

SPECIAL FEATURE DIRECT DATA DIAGNOSTIC

(WITHOUT I/O TRAP INCLUDED)

B. M. 568800 - 709

B. M. 568802 - 766

A. PURPOSE OF TEST

1. Test all Circuitry for the Direct Data Feature
2. Test Cable and line connections for Direct Data Simulator

B. METHOD OF TEST

1. The feature which is logically build into Channel B is tested through the use of Channel A by Cabling from the summary punch shoe for Channel A tape (335021) to the summary punch receptical box (566461) and back to Direct Data Summary Punch shoe in the 766 (319489).

NOTE: See page 6 of this write up for the layout of the receptacle box and cables.

2. Channel B, D or F may be tested through the use of 9IOM modification program.
3. The following is a list of tests which will be performed by the diagnostic.
 - a. 00147 Store sense lines to see that it does not decode as store channel.
 - b. 00171 Present sense lines with all zeros. Only ETT on chan. A should come up.
 - c. 00225 Test Present Sense line positions 8, 10, 16
 - d. 00266 Test Direct Data WRS
 - e. 00315 Test Direct Data RDS
 - f. 00345 Select tape units 1-5 on Channel A to test sense input lines 8-12.

- g. 00523 Test store sense lines - position 16 by giving DD WRS and RCH to bring up Channel ready write.
- h. 00546 Test store sense lines - position 17 by giving DD RDS and RCH to Bring up Channel Ready read.
- i. 00572 Use Reset and load Channel with Ind. 1 on - WC 0, to test EOF on Channel B.
- j. 00606 Test PSL and SSL indirectly addressed, indexed, and indirectly addressed and indexed.
- k. 00733 Write DD and pulse EOR to test disconnect from Direct Data.
- l. 00754 Write DD and Read Channel A to move one word.
- m. 01004 Transmit 36 words by rippling one bit to test each position of the data Register.
- n. 01057 Test write Channel A and Read Direct Data, for transmission of one word.
- o. 01104 Transmit a word every 60 us.
- p. 01230 Test that B time can get in during ER time of TCOB through use od END OPN Switch on MF CE Panel.
- q. 01255 Test that interrupt when not enabled will not trap.
- r. 01275 Enable and interrupt - Check for trap.
- s. 01320 Check that enable with zeros resets previous enable.
- t. 01357 Interrupt when not enabled. Enable and check for trap.
- u. 01412 Interrupt when inhibited - Restore and check for trap.
- v. 01457 Interrupt when inhibited enable and check for trap.
- w. 01524 Enable different Channel and Check for interrupt trap.

NOTE: See page 7 of this write up for diagram of line connections.

C. ERROR PRINT ROUTINES

Two Print Routines are Used:

1. The standard 9DEPR is used.

2. A special error print routine is used to test for correct traps and correct data placed in trap locations.

The symbolic entrance to this routine is "SPRT".

A BCD print subroutine is used to print trap errors and comments the symbolic entrance to this routine is "SPLAT".

D. AREA OF MACHINE REQUIRED

1. MF, CF, 1, 2 or 3 DATA Synchronizers and the Special Feature summary punch receptacle and cables, as described on page 6.
2. Storage Locations

9DDI 00030 - 01756, 02303 - 03415
9DEPR 06500 - 07663
9IOM 05500 - 06477

E. PROGRAM CONTROL

1. Deck 000 9LD01A Binary Loader
 001 - 080 9DD1
 132 TRA Card - TRA 2271
 133 - 134 Blank Cards

2. Sense Switch Control

Switches 1, 2, 3, 4 as per 9DEPR

Switch = 5 UP Program will make 1 pass on all Channels selected, and test switch 6 to repeat or call in next program.

Switch = 5 DOWN Program will loop in Channels initially selected, without returning to halt to enter control.

Switch = 6 UP Call next program

Switch = 6 DOWN Will return to halt at beginning of program to enter keys with new selection.

F. NORMAL STOPS

05517 To enter Control for 910M
01231 Throw End Opn Switch on MF, CE panel to "ON" position.
01242 Throw End Opn Switch on MF, CE panel to "OFF" position.

G. ERROR STOPS

With SW 3 DOWN 06517 or 06545 in "9DEPR"

H. I/O SELECTION

I/O selection is the format used in 9IOM

NOTE: See Diagram attached to this write-up on Page 5

I. COMMENTS

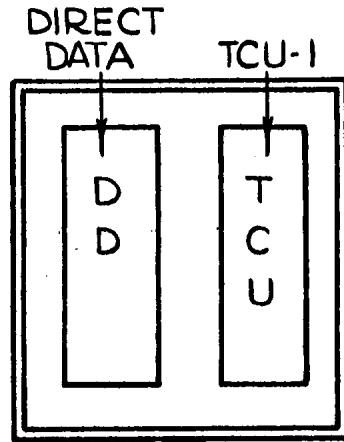
1. The Direct Data receptacle must be connected to the system with the cables, previously mentioned, before starting program.
2. Page 7 of this write up contains a diagram of the lines from the Tape Channel to the Direct Data Receptacle, and from the Direct Data Receptacle to the Tape Channel.

The left side of the diagram labelled Chan. B refers to Direct Data, and the right side of the diagram labelled Chan. A refers to the Tape Channel.

The Cables should be laid out with each position, as indicated.

3. Any positions of the Cables which are not used, are floating, but are shielded. The "SPARES" go to edge connectors.

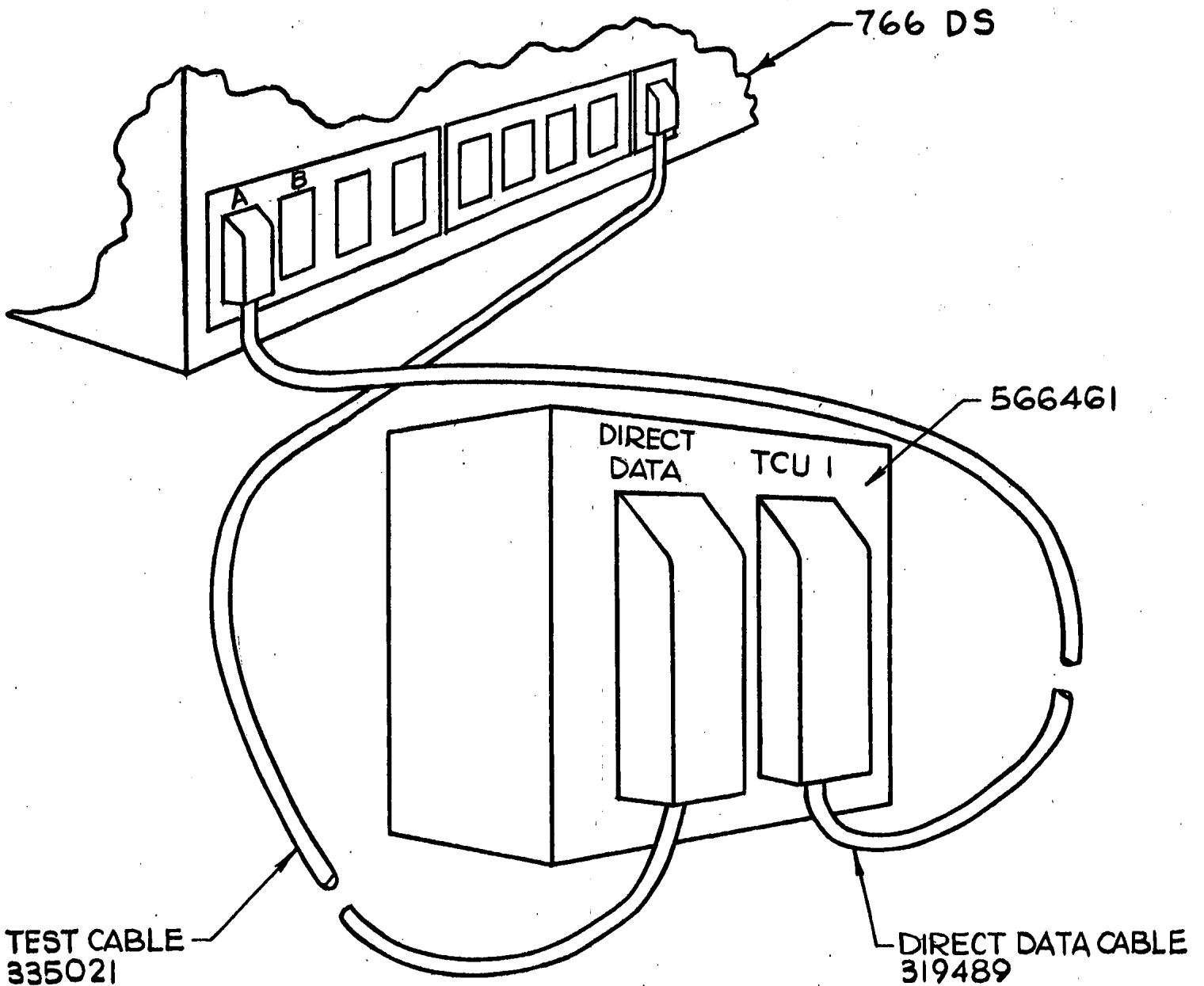
DIRECT DATA TEST EQUIPMENT 566461
(RECEPTACLE BOX)



CABLE:

BOX TO TAPE 7' CABLE 335021

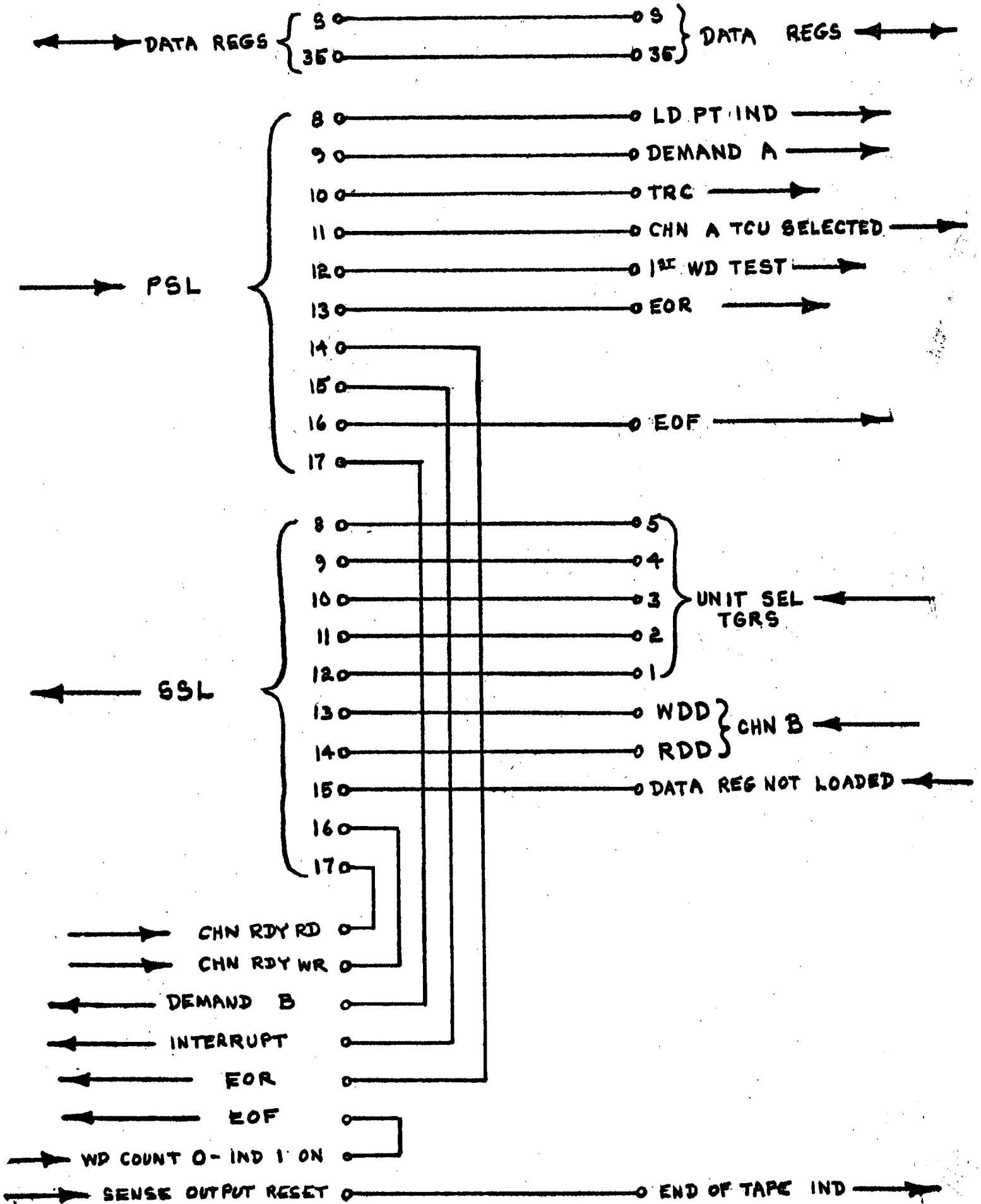
BOX TO DD DIRECT DATA CABLE (MAX LENGTH 70') 319489

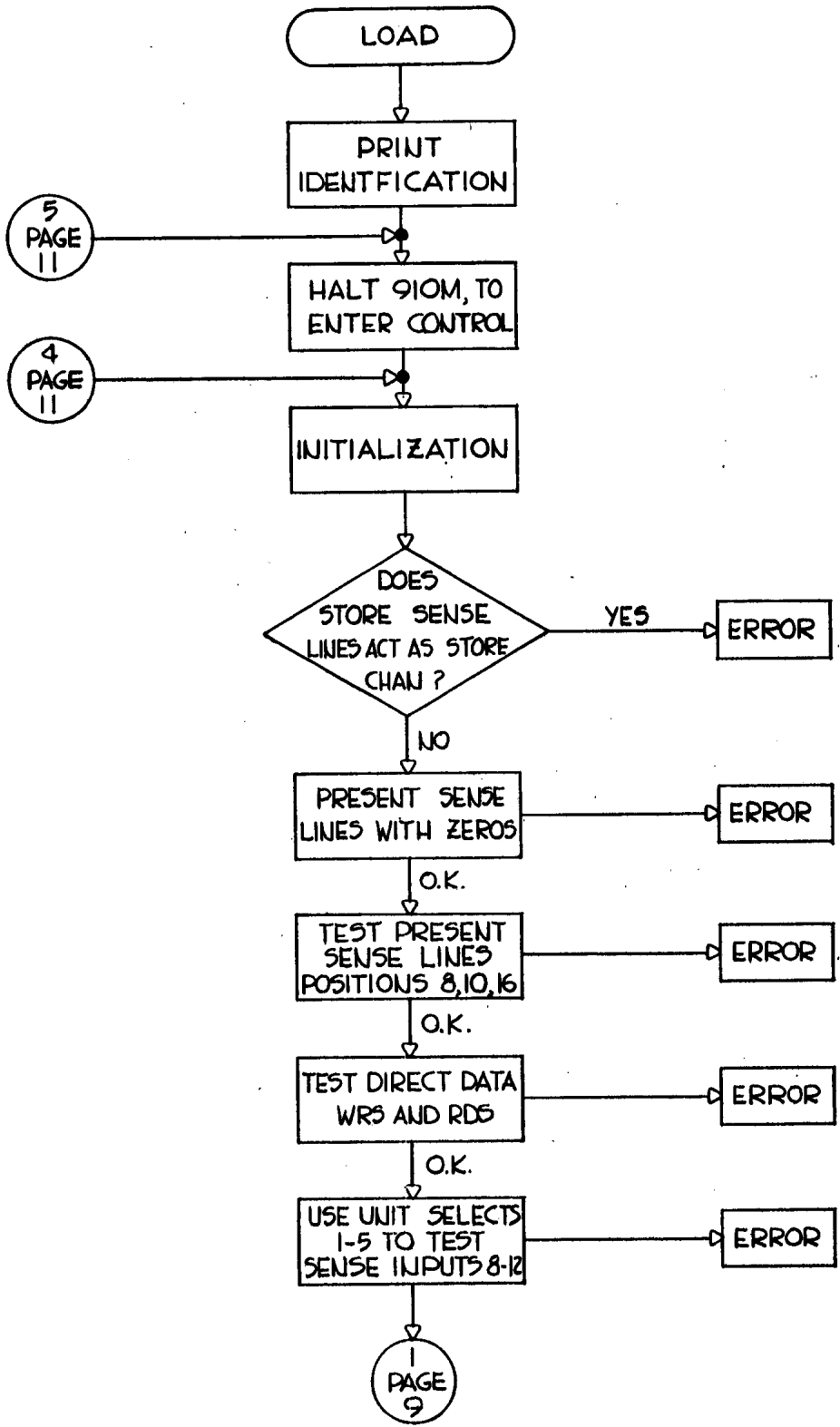


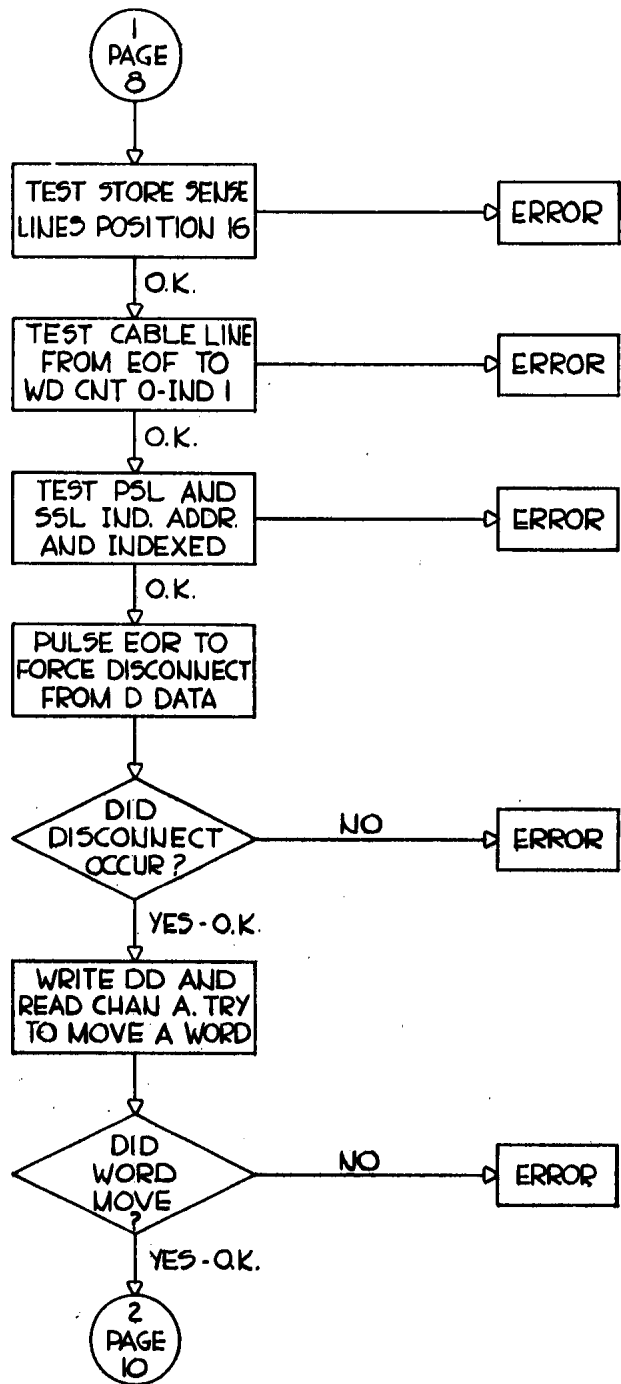
CHN B

DD TEST X'OVER

CHN A 9DD1
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RIPPLE ONE BIT
THROUGH DATA REG
TO CHECK CABLE

ERROR

O.K.

TEST WRITE CHANNEL
AND READ DD FOR
TRANSMISSION
OF ONE WORD

WAS
DATA
TRANSMITTED?

NO

ERROR

YES - O.K.

ATTEMPT TO
TRANSMIT WORD
EVERY 60US

WAS DATA
TRANSMITTED
EVERY 60US?

NO

ERROR

YES - O.K.

TEST THAT INTERRUPT
WHEN NOT ENABLED
WILL NOT TRAP

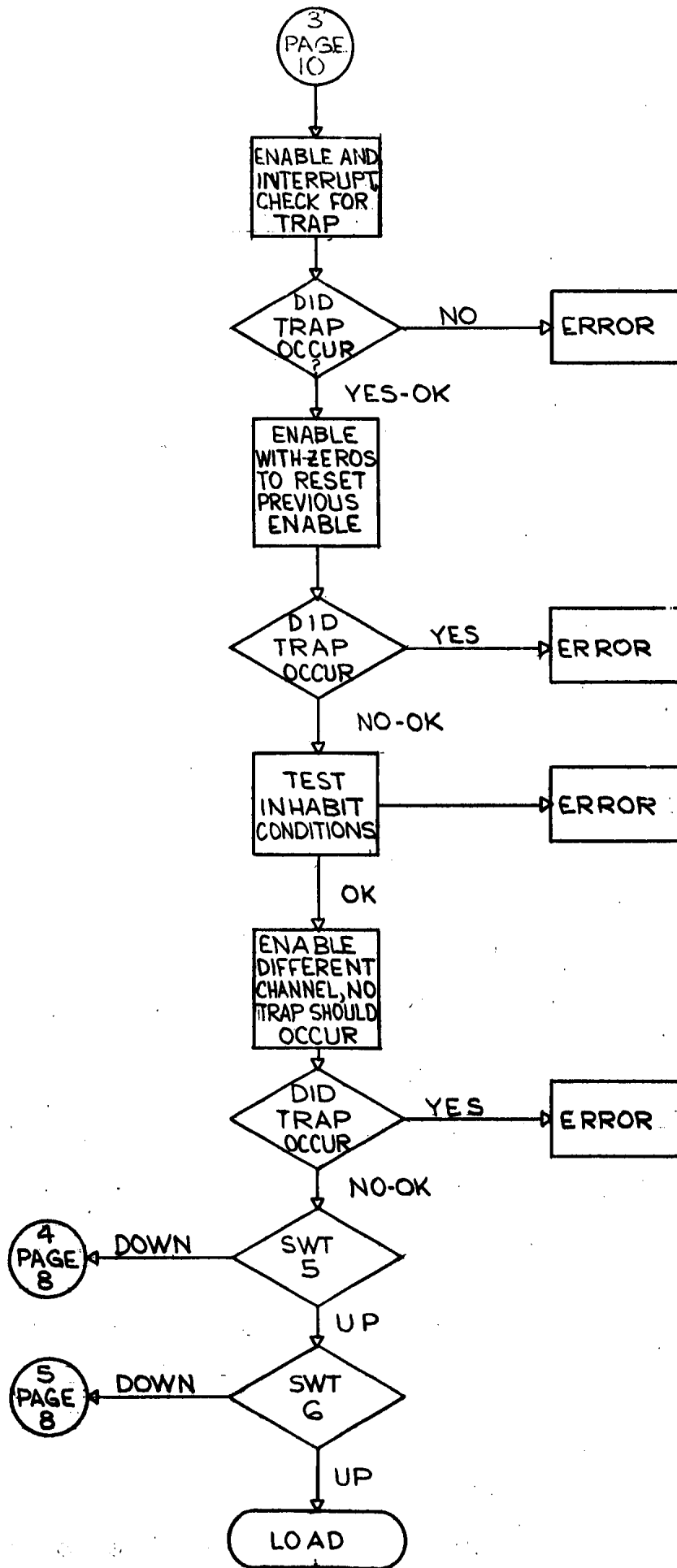
DID
TRAP
OCCUR?

YES

ERROR

NO - O.K.

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* 9 D D 1 A

*PROGRAM TO TEST DIRECT DATA INPUT ON 709 WITH SIMULATION

```
          00030          ORG 24

00030  0761 00 0 00000          NOP
00031  0760 00 0 00163          SWT 3          CHECK SENSE SWITCH 3
00032  0020 00 0 00034          TRA *+2          UP - PRINT TEST IDENTITY
00033  0020 00 0 00046          TRA *+11         DN - BYPASS PRINT
00034  0074 00 4 02056          TSX SPLAT-1,4
00035  -0 00001 0 00010         MZE 8,0,1
00036  454666604725           BCD 6NOW PERFORMING DIAGNOSTIC DIRECT DAT
00037  512646514431
00040  452760243121
00041  274546626331
00042  236024315125
00043  236360242163
00044  216063256263           BCD 2A TEST 9DD1
00045  606011242401
```

* I N I T I A L I Z A T I O N

```
00046  0600 00 0 02405          STZ TEST          CLEAR TEST
00047  0074 00 4 05514  CBEGN  TSX IOC,4          TO ENTER CONTROL WORDS
```

* NOTE -- ONLY ONE DS - 2 CHANNELS - SHOULD BE CALLED AT EACH
* KEY ENTRY

```
00050  0774 00 2 00003          AXT 3,2          L +3 IN XRB
00051  0774 00 1 00006          AXT 6,1          L +6 IN XRA
00052  -0500 00 2 05503          CAL CTRL1+3,2    L CONTROL WORD
00053  0602 00 2 02307          SLW ORIG+3,2     SAVE ORIGINAL CONTROL WORD
00054  -0320 00 0 02324          ANA SK1+1        CLEAR TO CARD MACHINES
00055  0520 00 1 05512          ZET CTRA+6,1
00056  -0501 00 1 02334          ORA SYNCW+6,1    OR IN EXCLUSIVE UNIT 1
00057  0520 00 1 05513          ZET CTRA+7,1
00060  -0501 00 1 02335          ORA SYNCW+7,1    OR IN EXCLUSIVE UNIT 1
00061  0602 00 2 05503          SLW CTRL1+3,2    SAVE ADJUSTED CONTROL WORD
00062  2 00001 2 00063          TIX *+1,2,1
00063  2 00002 1 00052          TIX *-9,1,2

00064  0500 00 0 02304          CLA ORIG          L ORIGINAL CHN A CONTROL
00065  0120 00 0 00070          TPL *+3          CHECK IF PROGRAM READ
                                FROM CARDS
00066  0500 00 0 02324          CLA SK1+1        YES - L READ CARDS
00067  0020 00 0 00071          TRA *+2
00070  0500 00 0 02323          CLA SK1          NOT READ FROM CARDS
                                L READ TAPE

00071  0601 00 0 01634          STO FINL1
00072  0074 00 4 05513  RUC    TSX IOCNT,4    RECALCULATE UNIT COUNT
```

00073	0500	00	0	02307		CLA K	L +764
00074	0601	00	0	02311		STO CTRCK	
00075	0600	00	0	02310		STZ CTR	
00076	0500	00	0	02404		CLA POST	POST
00077	0601	00	0	00000		STO 0	RESTART
00100	0774	00	1	00006	INTL1	AXT 6,1	L +6 IN XRA
00101	0774	00	2	00003		AXT 3,2	L +3 IN XRB
00102	0500	00	1	05512		CLA CTRA+6,1	L CHANNEL UNIT COUNT
00103	0100	00	0	00136		TZE NEXT	CHECK NEXT CHANNEL
00104	0600	00	1	05512		STZ CTRA+6,1	CLEAR UNIT COUNT
00105	0600	00	1	05513		STZ CTRA+7,1	CLEAR UNIT COUNT
00106	0600	00	0	05500		STZ CTRL1	CLEAR CONTROL
00107	0600	00	0	05501		STZ CTRL2	WORDS
00110	0600	00	0	05502		STZ CTRL3	FROM 9IOM
00111	0500	00	1	02334		CLA SYNCW+6,1	L SYNTHETIC CONTROL WORD
00112	0601	00	2	05503		STO CTRL1+3,2	
00113	0074	00	4	05512		TSX CTX,4	GO TO MODIFY PROGRAM
00114	0 02441	0	0	02415		PZE BEGA,0,ENDA	MODIFICATION AREA
00115	0500	00	1	02335		CLA SYNCW+7,1	L SYNTHETIC CONTROL WORD
00116	0601	00	2	05503		STO CTRL1+3,2	
00117	0074	00	4	05512		TSX CTX,4	GO TO MODIFY PROGRAM
00120	0 01614	0	0	00122		PZE BEGB,0,ENDB	MODIFICATION AREA
00121	0020	00	0	00147		TRA TROT	BEGIN TEST

*RESET CHANNEL TRIGGERS

00122	0766	00	0	02240	SETR	WDDB	RESET TRAP
00123	-0540	00	0	02334		RCHB ZERO	TRIGGERS
00124	0522	00	0	02425		XEC CHANA+7	WRITE SELECT
00125	-0664	00	0	02360		PSLB PSL+6	PULSE TCU SELECTED
00126	-0664	00	0	02356		PSLB PSL+4	PULSE EOR-CHAN A
00127	0522	00	0	02424		XEC CHANA+6	END OF TAPE TEST
00130	0761	00	0	00000		NOP	
00131	0522	00	0	02440		XEC CHANA+18	REDUNDANCY CHECK
00132	0522	00	0	02441		XEC CHANA+19	END OF FILE CHECK
00133	0522	00	0	02416		XEC CHANA	BEGINNING OF TAPE TEST
00134	0761	00	0	00000		NOP	
00135	0020	00	4	00001		TRA 1,4	

00136	2	00002	1	00137	NEXT	TIX *+1,1,2	
00137	2	00001	2	00102		TIX INTL1+2,2,1	
00140	0774	00	1	00003		AXT 3,1	RESTORE
00141	0500	00	1	02307		CLA ORIG+3,1	ORIGINAL
00142	0601	00	1	05503		STO CTRL1+3,1	CONTROL
00143	2	00001	1	00141		TIX *-2,1,1	WORDS
00144	0020	00	0	01614		TRA SWT5	
00145	0020	00	0	00072		TRA RUC	

*TRY STORE SENSE LINES AND SEE IF IT DECODES AS STORE CHANNEL

00146	626243226060		BCD 1SSLB	
00147	0074 00 4 02032	TROT	TSX RESET, 4	MONITOR RESET
00150	0074 00 4 00122		TSX SETR, 4	GO TO RESET TRIGGERS
00151	-0540 00 0 02413		RCHB AALLO	PLACE BITS IN REGISTERS
00152	-0660 00 0 02564		SSLB TO	STORE SENSE LINES. POSITION 15 SHOULD HAVE A BIT, THE REMAINDER SHOULD BE ZERO
00153	0500 00 0 02564		CLA TO	RESULT OF STORING S. LINES
00154	0560 00 0 02563		LDQ ME	CORRECT RESULT
00155	0340 00 0 02563		CAS ME	
00156	0020 00 0 00160		TRA *+2	ERROR
00157	0020 00 0 00164		TRA *+5	OK
00160	0074 00 4 06503		TSX ERROR-1, 4	ERROR IN STORING SENSE
00161	0761 00 0 00147		NOP TROT	LINES. MQ SHOULD HAVE
00162	0074 00 4 02057		TSX SPLAT, 4	CORRECT BITS. ACC SHOULD
00163	0 00000 0 02576		PZE PASS	HAVE INCORRECT BITS
00164	0760 00 0 00005		IOT	TURN OFF I/O CK LITE
00165	0761 00 0 00000		NOP	
00166	0074 00 4 06511		TSX OK, 4	REPEAT IF NECESSARY
00167	0020 00 0 00147		TRA TROT	

*PRESENT SENSE LINES WITH ZEROS IN ALL POSITIONS
*ONLY ETT ON CHAN A SHOULD COME UP

00170	476243226060		BCD 1PSLB	
00171	0074 00 4 01775	TROOP	TSX CLEAR, 4	MONITOR
00172	0074 00 4 00122		TSX SETR, 4	GO TO RESET TRIGGERS
00173	-0664 00 0 02334		PSLB ZERO	L +0
00174	0600 00 0 02564		STZ TO	CLEAR TEMP STORAGE
00175	-0660 00 0 02564		SSLB TO	SAVE SENSE LINES
00176	0500 00 0 02564		CLA TO	BITS STORED
00177	0560 00 0 02563		LDQ ME	CORRECT LINES
00200	0340 00 0 02563		CAS ME	
00201	0020 00 0 00203		TRA *+2	ERROR
00202	0020 00 0 00205		TRA *+3	OK
00203	0074 00 4 06502		TSX ERROR-2, 4	SOME POSITION WAS UP IN ERROR
00204	-3 00000 0 00171		TXL TROOP	
00205	0522 00 0 02416		XEC CHANA	BTTA
00206	0020 00 0 00210		TRA *+2	ON-ERROR
00207	0020 00 0 00212		TRA *+3	OK
00210	0074 00 4 06503		TSX ERROR-1, 4	POSITION 8 WAS UP
00211	-3 00000 0 00171		TXL TROOP	AFTER PSL WITH ZERO
00212	0522 00 0 02433		XEC CHANA+13	TRCA
00213	0020 00 0 00216		TRA *+3	OK
00214	0074 00 4 06503	TRUMP	TSX ERROR-1, 4	POSITION 10 WAS UP
00215	-3 00000 0 00171		TXL TROOP	AFTER PSL WITH ZERO
00216	0522 00 0 02434		XEC CHANA+14	TEFA
00217	0020 00 0 00222		TRA *+3	OK
00220	0074 00 4 06503		TSX ERROR-1, 4	POSITION 16 WAS UP
00221	-3 00000 0 00171		TXL TROOP	AFTER PSL WITH ZERO
00222	0074 00 4 06511		TSX OK, 4	REPEAT
00223	0020 00 0 00171		TRA TROOP	

*TEST PRESENT SENSE LINES-POSITIONS 8,10,16-SHOULD GET
*EOF ON CHANNEL A, REDUNDANCY CHECK ON CHANNEL A AND
*BOT ON CHANNEL A.

00224	476243226060		BCD 1PSLB		
00225	0074 00 4 01775	OUT	TSX CLEAR,4	MONITOR	
00226	0074 00 4 00122		TSX SETR,4	GO TO RESET TRIGGERS	
00227	0522 00 0 02421		XEC CHANA+3	TURN OFF BTT IND-CHAN A	
00230	0761 00 0 00000		NOP		
00231	0522 00 0 02422		XEC CHANA+4	TURN OFF RDNCY IND-CHAN A	
00232	0522 00 0 02423		XEC CHANA+5	TURN OFF EOF IND-CHAN A	
00233	-0664 00 0 02364		PSLB PSL+10	PULSE BTT, EOF AND RDNCY-CHAN A	
00234	0522 00 0 02416		XEC CHANA	TEST POSITION 8-BTTA	
00235	0020 00 0 00242		TRA *+5	ON-OK	
00236	0074 00 4 06503		TSX ERROR-1,4	PRINT ERROR EXIT	
00237	-3 00000 0 00225		TXL OUT		
00240	0074 00 4 02057		TSX SPLAT,4		
00241	0 00000 0 02611		PZE HIM		
00242	0522 00 0 02417		XEC CHANA+1	TEST FOR POSITION 10-TRCA	
00243	0074 00 4 06503		TSX ERROR-1,4	RDNCY IND NOT	
00244	-3 00000 0 00225		TXL OUT	ON-ERROR IN	
00245	0074 00 4 02057		TSX SPLAT,4	POSITION 10 OF PSL	
00246	0 00000 0 02624		PZE HIS		
00247	0522 00 0 02420	BOOZE	XEC CHANA+2	TEST FOR POSITION 16-TEFA	
00250	0074 00 4 06503		TSX ERROR-1,4	EOF IND NOT ON	
00251	-3 00000 0 00225		TXL OUT	POSITION 16 OF	
00252	0074 00 4 02057		TSX SPLAT,4	PSL FAILED	
00253	0 00000 0 02637		PZE HAT		
00254	0522 00 0 02424	HIC	XEC CHANA+6	TEST FOR SENSE OUTPUT RESET	
00255	0020 00 0 00257		TRA *+2	ON-ERROR	
00256	0020 00 0 00263		TRA *+5	OK-OFF	
00257	0074 00 4 06503		TSX ERROR-1,4	ON-SENSE OUTPUT RESET	
00260	-3 00000 0 00225		TXL OUT	SHOULD NOT COME UP. PAGE	
00261	0074 00 4 02057		TSX SPLAT,4	60.04.41	
00262	0 00000 0 02652		PZE HES		
00263	0074 00 4 06511		TSX OK,4	REPEAT IF NECESSARY	
00264	0020 00 0 00225		TRA OUT		

*SEE IF DIRECT DATA SELECTS WILL SELECT AND SEND
*SELECT LINE TO OUTSIDE WORLD.

00265	662424226060		BCD 1WDDB		
00266	0074 00 4 01775	CUP	TSX CLEAR,4	MONITOR	
00267	0074 00 4 00122		TSX SETR,4	GO TO RESET TRIGGERS	

00270	0766	00	0	02240	WDDB	WRITE DIRECT DATA
00271	0600	00	0	02562	STZ LEAD	CLEAR TEMP STORAGE
00272	-0660	00	0	02562	SSLB LEAD	SAVE SENSE LINES
00273	-0540	00	0	02334	RCHB ZERO	DISCONNECT
00274	-0500	00	0	02562	CAL LEAD	CONTENTS OF SENSE LINES
00275	0322	00	0	02373	ERA SSL	SHOULD LEAVE ZERO
00276	0100	00	0	00312	TZE TOP	OK-IF ZERO-CORRECT COMPARE
00277	0074	00	4	06503	TSX ERROR-1,4	EITHER SENSE INPUT POSITION
00300	-3	00000	0	00266	TXL CUP	15 OR 13 FAILED-DR NOT LDD
00301	0771	00	0	00024	ARS 20	OR WDD
00302	0760	00	0	00001	LBT	TEST FOR DR NOT LDD
00303	0020	00	0	00306	TRA *+3	DID NOT FAIL
00304	0074	00	4	02057	TSX SPLAT,4	DR NOT LDD FAILED
00305	0	00000	0	02666	PZE LEAV	
00306	0771	00	0	00001	ARS 1	TEST FOR WDD
00307	0100	00	0	00312	TZE TOP	OK-IF ZERO-CORRECT COMPARE
00310	0074	00	4	02057	TSX SPLAT,4	WDD SENSE INPUT LINE
00311	0	00000	0	02702	PZE ING	13 FAILED
00312	0074	00	4	06511	TOP TSX OK,4	REPEAT IF NECESSARY
00313	0020	00	0	00266	TRA CUP	

*TEST RDD AS ABOVE TEST FOR WRITE

00314	512424226060				BCD 1RDDB	
00315	0074	00	4	01775	DRAW TSX CLEAR,4	MONITOR
00316	0074	00	4	00122	TSX SETR,4	GO TO RESET TRIGGERS
00317	0762	00	0	02240	RDDB	READ DIRECT DATA
00320	0600	00	0	02562	STZ LEAD	CLEAR TEMP STORAGE
00321	-0660	00	0	02562	SSLB LEAD	SAVE SENSE LINES
00322	-0540	00	0	02334	RCHB ZERO	DISCONNECT
00323	-0664	00	0	02356	PSLB PSL+4	PULSE EOR-CHAN A
00324	-0500	00	0	02562	CAL LEAD	CONTENTS OF SENSE LINES
00325	0322	00	0	02374	ERA SSL+1	SHOULD LEAVE ZERO
00326	0100	00	0	00342	TZE ER	OK-IF ZERO-CORRECT COMPARE
00327	0074	00	4	06503	TSX ERROR-1,4	EITHER SENSE INPUT POSITION
00330	-3	00000	0	00315	TXL DRAW	14 OR 15 FAILED-DR NOT LDD
00331	0771	00	0	00024	ARS 20	OR RDD
00332	0760	00	0	00001	LBT	TEST FOR DR NOT LDD
00333	0020	00	0	00336	TRA *+3	DID NOT FAIL
00334	0074	00	4	02057	TSX SPLAT,4	DR NOT LDD FAILED
00335	0	00000	0	02666	PZE LEAV	
00336	0771	00	0	00001	ARS 1	TEST FOR RDD
00337	0100	00	0	00342	TZE ER	OK-IF ZERO-CORRECT COMPARE
00340	0074	00	4	02057	TSX SPLAT,4	RDD SENSE INPUT LINE
00341	0	00000	0	02716	PZE OLD	14 FAILED
00342	0074	00	4	06511	ER TSX OK,4	REPEAT IF NECESSARY
00343	0020	00	0	00315	TRA DRAW	

*SELECT TAPE ON CHANNEL A UNITS 1-5 TO TEST SENSE

*INPUT LINES 8-12

00344	626243226060				BCD 1SSLB	
00345	0074	00	4	01775	HIPS TSX CLEAR,4	MONITOR
00346	0074	00	4	00122	TSX SETR,4	GO TO RESET TRIGGERS

00347	0500	00	0	02425	CLA CHANA+7	L WTBA 1
00350	0601	00	0	00477	STO WELP	STO UNIT ONE
00351	0400	00	0	02414	ADD ONE	L +1
00352	0601	00	0	00454	STO KELP	STO UNIT TWO
00353	0400	00	0	02414	ADD ONE	L +1
00354	0601	00	0	00430	STO YELP	STO UNIT THREE
00355	0400	00	0	02414	ADD ONE	L +1
00356	0601	00	0	00405	STO HELP	STO UNIT FOUR
00357	0400	00	0	02414	ADD ONE	L +1
00360	0601	00	0	00361	STO *+1	STO UNIT FIVE
00361	0766	00	0	01225	WTBA 5	SELECT CHAN A - UNIT 5
00362	0600	00	0	02562	STZ LEAD	CLEAR TEMP STORAGE
00363	0600	00	0	02564	STZ TO	CLEAR TEMP STORAGE
00364	-0660	00	0	02564	SSLB TO	SHOULD STORE POSITION 12
00365	-0664	00	0	02360	PSLB PSL+6	PULSE TCU SELECTED
00366	-0664	00	0	02356	PSLB PSL+4	PULSE EOR-CHAN A
00367	0500	00	0	02564	CLA TO	
00370	0340	00	0	02366	CAS PSL2	
00371	0020	00	0	00373	TRA *+2	ERROR
00372	0020	00	0	00377	TRA *+5	OK
00373	0074	00	4	06503	TSX ERROR-1,4	POSITION 12 OF SSL FAILED
00374	-3	00000	0	00345	TXL HIPS	
00375	0074	00	4	02057	TSX SPLAT,4	
00376	0	00000	0	02732	PZE SIDE	
00377	-0500	00	0	02736	CAL SIDE+4	CHANGE
00400	0402	00	0	02375	SUB SALON	SSL
00401	0602	00	0	02736	SLW SIDE+4	BIT
00402	0500	00	0	02742	CLA SIDE+8	POSITION TO 11
00403	0400	00	0	02377	ADD ADD	AND UNIT ADDR
00404	0601	00	0	02742	STO SIDE+8	TO 4
00405	0766	00	0	01224	HELP WTBA 4	
00406	0600	00	0	02564	STZ TO	
00407	-0660	00	0	02564	SSLB TO	SHOULD STORE POSITION 11
00410	-0664	00	0	02360	PSLB PSL+6	PULSE TCU SELECTED
00411	-0664	00	0	02356	PSLB PSL+4	PULSE EOR-CHAN A
00412	0500	00	0	02564	CLA TO	
00413	0340	00	0	02367	CAS PSL2+1	
00414	0020	00	0	00416	TRA *+2	ERROR
00415	0020	00	0	00422	TRA *+5	OK
00416	0074	00	4	06503	TSX ERROR-1,4	ERROR DID NOT STORE
00417	-3	00000	0	00345	TXL HIPS	POSITION 11-UNIT ADDR 2
00420	0074	00	4	02057	TSX SPLAT,4	
00421	0	00000	0	02732	PZE SIDE	
00422	-0500	00	0	02736	CAL SIDE+4	CHANGE
00423	0402	00	0	02375	SUB SALON	SSL
00424	0602	00	0	02736	SLW SIDE+4	BIT POSITION TO 10
00425	0500	00	0	02742	CLA SIDE+8	AND UNIT ADDR
00426	0400	00	0	02377	ADD ADD	TO 3
00427	0601	00	0	02742	STO SIDE+8	
00430	0766	00	0	01223	YELP WTBA 3	SELECT UNIT 3
00431	0600	00	0	02564	STZ TO	CLEAR TEMP STORAGE
00432	-0660	00	0	02564	SSLB TO	SHOULD STORE POSITION 10
00433	-0664	00	0	02360	PSLB PSL+6	PULSE TCU SELECTED

00434	-0664	00	0	02356		PSLB PSL+4	PULSE EOR-CHAN A
00435	0500	00	0	02564		CLA TO	
00436	0340	00	0	02370		CAS PSL2+2	
00437	0020	00	0	00441		TRA *+2	ERROR
00440	0020	00	0	00445		TRA *+5	OK
00441	0074	00	4	06503		TSX ERROR-1,4	ERROR DID NOT STORE
00442	-3	00000	0	00345		TXL HIPS	POSITION 10
00443	0074	00	4	02057		TSX SPLAT,4	
00444	0	00000	0	02732		PZE SIDE	
00445	-0500	00	0	02736		CAL SIDE+4	CHANGE UNIT PRINT
00446	-0320	00	0	02400		ANA MASK	L 777777700077
00447	0400	00	0	02401		ADD NINE	L 01100
00450	0602	00	0	02736		SLW SIDE+4	ADJUST TO BCD 9
00451	0500	00	0	02742		CLA SIDE+8	UNIT ADDR
00452	0400	00	0	02377		ADD ADD	MAKE IT 2
00453	0601	00	0	02742		STO SIDE+8	
00454	0766	00	0	01222	KELP	WTBA 2	SELECT UNIT 2
00455	0600	00	0	02564		STZ TO	CLEAR TEMP STORAGE
00456	-0660	00	0	02564		SSLB TO	SHOULD STORE POSITION 9
00457	-0664	00	0	02360		PSLB PSL+6	PULSE TCU SELECTED
00460	-0664	00	0	02356		PSLB PSL+4	PULSE EOR-CHAN A
00461	0500	00	0	02564		CLA TO	
00462	0340	00	0	02371		CAS PSL2+3	
00463	0020	00	0	00465		TRA *+2	ERROR
00464	0020	00	0	00471		TRA *+5	OK
00465	0074	00	4	06503		TSX ERROR-1,4	ERROR DID NOT STORE
00466	-3	00000	0	00345		TXL HIPS	POSITION 10
00467	0074	00	4	02057		TSX SPLAT,4	
00470	0	00000	0	02732		PZE SIDE	
00471	-0500	00	0	02736		CAL SIDE+4	CHANGE
00472	0402	00	0	02375		SUB SALON	SSL
00473	0602	00	0	02736		SLW SIDE+4	BIT POSITION TO 8
00474	0500	00	0	02742		CLA SIDE+8	AND UNIT ADDR
00475	0400	00	0	02377		ADD ADD	TO 1
00476	0601	00	0	02742		STO SIDE+8	
00477	0766	00	0	01221	WELP	WTBA 1	SELECT UNIT 1
00500	0600	00	0	02564		STZ TO	CLEAR TEMP STORAGE
00501	-0660	00	0	02564		SSLB TO	SHOULD STORE POSITION 10
00502	-0664	00	0	02360		PSLB PSL+6	PULSE TCU SELECTED
00503	-0664	00	0	02356		PSLB PSL+4	PULSE EOR-CHAN A
00504	0500	00	0	02564		CLA TO	
00505	0340	00	0	02372		CAS PSL2+4	
00506	0020	00	0	00510		TRA *+2	ERROR
00507	0020	00	0	00514		TRA *+5	OK
00510	0074	00	4	06503		TSX ERROR-1,4	ERROR DID NOT STORE
00511	-3	00000	0	00345		TXL HIPS	POSITION 10
00512	0074	00	4	02057		TSX SPLAT,4	
00513	0	00000	0	02732		PZE SIDE	
00514	0500	00	0	02402		CLA SALO	RESTORE SSL POSITION
00515	0601	00	0	02742		STO SIDE+8	AND INITIAL
00516	0500	00	0	02376		CLA SAL	UNIT ADDR
00517	0601	00	0	02736		STO SIDE+4	IN PRINT OUT
00520	0074	00	4	06511		TSX OK,4	
00521	0020	00	0	00345		TRA HIPS	REPEAT

*TEST FOR SSL POSITION 16 BY GIVING WRD DD AND RCH TO BRING UP
*CHANNEL RDY WRITE

00522	626243226060		BCD 1SSLB	
00523	0074 00 4 01775	HOLY	TSX CLEAR, 4	
00524	0074 00 4 00122		TSX SETR, 4	GO TO RESET TRIGGERS
00525	0766 00 0 02240		WDDB	WRITE DIRECT DATA
00526	-0540 00 0 02557		RCHB OPER	IOCD-WC 1
00527	0600 00 0 02564		STZ TO	CLEAR TEMPORARY STORAGE
00530	-0660 00 0 02564		SSLB TO	STORE SENSE LINES
00531	-0540 00 0 02334		RCHB ZERO	WRITE DD, RESPECTIVELY
00532	0500 00 0 02564		CLA TO	
00533	0560 00 0 02560		LDQ COMP	CORRECT RESULT
00534	0340 00 0 02560		CAS COMP	
00535	0020 00 0 00537		TRA *+2	ERROR
00536	0020 00 0 00543		TRA *+5	OK
00537	0074 00 4 06503		TSX ERROR-1, 4	TEST FOR POSITION 16-SSLB
00540	-3 00000 0 00523		TXL HOLY	ALL OTHERS HAVE BEEN TESTED
00541	0074 00 4 02057		TSX SPLAT, 4	HOWEVER, POSITION 15 MIGHT
00542	0 00000 0 02743		PZE KICK	BE UP, AND SHOULD BE DOWN
				OR POSITION 13 MIGHT BE
				DOWN AND SHOULD BE UP.
				DATA REG NOT LOADED AND
00543	0074 00 4 06511		TSX OK, 4	
00544	0020 00 0 00523		TRA HOLY	
00545	626243226060		BCD 1SSLB	
00546	0074 00 4 01775	TOLE	TSX CLEAR, 4	
00547	0074 00 4 00122		TSX SETR, 4	GO TO RESET TRIGGERS
00550	0762 00 0 02240		RDDB	READ DIRECT DATA
00551	-0540 00 0 02557		RCHB OPER	IOCD-WC 1
00552	0600 00 0 02564		STZ TO	CLEAR TEMP STORAGE
00553	-0660 00 0 02564		SSLB TO	STORE SENSE LINES
00554	-0540 00 0 02334		RCHB ZERO	DISCONNECT
00555	0500 00 0 02564		CLA TO	
00556	0560 00 0 02561		LDQ COMP+1	CORRECT RESULT
00557	0340 00 0 02561		CAS COMP+1	
00560	0020 00 0 00562		TRA *+2	ERROR
00561	0020 00 0 00566		TRA *+5	OK
00562	0074 00 4 06503		TSX ERROR-1, 4	TEST POSITION 17-SSLB
00563	-3 00000 0 00546		TXL TOLE	ALL OTHER HAVE BEEN TESTED
00564	0074 00 4 02057		TSX SPLAT, 4	HOWEVER, POSITION 15 MIGHT BE
00565	0 00000 0 02760		PZE MULE	DOWN AND SHOULD BE UP OR
00566	-0664 00 0 02360		PSLB PSL+6	POSITION 14 MIGHT BE DOWN
				AND SHOULD BE UP
00567	0074 00 4 06511		TSX OK, 4	
00570	0020 00 0 00546		TRA TOLE	

*RESET AND LOAD CHANNEL B WITH IND 1 ON-WC - 0 TO
*TEST FEED BACK TO CHAN B EOF FROM WD CNT 0-IND 1 ON LINE.

00571	254626606060		BCD 1EOF	
00572	0074 00 4 01775	DO	TSX CLEAR,4	MONITOR
00573	0074 00 4 00122		TSX SETR,4	GO TO RESET TRIGGERS
00574	0762 00 0 02240		Rddb	READ DIRECT DATA
00575	-0540 00 0 02554		RCHB OPER1	IORP-WC0 TO TEST TIE BACK TO EOF CHAN B
00576	-0030 00 0 00603		TEFB *+5	
00577	0074 00 4 06503		TSX ERROR-1,4	IND 1-WC0 DID NOT
00600	-3 00000 0 00572		TXL DO	BRING UP EOF CHAN B
00601	0074 00 4 02057		TSX SPLAT,4	
00602	0 00000 0 02775		PZE TRAIN	
00603	0074 00 4 06511		TSX OK,4	
00604	0020 00 0 00572		TRA DO	

*TEST PSL AND SSL INDEXED, INDIRECTLY ADDRESSED
*AND INDEXED AND INDIRECTLY ADDRESSED

00605	476243606760		BCD 1PSL X	
00606	0074 00 4 01775	SPOT	TSX CLEAR,4	MONITOR
00607	0074 00 4 00122		TSX SETR,4	GO TO RESET TRIGGERS
00610	0774 00 1 01000		AXT 512,1	L 1000 IN XA
00611	-0664 00 1 03361		PSLB PSL+519,1	PULSE RDNCK - CHAN A
00612	0522 00 0 02435		XEC CHANA+15	TEST EOF - CHAN A
00613	0074 00 4 06503		TSX ERROR-1,4	PRESENT SENSE LINES
00614	-3 00000 0 00606		TXL SPOT	INDEXED FAILED
00615	0074 00 4 02057		TSX SPLAT,4	
00616	0 00000 0 03134		PZE SONG	
00617	0074 00 4 06511		TSX OK,4	
00620	0020 00 0 00606		TRA SPOT	

*
*

00621	476243603121		BCD 1PSL IA	
00622	0074 00 4 01775	CHECK	TSX CLEAR,4	MONITOR
00623	0074 00 4 00122		TSX SETR,4	GO TO RESET TRIGGERS
00624	-0664 60 0 02406		PSLB* FIX	SHOULD PULSE EOF - CHAN A
00625	0522 00 0 02436		XEC CHANA+16	TEST EOF - CHAN A
00626	0074 00 4 06503		TSX ERROR-1,4	PRESENT SENSE LINES
00627	-3 00000 0 00622		TXL CHECK	INDIRECTLY ADDRESSED
00630	0074 00 4 02057		TSX SPLAT,4	FAILED
00631	0 00000 0 03143		PZE BIRD	
00632	0074 00 4 06511		TSX OK,4	
00633	0020 00 0 00622		TRA CHECK	
00634	476243673121		BCD 1PSLXIA	PSL-INDEXED AND I ADDR
00635	0074 00 4 01775	ROL	TSX CLEAR,4	MONITOR
00636	0074 00 4 00122		TSX SETR,4	GO TO RESET TRIGGERS
00637	0774 00 1 01000		AXT 512,1	
00640	-0664 60 1 03407		PSLB* FIX+513,1	SHOULD PULSE RDNCK - CHAN A
00641	0522 00 0 02437		XEC CHANA+17	TEST EOF-CHAN A
00642	0074 00 4 06503		TSX ERROR-1,4	PRESENT SENSE LINES

00643	-3	00000	0	00635		TXL ROL	INDIRECTLY ADDRESSED
00644	0074	00	4	02057		TSX SPLAT, 4	AND INDEXED-FAILED
00645	0	00000	0	03154		PZE PARA	
00646	0074	00	4	06511		TSX OK, 4	
00647	0020	00	0	00635		TRA ROL	
00650	626243606760					BCD 1SSL X	
00651	0074	00	4	01775	LING	TSX CLEAR, 4	MONITOR
00652	0074	00	4	00122		TSX SETR, 4	GO TO RESET TRIGGERS
00653	0600	00	0	02410		STZ WAIT	
00654	0774	00	1	01000		AXT 512, 1	
00655	-0660	00	1	03410		SSLB WAIT+512, 1	SHOULD STORE POSITION 15
00656	0500	00	0	02410		CLA WAIT	RESULT OF SSL
00657	0560	00	0	02563		LDQ ME	CORRECT BIT
00660	0340	00	0	02563		CAS ME	
00661	0020	00	0	00663		TRA *+2	ERROR
00662	0020	00	0	00667		TRA *+5	OK
00663	0074	00	4	06503		TSX ERROR-1, 4	SSL INDEXED-FAILED
00664	-3	00000	0	00651		TXL LING	
00665	0074	00	4	02057		TSX SPLAT, 4	
00666	0	00000	0	03167		PZE DISE	
00667	0074	00	4	06511		TSX OK, 4	
00670	0020	00	0	00651		TRA LING	
00671	626243603121					BCD 1SSL IA	
00672	0074	00	4	01775	STONE	TSX CLEAR, 4	MONITOR
00673	0074	00	4	00122		TSX SETR, 4	GO TO RESET TRIGGERS
00674	0600	00	0	02410		STZ WAIT	
00675	-0660	60	0	02411		SSLB* WAIT+1	SHOULD POSITION 15
00676	0500	00	0	02410		CLA WAIT	
00677	0560	00	0	02563		LDQ ME	CORRECT BIT
00700	0340	00	0	02563		CAS ME	
00701	0020	00	0	00703		TRA *+2	ERROR
00702	0020	00	0	00707		TRA *+5	OK
00703	0074	00	4	06503		TSX ERROR-1, 4	SSL INDIRECTLY
00704	-3	00000	0	00672		TXL STONE	ADDRESS-FAILED
00705	0074	00	4	02057		TSX SPLAT, 4	
00706	0	00000	0	03176		PZE EDEN	
00707	0074	00	4	06511		TSX OK, 4	
00710	0020	00	0	00672		TRA STONE	
00711	626243673121					BCD 1SSLXIA	
00712	0074	00	4	01775	STOP	TSX CLEAR, 4	MONITOR
00713	0074	00	4	00122		TSX SETR, 4	GO TO RESET TRIGGERS
00714	0600	00	0	02410		STZ WAIT	CLEAR TEMP STORAGE
00715	0774	00	1	01000		AXT 512, 1	
00716	-0660	60	1	03411		SSLB* WAIT+513, 1	SHOULD POS. 15
00717	0500	00	0	02410		CLA WAIT	RESULT SSL
00720	0560	00	0	02563		LDQ ME	CORRECT BIT
00721	0340	00	0	02563		CAS ME	
00722	0020	00	0	00724		TRA *+2	ERROR
00723	0020	00	0	00730		TRA *+5	OK
00724	0074	00	4	06503		TSX ERROR-1, 4	SSL INDIRECTLY

00725	-3	00000	0	00712	TXL STOP	ADDRESSED AND
00726	0074	00	4	02057	TSX SPLAT,4	INDEXED-FAILED
00727	0	00000	0	03207	PZE ADAM	
00730	0074	00	4	06511	TSX OK,4	
00731	0020	00	0	00712	TRA STOP	

*WRITE DIRECT DATA AND PULSE EOR ON CHANNEL B TO FORCE
*DISCONNECT FROM DIRECT DATA

00732	476243226060				BCD 1PSLB	
00733	0074	00	4	01775	GREY TSX CLEAR,4	MONITOR
00734	0074	00	4	00122	TSX SETR,4	GO TO RESET TRIGGERS
00735	0522	00	0	02424	XEC CHANA+6	TURN OFF ETT IND
00736	0761	00	0	00000	NOP	
00737	0766	00	0	02240	WDDB	
00740	-0540	00	0	02403	RCHB NOD	IORP - WC 10
00741	-0664	00	0	02355	PSLB PSL+3	PULSE EOR - CHAN B TO DISC
00742	0061	00	0	00744	TCOB *+2	ERROR
00743	0020	00	0	00751	TRA *+6	OK
00744	-0540	00	0	02554	RCHB OPER1	DISCONNECT WITH EOF, IF
00745	0074	00	4	06503	TSX ERROR-1,4	EOR DID NOT WORK
00746	-3	00000	0	00733	TXL GREY	
00747	0074	00	4	02057	TSX SPLAT,4	PRESENT SENSE LINE 14 DID
00750	0	00000	0	03007	PZE CLIP	NOT DISCONNECT CHAN B ON EOR
00751	0074	00	4	06511	TSX OK,4	
00752	0020	00	0	00733	TRA GREY	

**WRITE SELECT DIRECT DATA CHAN B AND RDS CHAN A-TRY
*TO MOVE DATA WITH FIRST WORD TEST, AND DEMANDS

00753	662424226060				BCD 1WDDB	
00754	0074	00	4	01775	MARE TSX CLEAR,4	MONITOR
00755	0074	00	4	00122	TSX SETR,4	GO TO RESET TRIGGERS
00756	0766	00	0	02240	WDDB	
00757	-0540	00	0	02552	RCHB OPER2	IOCD-WC1 ALL ONES
00760	0600	00	0	02575	STZ RINK	CLEAR TEMP STORAGE
00761	0522	00	0	02426	XEC CHANA+8	READ CHAN A
00762	0522	00	0	02430	XEC CHANA+10	RCHA-IOCD WC1
00763	-0664	00	0	02360	PSLB PSL+6	PULSE TCU SELECTED-CHANA
00764	-0664	00	0	02357	PSLB PSL+5	PULSE 1ST WD TEST-CHAN A
00765	-0664	00	0	02362	PSLB PSL+8	PULSE DEMAND CHAN A
00766	-0664	00	0	02352	PSLB PSL	PULSE DMD - CHAN B
00767	-0664	00	0	02362	PSLB PSL+8	PULSE DMD - CHAN A
00770	0500	00	0	02575	CLA RINK	WORD READ
00771	0560	00	0	02553	LDQ ONES	CORRECT WORD
00772	0340	00	0	02553	CAS ONES	
00773	0020	00	0	00775	TRA *+2	ERROR
00774	0020	00	0	01001	TRA *+5	OK
00775	0074	00	4	06502	TSX ERROR-2,4	FIRST TRY AT TRANSMITTING
00776	-3	00000	0	00754	TXL MARE	WORD OF ALL ONES
00777	0074	00	4	02057	TSX SPLAT,4	

```
01000 0 00000 0 03035      PZE CLOP
01001 0074 00 4 06511     TSX OK,4      REPEAT
01002 0020 00 0 00754     TRA MARE
```

*TRANSMIT 36 WORDS WITH A RIPPLE OF ONE BIT TO CHECK
 *EACH POSITION OF THE DATA REGISTER CABLE

```
01003 662424226060      BCD 1WDDB
01004 0074 00 4 01775   AINT  TSX CLEAR,4    MONITOR
01005 0074 00 4 00122   TSX SETR,4    GO TO RESET TRIGGERS
01006 0774 00 1 00044   AXT 36,1
01007 0500 00 0 02414   CLA ONE      L+1
01010 0602 00 1 02506   SLW WRFLD+36,1  FORM
01011 0767 00 0 00001   ALS 1       36 POSITION
01012 2 00001 1 01010   TIX *-2,1,1  RIPPLE PATTERN
01013 0774 00 2 00001   AXT 1,2
01014 0754 00 2 00000   PXA 0,2     SET UP
01015 0400 00 0 02414   ADD ONE     RECNO
01016 0601 00 0 06557   STO RECNO   FOR PRINT RT

01017 0766 00 0 02240   WDDB
01020 -0540 00 0 02567   RCHB BUT    IOCD-WC 36
01021 0774 00 1 00044   AXT 36,1
01022 0522 00 0 02426   XEC CHANA+8  RDS CHAN A
01023 0522 00 0 02427   XEC CHANA+9  RCHA-IOCD WC 36
01024 -0664 00 0 02360   PSLB PSL+6  PULSE TCU SELECTED
01025 -0664 00 0 02357   PSLB PSL+5  PULSE 1ST WD TEST
01026 -0664 00 0 02362   PSLB PSL+8  PULSE DMD-CHAN A
01027 -0664 00 0 02352   PSLB PSL    PULSE DMD-CHAN B
01030 2 00001 1 01026   TIX *-2,1,1
01031 -0664 00 0 02570   PSLB DONT   PULSE EOR CHAN A + CHAN B
01032 0761 00 0 00000   NOP
01033 0774 00 1 00044   AXT 36,1
01034 0754 00 1 00000   PXA 0,1
01035 0400 00 0 02414   ADD ONE     L+1
01036 0601 00 0 06556   STO WDNO
01037 0500 00 1 02552   CLA RDFLD+36,1  WORD READ
01040 0560 00 1 02506   LDQ WRFLD+36,1  CORRECT WORD
01041 0340 00 1 02506   CAS WRFLD+36,1
01042 0020 00 0 01044   TRA *+2     ERROR
01043 0020 00 0 01047   TRA *+4     OK
01044 0074 00 4 06502   TSX ERROR-2,4
01045 0761 00 0 01004   NOP AINT
01046 0760 00 0 00141   SLN 1      LITE ONE ON IF ERROR
01047 2 00001 1 01037   TIX *-8,1,1  CHECK 36 WORDS
01050 -0760 00 0 00141   SLT 1      TEST FOR ERROR
01051 0020 00 0 01054   TRA *+3     OK
01052 0074 00 4 02057   TSX SPLAT,4  PRINT COMMENT
01053 0 00000 0 03050   PZE PIN
01054 0074 00 4 06511   TSX OK,4    REPEAT
01055 0020 00 0 01004   TRA AINT
```

*TEST WRITE CHAN A AND READ DIRECT DATA FOR
 *TRANSMISSION OF ONE WORD

01056	512424226060		BCD 1RDDB	
01057	0074 00 4 01775	WHAT	TSX CLEAR, 4	
01060	0074 00 4 00122		TSX SETR, 4	GO TO RESET TRIGGERS
01061	0522 00 0 02425		XEC CHANA+7	WRS CHAN A
01062	0522 00 0 02431		XEC CHANA+11	RCHA-IOCD-WC1
01063	0762 00 0 02240		RDDB	
01064	-0540 00 0 02557		RCHB OPER	IOCD-WC1
01065	-0664 00 0 02360		PSLB PSL+6	PULSE TCU SELECTED
01066	-0664 00 0 02365		PSLB PSL+11	PULSE DEMAND A AND B
01067	-0664 00 0 02356		PSLB PSL+4	PULSE EOR-A
01070	0500 00 0 02556		CLA TEMP	WORD READ
01071	0560 00 0 02553		LDQ ONES	CORRECT WORD
01072	0340 00 0 02553		CAS ONES	
01073	0020 00 0 01075		TRA *+2	ERROR
01074	0020 00 0 01101		TRA *+5	OK
01075	0074 00 4 06502		TSX ERROR-2, 4	TRY AT READING
01076	0761 00 0 01057		NOP WHAT	DIRECT DATA
01077	0074 00 4 02057		TSX SPLAT, 4	FAILED. WORD EITHER
01100	0 00000 0 03065		PZE OVER	NOT TRANSMITTED, OR
01101	0074 00 4 06511		TSX OK, 4	ERROR IN WORD
01102	0020 00 0 01057		TRA WHAT	

*ATTEMPT TO HIT WORST CASE, WHICH WOULD BE TO TRANSMIT
*A WORD EVERY 36US. 60US IS AS CLOSE AS PROGRAM CAN COME.

01103	662424226060		BCD 1WDDB	
01104	0074 00 4 01775	SHE	TSX CLEAR, 4	
01105	0074 00 4 00122		TSX SETR, 4	GO TO RESET TRIGGERS
01106	0766 00 0 02240		WDDB	WRITE DIRECT DATA
01107	-0540 00 0 02571		RCHB MAKE	IORP-WC 36
01110	0522 00 0 02426		XEC CHANA+8	RDS CHAN A
01111	0522 00 0 02432		XEC CHANA+12	
01112	-0664 00 0 02360		PSLB PSL+6	PULSE TCU SELECTED
01113	0774 00 1 00044		AXT 36, 1	
01114	0600 00 1 02552		STZ RDFLD+36, 1	CLEAR
01115	2 00001 1 01114		TIX *-1, 1, 1	READ FIELD
01116	-0664 00 0 02357		PSLB PSL+5	PULSE 1ST WD TEST-A
01117	-0664 00 0 02365		PSLB PSL+11	PULSE DEMAND A AND B
01120	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01121	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01122	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01123	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01124	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01125	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01126	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01127	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01130	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01131	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01132	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01133	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01134	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01135	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B
01136	0522 00 0 01117		XEC SHE+11	PULSE DEMAND A AND B

01137	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01140	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01141	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01142	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01143	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01144	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01145	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01146	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01147	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01150	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01151	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01152	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01153	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01154	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01155	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01156	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01157	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01160	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01161	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01162	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01163	0522	00	0	01117	XEC SHE+11	PULSE DEMAND A AND B
01164	-0664	00	0	02570	PSLB DONT	PULSE EOR - A AND B
01165	0774	00	1	00044	AXT 36,1	
01166	0500	00	1	02552	CLA RDFLD+36,1	WORD READ
01167	0560	00	1	02506	LDQ WRFLD+36,1	CORRECT WORD
01170	0340	00	1	02506	CAS WRFLD+36,1	
01171	0020	00	0	01173	TRA *+2	ERROR
01172	0020	00	0	01176	TRA *+4	OK
01173	0760	00	0	00141	SLN 1	
01174	0074	00	4	06502	TSX ERROR-2,4	DATA FAILURE DURING
01175	0761	00	0	01104	NOP SHE	48 US WORST CASE
01176	2 00001	1	01166	TIX *-8,1,1	CHECK ALL WORDS	
01177	-0760	00	0	00141	SLT 1	
01200	0020	00	0	01203	TRA *+3	OK-OFF
01201	0074	00	4	02057	TSX SPLAT,4	
01202	0 00000	0	03065	PZE OVER		
01203	0020	00	0	01205	TRA *+2	CONTINUE
01204	314663606060				BCD 1IOT	
01205	0760	00	0	00005	USTA IOT	
01206	0020	00	0	01210	TRA *+2	ON-ERROR
01207	0020	00	0	01216	TRA *+7	OFF-OK
01210	0074	00	4	06503	TSX ERROR-1,4	I/O CK LIGHT ON
01211	-3 00000	0	01205	TXL USTA	PROBABLY AS RESULT OF	
01212	0074	00	4	02057	TSX SPLAT,4	RATE OF TRANSMISSION
01213	0 00000	0	03100	PZE HILLN	OF DATA	
01214	0074	00	4	02057	TSX SPLAT,4	
01215	0 00000	0	03115	PZE HILLN+13		
01216	0020	00	0	01220	TRA *+2	
01217	254626606060				BCD 1EOF	
01220	-0030	00	0	01225	BE TEFB *+5	
01221	0074	00	4	06503	TSX ERROR-1,4	IND 1 ON-WC 0
01222	-3 00000	0	01220	TXL BE	DID NOT BRING	

01223 0074 00 4 02057 TSX SPLAT,4 UP EOF CHAN B
01224 0 00000 0 03123 PZE DALE
01225 0074 00 4 06511 TSX OK,4
01226 0020 00 0 01104 TRA SHE

01227 0761 00 0 00000 NOP

*TEST FOR POSSIBLE TRANSMISSION OF DATA EVERY 36 US

01230 0074 00 4 01775 TIME TSX CLEAR,4 MONITOR
01231 0074 00 4 00122 TSX SETR,4 GO TO RESET TRIGGERS
01232 0500 00 0 02405 CLA TEST TEST FOR FIRST PASS
01233 0100 00 0 01235 TZE *+2 ZERO - YES
01234 0020 00 0 01255 TRA TRP NOT ZERO - CONTINUE
01235 -0625 00 0 02405 STL TEST SET SWITCH

01236 0000 00 0 01237 HTR *+1 THROW END OPN SW ON MF C.E.
PANEL TO ON POSITION

01237 0766 00 0 02240 WDDB
01240 -0540 00 0 02552 RCHB OPER2 IOCD - WC1, ALL ONES
01241 0522 00 0 02426 XEC CHANA+8 READ SELECT CHAN A
01242 0522 00 0 02430 XEC CHANA+10 RCHA, IOCD - WC 1
01243 -0664 00 0 02360 PSLB PSL+6 PULSE TCU SEL - A
01244 -0664 00 0 02357 PSLB PSL+5 PULSE 1ST WD TEST - TEST
01245 -0664 00 0 02365 PSLB PSL+11 PULSE DEMAND A AND B
01246 0061 00 0 01246 TCOB * IF PROGRAM HANGS UP AT
THIS LOCATION , B TIME WAS
NOT ABLE TO GET IN DURING
ER TIME OF TCOB.
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01247 0000 00 0 01250 HTR *+1 RETURN END OPN SW TO
OFF POSITION

01250 -0664 00 0 02356 PSLB PSL+4 PULSE EOR CHANNEL A
01251 -0540 00 0 02334 RCHB ZERO DISCONNECT
01252 0074 00 4 06511 TSX OK,4
01253 0020 00 0 01230 TRA TIME

* CHECK THAT INTERRUPT WHEN NOT ENABLED DOES NOT TRAP

01254 635121476060 BCD 1TRAP TEST CONDITION
01255 0074 00 4 01775 TRP TSX CLEAR,4 MONITOR
01256 0074 00 4 00122 TSX SETR,4 GO TO RESET TRIGGERS
01257 0074 00 4 01641 TSX RSTRP,4
01260 0766 00 0 02240 WDDB RESET TRAP TRIGGERS OFF
01261 -0540 00 0 02334 RCHB ZERO DISCONNECT
01262 0061 00 0 01262 TCOB * SHOULD BE OUT OF OPN
01263 0564 00 0 02334 ENB ZERO DISABLE ALL CHANNELS
01264 0074 00 2 01265 TSX *+1,2 SET XRB FOR RETURN
01265 -0664 00 0 02354 PSLB NTRPT INTERRUPT

01266	0761	00	0	01266	NOP *	
01267	0020	00	0	01272	TRA *+3	OK - SHOULD NOT TRAP
01270	0074	00	4	02057	TSX SPLAT,4	
01271	0	00000	0	03304	PZE SB CD5,0,0	TRAPPED WITH ALL CHANNELS DISABLED
01272	0074	00	4	06511	TSX OK,4	
01273	0020	00	0	01255	TRA TRP	

* ENABLE AND INTERRUPT - CHECK FOR TRAP AND RETURN

01274	635121476060				BCD 1TRAP	TEST CONDITION
01275	0074	00	4	01775	TRP1 TSX CLEAR,4	MONITOR
01276	0074	00	4	00122	TSX SETR,4	GO TO RESET TRIGGERS
01277	0074	00	4	01641	TSX RSTRP,4	
01300	0766	00	0	02240	WDDB	RESET TRAP TGRS
01301	-0540	00	0	02334	RCHB ZERO	DISCONNECT
01302	0061	00	0	01302	TCOB *	SHOULD BE OUT OF OPN
01303	0564	00	0	02341	ENB ALL	ENABLE ALL CHANNELS
01304	0600	00	0	02337	STZ TPCK	TRAP EXPECTED
01305	0074	00	2	01306	TSX *+1,2	SET XRB FOR RETURN
01306	-0664	00	0	02354	PSLB NTRPT	INTERRUPT
01307	0761	00	0	01307	NOP *	TRAP FROM THIS LOCATION
01310	0020	00	0	01312	TRA *+2	
01311	0020	00	0	01315	TRA *+4	OK - SHOULD TRAP
01312	0074	00	2	01650	TSX SPRT,2	
01313	0074	00	4	02057	TSX SPLAT,4	
01314	0	00000	0	03313	PZE SB CD6,0,0	FAILED TO TRAP WITH ALL CHANNELS ENABLED
01315	0074	00	4	06511	TSX OK,4	
01316	0020	00	0	01275	TRA TRP1	

* CHECK THAT ENABLE WITH ZERO DISABLES CHANNEL AFTER PREVIOUS TRAP

01317	635121476060				BCD 1TRAP	TEST CONDITION
01320	0074	00	4	01775	TRP2 TSX CLEAR,4	MONITOR
01321	0074	00	4	00122	TSX SETR,4	GO TO RESET TRIGGERS
01322	0074	00	4	01641	TSX RSTRP,4	
01323	0766	00	0	02240	WDDB	RESET TRAP TRIGGERS OFF
01324	-0540	00	0	02334	RCHB ZERO	DISCONNECT
01325	0061	00	0	01325	TCOB *	SHOULD BE OUT OF OPN
01326	0564	00	0	02341	ENB ALL	ENABLE ALL CHANNELS
01327	0600	00	0	02337	STZ TPCK	TRAP EXPECTED
01330	0074	00	2	01331	TSX *+1,2	SET XRB FOR RETURN
01331	-0664	00	0	02354	PSLB NTRPT	INTERRUPT
01332	0761	00	0	01332	NOP *	TRAP FROM THIS LOCATION
01333	0020	00	0	01335	TRA *+2	ERROR-FAILED TO TRAP
01334	0020	00	0	01341	TRA *+5	OK - SHOULD TRAP
01335	0074	00	2	01650	TSX SPRT,2	
01336	0074	00	4	02057	TSX SPLAT,4	
01337	0	00000	0	03313	PZE SB CD6,0,0	FAILED TO TRAP WITH ALL CHANNELS ENABLED
01340	0020	00	0	01354	TRA *+12	

01341	0074	00	4	01641	TSX RSTRP,4	
01342	0766	00	0	02240	WDDB	RESET TRAP TRIGGERS OFF
01343	-0540	00	0	02334	RCHB ZERO	DISCONNECT
01344	0061	00	0	01344	TCOB *	SHOULD BE OUT OF OPN
01345	0564	00	0	02334	ENB ZERO	DISABLE ALL CHANNELS
01346	0074	00	2	01347	TSX *+1,2	SET XRB FOR RETURN
01347	-0664	00	0	02354	PSLB NTRPT	INTERRUPT
01350	0761	00	0	01350	NOP *	TRAP FROM THIS LOCATION
01351	0020	00	0	01354	TRA *+3	OK-SHOULD NOT TRAP
01352	0074	00	4	02057	TSX SPLAT,4	
01353	0	00000	0	03304	PZE SB CD5,0,0	TRAPPED WITH ALL CHANNELS DISABLED
01354	0074	00	4	06511	TSX OK,4	
01355	0020	00	0	01320	TRA TRP2	

* INTERRUPT WHEN NOT ENABLED - THEN ENABLE AND CHECK FOR TRAP

01356	635121476060				BCD 1TRAP	TEST CONDITION
01357	0074	00	4	01775	TRP3 TSX CLEAR,4	MONITOR
01360	0074	00	4	00122	TSX SETR,4	GO TO RESET TRIGGERS
01361	0074	00	4	01641	TSX RSTRP,4	
01362	0766	00	0	02240	WDDB	RESET TRAP TRIGGERS OFF
01363	-0540	00	0	02334	RCHB ZERO	DISCONNECT
01364	0061	00	0	01364	TCOB *	SHOULD BE OUT OF OPN
01365	0564	00	0	02334	ENB ZERO	DISABLE ALL CHANNELS
01366	0074	00	2	01367	TSX *+1,2	SET XRB FOR RETURN
01367	-0664	00	0	02354	PSLB NTRPT	INTERRUPT
01370	0761	00	0	01370	NOP *	TRAP FROM THIS LOCATION
01371	0020	00	0	01375	TRA *+4	OK-SHOULD NOT TRAP
01372	0074	00	4	02057	TSX SPLAT,4	
01373	0	00000	0	03304	PZE SB CD5,0,0	TRAPPED WITH ALL CHANNELS DISABLED
01374	0020	00	0	01407	TRA *+11	
01375	0074	00	4	01641	TSX RSTRP,4	
01376	0600	00	0	02337	STZ TPCK	TRAP EXPECTED
01377	0074	00	2	01400	TSX *+1,2	SET XRB FOR RETURN
01400	0564	00	0	02341	ENB ALL	ENABLE ALL CHANNELS
01401	0761	00	0	01401	NOP *	TRAP FROM THIS LOCATION
01402	0020	00	0	01404	TRA *+2	ERROR-FAILED TO TRAP
01403	0020	00	0	01407	TRA *+4	OK-SHOULD TRAP
01404	0074	00	2	01650	TSX SPRT,2	
01405	0074	00	4	02057	TSX SPLAT,4	
01406	0	00000	0	03323	PZE SB CD7,0,0	FAILED TO TRAP FROM ENABLE WITH A TRAP CONDITIONED
01407	0074	00	4	06511	TSX OK,4	
01410	0020	00	0	01357	TRA TRP3	

* INTERRUPT WHEN INHIBITED - RESTORE AND CHECK FOR TRAP

01411	635121476060				BCD 1TRAP	TEST CONDITION
01412	0074	00	4	01775	TRP4 TSX CLEAR,4	MONITOR
01413	0074	00	4	00122	TSX SETR,4	GO TO RESET TRIGGERS

01414	0074	00	4	01641	TSX RSTRP,4	
01415	0766	00	0	02240	WDDB	RESET TRAP TRIGGERS OFF
01416	-0540	00	0	02334	RCHB ZERO	DISCONNECT
01417	0061	00	0	01417	TCOB *	SHOULD BE OUT OF OPN
01420	0564	00	0	02341	ENB ALL	ENABLE ALL CHANNELS
01421	0600	00	0	02337	STZ TPCK	TRAP EXPECTED
01422	0074	00	2	01423	TSX *+1,2	SET XRB FOR RETURN
01423	-0664	00	0	02354	PSLB NTRPT	INTERRUPT
01424	0761	00	0	01424	NOP *	TRAP FROM THIS LOCATION
01425	0020	00	0	01427	TRA *+2	ERROR-FAILED TO TRAP
01426	0020	00	0	01433	TRA *+5	OK-SHOULD HAVE TRAPPED
01427	0074	00	2	01650	TSX SPRT,2	
01430	0074	00	4	02057	TSX SPLAT,4	
01431	0	00000	0	03313	PZE SB CD6,0,0	FAILED TO TRAP WITH ALL CHANNELS ENABLED
01432	0020	00	0	01454	TRA *+18	

* NOW CHANNEL SHOULD BE INHIBITED

01433	0074	00	4	01641	TSX RSTRP,4	
01434	0074	00	2	01435	TSX *+1,2	SET XRB FOR RETURN
01435	-0664	00	0	02354	PSLB NTRPT	INTERRUPT
01436	0761	00	0	01436	NOP *	TRAP FROM THIS LOCATION
01437	0020	00	0	01443	TRA *+4	OK-SHOULD NOT TRAP
01440	0074	00	4	02057	TSX SPLAT,4	
01441	0	00000	0	03335	PZE SB CD8,0,0	TRAPPED IN ERROR WHILE INHIBITED
01442	0020	00	0	01454	TRA *+10	
01443	0600	00	0	02337	STZ TPCK	TRAP EXPECTED
01444	0074	00	2	01445	TSX *+1,2	SET XRB FOR RETURN
01445	0760	00	0	00014	RCT	RESTORE
01446	0761	00	0	01447	NOP *+1	TRAP FROM NEXT LOCATION
01447	0020	00	0	01451	TRA *+2	ERROR - FAILED TO TRAP
01450	0020	00	0	01454	TRA *+4	OK-SHOULD TRAP
01451	0074	00	2	01650	TSX SPRT,2	
01452	0074	00	4	02057	TSX SPLAT,4	
01453	0	00000	0	03344	PZE SB CD9,0,0	FAILED TO TRAP FROM RESTORE WITH AN INHIBITED TRAP CONDITIONED
01454	0074	00	4	06511	TSX OK,4	
01455	0020	00	0	01412	TRA TRP4	

* INTERRUPT WHEN INHIBITED - ENABLE AND CHECK FOR TRAP

01456	635121476060				BCD 1TRAP	TEST CONDITION
01457	0074	00	4	01775	TRP4A TSX CLEAR,4	MONITOR
01460	0074	00	4	00122	TSX SETR,4	GO TO RESET TRIGGERS
01461	0074	00	4	01641	TSX RSTRP,4	
01462	0766	00	0	02240	WDDB	RESET TRAP TRIGGERS OFF
01463	-0540	00	0	02334	RCHB ZERO	DISCONNECT
01464	0061	00	0	01464	TCOB *	SHOULD BE OUT OF OPERATION
01465	0564	00	0	02341	ENB ALL	ENABLE ALL CHANNELS

01466	0600	00	0	02337	STZ TPCK	TRAP EXPECTED
01467	0074	00	2	01470	TSX *+1,2	SET XRB FOR RETURN
01470	-0664	00	0	02354	PSLB NTRPT	INTERRUPT
01471	0761	00	0	01471	NOP *	TRAP FROM THIS LOCATION
01472	0020	00	0	01474	TRA *+2	ERROR - FAILED TO TRAP
01473	0020	00	0	01500	TRA *+5	OK - SHOULD HAVE TRAPPED
01474	0074	00	2	01650	TSX SPRT,2	
01475	0074	00	4	02057	TSX SPLAT,4	
01476	0	00000	0	03313	PZE SB CD6,0,0	FAILED TO TRAP WITH ALL CHANNELS ENABLED
01477	0020	00	0	01521	TRA *+18	

* NOW CHANNEL SHOULD BE INHIBITED

01500	0074	00	4	01641	TSX RSTRP,4	
01501	0074	00	2	01502	TSX *+1,2	SET XRB FOR RETURN
01502	-0664	00	0	02354	PSLB NTRPT	INTERRUPT
01503	0761	00	0	01503	NOP *	MIGHT TRAP FROM THIS LOC
01504	0020	00	0	01510	TRA *+4	OK - SHOULD NOT TRAP
01505	0074	00	4	02057	TSX SPLAT,4	
01506	0	00000	0	03335	PZE SB CD8,0,0	TRAPPED IN ERROR WHILE INHIBITED
01507	0020	00	0	01521	TRA *+10	
01510	0600	00	0	02337	STZ TPCK	TRAP EXPECTED
01511	0074	00	2	01512	TSX *+1,2	SET XRB FOR RETURN
01512	0564	00	0	02341	ENB ALL	ENABLE ALL CHANNELS
01513	0761	00	0	01514	NOP *+1	TRAP FROM NEXT LOCATION
01514	0020	00	0	01516	TRA *+2	ERROR - FAILED TO TRAP
01515	0020	00	0	01521	TRA *+4	OK - SHOULD TRAP
01516	0074	00	2	01650	TSX SPRT,2	
01517	0074	00	4	02057	TSX SPLAT,4	
01520	0	00000	0	03360	PZE BCD49,0,0	FAILED TO TRAP FROM ENABLE WITH AN INHIBITED TRAP CONDITIONED
01521	0074	00	4	06511	TSX OK,4	
01522	0020	00	0	01457	TRA TRP4A	

* ENABLE FOR A DIFFERENT CHANNEL AND CHECL THAT NO TRAP OCCURS

01523	635121476060				BCD 1TRAP	TEST CONDITION
01524	0074	00	4	01775	TRP5 TSX CLEAR,4	MONITOR
01525	0074	00	4	00122	TSX SETR,4	GO TO RESET TRIGGERS
01526	0074	00	4	01641	TSX RSTRP,4	
01527	0766	00	0	02240	WDDB	RESET TRAP TRIGGERS OFF
01530	-0540	00	0	02334	RCHB ZERO	DISCONNECT
01531	0061	00	0	01531	TCOB *	SHOULD BE OUT OF OPN
01532	0500	00	0	02425	CLA CHANA+7	L SELECT
01533	0771	00	0	00011	ARS 9	MOVE CHANNEL TO LOW ORDER
01534	-0320	00	0	02303	ANA SEVEN	
01535	0734	00	1	00000	PAX 0,1	L CHN COUNT IN XRA
01536	0621	00	0	01556	STA *+16	SET CHANNEL COUNT
01537	0564	00	1	02322	ENB ENBC,1	ENABLE CURRENT CHANNEL

01540	0600	00	0	02337	STZ TPCK	TRAP EXPECTED
01541	0074	00	2	01542	TSX *+1,2	SET XRB FOR RETURN
01542	-0664	00	0	02354	PSLB NTRPT	INTERRUPT
01543	0761	00	0	01543	NOP *	TRAP FROM THIS LOCATION
01544	0020	00	0	01546	TRA *+2	ERROR-FAILED TO TRAP
01545	0020	00	0	01552	TRA *+5	OK - SHOULD TRAP
01546	0074	00	2	01650	TSX SPRT,2	
01547	0074	00	4	02057	TSX SPLAT,4	
01550	0	00000	0	03374	PZE BCD50,0,0	FAILED TO TRAP WITH SINGLE CHANNEL ENABLED
01551	0020	00	0	01566	TRA *+13	
01552	0074	00	4	01641	TSX RSTRP,4	
01553	0766	00	0	02240	WDDB	RESET TRAP TRIGGERS OFF
01554	-0540	00	0	02334	RCHB ZERO	DISCONNECT
01555	0061	00	0	01555	TCOB *	SHOULD BE OUT OF OPN
01556	0774	00	1	00000	AXT **,1	L CHN COUNT IN XRA
01557	0564	00	2	02323	ENB ENBC+1,2	ENABLE OTHER CHANNELS
01560	0074	00	2	01561	TSX *+1,2	SET XRB FOR RETURN
01561	-0664	00	0	02354	PSLB NTRPT	INTERRUPT
01562	0761	00	0	01562	NOP *	TRAP FROM THIS LOCATION
01563	0020	00	0	01566	TRA *+3	OK - SHOULD NOT TRAP
01564	0074	00	4	02057	TSX SPLAT,4	
01565	0	00000	0	03404	PZE BCD51,0,0	TRAPPED IN ERROR WHEN ENABLED FOR A DIFFERENT CHN
01566	0766	00	0	02240	WDDB	
01567	-0540	00	0	02334	RCHB ZERO	
01570	0074	00	4	06511	TSX OK,4	
01571	0020	00	0	01524	TRA TRP5	
01572	0761	00	0	00000	NOP	
01573	0500	00	0	02310	CLA CTR	
01574	0400	00	0	02414	ADD ONE	
01575	0601	00	0	02310	STO CTR	
01576	0402	00	0	02311	SUB CTRCK	
01577	-0120	00	0	00147	TMI TROT	
01600	-0500	00	0	02312	CAL MSK1	CLEAR
01601	0320	00	0	01624	ANS SWT5+8	PRINT
01602	0320	00	0	01625	ANS SWT5+9	IMAGE
01603	-0500	00	0	02415	CAL CHANA-1	L CHANNEL A SELECT
01604	-0320	00	0	02313	ANA MSK3	RETAIN CHANNEL
01605	-0765	00	0	00003	LGR 3	INSERT CURRENT
01606	-0602	00	0	01624	ORS SWT5+8	CHANNEL IN IMAGE
01607	-0500	00	0	01527	CAL TRP5+3	L CHN B SELECT
01610	-0320	00	0	02313	ANA MSK3	RETAIN CHANNEL
01611	-0765	00	0	00003	LGR 3	INSERT CURRENT
01612	-0602	00	0	01625	ORS SWT5+9	CHANNEL IN IMAGE
01613	0020	00	0	00073	TRA INTL1-5	

01614 0074 00 4 02056 SWT5 TSX SPLAT-1,4
01615 -0 00006 0 00010 MZE 8,0,6
01616 112424016040 BCD 69DD1 -- 200 PASSES COMPLETE ON CHANN
01617 406002000060
01620 472162622562
01621 602346444743
01622 256325604645
01623 602330214545
01624 254362602160 BCD 2ELS A AND B
01625 214524602260

01626 0760 00 0 00165 SWT 5 CHECK SENSE SWITCH 5
01627 0020 00 0 01631 TRA *+2 UP-TEST SWITCH 6
01630 0020 00 0 00072 TRA RUC DOWN - REPEAT WITHOUT
9IOM HALT
01631 0760 00 0 00166 SWT 6
01632 0020 00 0 01634 TRA *+2 UP-CALL NEXT PROGRAM
01633 0020 00 0 00047 TRA CBEGN REPEAT AFTER HALT TO
ENTER KEYS

* IF CHANNELS ARE CHANGED HERE THE DIRECT DATA TEST EQUIPMENT
* BOX AND CABLES MUST BE SHIFTED TO SUIT BEFORE PRESSING
* START WITH THE NEW KEY ENTRY

01634 0 00000 0 00000 FINL1 PZE ** READ SELECT NEXT PROGRAM
01635 0540 00 0 01640 RCHA *+3
01636 0544 00 0 00000 LCHA 0
01637 0020 00 0 00001 TRA 1
01640 -1 00003 0 00000 IOCT 0,0,3

* * * * *

* ERROR CHECK AND PRINT SUBROUTINE

01641 0774 00 1 00031 RSTRP AXT 25,1 L +25 IN XRA
01642 0600 00 1 00032 STZ 26,1 CLEAR
01643 2 00001 1 01642 TIX *-1,1,1 TRAP AREAS
01644 0500 00 0 02314 CLA STR1 L TRA STPRT - SET
01645 0601 00 0 00004 STO 4 RETURN FROM TRAP
01646 0601 00 0 02337 STO TPCK SET NO TRAP INDICATION
01647 0020 00 4 00001 TRA 1,4 RETURN TO PROGRAM
01650 -0500 00 2 77775 SPRT CAL -3,2 L TRAP LOCATION
01651 -0320 00 0 02336 ANA ADRS CLEAR TO ADDRESS
01652 0602 00 0 02335 SLW MSK2 SAVE CORRECT TRAP WORD
01653 0500 00 0 01415 CLA TRP4+3 L SELECT
01654 0771 00 0 00011 ARS 9 MOVE CHANNEL TO LOW ORDER
01655 -0320 00 0 02303 ANA SEVEN CLEAR TO CHANNEL COUNT
01656 0734 00 1 00000 PAX 0,1 L CHANNEL COUNT IN XRA
01657 0500 00 1 02352 CLA TPDC+8,1 L CORRECT DECREMENT
01660 -0602 00 0 02335 ORS MSK2 PLACE INTO CORRECT WORD
01661 0074 00 4 01723 TSX LOC3,4 GO TO INSERT PRINT IMAGES

01662	0074	00	4	02057		TSX SPLAT,4	GO TO PRINT
01663	-0	00000	0	03242		MZE SB CD1	
01664	0760	00	0	00141		SLN 1	TURN ON SENSE LIGHT 1
01665	0020	00	0	01714		TRA SPRT1	
01666	-0500	00	2	00002	STPRT	CAL 2,2	L TRAP LOCATION
01667	-0320	00	0	02336		ANA ADRS	CLEAR TO ADDRESS
01670	0602	00	0	02335		SLW MSK2	SAVE CORRECT TRAP WORD
01671	0500	00	0	01415		CLA TRP4+3	L SELECT
01672	0771	00	0	00011		ARS 9	MOVE CHANNEL TO LOW ORDER
01673	-0320	00	0	02303		ANA SEVEN	CLEAR TO CHANNEL COUNT
01674	0734	00	1	00000		PAX 0,1	L CHANNEL COUNT IN XRA
01675	0500	00	1	02352		CLA TPDC+8,1	L CORRECT DECREMENT
01676	-0602	00	0	02335		ORS MSK2	PLACE INTO CORRECT WORD
01677	-0520	00	0	02337		NZT TPCK	CHK IF SHOULD TRAP
01700	0020	00	0	01705		TRA *+5	ZERO - SHOULD TRAP
01701	0074	00	4	01723		TSX LOC3,4	GO TO INSERT PRINT IMAGES
01702	0074	00	4	02057		TSX SPLAT,4	GO TO PRINT
01703	-0	00000	0	03230		MZE SB CD	
01704	0020	00	0	01714		TRA SPRT1	
01705	0500	00	0	02335		CLA MSK2	L CORRECT TRAP WORD
01706	0340	00	0	00003		CAS 3	COMPARE TRAP LOCATION
01707	0020	00	0	01711		TRA *+2	ERROR
01710	0020	00	0	01720		TRA RET1-2	OK
01711	0074	00	4	01723		TSX LOC3,4	GO TO INSERT PRINT IMAGES
01712	0074	00	4	02057		TSX SPLAT,4	GO TO PRINT
01713	-0	00000	0	03254		MZE SB CD2	
01714	0074	00	4	02057	SPRT1	TSX SPLAT,4	
01715	0	00000	0	03266		PZE SB CD3	
01716	0074	00	4	02057		TSX SPLAT,4	GO TO PRINT
01717	0	00000	0	03275		PZE SB CD4	
01720	-0760	00	0	00141		SLT 1	CHECK SENSE LIGHT 1
01721	0020	00	2	00004		TRA 4,2	OFF - RETURN TO PROGRAM
01722	0020	00	2	00001	RET1	TRA 1,2	ON - RETURN TO PROGRAM
01723	0774	00	1	00044	LOC3	AXT 36,1	L +44 IN XRA
01724	0560	00	0	00003		LDQ 3	L TRAP LOC CONTENTS IN MQ
01725	0754	00	0	00000		PXA 0,0	CLEAR ACC
01726	0767	00	0	00003		ALS 3	SPACE TRAP
01727	-0763	00	0	00003		LGL 3	INFORMATION
01730	2	00006	1	01726		TIX *-2,1,6	FOR PRINT IMAGES
01731	0602	00	0	03302		SLW SB CD4+5	STORE IN BCD IMAGE
01732	0767	00	0	00003		ALS 3	SPACE TRAP
01733	-0763	00	0	00003		LGL 3	INFORMATION
01734	2	00001	1	01732		TIX *-2,1,1	FOR PRINT IMAGES
01735	0602	00	0	03303		SLW SB CD4+6	STORE IN BCD IMAGE
01736	-0501	00	0	02340		ORA MTW	L +6 IN PREFIX
01737	0602	00	0	03241		SLW SB CD+9	STORE IN BCD IMAGE
01740	0602	00	0	03265		SLW SB CD2+9	STORE IN BCD IMAGE
01741	0774	00	1	00044		AXT 36,1	L +44 IN XRA
01742	0560	00	0	02335		LDQ MSK2	L CORRECT WORD IN MQ
01743	0754	00	0	00000		PXA 0,0	CLEAR ACC
01744	0767	00	0	00003		ALS 3	SPACE TRAP
01745	-0763	00	0	00003		LGL 3	INFORMATION
01746	2	00006	1	01744		TIX *-2,1,6	FOR PRINT IMAGES
01747	0602	00	0	03273		SLW SB CD3+5	STORE IN BCD IMAGE

01750	0767	00	0	00003	ALS	3	SPACE TRAP
01751	-0763	00	0	00003	LGL	3	INFORMATION
01752	2	00001	1	01750	TIX	*-2,1,1	FOR PRINT IMAGES
01753	0602	00	0	03274	SLW	SBCD3+6	STORE IN BCD IMAGE
01754	-0501	00	0	02340	ORA	MTW	L +6 IN PREFIX
01755	0602	00	0	03253	SLW	SBCD1+9	STORE IN BCD IMAGE
01756	0020	00	4	00001	TRA	1,4	RETURN

* * * * *

* MONITOR SUBROUTINE
 * PROGRAM PROGRESSION CONTROL

01757	624721232560				BCD	1SPACE	
01760	-0634	00	4	02051	SPACE	SXD BIN,4	SPACE ADDRESS
01761	-0535	00	4	02051		LDC BIN,4	XRC TRUE TO DECREMENT
01762	-0634	00	4	02051		SXD BIN,4	OF BIN
01763	-0535	00	4	02052		LDC MONIT,4	ADDRESS OF TEST
01764	0634	00	4	02051		SXA BIN,4	THAT LOST CONTROL TO ADDRESS
01765	0441	00	0	02051		LDI BIN	ADDRESS PROGRAM SKIPPED TO IN DECREMENT OF INDICATORS. ADDRESS OF TEST BEING PERFORMED IN ADDRESS OF INDICATORS
01766	0074	00	4	06503		TSX ERROR-1,4	
01767	0761	00	0	01760		NOP SPACE	
01770	-0534	00	4	02052		LXD MONIT,4	
01771	0500	00	4	77776		CLA -2,4	RESET MONIT
01772	0737	00	2	00000		PAC 0,2	AND RETURN
01773	-0634	00	2	02052		SXD MONIT,2	TO PROPER
01774	0020	00	0	02000		TRA *+4	SEQUENCE
01775	0760	00	0	00140	CLEAR	SLF	
01776	0760	00	0	00161		SWT 1	
01777	0020	00	0	02001		TRA *+2	
02000	0020	00	0	02003		TRA *+3	
02001	0760	00	0	00164		SWT 4	
02002	0020	00	0	02006		TRA *+4	NOT REPEATED
02003	-0754	00	4	00000		PXD 0,4	TEST REPEATED
02004	0402	00	0	02052		SUB MONIT	OR WILL BE
02005	0100	00	0	02033		TZE RESET+1	REPEATED-IF ZERO PROGRAM SEQUENCE OK.
02006	0600	00	0	02054		STZ FREE	
02007	-0634	00	4	02054		SXD FREE,4	SAVE TEST ADDRESS
02010	0500	00	4	77776		CLA -2,4	PRECEEDING TEST ADDRESS
02011	0737	00	4	00000		PAC 0,4	COMPLEMENT
02012	-0754	00	4	00000		PXD 0,4	

02013	0402	00	0	02052	SUB	MONIT	SHOULD BE ZERO
02014	-0534	00	4	02054	LXD	FREE,4	RESTORE XRC
02015	0100	00	0	02033	TZE	RESET+1	IF ZERO, PROGRAM SEQUENCE OK.
02016	0760	00	0	00004	ENK		CHECK FOR MANUAL TRANSFER
02017	0131	00	0	00000	XCA		
02020	0737	00	4	00000	PAC	0,4	COMPLEMENT KEYS ADDRESS
02021	0765	00	0	00025	LRS	21	CHECK TRA ONLY
02022	0402	00	0	02053	SUB	K41	-0200
02023	-0100	00	0	02030	TNZ	*+5	SEQUENCE N.G. IF NOT 0
02024	-0754	00	4	00000	PXD	0,4	OK, CHECK ADDRESS
02025	0402	00	0	02054	SUB	FREE	
02026	-0534	00	4	02054	LXD	FREE,4	RESTORE
02027	0100	00	0	02033	TZE	RESET+1	OK IF ZERO
02030	-0534	00	4	02054	LXD	FREE,4	PROGRAM OUT OF
02031	0021	00	0	01760	TTR	SPACE	SEQUENCE
02032	0760	00	0	00140	RESET	SLF	
02033	-0634	00	4	02052	SXD	MONIT,4	MONITOR
02034	-0535	00	4	02052	LDC	MONIT,4	
02035	1	00001	4	02036	TXI	*+1,4,1	FOR RETURN
02036	0634	00	4	02050	SXA	EXIT,4	
02037	-0754	00	0	00000	PXD	0,0	CLEAR ACC
02040	0761	00	0	00000	NOP		REPLACE WITH STZ 0 FOR FLPT
02041	0560	00	0	00000	LDQ		CLEAR MQ
02042	0140	00	0	02043	TOV	*+1	TURN OFF
02043	0761	00	0	00000	NOP		
02044	0760	00	0	00012	DCT		
02045	0761	00	0	00000	NOP		
02046	0044	00	0	00000	PAI		RESET
02047	-0534	00	7	00000	LXD	0,7	CLEAR ALL XRS
02050	0020	00	0	00000	EXIT	TRA	RETURN TO PROGRAM
02051	+0000000000000				BIN	OCT 0	
02052	+0000000000000				MONIT	OCT 0	
02053	+0000000000200				K41	OCT 200	
	02054				FREE	BSS 2	

INDEXABLE BCD PRINT SUBROUTINE.

02056	0020	00	0	02251	TRA	SPLT1+3	
02057	0020	00	0	02246	SPLAT	TRA SPLT1	CHECK FOR SENSE PRINTER
02060	0634	00	1	02154	SXA	SPLAT+61,1	
02061	0634	00	2	02155	SXA	SPLAT+62,2	
02062	0634	00	4	02245	SXA	SUBET,4	SAVE ORIGINAL XRC.
02063	-0520	00	4	00001	NZT	1,4	IF CONTROL WORD ZERO.
*5							
02064	0020	00	4	00002	TRA	2,4	RETURN
02065	-0500	00	4	00001	CAL	1,4	GET NON-ZERO WORD

02066	0602	00	0	02204	SLW	SPLAT+85	SAVE CONTROL WORD
02067	-0734	00	1	00000	PDX	0,1	TYPE WHEEL NO.
02070	-3	00000	1	02160	TXL	SPLAT+65,1,0	IF DECR. ZERO, GET NEW CONTROL WORD
*10							
02071	-0634	00	4	02073	SXD	*+2,4	GET EXIT ADDRESS
02072	0737	00	2	00000	PAC	0,2	BY ADDING TWOS COMP.
02073	1	00000	2	02074	TXI	*+1,2,0	OF N TO XRC.
02074	0634	00	2	02156	SXA	SPLAT+63,2	EXIT VALUE. SET BIT INDEX TO STARTING WHEEL
02075	0634	00	1	02100	SXA	*+3,1	FOR SHIFTING
*15							
02076	0774	00	3	00001	AXT	1,3	1 TO XRA AND XRB
02077	-0500	00	0	02201	CAL	SPLAT+82	BIT INDEX TO P
02100	-0765	00	1	00000	LGR	0,1	SHIFT TO STARTING POINT
02101	-0100	00	0	02104	TNZ	*+3	IF ACC IS ZERO, SET FOR
02102	-0600	00	0	02202	STQ	SPLAT+83	RIGHT ROW, AND MAKE
*20							
02103	1	00001	2	02105	TXI	*+2,2,1	XRB A DUECE
02104	0602	00	0	02202	SLW	SPLAT+83	OTHERWISE, LEFT ROW.
02105	0774	00	1	00032	AXT	26,1	
02106	0600	00	1	02245	STZ	CI+26,1	CLEAR CARD IMAGE
02107	2	00001	1	02106	TIX	*-1,1,1	
FORM CARD IMAGE.							
*25							
02110	2	00001	4	02111	TIX	*+1,4,1	ADDRESS OF FIRST WORD.
02111	0774	00	1	00006	AXT	6,1	CHARACTER COUNT.
02112	0560	00	4	00001	LDQ	1,4	GET THE WORD. SOME PEOPLE NEVER DO, YOU KNOW
02113	0634	00	1	02145	SXA	SPLAT+54,1	SAVE CHARACTER COUNT.
02114	-0754	00	0	00000	PXD		CLEAR ACC
*30							
02115	-0763	00	0	00002	LGL	2	ZONE
02116	0767	00	0	00001	ALS	1	TIMES 2
02117	0734	00	1	00000	PAX	0,1	
02120	0634	00	1	02134	SXA	SPLAT+45,1	FOR FUTURE REFERENCE.
02121	0760	00	0	00000	CLM		
*35							
02122	-0763	00	0	00004	LGL	4	DIGIT
02123	0767	00	0	00001	ALS	1	TIMES 2
02124	0602	00	0	02213	SLW	CI	TEMPO
02125	-0500	00	0	02202	CAL	SPLAT+83	BIT INDEX
02126	-0520	00	0	02213	NZT	CI	IS DIGIT ZERO.
*40							
02127	3	00000	1	02177	TXH	SPLAT+80,1,0	IS ZERO ZONE TOO.
02130	0534	00	1	02213	LXA	CI,1	OK, PROCEED
02131	3	00030	1	02137	TXH	SPLAT+48,1,24	CHECK FOR ILLEGAL

02132 3 00024 1 02175 TXH SPLAT+78,1,20 SPECIAL CHARACTER.
02133 -0602 60 2 02213 ORS* SPLAT+92,2 XRB PICKS LEFT OR RIGHT.

*45

02134 0774 00 1 00000 AXT 0,1 ZONE AGAIN.
02135 -3 00000 1 02137 TXL *+2,1,0 NOTHING FOR ZERO ZONE
02136 -0602 60 2 02211 ORS* SPLAT+90,2 PLACE ZONE BIT.

COLUMN SET.

02137 0771 00 0 00001 ARS 1 SET BIT INDEX TO
02140 -0100 00 0 02144 TNZ *+4 NEXT COLUMN, IF ANY.

*50

02141 3 00001 2 02153 TXH SPLAT+60,2,1 IF BX ZERO,+XRB 1, STOP

02142 -0500 00 0 02201 CAL SPLAT+82 IF NOT, SET TO RIGHT
02143 1 00001 2 02144 TXI *+1,2,1 ROW AND PROCEED.
02144 0602 00 0 02202 SLW SPLAT+83 BX READY FOR NEXT COLUMN.
02145 0774 00 1 00000 AXT 0,1 MORE CHARACTERS.

*55

02146 2 00001 1 02113 TIX SPLAT+28,1,1 NEXT COLUMN
02147 0534 00 1 02204 LXA SPLAT+85,1 MORE WORDS MAYBE.
02150 -2 00001 1 02153 TNX *+3,1,1 IF NOT, STOP.
02151 0634 00 1 02204 SXA SPLAT+85,1 YUMMY, GO GET EM.
02152 1 00000 0 02110 TXI SPLAT+25

FIFTEEN MEN ON A DEAD MANS CHEST.

*60

02153 0540 00 0 02203 RCHA SPLAT+84 LET HER RIP
02154 0774 00 1 00000 AXT 0,1
02155 0774 00 2 00000 AXT 0,2
02156 0774 00 4 00000 AXT 0,4
02157 0020 00 4 00002 TRA 2,4 EXIT

GET NEW CONTROL WORD FROM SOMPLACE

*65

02160 0634 00 4 02156 SXA SPLAT+63,4 FOR EXIT
02161 0534 00 1 02154 LXA SPLAT+61,1 RESTORE XRA
02162 -0520 60 0 02204 NZT* SPLAT+85 IF CONTROL WORD ZERO
02163 0020 00 0 02154 TRA SPLAT+61 RETURN.
02164 -0500 00 0 02204 CAL SPLAT+85 OLD CONTROL WORD

*70

02165 0625 00 0 02166 STT *+1 BRING OUT INDEX
02166 -0634 00 0 02170 SXD *+2,0 REGISTER, IF ONE IS TAGED.
02167 0737 00 4 00000 PAC 0,4
02170 1 00000 4 02171 TXI *+1,4,0 GET EFFECTIVE ADDRESS.
02171 -0500 00 4 00000 CAL 0,4 NEW CONTROL WORD.

*75

02172	-0734	00	1	00000	PDX 0,1	TYPE WHEEL ID.
02173	0602	00	0	02204	SLW SPLAT+85	
02174	1	00001	4	02075	TXI SPLAT+14,4,1	PROCEED
YOUR AN OLD SMOOTHY.						
02175	-0602	60	2	02207	ORS* SPLAT+88,2	PUT EIGHTH IN, TAKE
02176	2	00020	1	02133	TIX SPLAT+44,1,16	16 OUTM, - GOOD BUSINESS
*80						
02177	-3	00004	1	02136	TXL SPLAT+47,1,4	IF NOT BLANK, SET ZONE.
02200	0020	00	0	02137	TRA SPLAT+48	BLANK.
02201	-0	00000	0	00000	MZE	FOR BIT INDEX.
02202	0000	00	0	00000	HTR	DYNAMIC BIT INDEX.
02203	0000	30	0	02215	IOCD CI+2,,24	BUFFER COMMAND
*85						
02204	0000	00	0	00000	HTR	SPECIAL SALON FOR THE CONTROL WORD
02205	0000	00	0	02220	HTR CI+5	
02206	0000	00	0	02217	HTR CI+4	BROW ADDRESSES
02207	0000	00	1	02246	HTR CI+27,1	
02210	0000	00	1	02245	HTR CI+26,1	ZONE ROW ADDRESSES
*90						
02211	0000	00	1	02240	HTR CI+21,1	
02212	0000	00	1	02237	HTR CI+20,1	DIGIG ROW ADDRESSES
				02213	CI	BSS 26
				02245	SUBET	BSS 1
02246	0760	00	0	00162	SPLT1	SWT 2 AND SWITCHES
02247	0020	00	0	02251	TRA *+2	CHECK SWITCH 3
02250	0020	00	0	02262	TRA SPLIT	IGNORE ERROR
02251	0760	00	0	00163	SWT 3	TEST THREE
02252	0020	00	0	02254	TRA *+2	UP-PRINT
02253	0020	00	0	02262	TRA SPLIT	DOWN-RETURN
02254	0500	00	4	00001	CLA 1,4	
02255	0766	00	0	01361	WPRA	
02256	-0120	00	0	02260	TMI *+2	SENSE PRINTER
02257	0020	00	0	02060	TRA SPLAT+1	
02260	0760	00	0	01363	SPRA 3	
02261	0020	00	0	02060	TRA SPLAT+1	
02262	0500	00	4	00001	SPLIT	CLA 1,4 SPLAT PROGRAM CONTROL WORD
02263	0621	00	0	02270	STA *+5	
02264	0771	00	0	00022	ARS 18	MOVE DECREMENT TO ADDRESS
02265	-0100	00	0	02267	TNZ *+2	ZERO IF REMOTE
02266	0621	00	0	02270	STA *+2	SET RETURN ADDRESS
02267	2	00002	4	02270	TIX *+1,4,2	
02270	0020	00	4	00000	TRA **,4	RETURN TO PROGRAM

02271	0774 00 1 70115	START	AXT 32767-PR,1	
02272	0500 00 0 02302		CLA *+8	L TSX SPACE,4
02273	0601 00 1 00000		STO 0,1	
02274	2 00001 1 02273		TIX *-1,1,1	
02275	0774 00 1 02060		AXT 2868-BCD51,1	
02276	0500 00 0 02302		CLA *+4	L TSX SPACE,4
02277	0601 00 1 05500		STO 2880,1	
02300	2 00001 1 02277		TIX *-1,1,1	
02301	0020 00 0 00030		TRA 24	
02302	0074 00 4 01760		TSX SPACE,4	CONSTANT

* CONSTANTS

02303	+0000000000007	SEVEN	OCT 7	
02304	+0000000000000	ORIG	OCT **	ORIGINAL CTRL1
02305	+0000000000000		OCT **	ORIGINAL CTRL2
02306	+0000000000000		OCT **	ORIGINAL CTRL3
02307	+0000000000310	K	OCT +310	200 PAUSES
02310	+0000000000000	CTR	OCT **	
02311	+0000000000000	CTRCK	OCT **	
02312	-377777776077	MSK1	OCT 77777776077	
02313	+000000017000	MSK3	OCT 000000017000	
02314	0020 00 0 01666	STR1	TRA STPRT	
02315	+000000040000		OCT 040000	ENABLE CHN F
02316	+000000012000		OCT 012000	ALL CHNS BUT F
02317	+000000010000		OCT 010000	ENABLE CHN D
02320	+000000042000		OCT 042000	ALL CHNS BUT D
02321	+000000002000		OCT 002000	ENABLE CHN B
02322	+000000050000	ENBC	OCT 050000	ALL CHNS BUT B
02323	0762 00 0 01221	SK1	RTBA 1	READ TAPE UNIT 1 - CHN A
02324	0762 00 0 01321		RCDA	READ CARDS - CHN A
02325	+0000000000007		OCT +0000000000007	MASK FOR CARD MACHINES
02326	-0000000000430	SYNCW	OCT -0000000000430	EXCLU UNIT 1 - CHN A
02327	+000000043000		OCT +000000043000	EXCLU UNIT 1 - CHN B
02330	+0000000000430		OCT +0000000000430	EXCLU UNIT 1 - CHN C
02331	+000000043000		OCT +000000043000	EXCLU UNIT 1 - CHN D
02332	+0000000000430		OCT +0000000000430	EXCLU UNIT 1 - CHN E
02333	+000000043000		OCT +000000043000	EXCLU UNIT 1 - CHN F
02334	+0000000000000	ZERO	OCT 0	
02335	+0000000000000	MSK2	OCT **	CORRECT CONTENTS OF LOC 3
02336	+000000077777	ADRS	OCT 000000077777	
02337	+0000000000000	TPCK	OCT **	ZERO IF SHOULD TRAP
02340	-2 00000 0 00000	MTW	MTW 0	6 IN PREFIX

02341	+000000052000	ALL	OCT	000000052000		
02342	0 00200 0 00000	TPDC	PZE	0,0,128	CHANNEL H	
02343	0 00100 0 00000		PZE	0,0,64	CHANNEL G	
02344	0 00040 0 00000		PZE	0,0,32	CHANNEL F	
02345	0 00020 0 00000		PZE	0,0,16	CHANNEL E	
02346	0 00010 0 00000		PZE	0,0,8	CHANNEL D	
02347	0 00004 0 00000		PZE	0,0,4	CHANNEL C	
02350	0 00002 0 00000		PZE	0,0,2	CHANNEL B	
02351	0 00001 0 00000		PZE	0,0,1	CHANNEL A	
02352	0 00001 0 00000	PSL	PZE	0,0,1	PULSE DEMAND-CHAN B	
02353	0 00002 0 00000		PZE	0,0,2	PULSE END OF FILE-CHAN A	
02354	0 00004 0 00000		PZE	0,0,4	PULSE DD INTERRUPT	
02355	0 00010 0 00000		PZE	0,0,8	PULSE EOR - CHAN B	
02356	0 00020 0 00000		PZE	0,0,16	PULSE EOR - CHAN A	
02357	0 00040 0 00000		PZE	0,0,32	PULSE 1ST WD TEST - CHAN A	
02360	0 00100 0 00000		PZE	0,0,64	PULSE TCU SELECTED - CHAN A	
02361	0 00200 0 00000		PZE	0,0,128	PULSE RDNCY CHECK - CHAN A	
02362	0 00400 0 00000		PZE	0,0,256	PULSE DEMAND - CHAN A	
02363	0 01000 0 00000		PZE	0,0,512	PULSE LD PT IND - CHAN A	
02364	0 01202 0 00000		PZE	0,0,642	PULSE RDNCK, EOF, BOT	
02365	0 00401 0 00000		PZE	0,0,257	PULSE DEMAND A AND B	
02366	0 00044 0 00000	PSL2	PZE	0,0,36		
02367	0 00104 0 00000		PZE	0,0,68		
02370	0 00204 0 00000		PZE	0,0,132		
02371	0 00404 0 00000		PZE	0,0,260		
02372	0 01004 0 00000		PZE	0,0,516		
02373	0 00024 0 00000	SSL	PZE	0,0,20		
02374	0 00014 0 00000		PZE	0,0,12		
02375	+000000000100	SALON	OCT	100		
02376	464560010260	SAL	BCD	10N 12		
02377	+000000010000	ADD	OCT	10000		
02400	-377777700077	MASK	OCT	777777700077		
02401	+000000001100	NINE	OCT	1100		
02402	626260053360	SALO	BCD	1SS 5.		
02403	3 00012 0 02442	NOD	IORT	WRFLD,0,10		
02404	0020 00 0 00147	POST	TRA	TROT		
02405	+000000000000	TEST	OCT	0		
02406	0000 00 0 02361	FIX	HTR	PSL+7		
02407	0000 00 0 02361		HTR	PSL+7		
02410	+000000000000	WAIT	OCT	0		
02411	0000 00 0 02410		HTR	WAIT		
02412	+000000000030	TALLO	OCT	30		
02413	-377777777776	AALLO	OCT	777777777776	ALMOST ALL ONES	
02414	+000000000001	ONE	OCT	1		
02415	0766 00 0 01221		WTBA	1	DUMMY SELECT FROM 9IOM	
02416	0760 00 0 01000	CHANA	BTTA		TEST FOR POSITION 12	
02417	0022 00 0 00247		TRCA	BOOZE	TEST FOR POSITION 10	
02420	0030 00 0 00254		TEFA	HIC	TEST FOR POSITION 9	
02421	0760 00 0 01000		BTTA		TURN OFF BOT IND	

02422	0022 00 0 00232	TRCA	OUT+5	
02423	0030 00 0 00233	TEFA	OUT+6	
02424	-0760 00 0 01000	ETTA		TEST FOR SENSE OUTPUT RESET
02425	0766 00 0 01221	WTBA	1	TEST FOR SENSE INPUTS 8-12
02426	0762 00 0 01221	RTBA	1	
02427	0540 00 0 02566	RCHA	ALTAR	IOCD-WC 36
02430	0540 00 0 02565	RCHA	THE	IOCD-WC 1
02431	0540 00 0 02552	RCHA	OPER2	IOCD WC 1
02432	0540 00 0 02573	RCHA	MED	IORP-WC 36
02433	0022 00 0 00214	TRCA	TRUMP	TEST POSITION 10
02434	0030 00 0 00217	TEFA	TRUMP+3	TEST POSITION 16
02435	0022 00 0 00617	TRCA	SPOT+9	
02436	0022 00 0 00632	TRCA	CHECK+8	
02437	0022 00 0 00646	TRCA	ROL+9	
02440	0022 00 0 00132	TRCA	SETR+8	
02441	0022 00 0 00133	TRCA	SETR+9	
	02442	WRFLD	BSS 36	BLOCK FOR 36 POSITION RIPPLE
	02506	RDFLD	BSS 36	BLOCK FOR READ AREA
02552	0000 01 0 02553	OPER2	IOCD ONES,0,1	
02553	-3777777777777	ONES	OCT 7777777777777	
02554	2 00000 0 00000	OPER1	IORP 0	
02555	0000 00 0 00000		IOCD 0	
02556	+0000000000000	TEMP	OCT 0	
02557	0000 01 0 02556	OPER	IOCD TEMP,0,1	
02560	0 00026 0 00000	COMP	PZE 0,0,22	
02561	0 00015 0 00000		PZE 0,0,13	
02562	+0000000000000	LEAD	OCT 0	TEMP STORAGE
02563	0 00004 0 00000	ME	PZE 0,0,4	BIT TO CHECK FOR SSL.
02564	+0000000000000	TO	OCT 0	TEMP STORAGE
02565	0000 01 0 02575	THE	IOCD RINK,0,1	
02566	0000 44 0 02506	ALTAR	IOCD RDFLD,0,36	
02567	0000 44 0 02442	BUT	IOCD WRFLD,0,36	
02570	0 00030 0 00000	DONT	PZE 0,0,24	EOR A AND B
02571	2 00044 0 02442	MAKE	IORP WRFLD,0,36	
02572	0000 00 0 00000		IOCD 0	
02573	2 00044 0 02506	MED	IORP RDFLD,0,36	
02574	0000 00 0 00000		IOCD 0	
02575	+0000000000000	RINK	OCT 0	
02576	0 00001 0 00012	PASS	PZE 10,0,1	
02577	626346512560		BCD 6STORE SENSE LINES ACTED AS STORE CH	
02600	622545622560			
02601	433145256260			
02602	212363252460			
02603	216260626346			
02604	512560233060			
02605	454525433360		BCD 4NNEL. PAGE 60.04.41	
02606	472127256006			
02607	003300043304			
02610	016060606060			
02611	0 00001 0 00012	HIM	PZE 10,0,1	
02612	474662316331		BCD 6POSITION 12 FAILED DURING PRESENT SE	

02613 464560010260
02614 262131432524
02615 602464513145
02616 276047512562
02617 254563606225
02620 456225604331
02621 452562336047
02622 212725600600
02623 330004330402

BCD 4NSE LINES. PAGE 60.04.42

02624 0 00001 0 00012 HIS
02625 474662316331
02626 464560010060
02627 262131432524
02630 602464513145
02631 276047512562
02632 254563606225
02633 456225604331
02634 452562336047
02635 212725600600
02636 330004330402

PZE 10,0,1
BCD 6POSITION 10 FAILED DURING PRESENT SE

BCD 4NSE LINES. PAGE 60.04.42

02637 0 00001 0 00012 HAT
02640 474662316331
02641 464560010660
02642 262131432524
02643 602464513145
02644 276047512562
02645 254563606225
02646 456225604331
02647 452562336047
02650 212725600600
02651 330004330402

PZE 10,0,1
BCD 6POSITION 16 FAILED DURING PRESENT SE

BCD 4NSE LINES. PAGE 60.04.42

02652 0 00001 0 00013 HES
02653 622545622560
02654 466463476463
02655 605125622563
02656 602431246045
02657 466360234644
02660 256064476022
02661 252646512560
02662 476243223360
02663 472127256006
02664 003300043304
02665 016060606060

PZE 11,0,1
BCD 6SENSE OUTPUT RESET DID NOT COME UP B

BCD 5EFORE PSLB. PAGE 60.04.41

02666 0 00001 0 00013 LEAV
02667 622545622560
02670 314547646360
02671 474662316331
02672 464560010560
02673 262131432524
02674 602421632160
02675 512527336045
02676 466360432424
02677 336047212725

PZE 11,0,1
BCD 6SENSE INPUT POSITION 15 FAILED DATA

BCD 5REG. NOT LDD. PAGE 60.06.01

02700 600600330006
02701 330001606060

02702 0 00001 0 00013 ING PZE 11,0,1
02703 622545622560 BCD 6SENSE INPUT POSITION 13 FAILED. WRIT
02704 314547646360
02705 474662316331
02706 464560010360
02707 262131432524
02710 336066513163
02711 256024315125 BCD 5E DIRECT DATA. PAGE 60.06.01
02712 236360242163
02713 213360472127
02714 256006003300
02715 063300016060

02716 0 00001 0 00013 OLD PZE 11,0,1
02717 622545622560 BCD 6SENSE INPUT POSITION 14 FAILED. READ
02720 314547646360
02721 474662316331
02722 464560010460
02723 262131432524
02724 336051252124
02725 602431512523 BCD 5 DIRECT DATA. PAGE 60.06.01
02726 636024216321
02727 336047212725
02730 600600330006
02731 330001606060

02732 0 00001 0 00010 SIDE PZE 8,0,1
02733 622545622560 BCD 6SENSE INPUT POSITION 12 FAILED. UNIT
02734 314547646360
02735 474662316331
02736 464560010260
02737 262131432524
02740 336064453163
02741 602124245125 BCD 2 ADDRESS 5.
02742 626260053360

02743 0 00001 0 00014 KICK PZE 12,0,1
02744 622545622560 BCD 6SENSE INPUT POSITION 16-CHAN RFY WR
02745 314547646360
02746 474662316331
02747 464560010640
02750 233021456051
02751 267060665160
02752 262131432524 BCD 6FAILED, OR POSITION 13,15-PRE TESTD.
02753 736046516047
02754 466231633146
02755 456001037301
02756 054047512560
02757 632562632433

02760 0 00001 0 00014 MULE PZE 12,0,1
02761 622545622560 BCD 6SENSE INPUT POSITION 17-CHAN RDY RD
02762 314547646360

02763 474662316331
02764 464560010740
02765 233021456051
02766 247060512460
02767 262131432524 BCD 6FAILED, OR POSITIONS 14,15-PRE TESTD
02770 736046516047
02771 466231633146
02772 456260010473
02773 010540475125
02774 606325626324

02775 0 00001 0 00011 TRAIN PZE 9,0,1
02776 512330227360 BCD 6RCHB, IORP WC 0 DID NOT BRING UP EOF
02777 314651476066
03000 236000602431
03001 246045466360
03002 225131452760
03003 644760254626
03004 604645602330 BCD 3 ON CHANNEL B.
03005 214545254360
03006 223360606060

03007 0 00001 0 00011 CLIP PZE 9,0,1
03010 475125622545 BCD 6PRESENT SENSE LINE 14 DID NOT DISCON
03011 636062254562
03012 256043314525
03013 600104602431
03014 246045466360
03015 243162234645
03016 452523636023 BCD 3NECT CHAN B ON EOR
03017 302145602260
03020 464560254651

03021 0 00001 0 00013 PITY PZE 11,0,1
03022 475125622545 BCD 6PRESENT SENSE LINES DID NOT TURN ON
03023 636062254562
03024 256043314525
03025 626024312460
03026 454663606364
03027 514560464560
03030 256363603145 BCD 5ETT IND-SENSE OUTPUT RESET
03031 244062254562
03032 256046646347
03033 646360512562
03034 256360606060

03035 0 00001 0 00012 CLOP PZE 10,0,1
03036 602631516263 BCD 6 FIRST TRY AT TRANSMITTING INFORMATIO
03037 606351706021
03040 636063512145
03041 624431636331
03042 452760314526
03043 465144216331
03044 456026213143 BCD 4N FAILED AS SHOWN ABOVE
03045 252460216260
03046 623046664560

03047 212246652560

03050 0 00001 0 00014 PIN PZE 12,0,1
03051 030660664651 BCD 636 WORDS WERE WRITTEN-1 BIT IN EACH
03052 246260662551
03053 256066513163
03054 632545400160
03055 223163603145
03056 602521233060
03057 662460314560 BCD 6WD IN RIPPLE FASHION. ERROR AS SHOWN
03060 513147474325
03061 602621623031
03062 464533602551
03063 514651602162
03064 606230466645

03065 0 00001 0 00012 OVER PZE 10,0,1
03066 242163216026 BCD 6DATA FAILED AS ABOVE WHILE WRITING W
03067 213143252460
03070 216260212246
03071 652560663031
03072 432560665131
03073 633145276066
03074 316330600410 BCD 4ITH 48US BETWEEN DEMANDS
03075 646260222563
03076 662525456024
03077 254421452462

03100 0 00001 0 00014 HILLN PZE 12,0,1
03101 316146602342 BCD 6I/O CK LITE WAS ON IN ERROR PROBABLY
03102 604331632560
03103 662162604645
03104 603145602551
03105 514651604751
03106 462221224370
03107 602225232164 BCD 6 BECAUSE OF THE RATE AT WHICH THE
03110 622560462660
03111 633025605121
03112 632560216360
03113 663031233060
03114 633025606060
03115 0 00001 0 00005 PZE 5,0,1
03116 242163216066 BCD 5DATA WAS TRANSMITTED-60US
03117 216260635121
03120 456244316363
03121 252440060064
03122 626060606060

03123 0 00001 0 00010 DALE PZE 8,0,1
03124 314524600160 BCD 6IND 1 ON-WC GOING TO ZERO DID NOT BR
03125 464540662360
03126 274631452760
03127 634660712551
03130 466024312460
03131 454663602251
03132 314527606447 BCD 2ING UP EOF

03133 602546266060

03134 0 00001 0 00006 SONG PZE 6,0,1
03135 475125622545 BCD 6PRESENT SENSE LINES-INDEXED-FAILED
03136 636062254562
03137 256043314525
03140 624031452425
03141 672524402621
03142 314325246060

03143 0 00001 0 00010 BIRD PZE 8,0,1
03144 475125622545 BCD 6PRESENT SENSE LINES-ENDIRECTLY ADDRE
03145 636062254562
03146 256043314525
03147 624025452431
03150 512523634370
03151 602124245125
03152 626225246026 BCD 2SSED FAILED
03153 213143252460

03154 0 00001 0 00012 PARA PZE 10,0,1
03155 475125622545 BCD 6PRESENT SENSE LINES-INDIRECTLY ADDRE
03156 636062254562
03157 256043314525
03160 624031452431
03161 512523634370
03162 602124245125
03163 626225246021 BCD 4SSED ADN INDEXED-FAILED
03164 244560314524
03165 256725244026
03166 213143252460

03167 0 00001 0 00006 DISE PZE 6,0,1
03170 626346512560 BCD 6STORE SENSE LINES-INDEXED-FAILED
03171 622545622560
03172 433145256240
03173 314524256725
03174 244026213143
03175 252460606060

03176 0 00001 0 00010 EDEN PZE 8,0,1
03177 626346512560 BCD 6STORE SENSE LINES-INDIRECTLY ADDRESS
03200 622545622560
03201 433145256240
03202 314524315125
03203 236343706021
03204 242451256262
03205 252440262131 BCD 2ED-FAILED
03206 432524606060

03207 0 00001 0 00012 ADAM PZE 10,0,1
03210 626346512560 BCD 6STORE SENSE LINES-INDIRECTLY ADDRESS
03211 622545622560
03212 433145256240
03213 314524315125
03214 236343706021

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03215 242451256262
03216 246021452460          BCD ED AND INDEXED-FAILED
03217 314524256725
03220 244026213143
03221 252460606060
03222 606060606060
03223 606060606060
03224 606060606060
03225 606060606060
03226 606060606060
03227 606060606060

03230 0 00001 0 00011  SBCD  PZE 9,0,1
03231 243151252363          BCD 6DIRECT DATA INTERRUPT TRAPPED IN ERR
03232 602421632160
03233 314563255151
03234 644763606351
03235 214747252460
03236 314560255151
03237 465160216360          BCD 3OR AT LOC      00000
03240 434623606060
03241 600000000000

03242 0 00001 0 00011  SBCD1 PZE 9,0,1
03243 243151252363          BCD 6DIRECT DATA INTERRUPT FAILED TO TRAP
03244 602421632160
03245 314563255151
03246 644763602621
03247 314325246063
03250 466063512147
03251 602163604346          BCD 3 AT LOCATION 00000
03252 232163314645
03253 600000000000

03254 0 00001 0 00011  SBCD2 PZE 9,0,1
03255 243151252363          BCD 6DIRECT DATA INTERRUPT TRAPPED INCORR
03256 602421632160
03257 314563255151
03260 644763606351
03261 214747252460
03262 314523465151
03263 252363437060          BCD 3ECTLY AT LOC 000000
03264 216360434623
03265 600000000000

03266 0 00006 0 00006  SBCD3 PZE 6,0,6
03267 234651512523          BCD 6CORRECT LOCATION 3      000000000000
03270 636043462321
03271 633146456003
03272 606060606060
03273 000000000000
03274 000000000000

03275 0 00006 0 00006  SBCD4 PZE 6,0,6
03276 234645632545          BCD 6CONTENTS OF LOC. 3      000000000000
03277 636260462660
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03300 434623336003
03301 606060606060
03302 000000000000
03303 000000000000

03304 0 00001 0 00006 SBCD5 PZE 6,0,1
03305 635121474725 BCD 6TRAPPED WITH ALL CHANNELS DISABLED
03306 246066316330
03307 602143436023
03310 302145452543
03311 626024316221
03312 224325246060

03313 0 00001 0 00007 SBCD6 PZE 7,0,1
03314 262131432524 BCD 5FAILED TO TRAP WITH ALL CHANNE
03315 606346606351
03316 214760663163
03317 306021434360
03320 233021454525
03321 436260254521 BCD 2LS ENABLED
03322 224325246060

03323 0 00001 0 00011 SBCD7 PZE 9,0,1
03324 262131432524 BCD 6FAILED TO TRAP FROM ENABLE WITH A TR
03325 606346606351
03326 214760265146
03327 446025452122
03330 432560663163
03331 306021606351
03332 214760234645 BCD 3AP CONDITIONED
03333 243163314645
03334 252460606060

03335 0 00001 0 00006 SBCD8 PZE 6,0,1
03336 635121474725 BCD 6TRAPPED IN ERROR WHILE INHIBITED
03337 246031456025
03340 515146516066
03341 303143256031
03342 453031223163
03343 252460606060

03344 0 00001 0 00013 SBCD9 PZE 11,0,1
03345 262131432524 BCD 6FAILED TO TRAP FROM RESTORE WITH AN
03346 606346606351
03347 214760265146
03350 446051256263
03351 465125606631
03352 633060214560
03353 314530312231 BCD 5INHIBITED TRAP CONDITIONED
03354 632524606351
03355 214760234645
03356 243163314645
03357 252460606060

03360 0 00001 0 00013 BCD49 PZE 11,0,1
03361 262131432524 BCD 6FAILED TO TRAP FROM ENABLE WITH AN I

03362 606346606351
03363 214760265146
03364 446025452122
03365 432560663163
03366 306021456031
03367 453031223163 BCD 5INHIBITED TRAP CONDITIONED
03370 252460635121
03371 476023464524
03372 316331464525
03373 246060606060

03374 0 00001 0 00007 BCD50 PZE 7,0,1
03375 262131432524 BCD 6FAILED TO TRAP WITH SINGLE CHANNEL E
03376 606346606351
03377 214760663163
03400 306062314527
03401 432560233021
03402 454525436025
03403 452122432524 BCD 1NABLED

03404 0 00001 0 00013 BCD51 PZE 11,0,1
03405 635121474725 BCD 6TRAPPED WITH OTHER CHANNELS ENABLED
03406 246066316330
03407 604663302551
03410 602330214545
03411 254362602545
03412 212243252460
03413 226463604546 BCD 5BUT NOT CHANNEL OPERATING
03414 636023302145
03415 452543604647
03416 255121633145
03417 276060606060

05504 CTRA EQU 2884
05505 CTRB EQU 2885
05506 CTRC EQU 2886
05507 CTRD EQU 2887
05510 CTRE EQU 2888
05511 CTRF EQU 2889
05513 IOCNT EQU 2891
05514 IOC EQU 2892
05512 CTX EQU 2890
05503 IOCT EQU 2883
05500 CTRL1 EQU 2880
05501 CTRL2 EQU 2881
05502 CTRL3 EQU 2882
06504 ERROR EQU 3396
06511 OK EQU 3401
06557 RECNO EQU 3439
06556 WDNO EQU 3438
07662 PR EQU 4018
06560 RDNCK EQU 3440
02415 BEGA EQU CHANA-1
02441 ENDA EQU WRFLD-1
00122 BEGB EQU SETR
01614 ENDB EQU SWT5

02355 EORB EQU PSL+3
02354 NTRPT EQU PSL+2

02271 END START

EOF*