0   C020           END10 LD      XR1                              ENDIN039
001B 20  02255103              LIBF    BINDC                            ENDIN040
001C 1   002B                  DC      OUTPT                            ENDIN041
001D 20  085935D9              LIBF    HOLPR                            ENDIN042
001E 0   0000                  DC      0                                ENDIN043
001F 1   002F                  DC      OUTPT+4                          ENDIN044
0020 1   0050                  DC      PRINT                            ENDIN045
0021 0   0002                  DC      2                                ENDIN046
0022 20  23A17155              LIBF    TYPEN                            ENDIN047
0023 0   2001                  DC      /2001                            ENDIN048
0024 1   0049                  DC      MES3-1                           ENDIN049
0025 0   0000                  DC      0                                ENDIN050
0026 01  4C800000              BSC  I  ENDIN                            ENDIN051
0028     0001           DATSW BSS  E  1                                ENDIN052
0029 0   0740                  DC      /0740                            ENDIN053
002A 0   B000           EOI   DC      /B000                            ENDIN054
002B     0006           OUTPT BSS     6                                ENDIN055
0031 0   0003           AREA  DC      3                                ENDIN056
0032 0   007B                  DC      123                              ENDIN057
0033 0   0000                  DC      0                                ENDIN058
0034 0   0000                  DC      0                                ENDIN059
0035 0   0002           MASK  DC      2                                ENDIN060
0036 0   007C                  DC      124                              ENDIN061
0037 0   0000                  DC      *-*                              ENDIN062
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0038 0  0000          ROUTI DC      *-*                              ENDIN063
0039 01 4C800038            BSC   I ROUTI                            ENDIN064
003B 0  0000          XR1   DC      *-*                              ENDIN065
003C 0  0010          C16   DC      16                               ENDIN066
003D 0  000B                DC      MES2-MES1                        ENDIN067
003E    0016          MES1  DMES    'XEND OF INTERRUPT FOR 'E        ENDIN068
0049    0000          MES2  BES     0                                ENDIN069
0049 0  0007                DC      MES4-MES3                        ENDIN070
004A    000C          MES3  DMES    'XSTATION NR 'E                  ENDIN071
0050    0001          PRINT BSS     1                                ENDIN072
0051    0000          MES4  BES     0                                ENDIN073
0052                        END     ENDIN                            ENDIN074

     NO ERRORS IN ABOVE ASSEMBLY.
ENDIN
DUP FUNCTION COMPLETED
```

```
                        ************************************************** IFOP 002
                        *                                                * IFOP 003
                        * SUBROUTINE-IFOP-                               * IFOP 004
                        * TO ENABLE OR DISABLE INTERFACE STATIONS        * IFOP 005
                        *                                                * IFOP 006
                        ************************************************** IFOP 007
0000     091965C0               ENT     IFOP                             IFOP 008
0000 0   0000           IFOP   DC      *-*                              IFOP 009
                        * WRITE MESSAGE ON SYSTEM PRINTER                 IFOP 010
0001 20  23A17155              LIBF    TYPEN                            IFOP 011
0002 0   2001                  DC      /2001                            IFOP 012
0003 1   006C                  DC      MES1-1                           IFOP 013
0004 0   0000                  DC      0                                IFOP 014
0005 20  17064885              LIBF    PAUSE                            IFOP 015
0006 0   0001                  DC      1                                IFOP 016
0007 0   1010                  SLA     16                               IFOP 017
0008 0   61C0                  LDX   1 -64                              IFOP 018
0009 01  D500010D       IF005  STO   L1 TABLE+64                        IFOP 019
000B 0   7101                  MDX   1 +1                               IFOP 020
000C 0   70FC                  MDX     IF005                            IFOP 021
                        * READ DATA SWITCH POSITIONS                     IFOP 022
000D 0   C043                  LD      C1                               IFOP 023
000E 0   D043                  STO     FIRST                            IFOP 024
000F 0   C04C                  LD      H2000                            IFOP 025
0010 0   D04C                  STO     IND                              IFOP 026
0011 0   C043                  LD      AMSK                             IFOP 027
0012 0   D00E                  STO     IF020+1                          IFOP 028
0013 0   0844                  XIO     DATSW                            IFOP 029
0014 0   F045                  EOR     HFFFF                            IFOP 030
0015 0   E048                  AND     H7FFF                            IFOP 031
0016 0   6110           IF010  LDX   1 16                               IFOP 032
0017 0   1140           IF015  SLCA  1 0                                IFOP 033
0018 01  4C180035              BSC   L IF030,+-   JUMP IF ZERO          IFOP 034
001A 0   E043                  AND     H7FFF                            IFOP 035
001B 0   D043                  STO     SAVE                             IFOP 036
001C 0   6943                  STX   1 XR1                              IFOP 037
001D 0   C043                  LD      C16                              IFOP 038
001E 0   9041                  S       XR1                              IFOP 039
001F 0   D040                  STO     XR1                              IFOP 040
0020 00  EC000000       IF020  OR    L  *-*                              IFOP 041
0022 0   D045                  STO     MASK+2                           IFOP 042
                        * EFFECTUATE MASK/DEMASK STATIONS                IFOP 043
0023 20  040565C0              LIBF    DAOP                             IFOP 044
0024 0   1000                  DC      /1000                            IFOP 045
0025 1   0062                  DC      AREA                             IFOP 046
0026 1   0069                  DC      ROUTI                            IFOP 047
0027 20  040565C0              LIBF    DAOP                             IFOP 048
0028 0   1000                  DC      /1000                            IFOP 049
0029 1   0066                  DC      MASK                             IFOP 050
002A 1   0069                  DC      ROUTI                            IFOP 051
002B 0   C034                  LD      XR1                              IFOP 052
002C 0   1002                  SLA     2                                IFOP 053
002D 0   D032                  STO     XR1                              IFOP 054
002E 01  66800060              LDX   I2 XR1                             IFOP 055
0030 0   C02C                  LD      IND                              IFOP 056
0031 01  D60000CD              STO   L2 TABLE                           IFOP 057
0033 0   C02B                  LD      SAVE                             IFOP 058
0034 0   70E2                  MDX     IF015                            IFOP 059
0035 01  74000052       IF030  MDX   L  FIRST,0                         IFOP 060
0037 0   7001                  MDX     *+1        YES                   IFOP 061
0038 0   7009                  MDX     IF050      NO                    IFOP 062
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```
0039 0  C01C             LD      ADMSK                                  IFOP 063
003A 0  D0E6             STO     IF020+1                                IFOP 064
003B 0  1010             SLA     16                                     IFOP 065
003C 0  D015             STO     FIRST                                  IFOP 066
003D 0  C01D             LD      H1000                                  IFOP 067
003E 0  D01E             STO     IND                                    IFOP 068
003F 0  0818             XIO     DATSW                                  IFOP 069
0040 0  E01D             AND     H7FFF                                  IFOP 070
0041 0  70D4             MDX     IF010                                  IFOP 071
                      * PRINT OUT STATUS OFF ALL STATIONS                IFOP 072
0042 20 085935D9    IF050 LIBF   HOLPR                                  IFOP 073
0043 0  0000             DC      0                                      IFOP 074
0044 1  00CD             DC      TABLE                                  IFOP 075
0045 1  00AD             DC      LIST                                   IFOP 076
0046 0  0040             DC      64                                     IFOP 077
0047 20 23A17155         LIBF    TYPEN                                  IFOP 078
0048 0  2001             DC      /2001                                  IFOP 079
0049 1  0080             DC      MES5-1                                 IFOP 080
004A 0  0000             DC      0                                      IFOP 081
004B 20 23A17155         LIBF    TYPEN                                  IFOP 082
004C 0  2001             DC      /2001                                  IFOP 083
004D 1  00A6             DC      MES7-1                                 IFOP 084
004E 0  0000             DC      0                                      IFOP 085
004F 01 4C800000         BSC  I  IFOP                                   IFOP 086
0051 0  0001        C1   DC      1                                      IFOP 087
0052 0  0000        FIRST DC     *-*                                    IFOP 088
0053 0  E800        MSK  DC      /E800       DISABLE I.F.STATION        IFOP 089
0054 0  F800        DMSK DC      /F800       ENABLE                     IFOP 090
0055 1  0053        AMSK DC      MSK                                    IFOP 091
0056 1  0054        ADMSK DC     DMSK                                   IFOP 092
0058    0001        DATSW BSS  E 1                                      IFOP 093
0059 0  0740             DC      /0740                                  IFOP 094
005A 0  FFFF        HFFFF DC     /FFFF                                  IFOP 095
005B 0  1000        H1000 DC     /1000                                  IFOP 096
005C 0  2000        H2000 DC     /2000                                  IFOP 097
005D 0  0000        IND  DC      *-*                                    IFOP 098
005E 0  7FFF        H7FFF DC     /7FFF                                  IFOP 099
005F 0  0000        SAVE DC      *-*                                    IFOP 100
0060 0  0000        XR1  DC      *-*                                    IFOP 101
0061 0  0010        C16  DC      16                                     IFOP 102
0062 0  0003        AREA DC      3                                      IFOP 103
0063 0  007B             DC      123                                    IFOP 104
0064 0  0000             DC      0                                      IFOP 105
0065 0  0000             DC      0                                      IFOP 106
0066 0  0002        MASK DC      2                                      IFOP 107
0067 0  007C             DC      124                                    IFOP 108
0068 0  0000             DC      *-*                                    IFOP 109
0069 0  0000        ROUTI DC     *-*                                    IFOP 110
006A 01 4C800069         BSC  I  ROUTI                                  IFOP 111
006C 0  0013             DC      MES2-MES1                              IFOP 112
006D    001D        MES1 DMES    'XENABLE OR DISABLE INTERFACE '        IFOP 113
007B    0009             DMES    STATIONS'E                             IFOP 114
0080    0000        MES2 BES     0                                      IFOP 115
0080 0  0025             DC      MES6-MES5                              IFOP 116
0081    0021        MES5 DMES    'RSTATION NR     1   2   3   4   5'    IFOP 117
0091    001C             DMES      6   7   8   9  10  11  12'         IFOP 118
009F    000D             DMES    13  14  15'E                           IFOP 119
00A6    0000        MES6 BES     0                                      IFOP 120
00A6 0  0026             DC      MES8-MES7                              IFOP 121
00A7    000C        MES7 DMES    'R          'E                         IFOP 122
00AD    0020        LIST BSS     32                                     IFOP 123
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00CD  0000        MES8  BES     0                    IFOP 124
00CD  0040        TABLE BSS     64                   IFOP 125
010E                    END     IFOP                 IFOP 126

     NO ERRORS IN ABOVE ASSEMBLY.
IFOP
DUP FUNCTION COMPLETED
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                        ************************************************** WORDT002
                        *                                                * WORDT003
                        * OFF-LINE INTERFACE WORD TEST-WORDT             * WORDT004
                        * THE 4 CONTROL AND THE 9 SCALER WORDS ARE READ  * WORDT005
                        * CONTINUOUSLY IN DATA CHANNEL                   * WORDT006
                        * IN CASE THEY DIFFER FROM THE PREVIOUS RUN,THEY * WORDT007
                        * ARE PRINTED OUT UP TO 16 TIMES, THEN THE PROGRAM* WORDT008
                        * RUNS CONTINUOUSLY WITHOUT PRINTING             * WORDT009
                        * THE STATION NR IS INTRODUCED WITH DATA SWITCH  * WORDT010
                        *                                                * WORDT011
                        ************************************************** WORDT012
0000 0  0002            AREA3 DC      2                                    WORDT013
0001 0  007C                  DC      124                                  WORDT014
0002 0  4200            COMND DC      /4200                                WORDT015
0004    0001            DATSW BSS  E  1                                    WORDT016
0005 0  0740                  DC      /0740                                WORDT017
0006 0  0000            STATN DC      *-*       STATION NR                 WORDT018
0007 0  0010            C16   DC      16                                   WORDT019
                        * GET STATION NR                                   WORDT020
0008 20 176558D5        WORDT LIBF    PRNTN                                WORDT021
0009 0  2100                  DC      /2100                                WORDT022
000A 1  0109                  DC      MES3-1                               WORDT023
000B 0  0000                  DC      0                                    WORDT024
000C 20 17064885              LIBF    PAUSE                                WORDT025
000D 0  0000                  DC      0                                    WORDT026
000E 0  08F5                  XIO     DATSW                                WORDT027
000F 0  6110                  LDX   1 16                                   WORDT028
0010 0  1140                  SLCA  1 0                                    WORDT029
0011 01 4C200014              BSC   L WOR10,Z   ZERO                       WORDT030
0013 0  70F4                  MDX     WORDT     YES,RETURN                 WORDT031
0014 0  69F1            WOR10 STX   1 STATN     STATION NR                 WORDT032
0015 0  C0F1                  LD      C16                                  WORDT033
0016 0  90EF                  S       STATN                                WORDT034
0017 0  D0EE                  STO     STATN                                WORDT035
0018 20 02255103              LIBF    BINDC                                WORDT036
0019 1  00A1                  DC      INPUT                                WORDT037
001A 20 085935D9              LIBF    HOLPR                                WORDT038
001B 0  0001                  DC      1                                    WORDT039
001C 1  00A5                  DC      INPUT+4                              WORDT040
001D 1  0129                  DC      STNR                                 WORDT041
001E 0  0002                  DC      2                                    WORDT042
001F 20 176558D5              LIBF    PRNTN                                WORDT043
0020 0  2100                  DC      /2100                                WORDT044
0021 1  0121                  DC      MES5-1                               WORDT045
0022 0  0000                  DC      0                                    WORDT046
0023 0  C0DE                  LD      COMND                                WORDT047
0024 0  E8E1                  OR      STATN                                WORDT048
0025 0  D0DC                  STO     COMND                                WORDT049
0026 0  C0E0                  LD      C16                                  WORDT050
0027 0  D073                  STO     FAULT                                WORDT051
                        * READ WORDS IN DATA CHANNEL                       WORDT052
0028 20 040565C0        WOR20 LIBF    DAOP                                 WORDT053
0029 0  1000                  DC      /1000                                WORDT054
002A 1  0094                  DC      AREA4                                WORDT055
002B 1  0098                  DC      ROUTI                                WORDT056
002C 20 040565C0              LIBF    DAOP                                 WORDT057
002D 0  1000                  DC      /1000                                WORDT058
```

```
002E 1  0000              DC      AREA3                                  WORDT059
002F 1  0098              DC      ROUTI                                  WORDT060
0030 20 042555C0          LIBF    DINP                                   WORDT061
0031 0  1005              DC      /1005                                  WORDT062
0032 1  0130              DC      TABLE                                  WORDT063
0033 1  0098              DC      ROUTI                                  WORDT064
0034 00 650000C8          LDX   L1 200                                   WORDT065
0036 0  10A0              SLT     32                                     WORDT066
0037 0  71FF              MDX    1 -1                                    WORDT067
0038 0  70FD              MDX     *-3                                    WORDT068
0039 20 042555C0          LIBF    DINP                                   WORDT069
003A 0  4005              DC      /4005       RESET D.CH.OPERATION       WORDT070
003B 0  62E0              LDX    2 -32                                   WORDT071
                        * COMPARE TO PREVIOUS VALUES                     WORDT072
003C 01 CE000152        A20   LDD   L2 TABLE+34                          WORDT073
003E 01 9E000172            SD    L2 TABL1+32                            WORDT074
0040 01 4C200048            BSC   L  PRINT,Z                             WORDT075
0042 0  1090                SLT     16                                   WORDT076
0043 01 4C200048            BSC   L  PRINT,Z                             WORDT077
0045 0  7202                MDX    2 +2                                  WORDT078
0046 0  70F5                MDX     A20                                  WORDT079
0047 0  70E0                MDX     WOR20                                WORDT080
                        * PRINT READ DOUBLE WORDS                        WORDT081
0048 0  C052            PRINT LD      FAULT                              WORDT082
0049 01 4C080028            BSC   L  WOR20,+    RETURN IF FAULT =0-      WORDT083
004B 20 176558D5            LIBF    PRNTN                                WORDT084
004C 0  3E00                DC      /3E00                                WORDT085
004D 20 176558D5            LIBF    PRNTN       YES                      WORDT086
004E 0  2100                DC      /2100                                WORDT087
004F 1  00EA                DC      MES1-1                               WORDT088
0050 0  0000                DC      0                                    WORDT089
0051 0  61DF                LDX    1 -33                                 WORDT090
0052 0  7027                MDX     PRI20                                WORDT091
0053 01 C5000152        PRI10 LD    L1 TABLE+34                          WORDT092
0055 20 02255227            LIBF    BINHX                                WORDT093
0056 1  00A1                DC      INPUT                                WORDT094
0057 20 085935D9            LIBF    HOLPR                                WORDT095
0058 0  0001                DC      1                                    WORDT096
0059 1  00A1                DC      INPUT                                WORDT097
005A 1  009C                DC      WORD1                                WORDT098
005B 0  0004                DC      4                                    WORDT099
005C 0  7101                MDX    1 +1                                  WORDT100
005D 01 C5000152            LD    L1 TABLE+34                            WORDT101
005F 20 02255227            LIBF    BINHX                                WORDT102
0060 1  00A1                DC      INPUT                                WORDT103
0061 20 085935D9            LIBF    HOLPR                                WORDT104
0062 0  0001                DC      1                                    WORDT105
0063 1  00A1                DC      INPUT                                WORDT106
0064 1  009E                DC      WORD2                                WORDT107
0065 0  0004                DC      4                                    WORDT108
0066 0  C835                LDD     WORD1                                WORDT109
0067 01 DE0000AA            STD   L2 OUT                                 WORDT110
0069 0  7204                MDX    2 +4                                  WORDT111
006A 0  C833                LDD     WORD2                                WORDT112
006B 01 DE0000AA            STD   L2 OUT                                 WORDT113
006D 0  7204                MDX    2 +4                                  WORDT114
006E 01 74FF00A0            MDX   L  NWPL,-1    LINE FULL                WORDT115
```

```
0070 0  7012              MDX     PRI30       NO                    WORDT116
0071 20 176558D5          LIBF    PRNTN                             WORDT117
0072 0  3D00              DC      /3D00                             WORDT118
0073 20 176558D5          LIBF    PRNTN                             WORDT119
0074 0  2100              DC      /2100                             WORDT120
0075 1  00A9              DC      OUT-1                             WORDT121
0076 0  0000              DC      0                                 WORDT122
0077 20 176558D5  PRI15   LIBF    PRNTN                             WORDT123
0078 0  0000              DC      0                                 WORDT124
0079 0  70FD              MDX     PRI15                             WORDT125
007A 0  C017      PRI20   LD      C8                                WORDT126
007B 0  D024              STO     NWPL                              WORDT127
007C 0  10A0              SLT     32                                WORDT128
007D 0  62C0              LDX   2 -64                               WORDT129
007E 01 D60000EA  CLEAR   STO   L2 OUT+64                           WORDT130
0080 0  7202              MDX   2 +2                                WORDT131
0081 0  70FC              MDX     CLEAR                             WORDT132
0082 0  6200              LDX   2 0                                 WORDT133
0083 0  7101      PRI30   MDX   1 +1                                WORDT134
0084 0  70CE              MDX     PRI10                             WORDT135
0085 01 74FF009B          MDX   L FAULT,-1                          WORDT136
0087 0  7000              MDX     *                                 WORDT137
0088 0  62E0              LDX   2 -32                               WORDT138
0089 01 CE000152  A30     LDD   L2 TABLE+34                         WORDT139
008B 01 DE000172          STD   L2 TABL1+32                         WORDT140
008D 0  7202              MDX   2 +2                                WORDT141
008E 0  70FA              MDX     A30                               WORDT142
008F 0  7098              MDX     WOR20                             WORDT143
0090 30 059C98C0          CALL    EXIT                              WORDT144
0092 0  0008      C8      DC      8                                 WORDT145
0093 0  FFFF      CTR     DC      -1                                WORDT146
0094 0  0003      AREA4   DC      3                                 WORDT147
0095 0  007B              DC      123                               WORDT148
0096 0  0000              DC      0                                 WORDT149
0097 0  0000              DC      0                                 WORDT150
0098 0  0000      ROUTI   DC      *-*                               WORDT151
0099 01 4C800098          BSC   I ROUTI                             WORDT152
009B 0  0010      FAULT   DC      16                                WORDT153
009C    0002      WORD1   BSS   E 2                                 WORDT154
009E    0002      WORD2   BSS   E 2                                 WORDT155
00A0 0  0000      NWPL    DC      *-*         NR WORDS PER LINE     WORDT156
00A1    0006      INPUT   BSS     6                                 WORDT157
00A8    0001              BSS   E 1                                 WORDT158
00A9 0  0040              DC      64                                WORDT159
00AA    0040      OUT     BSS     64                                WORDT160
00EA 0  001E              DC      MES2-MES1                         WORDT161
00EB    001D      MES1    DMES  1 THIS DATA BLOC DIFFERS FROM  '    WORDT162
00F9    001F              DMES  1 PREVIOUS READING(HEX.DEC.CODE) 'E WORDT163
0109    0000      MES2    BES     0                                 WORDT164
0109 0  0017              DC      MES4-MES3                         WORDT165
010A    0021      MES3    DMES  1 SELECT STATION NR ON DATA SWITCH-' WORDT166
011A    000D              DMES  1 PRESS START 'E                    WORDT167
0121    0000      MES4    BES     0                                 WORDT168
0121 0  000E              DC      MES6-MES5                         WORDT169
0122    000E      MES5    DMES  1 STATION NR    '                   WORDT170
0129    0001      STNR    BSS     1                                 WORDT171
012A    000C              DMES  1   IS TESTED 'E                   WORDT172
```

```
0130     0000          MES6  BES      0                                        WORDT173
0130     0000                BSS  E   0                                        WORDT174
0130 0   0021          TABLE DC       33                                       WORDT175
0131 0   0043                DC       67                                       WORDT176
0132     0020                BSS      32                                       WORDT177
0152 0   0001          TABL1 DC       1        TABL1 MUST NOT BE ALL ZERO      WORDT178
0153 0   0002                DC       2                                        WORDT179
0154     001E                BSS      30                                       WORDT180
0172     0008                END      WORDT                                    WORDT181

     NO ERRORS IN ABOVE ASSEMBLY.
WORDT
DUP FUNCTION COMPLETED
```

```
                        ************************************************** FEAT 002
                        *                                                * FEAT 003
                        * FRONT END ADAPTER TEST                         * FEAT 004
                        * PROGRAM TO WRITE ON DIGITAL OUTPUT WITH ADDRESS * FEAT 005
                        * 123 AND TO READ ON DIGITAL INPUT 67.           * FEAT 006
                        * IF A FAULT IS DETECTED, IT IS PRINTED OUT ON    * FEAT 007
                        * 1816 TYPEWRITER.                              * FEAT 008
                        * TO PRINT OUT, SET ON ANY DATA SWITCH           * FEAT 009
                        * TEST INTERRUPTED IF 16 ERRORS ARE DETECTED     * FEAT 010
                        * TO TEST ONCE MORE, PRESS CONSOLE START         * FEAT 011
                        *                                                * FEAT 012
                        ************************************************** FEAT 013
                        * WRITE WORD                                       FEAT 014
0000 20 040565C0        FEAT  LIBF    DAOP                               FEAT 015
0001 0  1000                  DC      /1000                              FEAT 016
0002 1  004E                  DC      AREA1                              FEAT 017
0003 1  0049                  DC      ROUTI                              FEAT 018
                        * READ WORD                                      FEAT 019
0004 20 042555C0              LIBF    DINP                               FEAT 020
0005 0  2000                  DC      /2000                              FEAT 021
0006 1  0054                  DC      AREA2                              FEAT 022
0007 1  0049                  DC      ROUTI                              FEAT 023
0008 20 042555C0        A10   LIBF    DINP                               FEAT 024
0009 0  0000                  DC      /0000                              FEAT 025
000A 0  70FD                  MDX     A10                                FEAT 026
000B 20 040565C0              LIBF    DAOP                               FEAT 027
000C 0  1000                  DC      /1000                              FEAT 028
000D 1  0051                  DC      AREA5                              FEAT 029
000E 1  0049                  DC      ROUTI                              FEAT 030
                        * COMPARE WORDS                                  FEAT 031
000F 0  C046                  LD      ADDRI                              FEAT 032
0010 0  903F                  S       ADDRO                              FEAT 033
0011 01 4C20001C              BSC  L  PRINT,Z                            FEAT 034
0013 0  C03C            A30   LD      ADDRO                              FEAT 035
0014 01 4C200018              BSC  L  A40,Z                              FEAT 036
0016 0  8042                  A       C1                                 FEAT 037
0017 0  7001                  MDX     *+1                                FEAT 038
0018 0  1001            A40   SLA     1                                  FEAT 039
0019 0  D036                  STO     ADDRO                              FEAT 040
001A 0  D038                  STO     ADDRC                              FEAT 041
001B 0  70E4                  MDX     FEAT                               FEAT 042
                        * PRINT WORD ON 1053 PRINTER                     FEAT 043
001C 0  082F            PRINT XIO     DATSW                              FEAT 044
001D 01 4C180013              BSC  L  A30,+-                             FEAT 045
001F 0  C036                  LD      ADDRI                              FEAT 046
0020 20 02255227              LIBF    BINHX                              FEAT 047
0021 1  005A                  DC      INPUT                              FEAT 048
0022 20 085935D9              LIBF    HOLPR                              FEAT 049
0023 0  0000                  DC      /0000                              FEAT 050
0024 1  005A                  DC      INPUT                              FEAT 051
0025 1  0071                  DC      WORDI                              FEAT 052
0026 0  0004                  DC      4                                  FEAT 053
0027 0  C028                  LD      ADDRO                              FEAT 054
0028 20 02255227              LIBF    BINHX                              FEAT 055
0029 1  005A                  DC      INPUT                              FEAT 056
002A 20 085935D9              LIBF    HOLPR                              FEAT 057
002B 0  0000                  DC      /0000                              FEAT 058
```

```
002C 1  005A                    DC      INPUT                    FEAT 059
002D 1  0067                    DC      WORDO                    FEAT 060
002E 0  0004                    DC      4                        FEAT 061
002F 20 23A17155                LIBF    TYPEN                    FEAT 062
0030 0  2001                    DC      /2001                    FEAT 063
0031 1  005E                    DC      M1-1                     FEAT 064
0032 0  0000                    DC      0                        FEAT 065
0033 20 23A17155        A20     LIBF    TYPEN                    FEAT 066
0034 0  0001                    DC      /0001                    FEAT 067
0035 0  70FD                    MDX     A20                      FEAT 068
0036 0  C019                    LD      ADDRO                    FEAT 069
0037 01 4C20003B                BSC  L  A50,Z                    FEAT 070
0039 0  801F                    A       C1                       FEAT 071
003A 0  7001                    MDX     *+1                      FEAT 072
003B 0  1001            A50     SLA     1                        FEAT 073
003C 0  D013                    STO     ADDRO                    FEAT 074
003D 01 74FF0057                MDX  I  ERROR,-1                 FEAT 075
003F 0  70C0                    MDX     FEAT                     FEAT 076
0040 20 17064885                LIBF    PAUSE                    FEAT 077
0041 0  FFFF                    DC      /FFFF                    FEAT 078
0042 0  C015                    LD      C16                      FEAT 079
0043 0  D013                    STO     ERROR                    FEAT 080
0044 0  C014                    LD      C1                       FEAT 081
0045 0  D00A                    STO     ADDRO                    FEAT 082
0046 0  70B9                    MDX     FEAT                     FEAT 083
0047 30 059C98C0                CALL    EXIT                     FEAT 084
0049 0  0000            ROUTI   DC      *-*                      FEAT 085
004A 01 4C800049                BSC  I  ROUTI                    FEAT 086
004C    0001            DATSW   BSS  E  1                        FEAT 087
004D 0  0740                    DC      /0740                    FEAT 088
004E 0  0002            AREA1   DC      2                        FEAT 089
004F 0  007B                    DC      123                      FEAT 090
0050 0  0001            ADDRO   DC      1                        FEAT 091
0051 0  0002            AREA5   DC      2                        FEAT 092
0052 0  007C                    DC      124                      FEAT 093
0053 0  0001            ADDRC   DC      1                        FEAT 094
0054 0  0002            AREA2   DC      2                        FEAT 095
0055 0  0043                    DC      67                       FEAT 096
0056 0  0000            ADDRI   DC      *-*                      FEAT 097
0057 0  0010            ERROR   DC      16                       FEAT 098
0058 0  0010            C16     DC      16                       FEAT 099
0059 0  0001            C1      DC      1                        FEAT 100
005A    0004            INPUT   BSS     4                        FEAT 101
005E 0  0014                    DC      M2-M1                    FEAT 102
005F    0010            M1      DMES    'RWRITTEN WORD  /'E      FEAT 103
0067    0002            WORDO   BSS     2                        FEAT 104
0069    0010                    DMES    '4XREAD WORD  /'E        FEAT 105
0071    0002            WORDI   BSS     2                        FEAT 106
0073    0000            M2      BES     0                        FEAT 107
0074    0000                    END     FEAT                     FEAT 108

     NO ERRORS IN ABOVE ASSEMBLY.
FEAT
DUP FUNCTION COMPLETED
```

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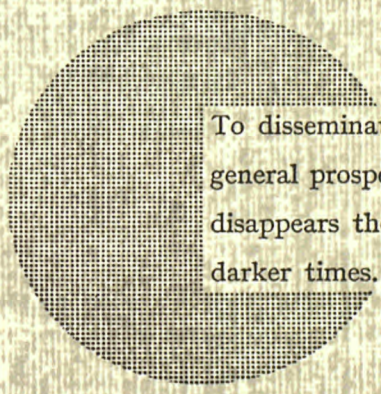

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Alfred Nobel

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