

PAGE NO. SH	TITLE	PART NO	EC NO.	FEATURE B/M OR B/MS
** LOGIC TYPE DIAG AND DLTS MANUALS 7				
080012.00*	080C MONITOR ENGLISH MSGE DESC	2246407	431319	.W. 2183176
080012.00-	080C MONITOR ENGLISH MSGE LIST	2246405	431319	.W. 2183176
080013.00*	080D DESCRIPTION	2279482	431323	.W. 2279238
080013.00-	080D LISTINGS	2279480	431323	.W. 2279238
080014.00*	080E DESCRIPTION	2279478	431323	.W. 2279238
080014.00-	080E LISTINGS	2279476	431319A	.W. 2279238
080015.00*	080F 1442 FUNCTION TEST DESC	2196388	411857	.W. 2183186
080015.00-	080F 1442 FUNCTION TEST LIST	2196386	411875	.W. 2183186

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1. PURPOSE

TO PROVIDE A MEANS WHEREBY THE 1800 DIAGNOSTIC MONITOR CAN PROVIDE PRINTOUTS IN ENGLISH FOR ALL DIAGNOSTIC MONITOR CONTROLLED PROGRAMS

2. REQUIREMENTS

THIS PROGRAM IS USED AS AN EXTENSION OF THE 1800 DIAGNOSTIC MONITOR. THIS PROGRAM MUST BE PLACED AS THE LAST PROGRAM IN THE CARD DECK TO BE LOADED INTO CORE. THE DIAGNOSTIC MONITOR AND ONE OR MORE TEST PROGRAMS MUST BE IN CORE AT THE TIME THIS PROGRAM IS LOADED. THIS PROGRAM MAY BE USED ONLY IF CARD IPL IS BEING USED, AND CANNOT BE STORED ON THE DISK USING THE DIMAL SYSTEM.

3. OPERATING PROCEDURE

PLACE THIS DECK AS THE LAST PROGRAM TO BE LOADED. OTHERWISE STANDARD MONITOR LOADING AND OPERATING PROCEDURES APPLY. REFER TO THE DIAGNOSTIC MONITOR DOCUMENTATION.

4. PRINTOUTS

NO PRINTOUTS ARE INITIATED BY THIS PROGRAM

5. COMMENTS

THE FIRST THREE CARDS IN THE ENGLISH MESSAGE DECK CONTAIN A SHORT PROGRAM. THE FUNCTIONS PERFORMED BY THIS PROGRAM ARE..

- A. CHECK IF THE ENGLISH MESSAGE DECK LOADER SECTION OF THE MONITOR IS IN CORE (THIS SECTION OF MONITOR MAY BE OVERLAID BY TEST PROGRAMS).
- B. IF THE ENGLISH DECK LOADER IS IN CORE TRANSFER CONTROL TO THAT SECTION.
- C. IF THE ENGLISH DECK LOADER IS NOT IN CORE TRANSFER TO THE ENGLISH DECK INTERFACE SECTION OF MONITOR. THE INTERFACE SECTION WILL THEN PRINT A MESSAGE IDENTIFYING THIS CONDITION AND HALT AT AN ERROR WAIT.

THE REMAINING CARDS CONTAIN THE ENGLISH LANGUAGE MESSAGES. THESE CARDS ARE READ INTO CORE BY THE ENGLISH DECK LOADER IN THE MONITOR. ONLY THOSE MESSAGES WHICH APPLY TO PROGRAMS CURRENTLY IN CORE ARE RETAINED IN CORE.

THE FORMAT OF THESE CARDS IS AS FOLLOWS..

COLUMNS 1 THRU 70 CONTAIN THE CODE FOR THE ENGLISH MESSAGES. COLUMN 71 CONTAINS A 12 BIT CHECK SUM. COLUMN 72 IS BLANK. COLUMNS 73 THRU 75 CONTAIN THE PROGRAM IDENTIFICATION NUMBER. COLUMNS 76 THRU 80 CONTAIN A CARD SEQUENCE NUMBER.

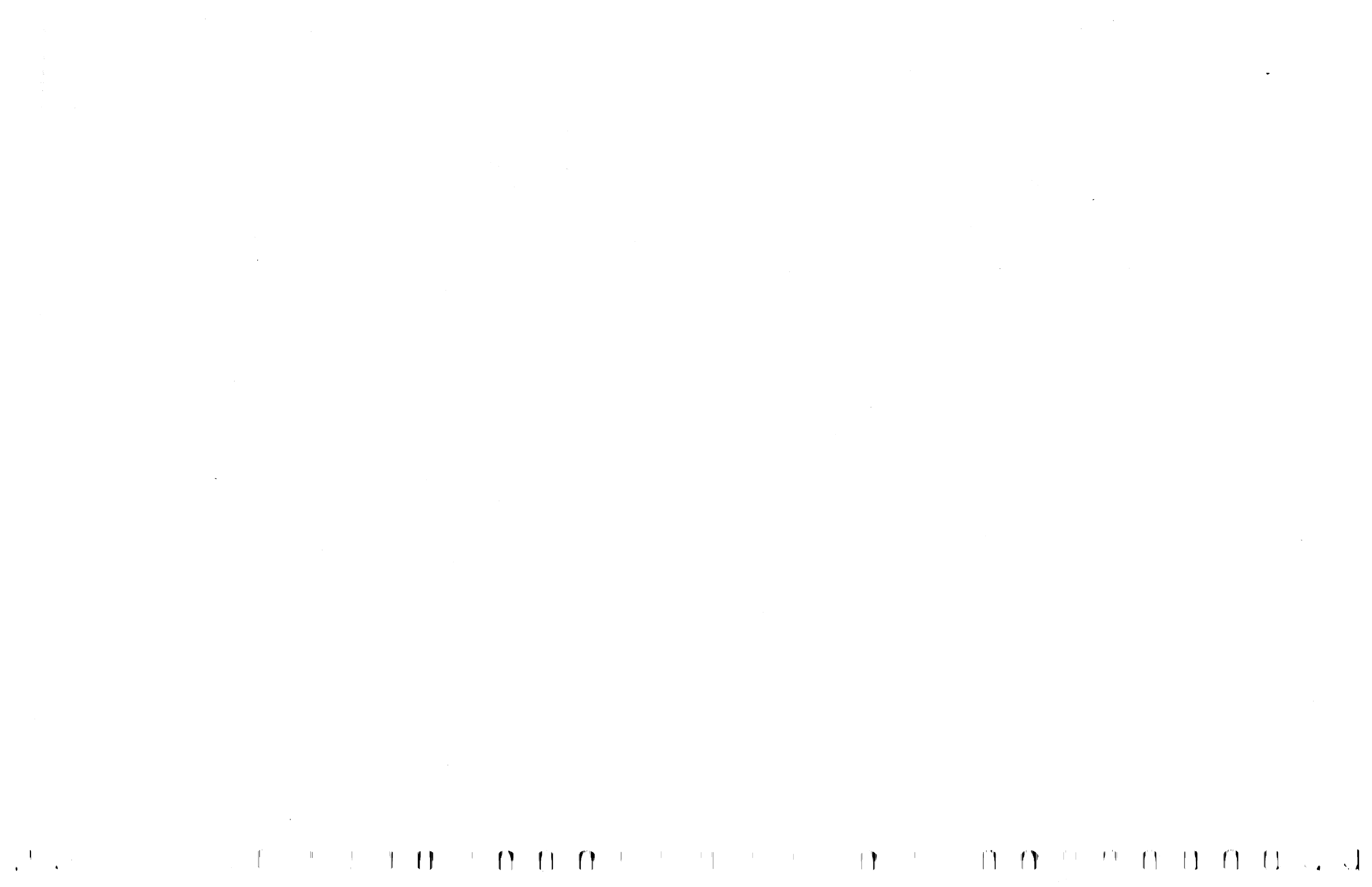
THE ENGLISH MESSAGES ARE CODED IN CARD COLUMNS 1 THRU 70 AS FOLLOWS..

THE FIRST COLUMN OF EACH MESSAGE IS A TERMINATOR (ALL ROWS PUNCHED). ROWS 12-5 OF THE SECOND COLUMN CONTAIN THE LAST TWO HEX DIGITS OF THE PID OF THE PROGRAM THE MESSAGE IS ASSOCIATED WITH. ROWS 6-9 OF THE SECOND COLUMN CONTAIN THE FIRST HEX DIGIT OF THE MESSAGE ID NUMBER (MID). THE THIRD COLUMN CONTAINS THE REMAINING THREE DIGITS OF THE MID. THE FOURTH COLUMN CONTAINS THE COUNT OF THE NUMBER OF CHARACTERS IN THE FIRST LINE TO BE PRINTED. THIS COUNT MUST BE EVEN AND IN THE RANGE OF 0 TO 60. SUBSEQUENT COLUMNS (COUNT/2) CONTAIN THE CODE FOR THE ENGLISH CHARACTERS—TWO CHARACTERS PER COLUMN. THE CODE USED IS THE 6 BIT CODE DESCRIBED BELOW. SUBSEQUENT LINES OF THE SAME MESSAGE BEGIN WITH THE CHARACTER COUNT (NO PID OR MID) FOLLOWED BY THE CHARACTER CODE. A SINGLE TERMINATOR MARKS THE END OF ONE MESSAGE AND THE BEGINNING OF THE NEXT. THE LAST MESSAGE IN THE LAST CARD ENDS WITH A TERMINATOR. LINES AND MESSAGES ARE PUNCHED IN CONTIGUOUS COLUMNS AND CARRY OVER FROM COLUMN 70 OF ONE CARD TO COLUMN 1 OF THE NEXT SO THAT ALL COLUMNS ARE USED.

6 BIT CHARACTER CODE

CHAR .	BINARY .	HEX	CHAR .	BINARY .	HEX
SPACE.	000000	. 00	0	011001	. 19
0	000001	. 01	P	011010	. 1A
1	000010	. 02	Q	011011	. 1B
2	000011	. 03	R	011100	. 1C
3	000100	. 04	S	011101	. 1D
4	000101	. 05	T	011110	. 1E
5	000110	. 06	U	011111	. 1F
6	000111	. 07	V	100000	. 20
7	001000	. 08	W	100001	. 21
8	001001	. 09	X	100010	. 22
9	001010	. 0A	Y	100011	. 23
A	001011	. 0B	Z	100100	. 24
B	001100	. 0C	+	100101	. 25
C	001101	. 0D	-	100110	. 26
D	001110	. 0E	/	100111	. 27
E	001111	. 0F	*	101000	. 28
F	010000	. 10	{	101001	. 29
G	010001	. 11	}	101010	. 2A
H	010010	. 12	&	101011	. 2B
I	010011	. 13	.	101100	. 2C
J	010100	. 14	,	101101	. 2D
K	010101	. 15	;	101110	. 2E
L	010110	. 16	=	101111	. 2F
M	010111	. 17	'	110000	. 30
N	011000	. 18	#	110001	. 31

----- LAST PAGE -----




```

***** 80C00020
***** 80C00030
* MONITOR ENGLISH MESSAGE DECK 80C00040
***** 80C00050
***** 80C00060
* 80C00070
* THE 1800 ENGLISH LANGUAGE MESSAGE DECK IS USED 80C00080
* IN CONJUNCTION WITH THE 1800 DIAGNOSTIC MONITOR 80C00090
* PROGRAM TO PROVIDE ENGLISH LANGUAGE PRINTOUTS 80C00100
* FOR ALL DIAGNOSTIC MONITOR CONTROLLED PROGRAMS. 80C00110
* 80C00120
* THE FIRST THREE CARDS OF THE ENGLISH MESSAGE 80C00130
* DECK CONTAIN THE PROGRAM THE LISTING OF WHICH 80C00140
* APPEARS BELOW. THE FUNCTION OF THIS PROGRAM IS 80C00150
* TO XFER CONTROL TO THE ENGLISH MESSAGE DECK 80C00160
* LOADER SECTION OF THE MONITOR. IF THE ENGLISH 80C00170
* LOADER SECTION OF THE MONITOR IS NOT IN CORE 80C00180
* THEN THE XFER IS TO AN ERROR WAIT IN THE MONITOR. 80C00190
* 80C00200
* THE REMAINING CARDS IN THE ENGLISH MESSAGE DECK 80C00210
* CONTAIN THE CONTENT OF THE ENGLISH MESSAGES. 80C00220
* THESE CARDS ARE READ BY THE ENGLISH DECK LOADER 80C00230
* SECTION OF THE MONITOR. 80C00240
* 80C00250
07FF ORG **/07FF 80C00260
* 80C00270
006F 0 RLBA EQU /006F 80C00280
0135 0 ENGLD EQU /0135 80C00290
* 80C00300
07FF 0 C400 0135 DECK LD L ENGLD GO TO ENG DECK LOADER IF 80C00310
0801 0 44A0 0135 BSI I ENGLD,Z * LOADER IS STILL IN CORE 80C00320
* 80C00330
0803 0 6C00 0070 STX L RLBA+1 SET LAST CARD INDICATOR 80C00340
0805 0 4C00 0136 BSC L ENGLD+1 GO TO ERR WAIT IN MONITOR 80C00350
* 80C00360
0808 07FF END DECK 80C00370
NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY

```

```

DECK 07FF 0808
ENGLD 0135 07FF 0801 0805
RLBA 006F 0803
END OF ASSEMBLY

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----- LAST PAGE -----

***** PROGRAMMER - NOTE BELOW *****

SECTION 5.8 OF THIS DOCUMENT CONTAINS REFERENCES TO SLT BOARD PINS FOR INSTALLATION OF TEST JUMPERS. BEFORE RELEASE OF THIS DOCUMENT, ENSURE THAT THESE REFERENCES MATCH THE LATEST HARDWARE LEVEL. DELETE THIS NOTE FROM DOCUMENTATION BEFORE RELEASE.

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1. PURPOSE

THE PURPOSE OF THE 1800 CA TRANSMIT/RECEIVE TEST IS TO PROVIDE PROGRAM ABILITY TO OPERATE THE COMMUNICATIONS ADAPTOR (CA) IN AN OVER-THE-LINE TEST OF SYSTEM PERFORMANCE WITH ANOTHER BSC STATION.

2. REQUIREMENTS

2.1 PROGRAM REQUIREMENTS

THE 1800 CA TRANSMIT/RECEIVE TEST MUST OPERATE UNDER CONTROL OF THE 1800 DIAGNOSTIC MONITOR.

2.2 EQUIPMENT REQUIREMENTS

- A) EQUIPMENT AS REQUIRED FOR OPERATION OF THE 1800 DIAGNOSTIC MONITOR.
- B) A MINIMUM OF 8K OF CORE STORAGE
- C) THE 1800 CA FEATURE
- D) CA CONNECTION THROUGH THE PROPER MODEM EQUIPMENT TO A REMOTE BSC STATION.

2.3 REMOTE STATION REQUIREMENTS

THE REMOTE STATION MUST HAVE OPTIONAL BSC FEATURES (CODE, LINE SPEED, ETC.) WHICH ARE COMPATIBLE WITH THE CA TO BE TESTED. THE REMOTE STATION MUST BE CAPABLE OF TRANSMITTING AND/OR RECEIVING AND RESPONDING TO REQUEST-FOR-TEST (RFT) AND TEST MESSAGES AS DESCRIBED IN THIS DOCUMENT. IN A MULTIPOINT NETWORK ONE OF THE REMOTE STATIONS MUST PROVIDE THE FUNCTIONS OF THE CONTROL STATION.

3. OPERATING PROCEDURE

****CAUTION**** STANDARD DIAGNOSTIC MONITOR LOADING AND OPERATING PROCEDURES ARE NOT WHOLLY APPLICABLE TO THIS PROGRAM. REFER TO 3.1 AND 3.2 BELOW.

3.1 PROGRAM LOADING

LOADING PROCEDURES ARE SUMMARIZED HERE. REFER TO DIAGNOSTIC MONITOR (DM) USE PROCEDURE FOR ADDITIONAL DETAILS.

- A) NOTIFY THE REMOTE STATION OPERATOR THAT THE 1800 WILL BE TAKEN OFF-LINE FOR LOADING AND EXECUTION OF DIAGNOSTIC PROGRAMS.
- B) IF DESIRED, INSTALL OPTIONAL TEST JUMPER(S). (REFER TO SEC. 5.8)
- C) ENSURE THAT THE CA PROGRAM IS EDITED FOR THE CA LINE TO BE TESTED. (REFER TO 6.4)
- D) CLEAR STORAGE TO /70FF.
- E) LOAD THE DIAGNOSTIC MONITOR.
- F) SELECT DM PROGRAM LOAD OPTIONS. (SEE NOTE BELOW)
- G) LOAD THE DIAGNOSTIC PROGRAM(S).

NOTE...ON SYSTEMS HAVING OVER 32K OF CORE STORAGE, CARE SHOULD BE TAKEN TO AVOID LOADING THE CA DIAGNOSTIC ACROSS THE 32K CORE BOUNDARY. THE CA DIAGNOSTIC OCCUPIES 6K OF CORE AND SHOULD START LOADING EITHER BELOW ADDRESS /67FF OR ABOVE ADDRESS /7FFF.

CA TRANSMIT/RECEIVE TEST

CA TRANSMIT/RECEIVE TEST

3.2 PROGRAM OPERATION

CAUTION

THE MONITOR 'HALT' AND 'HALT ON ERROR' OPTIONS MUST NOT BE SELECTED WHILE THE CA PROGRAM IS IN EXECUTION. THE MONITOR 'BYPASS ERROR PRINTOUTS' AND 'LOOP ON ERROR' OPTIONS MAY BE USED TO CONTROL OTHER PROGRAMS BUT WILL HAVE NO EFFECT ON CA PROGRAM OPERATION.

OPERATING PROCEDURES ARE SUMMARIZED HERE. REFER TO DIAGNOSTIC MONITOR USE PROCEDURE AND SECTION 5. OF THIS DOCUMENT FOR ADDITIONAL DETAILS.

- A) LOAD PROGRAMS (REFER 3.1)
- B) SELECT MONITOR CONTROL OPTIONS IF DESIRED (SEE CAUTION ABOVE).
- C) SELECT CA PROGRAM CONTROL OPTIONS FROM TABLE 0 IF DESIRED.
- D) INSTRUCT MONITOR TO EXECUTE. THE PROGRAM SHOULD BEGIN MONITORING THE COMMUNICATION LINE (AAAX PRINTOUTS).
- E) ON A MULTIPOINT LINE IT MAY BE NECESSARY TO INFORM THE CONTROL STATION OPERATOR THAT THE LOCAL STATION IS READY TO ACCEPT POLLING AND SELECTION.
- F) ON A SWITCHED LINE, INCOMING CALLS MAY BE ANSWERED EITHER MANUALLY, BY ANSWERING THE PHONE AND PRESSING THE DATA BUTTON ON THE DATA SET, OR AUTOMATICALLY, BY PRESSING THE AUTO-ANSWER BUTTON ON THE DATA SET.
- G) TO TRANSMIT A REQUEST-FOR-TEST MESSAGE...
 - 1. SELECT DESIRED TEST MESSAGE COUNT (Y) FROM TABLE 3.
 - 2. SELECT DESIRED REQUEST-FOR-TEST MESSAGE FROM TABLE 1. THE PROGRAM SHOULD BEGIN ATTEMPTING TO TRANSMIT THE RFT.
 - 3. ON A SWITCHED LINE, DIAL THE REMOTE STATION.

NOTE...PROGRAM OPTIONS MAY BE CHANGED AT ANY TIME, HOWEVER, IF OPTIONS ARE CHANGED WHILE TEST TRANSMISSIONS ARE IN PROGRESS, THE NEW OPTIONS MAY NOT TAKE EFFECT UNTIL THE NEXT TEST IS STARTED.

TABLE 0 - FUNCTION 0
PROGRAM CONTROL OPTIONS

```

***** 1. SET FUNCTION 00 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15.
* * * 4. PRESS CONSOLE INTERRUPT.
* 0 0 0 0 1 1 0 1 *
*****
* DATA ENTRY SWITCHES * DESCRIPTION *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* . . . . . *
* . . . . . 1...END PROGRAM *
* . . . . . 1...TERMINATE CURRENT TRACE PRINTOUTS *
* . . . . . 1...TERMINATE CURRENT D003 PRINTOUTS *
* . . . . . 1...BYPASS E07 PRINTOUTS *
* . . . . . 1...TRACE ALL DATA *
* . . . . . 1...TRACE ENTIRE TEST *
* . . . . . 1...BYPASS XMIT/RECEIVE TABLE PRINTOUTS *
* . . . . . 1...BYPASS ENTIRE TRACE *
* . . . . . 1...BYPASS START OF TEST STATUS MSGS *
* . . . . . 1...OPERATE CA IN NORMAL MODE ONLY *
* . . . . . 1...ALLOW THE EOT XMIT AT TIMEOUT TIME *
*****
* 15-ON=END PROGRAM *
* CAUSES THE CA TO BE IMMEDIATELY CLEARED (RESET). CONTROL IS THEN *
* TRANSFERED TO THE MONITOR END ROUTINE. *
*
* 14-ON=TERMINATE CURRENT TRACE PRINTOUTS *
* HAS EFFECT ONLY IF SELECTED WHILE THE END-OF-TEST TRACE PRINTOUTS *
* ARE BEING OUTPUT. CAUSES THE REMAINING PRINTOUTS TO BE BYPASSED. *
*
* 13-ON=TERMINATE CURRENT D003 PRINTOUT *
* HAS EFFECT ONLY IF SELECTED DURING A D003 PRINTOUT. CAUSES *
* REMAINDER OF PRINTOUT TO BE BYPASSED. *
*
* 12-ON=BYPASS E07 PRINTOUTS *
* CAUSES E07 END-OF-TEST PRINTOUTS AND THE ASSOCIATED TRACE PRINTOUTS *
* TO BE BYPASSED (REFER E07 PRINTOUT DESCRIPTION). *
*
* 11-ON=TRACE ALL DATA *
* CAUSES THE ENTIRE TRANSMIT AND/OR RECEIVE TABLE(S) TO BE INCLUDED IN *
* THE D003 PRINTOUT. NORMALLY ONLY THE FIRST AND LAST 14 WORDS FROM *
* EACH TABLE ARE INCLUDED IN THE PRINTOUT. *
*
* 10-ON=TRACE ENTIRE TEST *
* CAUSES ALL TEST ROUTINES EXECUTED DURING THE TEST PROCEDURE TO BE *
* INCLUDED IN THE TRACE PRINTOUTS. NORMALLY ONLY THOSE ROUTINES IN *
* WHICH AN ERROR OCCURED ARE INCLUDED. *
*
* 9-ON=BYPASS TRANSMIT AND RECEIVE TABLE PRINTOUTS *
* CAUSES THE TRANSMIT AND RECEIVE TABLES TO BE OMITTED FROM THE D003 *
* PRINTOUTS. *
*
* 8-ON=BYPASS ENTIRE TRACE *
* CAUSES ALL TRACE PRINTOUTS, INCLUDING ERROR MESSAGES, TO BE BYPASSED. *
*
* 7-ON=BYPASS START OF TEST STATUS MSGS *
* CAUSES ALL START OF TEST STATUS PRINTOUTS (AAAX) TO BE BYPASSED. *
*
* 6-ON=OPERATE CA IN NORMAL MODE ONLY *
* CAUSES ALL TEST ROUTINES TO OPERATE IN NORMAL MODE. IF THIS OPTION *
* IS NOT SELECTED MOST ROUTINES WILL OPERATE IN DIAGNOSTIC MODE. *
* (REFER TO SECTION 5.7) *
*
* 5-ON=ALLOWS THE EOT XMIT AT TIMEOUT TIME *
* TURN THIS SWITCH ON TO CAUSE EOT TRANSMISSION AT RECEIVE TIMEOUT TIME.*
*****
    
```

TABLE 1 - FUNCTION 1
TRANSMIT RFT SELECTION (REFER SECTIONS 5.2 & 5.3)

```
***** 1. SET FUNCTION 01 IN SENSE /PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SET DESIRED OPTIONS IN DATA ENTRY SWITCHES 0 THRU 15.
* * 4. PRESS CONSOLE INTERRUPT
* 0 1 0 0 1 1 0 1 *
*****
* DATA ENTRY SWITCHES * DESCRIPTION
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
*
* X X X X X X X X...TEST MESSAGE NUMBER - ENTER AS TWO
* DECIMAL DIGITS.
* 1.....LOOP REQUEST-FOR-TEST.
* 0 0.....XMIT RFT WITH X=00, THEN XMIT THE
* SPECIFIED TEST MSG Y TIMES.
* 0 1.....XMIT RFT WITH X=01 AND INCLUDING
* THE SPECIFIED TEST MSG.
* 1 0.....XMIT RFT WITH X EQUAL TO THE
* SPECIFIED TEST MSG NUMBER.
* 1 1.....XMIT ALL POSSIBLE RFT'S AND ALL
* POSSIBLE TEST MESSAGES.
* 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0...DESELECT PREVIOUS SELECTION
*****
* FUNCTION 1 COMMENTS
* DE SWS
* 8-15=TEST MESSAGE NUMBER IN DECIMAL (NO ENTRY REQUIRED IF SWS 0 AND 1=11)
* ENTER, AS TWO DECIMAL DIGITS, THE NUMBER OF THE TEST MESSAGE TO BE
* USED DURING THE TEST. REFER TO 5.3 FOR CONTENT OF TEST MESSAGES.
* VALID TEST MESSAGE NUMBERS ARE...
* EBCDIC NORMAL TEXT - 04, 12, 13, 14, 15, AND 16
* EBCDIC TRANSPARENT TEXT - 02, 19, 20, 21, AND 22 (DO NOT USE 19 WITH
* X=01)
* ASCII NORMAL TEXT - 05, 06, 07, AND 08
* TEST MESSAGE NUMBER 01 MAY BE USED ON EITHER EBCDIC OR ASCII MACHINES
* IF DE SWS 0 AND 1 ARE SET TO 00 OR 01.
*
* 7-0N=LOOP REQUEST-FOR-TEST
* IF THIS OPTION IS SELECTED THE PROGRAM WILL REPEAT THE SELECTED TEST
* UNTIL ANOTHER FUNCTION 1 ENTRY IS SELECTED.
*
* 0-1=00=SELECTION OF THIS OPTION CAUSES A REQUEST-FOR-TEST MESSAGE TO BE
* TRANSMITTED WITH AN X VALUE OF 00. AFTER THE REMOTE TERMINAL HAS
* ACKNOWLEDGED THE RFT, THE TEST MESSAGE SPECIFIED BY SWS 8-15 IS
* TRANSMITTED Y TIMES.
*
* 0-1=01=THIS OPTION CAUSES AN RFT MESSAGE TO BE TRANSMITTED THAT HAS AN
* X VALUE OF 01 AND CONTAINING THE TEST MESSAGE SPECIFIED BY SWS 8-15.
* THE REMOTE STATION SHOULD THEN TRANSMIT THE TEST MESSAGE Y TIMES.
* TEST MESSAGE 19 CANNOT BE USED WITH THIS OPTION.
*
* 0-1=10=THIS OPTION CAUSES AN RFT MESSAGE TO BE TRANSMITTED THAT HAS AN
* X VALUE AS SPECIFIED IN SWITCHES 8-15. THE REMOTE TERMINAL SHOULD
* THEN TRANSMIT THE SPECIFIED TEST MESSAGE Y TIMES. TEST MESSAGE 01
* CANNOT BE USED WITH THIS OPTION.
*
* 0-1=11=SELECTION OF THIS OPTION CAUSES ALL TEST PROCEDURES THAT CAN BE
* INITIATED ON THE SYSTEM IN USE TO BE SEQUENTIALLY EXECUTED, EXCEPT
* THOSE TESTS THAT REQUIRE USE OF TEST MESSAGE 01. NO TEST MESSAGE
* NUMBER ENTRY IS REQUIRED WITH THIS OPTION.
*
* ALL OFF=SELECTION OF FUNCTION 1 WITH ALL DATA ENTRY SWITCHES OFF MAY BE
* USED TO DESELECT A PREVIOUS FUNCTION 1 ENTRY UNLESS THE SELECTED
* TEST IS ALREADY IN PROGRESS. THE PRIMARY PURPOSE OF THIS OPTION
* IS TO PROVIDE A MEANS FOR DESELECTION OF THE 'LOOP REQUEST-FOR-TEST'
* AND 'TRANSMIT ALL REQUEST-FOR-TESTS' OPTIONS.
*****
```

TABLE 3 - FUNCTION 3
Y VALUE SELECTION (REFER SECTION 5.2)

```
***** 1. SET FUNCTION 11 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SET DESIRED OPTIONS IN DATA ENTRY SWITCHES 8 THRU 15.
* * 4. PRESS CONSOLE INTERRUPT.
* 1 1 0 0 1 1 0 1 *
*****
* DATA ENTRY SWITCHES * DESCRIPTION
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
*
* X X X X X X X X...TEST MESSAGE COUNT (Y VALUE) TO BE
* USED IN RFT MESSAGE. ENTER AS TWO
* DECIMAL DIGITS. VALID VALUES
* ARE 01 THROUGH 99.
*****
* FUNCTION 3 COMMENTS
* DE SWS
* 8-15=TEST MESSAGE COUNT (Y VALUE) IN DECIMAL
* ENTER, AS TWO DECIMAL DIGITS, THE Y VALUE TO BE USED IN RFT MESSAGES
* TRANSMITTED. THE Y VALUE SPECIFIES THE NUMBER OF TEST MESSAGES TO BE
* TRANSMITTED. VALID VALUES ARE 01 THROUGH 99. IF NO ENTRY OR AN
* INVALID ENTRY IS SELECTED, THE PROGRAM WILL USE A VALUE OF 03.
* IT SHOULD BE NOTED THAT LARGE Y VALUES MAY CAUSE CORE TO BECOME FULL
* OF STORED TRACE INFORMATION BEFORE THE END OF THE TEST, ESPECIALLY IF
* THE 'TRACE ENTIRE TEST' OPTION IS SELECTED. LARGE Y VALUES ARE
* RECOMMENDED ONLY FOR STATISTICAL EVALUATION OF LINE CONDITION (D001
* AND D002 PRINTOUTS) AND FOR USE IN SCOPING. (REFER SECTION 5.8)
*****
```

3.3 PROGRAM HALTS

THE 1800 CA TRANSMIT/RECEIVE TEST CONTAINS ONLY ONE PROGRAM HALT. THIS HALT INDICATES AN ERROR IN LOADING OR EDITING THE PROGRAM, AND CAN ONLY OCCUR ON THE FIRST ATTEMPT TO EXECUTE THE PROGRAM AFTER INITIAL LOAD. THE HALT IS ALWAYS PRECEDED BY A PRINTOUT INDICATING THE ERROR CONDITION. THIS HALT MAY BE IDENTIFIED BY THE PRINTOUT OR BY THE CONTENTS OF THE B REGISTER BEING /30CA.

3.4 PROGRAM TERMINATION

THE 1800 CA TRANSMIT/RECEIVE TEST TERMINATES ONLY IF THE 'END PROGRAM' OPTION IS SELECTED. (SEE SECTION 3.2, TABLE 1)

3.5 RESTART PROCEDURE

STANDARD MONITOR RESTART PROCEDURES MAY BE USED.

CA TRANSMIT/RECEIVE TEST

4. PRINTOUTS

ALL PRINTOUTS PRODUCED BY THIS PROGRAM ARE IN THE STANDARD DIAGNOSTIC MONITOR FORMAT (PID MID RID RAD MODIFIERS). IN ALL FOLLOWING SAMPLE PRINTOUTS THE PID IS OMITTED, ROUTINE ID NUMBER (RID) IS REPRESENTED BY RRRR, ROUTINE ADDRESS (RAD) IS REPRESENTED BY AAAA, HEXADECIMAL MODIFIERS ARE REPRESENTED BY XXXX, AND DECIMAL MODIFIERS ARE REPRESENTED BY XXXXXXXX.

4.1 STATUS (AXXX) PRINTOUTS

AAA1 0000 0000

THE PROGRAM IS MONITORING THE LINE FOR THE MULTIPOINT POLLING OR SELECTION ADDRESS.

AAA2 0000 0000

THE PROGRAM IS MONITORING THE LINE FOR A LINE BID (ENQ) FROM THE REMOTE STATION.

AAA3 0000 0000

THE PROGRAM IS MONITORING THE LINE FOR THE SWITCHED LINE INITIALIZATION SEQUENCE (ID ENQ). IF AUTO-ANSWER IS DESIRED, ENSURE THAT THE AUTO-ANSWER BUTTON ON THE DATA SET IS DEPRESSED.

AAA4 0000 0000

THE PROGRAM IS BIDDING FOR THE LINE (TRANSMITTING ENQ) IN AN ATTEMPT TO TRANSMIT A REQUEST-FOR-TEST MESSAGE.

AAA5 0000 0000

THE PROGRAM IS ATTEMPTING TO TRANSMIT THE SWITCHED LINE INITIALIZATION SEQUENCE (ID ENQ). THE OPERATOR SHOULD DIAL THE REMOTE STATION AT THIS TIME.

AAA6 0000 0000

THE PROGRAM IS WAITING FOR A RINGING INDICATION FROM THE DATA SET. ENSURE THAT THE AUTO-ANSWER BUTTON ON THE DATA SET IS DEPRESSED.

AAA7 0000 0000

THE PROGRAM IS ATTEMPTING TO TRANSMIT A THREE SECOND TONE. THIS IS AN UNUSUAL USE OF THE EDIT CARD OPTIONS. THE TRANSMIT TONE OPTION IS SELECTED, BUT NOT THE AUTO-ANSWER OPTION. WITH THIS CONFIGURATION AUTO-ANSWER WILL BE ACCOMPLISHED BY INITIALIZING THE CA IN TRANSMIT MODE RATHER THAN WAITING FOR A RINGING INTERRUPT TO OCCUR. DEPRESS THE AUTO-ANSWER BUTTON ON THE DATA SET TO ENABLE THE AUTO-ANSWER.

AA01 RRRR AAAA

NORMAL END OF TEST - TEST MESSAGE RECEIVER. THE EXPECTED NUMBER (Y) OF TEST MESSAGES WERE RECEIVED FROM THE REMOTE STATION.

CA TRANSMIT/RECEIVE TEST

AA02 RRRR AAAA

NORMAL END OF TEST - TEST MESSAGE TRANSMITTER. THE REQUIRED NUMBER OF TEST MESSAGES HAVE BEEN TRANSMITTED TO THE REMOTE STATION.

A001 RRRR AAAA

RAN OUT OF CORE STORAGE. CORE STORAGE BECAME FULL WHILE STORING TRACE INFORMATION. ALL FOLLOWING TRACE INFORMATION WAS LOST.

A003 RRRR AAAA

EOT RECEIVED DURING LINE INITIALIZATION ATTEMPTS. THIS IS A NORMAL ATTEMPT BY THE REMOTE STATION TO RESET THE LINE TO A KNOWN CONDITION. THE EOT GIVES THE LOCAL STATION THE RIGHT TO TRANSMIT IF REQUIRED.

A004 RRRR AAAA

DISC RECEIVED DURING LINE INITIALIZATION ATTEMPTS. THIS IS A NORMAL INDICATION THAT THE REMOTE STATION IS DISCONNECTING FROM THE LINE. THE LOCAL STATION WILL ALSO DISCONNECT.

A006 RRRR AAAA

NORMAL COMPLETION OF TEST ROUTINE 01 (CLEAR CA). THE CA WAS CLEARED, THE CONTINUE TIMER STARTED, AND THE EXPECTED INTERRUPT OCCURED WITHOUT ERROR.

A008 RRRR AAAA

DATA SET NOT READY AFTER AN ATTEMPT TO RECEIVE THE INITIAL ID ENQ SEQUENCE. THIS INDICATES THAT NO LINE CONNECTION TO THE REMOTE STATION HAS YET BEEN ESTABLISHED.

A009 RRRR AAAA

NOTHING WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE INITIAL ENQ OR ID ENQ. THIS IS NOT CONSIDERED AN ERROR CONDITION SINCE THE PROBABLE CAUSE IS THAT THE REMOTE STATION HAS NOTHING TO TRANSMIT.

A00A RRRR AAAA

INITIAL ENQ OR ID ENQ SUCCESSFULLY RECEIVED FROM THE REMOTE STATION.

A00C RRRR AAAA

DATA SET NOT READY AFTER AN ATTEMPT TO TRANSMIT THE INITIAL ID ENQ AND RECEIVE THE RESPONSE. THIS IS NOT CONSIDERED AN ERROR SINCE THE PROBABLE COUSE IS THAT THE OPERATOR HAS NOT YET DIALED THE REMOTE STATION AND ESTABLISHED THE CONNECTION.

CA TRANSMIT/RECEIVE TEST

A00D RRRR AAAA

NOTHING WAS RECEIVED ON AN ATTEMPT TO RECEIVE A RESPONSE TO THE INITIAL ENQ OR ID ENQ. THIS IS NOT CONSIDERED AN ERROR CONDITION SINCE IT IS PROBABLY CAUSED BY THE REMOTE STATION BEING TEMPORARILY UNABLE TO RECEIVE.

A00E RRRR AAAA

ENQ RECEIVED IN RESPONSE TO THE INITIAL ENQ TRANSMITTED. THIS INDICATES THAT THE REMOTE STATION IS ALSO BIDDING FOR THE LINE. IF THE EDIT CARDS DESIGNATE THE LOCAL STATION AS THE SECONDARY STATION, THEN THE PROGRAM WILL YIELD THE LINE TO THE REMOTE STATION. OTHERWISE, THE PROGRAM WILL TRANSMIT ENQ AGAIN FOR UP TO N TRIES.

A00F RRRR AAAA

POSITIVE ACKNOWLEDGEMENT (ACKO OR ID ACKO) SUCCESSFULLY RECEIVED IN RESPONSE TO THE INITIAL ENQ OR ID ENQ.

A010 RRRR AAAA

NAK OR ID NAK RECEIVED IN RESPONSE TO THE INITIAL ENQ OR ID ENQ. THIS INDICATES THAT THE REMOTE STATION IS TEMPORARILY UNABLE TO RECEIVE THE RFT MESSAGE.

A011 RRRR AAAA

WACK RECEIVED IN RESPONSE TO THE INITIAL ENQ OR ID ENQ. THIS INDICATES THAT THE REMOTE STATION IS TEMPORARILY UNABLE TO RECEIVE THE RFT MESSAGE.

A013 RRRR AAAA

THE CONTINUE TIMER TIMED OUT WHILE WAITING FOR A RINGING INTERRUPT. THE TIMER WILL BE RESTARTED AND THE PROGRAM WILL CONTINUE WAITING FOR AN INCOMING CALL.

A014 RRRR AAAA

THE CONTINUE TIMER TIMED OUT WHILE WAITING FOR A RINGING INTERRUPT AND THE DATA SET READY INDICATOR WAS FOUND TO BE ON. THE PROGRAM ASSUMES THAT THIS CONDITION WAS CAUSED BY THE OPERATOR MANUALLY ESTABLISHING THE LINE CONNECTION AND PROCEEDS AS IF THE RINGING INTERRUPT HAD OCCURED.

A015 RRRR AAAA

RINGING INTERRUPT OCCURED INDICATING AN INCOMING CALL.

A017 RRRR AAAA

DATA SET NOT READY AFTER AN ATTEMPT TO TRANSMIT THE THREE SECOND TONE. THIS IS A SOMEWHAT UNUSUAL CONDITION, HOWEVER, IT IS NOT CONSIDERED AN ERROR SINCE IT IS PROBABLY CAUSED BY NO LINE CONNECTION YET BEING ESTABLISHED.

CA TRANSMIT/RECEIVE TEST

A018 RRRR AAAA

THREE SECOND TONE WAS SUCCESSFULLY TRANSMITTED.

A01A RRRR AAAA

A RECEIVE TIMEOUT OCCURED (NOTHING RECEIVED) WHILE MONITORING THE MULTIPPOINT NETWORK IN THE PASSIVE RECEIVE MODE. THIS IS NOT CONSIDERED AN ERROR CONDITION SINCE THE LOCAL STATION NORMALLY CANNOT RECEIVE FROM OTHER TRIBUTARY STATIONS. TIMEOUTS ARE THEREFORE EXPECTED TO OCCUR UNTIL THE CONTROL STATION TRANSMITS.

A01B RRRR AAAA

SOMETHING OTHER THAN EOT WAS RECEIVED WHILE MONITORING THE LINE IN THE RECEIVE PASSIVE MODE. GENERALLY THE CHARACTERS RECEIVED CAN BE IGNORED SINCE THE ONLY PURPOSE OF RECEIVE PASSIVE MODE IS TO DETECT THE APPEARANCE OF EOT ON THE LINE. ONLY THE FIRST FOUR CHARACTERS RECEIVED (THE 1ST TABLE) WILL BE INCLUDED IN THE D003 PRINTOUT.

A01C RRRR AAAA

EOT RECEIVED WHILE MONITORING THE LINE IN THE RECEIVE PASSIVE MODE. THIS RESETS THE LINE TO CONTROL MODE AND THE PROGRAM WILL ATTEMPT TO RECEIVE THE POLLING OR SELECTION ADDRESS.

A01E RRRR AAAA

NOTHING WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE POLLING OR SELECTION ADDRESS. THIS IS NOT CONSIDERED AN ERROR SINCE THE CONDITION PROBABLY OCCURED WHILE ANOTHER TRIBUTARY STATION WAS TRANSMITTING. THE LOCAL STATION CANNOT RECEIVE FROM ANOTHER TRIBUTARY.

A01F RRRR AAAA

TEXT WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE POLLING OR SELECTION ADDRESS. THIS INDICATES THAT COMMUNICATION HAS STARTED BETWEEN THE CONTROL STATION AND ANOTHER TRIBUTARY. THE PROGRAM WILL RETURN TO THE RECEIVE PASSIVE MODE. ONLY THE FIRST TEN CHARACTERS OF THE TEXT RECEIVED WILL BE INCLUDED IN THE D003 PRINTOUT.

A020 RRRR AAAA

THE POLLING ADDRESS WAS RECEIVED FROM THE CONTROL STATION. THIS GIVES THE LOCAL STATION THE RIGHT TO TRANSMIT AN RFT MESSAGE.

A021 RRRR AAAA

THE SELECTION ADDRESS WAS RECEIVED FROM THE CONTROL STATION. THIS INDICATES THAT THE CONTROL STATION IS ATTEMPTING TO TRANSMIT AN RFT.

A022 RRRR AAAA

SOMETHING OTHER THAN TEXT OR THE POLLING OR SELECTION ADDRESS WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE POLLING OR SELECTION ADDRESS. THE CHARACTERS RECEIVED ARE ASSUMED TO BE PART OF A CONTROL STATION TRANSMISSION TO ANOTHER TRIBUTARY STATION.

A025 RRRR AAAA

A REQUEST-FOR-TEST MESSAGE WAS RECEIVED WITHOUT ERROR.

A027 RRRR AAAA

ENQ WAS SUCCESSFULLY RECEIVED IN AN ATTEMPT TO RECOVER FROM A PREVIOUS ERROR.

A028 RRRR AAAA

ID ENQ WAS SUCCESSFULLY RECEIVED IN AN ATTEMPT TO RECOVER FROM A PREVIOUS ERROR.

A02A RRRR AAAA

WACK RECEIVED IN RESPONSE TO THE RFT MESSAGE TRANSMITTED. THIS INDICATES THAT THE REMOTE STATION RECEIVED THE RFT WITHOUT ERROR BUT IS TEMPORARILY UNABLE TO CONTINUE WITH THE TEST.

A02B RRRR AAAA

RVI RECEIVED IN RESPONSE TO THE RFT MESSAGE TRANSMITTED. THIS IS A VERY UNUSUAL RESPONSE TO AN RFT MESSAGE. RVI INDICATES THAT THE REMOTE STATION HAS RECEIVED THE RFT WITHOUT ERROR AND IS READY TO CONTINUE, BUT THE THE REMOTE STATION IS REQUESTING THAT THE LOCAL STATION TERMINATE THE TEST. THE LOCAL STATION WILL IGNORE THIS REQUEST AND CONTINUE WITH THE TEST.

A02C RRRR AAAA

POSITIVE ACKNOWLEDGEMENT (ACK1) RECEIVED IN RESPONSE TO THE RFT MESSAGE TRANSMITTED.

A02E RRRR AAAA

EOT RECEIVED AS EXPECTED FROM THE REMOTE STATION.

A030 RRRR AAAA

THE SELECTION ADDRESS WAS EXPECTED FROM THE CONTROL STATION BUT EOT WAS RECEIVED. THIS IS A NORMAL ATTEMPT BY THE CONTROL STATION TO RESET ALL STATIONS TO CONTROL MODE BEFORE SENDING THE SELECTION ADDR.

A031 RRRR AAAA

ENQ OR THE SELECTION ADDRESS SUCCESSFULLY RECEIVED.

A033 RRRR AAAA

WACK RECEIVED IN RESPONSE TO ENQ. THIS INDICATES THAT THE REMOTE STATION IS TEMPORARILY UNABLE TO RECEIVE THE TEST MESSAGES.

A034 RRRR AAAA

POSITIVE ACKNOWLEDGEMENT RECEIVED IN RESPONSE TO ENQ. TEST MODE IS ENTERED AND TRANSMISSION OF TEST MESSAGES BEGINS.

A036 RRRR AAAA

WACK RECEIVED IN RESPONSE TO A TEST MESSAGE. THIS INDICATES THAT THE REMOTE STATION RECEIVED THE TEST MESSAGE WITHOUT ERROR BUT IS TEMPORARILY UNABLE TO RECEIVE FURTHER TEST MESSAGES.

A037 RRRR AAAA

POSITIVE ACKNOWLEDGEMENT (ACKO OR ACK1) RECEIVED IN RESPONSE TO A TEST MESSAGE.

A039 RRRR AAAA

TEST MESSAGE RECEIVED WITHOUT ERROR.

A03B RRRR AAAA

END OF TEST EOT SUCCESSFULLY RECEIVED.

A03C RRRR AAAA

DISC RECEIVED INDICATING NORMAL END OF TEST AND LINE DISCONNECT.

A03E RRRR AAAA

EOT SUCCESSFULLY TRANSMITTED.

A03F RRRR AAAA

DISC SUCCESSFULLY TRANSMITTED.

A040 RRRR AAAA

EOT SUCCESSFULLY RECEIVED FOLLOWING RECEIPT OF REQUEST-FOR-TEST MESSAGE. THIS MESSAGE OCCURS DURING THE PROCESSING OF A REQUEST-FOR-TEST MESSAGE WITH AN X VALUE OF 99.

A041 RRRR AAAA

CONTINUE TIMER TIMED OUT. THESE MESSAGES WILL OCCUR IF THE DELAY BEFORE TRANSMIT OPTION IN EDIT CARD O HAS BEEN SPECIFIED.

A042 RRRR AAAA

TTD RECEIVED ON ATTEMPT TO RECEIVE TEST MESSAGE.

4.2 DATA (D00X) PRINTOUTS

D001 0000 0000 XXXXXXXX XXXXXXXX XXXXXXXX (7 MODIFIERS)

THIS STATISTICS TABLE IS PRINTED IMMEDIATELY FOLLOWING THE END-OF-TEST PRINTOUT IF ONE OR MORE TEST MESSAGES WERE RECEIVED. THE SEVEN DECIMAL MODIFIERS PROVIDE THE FOLLOWING INFORMATION...

- MOD1....THE TEST MESSAGE NUMBER (SEE SEC. 5.3) IF THE LOCAL STATION TRANSMITTED THE REQUEST-FOR-TEST, OTHERWISE ALL ZEROS.
- MOD2....THE X VALUE FROM THE RFT MESSAGE TRANSMITTED OR RECEIVED.
- MOD3....THE Y VALUE FROM THE RFT MESSAGE TRANSMITTED OR RECEIVED.
- MOD4....THE NUMBER OF TEST MESSAGES RECEIVED WITHOUT ERROR.
- MOD5....THE NUMBER OF TEST MESSAGES RECEIVED THAT WERE PROPERLY FRAMED BY START AND END CHARACTERS BUT THAT CONTAINED ERRORS.
- MOD6....THE NUMBER OF TIMES THAT NOTHING WAS RECEIVED (RECEIVE TIMEOUTS) ON AN ATTEMPT TO RECEIVE A TEST MESSAGE.
- MOD7....THE NUMBER OF TEST MESSAGES RECEIVED THAT WERE NOT PROPERLY FRAMED BY START AND END CHARACTERS.

D002 0000 0000 XXXXXXXX XXXXXXXX XXXXXXXX (7 MODIFIERS)

THIS STATISTICS TABLE IS PRINTED IMMEDIATELY FOLLOWING THE END-OF-TEST PRINTOUT IF ONE OR MORE TEST MESSAGES WERE TRANSMITTED. THE SEVEN DECIMAL MODIFIERS PROVIDE THE FOLLOWING INFORMATION...

- MOD1....THE TEST MESSAGE NUMBER (SEE SEC. 5.3) IF THE LOCAL STATION TRANSMITTED THE REQUEST-FOR-TEST, OTHERWISE ALL ZEROS.
- MOD2....THE X VALUE FROM THE RFT MESSAGE TRANSMITTED OR RECEIVED.
- MOD3....THE Y VALUE FROM THE RFT MESSAGE TRANSMITTED OR RECEIVED.
- MOD4....THE NUMBER OF POSITIVE RESPONSES (ACK0 OR ACK1) RECEIVED IN RESPONSE TO TEST MESSAGES TRANSMITTED.
- MOD5....THE NUMBER OF NEGATIVE RESPONSES (NAKS) RECEIVED IN RESPONSE TO TEST MESSAGES TRANSMITTED.
- MOD6....THE NUMBER OF TIMES THAT NOTHING WAS RECEIVED (RECEIVE TIMEOUTS) IN RESPONSE TO TEST MESSAGES TRANSMITTED.
- MOD7....THE NUMBER OF INVALID RESPONSES RECEIVED (OTHER THAN ACK0/1 OR NAK) IN RESPONSE TO TEST MESSAGES TRANSMITTED.

D003 RRRR AAAA XXXX XXXX

XXXX
XXXX XXXX XXXX XXXX XXXX XXXX (UP TO 14 MODIFIERS)
XXXX XXXX XXXX XXXX XXXX XXXX
XXXX XXXX XXXX XXXX XXXX XXXX

THIS PRINTOUT ALWAYS OCCURS FOLLOWING A STRING OF ONE OR MORE STORED STATUS OR ERROR PRINTOUTS (AOXX OR EOXX). ALL PRINTOUTS IN THE STRING HAVE THE SAME RID AND RAD AND ALL REFER TO THE SAME I/O OPERATION. THE FIRST LINE OF THIS PRINTOUT PROVIDES THE OPERATING DSW AND BYTE COUNT DSW SENSED WHEN THE CA INTERRUPT OCCURED. THE FIRST MODIFIER IS THE OPERATING DSW.

THE REMAINING LINES OF THE PRINTOUT CONSIST OF A DUMP OF THE TRANSMIT AND/OR RECEIVE TABLE(S) USED IN THE I/O OPERATION. EACH SEPARATE TRANSMIT OR RECEIVE TABLE IS PRECEDED BY A BLANK LINE.

THE FIRST LINE OF A TABLE PRINTOUT IS THE ORIGINAL BYTE COUNT WORD. BIT ZERO OF THIS WORD BEING ON INDICATES THAT THE TABLE WAS CHAINED TO ANOTHER TABLE. BIT 2 BEING ON INDICATES A TRANSMIT TABLE. BIT 2 BEING OFF INDICATES A RECEIVE TABLE.

IF, AFTER COMPLETION OF AN I/O OPERATION, THE BYTE COUNT SENSED INDICATES THAT NOTHING WAS RECEIVED FROM THE REMOTE STATION, THEN THE RECEIVE TABLE WILL BE OMITTED FROM THE PRINTOUT.

A FEW SPECIAL TEST ROUTINES CONTAIN A TRANSMIT OR RECEIVE TABLE CHAINED TO A SECOND TABLE WHICH IS IN TURN CHAINED BACK TO ITSELF. FOR THESE ROUTINES, THE SECOND TABLE WILL ALWAYS BE OMITTED FROM THE PRINTOUT.

THE REMAINING LINES OF A TABLE PRINTOUT CONSIST OF THE DATA AND CONTROL CHARACTERS TRANSMITTED AND RECEIVED, AND DIAGNOSTIC WORDS IF THE I/O OPERATION WAS IN DIAGNOSTIC MODE. IF OPERATION WAS IN NORMAL MODE THE TABLES ARE PRINTED EXACTLY AS THEY APPEAR IN CORE ON COMPLETION OF THE I/O OPERATION - PACKED TWO CHARACTERS PER WORD.

IF OPERATION WAS IN DIAGNOSTIC MODE, DATA TRANSMITTED AND RECEIVED WILL BE FLAGGED BY /FF IN BIT POSITIONS 0-7, AND THE DATA CHARACTER WILL APPEAR IN BIT POSITIONS 8-15. DIAGNOSTIC WORDS SHOULD NEVER HAVE /FF IN BIT POSITIONS 0-7.

DIAGNOSTIC WORDS APPEARING IN TRANSMIT TABLES HAVE BITS 7 THRU 15 SHIFTED RIGHT ONE POSITION BEFORE PRINTING. THIS CAUSES BITS 8-15 OF THE PRINTED DIAGNOSTIC WORD TO CONTAIN THE DATA CHARACTER AS IT WAS TRANSMITTED TO THE COMMUNICATION LINE.

4.3 ERROR (EXXX) PRINTOUTS

EEE1 0000 0000

AN INVALID Y VALUE WAS ENTERED VIA FUNCTION 3 (TABLE 3). VALID VALUES ARE 01-99 AND MUST BE ENTERED AS TWO DECIMAL DIGITS. THE PROGRAM HAS REPLACED THE INVALID ENTRY WITH A VALUE OF 03.

EEE2 0000 0000

AN INVALID RFT SELECTION WAS ENTERED VIA FUNCTION 1 (TABLE 1). REFER TO TABLE 1 AND ENTER ANOTHER SELECTION IF DESIRED.

EEE4 0000 0000

THE PROGRAM EDIT CARDS USED TO DEFINE TEST MESSAGE 01 ARE INCORRECT. REFER TO THE EDIT PROCEDURE (SECTION 6.4) AND CORRECT THE EDIT CARDS. RELOAD THE PROGRAM.

EEE5 0000 0000

THE SECOND EDIT CARD (ED01) IS INCORRECT OR MISSING. REFER TO THE EDIT PROCEDURE (SECTION 6.4) AND CORRECT THE EDIT CARDS. RELOAD THE PROGRAM.

CA TRANSMIT/RECEIVE TEST

CA TRANSMIT/RECEIVE TEST

EEE6 0000 0000

THE CA PROGRAM WAS LOADED ACROSS THE 32K CORE BOUNDARY. PROGRAM RELOAD IS REQUIRED. REPOSITION THE CA PROGRAM IN THE PROGRAM LOAD SEQUENCE OR USE THE MONITOR LOAD OPTIONS TO RELOCATE THE PROGRAM.

EE01 RRRR AAAA XXXX XXXX

AN EXPECTED CA INTERRUPT FAILED TO OCCUR. RRRR IS THE NUMBER OF THE TEST ROUTINE THAT WAS IN EXECUTION AT THE TIME THE FAILURE OCCURED. THE FIRST MODIFIER IS THE OPERATING DSW AND THE SECOND MODIFIER IS THE BYTE COUNT DSW SENSED AT THE TIME THE FAILURE WAS DETECTED. THIS CONDITION FORCES TERMINATION OF ANY TEST OR LINE ACTIVITY THAT WAS IN PROGRESS AT THE TIME OF THE FAILURE.

EE02 RRRR AAAA

THE LOCAL STATION HAD SUCCESSFULLY TRANSMITTED AN RFT MESSAGE, RECEIVED THE RESPONSE (ACK1), AND TRANSMITTED EOT TO INITIATE A TURNAROUND. NO SELECTION OR ENQ WAS RECEIVED AFTER N ATTEMPTS. THIS CONDITION INDICATES THAT THE REMOTE STATION FAILED TO RECEIVE THE EOT AND THEREFORE DID NOT TURNAROUND.

EE03 RRRR AAAA

THE REQUIRED NUMBER OF ATTEMPTS (Y) TO RECEIVE TEST MESSAGES HAD BEEN PERFORMED AND THE REMOTE STATION WAS NOW EXPECTED TO END THE TEST BY TRANSMITTING EOT OR DISC. NO EOT OR DISC WAS RECEIVED. THE LOCAL STATION ENDED THE TEST AT THIS POINT BY TRANSMITTING EOT OR DISC.

EE04 RRRR AAAA

THE TEST WAS TERMINATED BECAUSE OF FAILURE TO RECOVER FROM SOME ABNORMAL CONDITION AFTER N (RETRY COUNT) ATTEMPTS. NORMALLY THIS TYPE OF TEST TERMINATION IS THE RESULT OF REPEATED ERRORS OCCURING BEFORE ANY TEST MESSAGES ARE TRANSMITTED OR RECEIVED. IT IS POSSIBLE, HOWEVER, FOR THIS TYPE OF TERMINATION TO OCCUR AS A RESULT OF REPEATED WACK RESPONSES FROM THE REMOTE STATION.

EE05 RRRR AAAA

EOT WAS RECEIVED FROM THE REMOTE STATION WHILE A TEST WAS IN PROGRESS BUT BEFORE THE NORMAL END OF TEST. THIS EOT TERMINATES THE TEST PROCEDURE.

EE06 RRRR AAAA

DISC WAS RECEIVED FROM THE REMOTE STATION WHILE A TEST WAS IN PROGRESS BUT BEFORE THE NORMAL END OF TEST. THIS DISC TERMINATES THE TEST AND CAUSES LINE DISCONNECT.

EE07 RRRR AAAA

N (RETRY COUNT) UNSUCCESSFULL ATTEMPTS HAVE BEEN MADE TO ESTABLISH A CONNECTION WITH THE REMOTE STATION. THIS IS PROBABLY NOT A TRUE ERROR CONDITION SINCE THE MOST LIKELY CAUSE IS THAT THE REMOTE STATION HAS NOTHING TO TRANSMIT OR IS NOT YET READY TO RECEIVE. USUALLY THIS PRINTOUT MERELY INDICATES THAT BOTH STATIONS ARE TRYING TO RECEIVE. ALTHOUGH THIS IS NOT USUALLY AN ERROR CONDITION, IT IS PRINTED AS AN ERROR MESSAGE TO ALERT THE OPERATOR TO THE POSSIBILITY THAT A FAILURE MAY EXIST SUCH THAT INITIAL COMMUNICATIONS WITH THE REMOTE STATION CANNOT BE ESTABLISHED. IT IS RECOMMENDED THAT THE OPERATOR USE ONE OF THE FOLLOWING DESCRIBED PROCEDURES AT THIS TIME.

- 1) IF IT IS DETERMINED THAT THE TWO STATIONS SHOULD HAVE SUCCESSFULLY ESTABLISHED COMMUNICATIONS, THEN SELECT THE 'TRACE ENTIRE TEST' OPTION (FUNCTION 0 SW 10) TO TRY TO DETERMINE THE CAUSE OF THE FAILURE.
- 2) FOR NORMAL OPERATION OF THE PROGRAM, SELECT THE 'BYPASS EE07 PRINTOUTS' OPTION (FUNCTION 0 SW 12) TO PREVENT FURTHER EE07 PRINTOUTS. WHEN THIS IS DONE THE OPERATOR SHOULD TAKE NOTE OF THE AAAX PRINTOUTS TO MONITOR THE STATE OF LINE INITIALIZATION ATTEMPTS. ONE AAAX PRINTOUT IS OUTPUT EACH TIME THE INITIALIZATION STATE CHANGES OR AFTER EACH N ATTEMPTS TO ESTABLISH A CONNECTION.

EE01 RRRR AAAA

CHANNEL STOP INDICATOR ON (DSW BIT 0) AFTER A CA INTERRUPT.

IF AN EE02 MESSAGE FOLLOWS THIS PRINTOUT, THEN THE ERROR WAS CAUSED BY A STORAGE PROTECT VIOLATION. REFER TO THE EE02 DESCRIPTION.

IF NO EE02 PRINTOUT OCCURS, THEN THIS ERROR INDICATES A PC OR BUS OUT PARITY ERROR OR A CAR CHECK. THIS CONDITION MAY OCCUR IN DIAGNOSTIC MODE IF DIAGNOSTIC WORDS ARE INCORRECTLY INSERTED IN A TRANSMIT TABLE SUCH AS WHEN SYN CHARACTERS ARE TOO FREQUENTLY INSERTED OR WHEN BCC CHARACTERS OR DATA DLE CHARACTERS FAIL TO BE INSERTED IN THE DATA STREAM.

EE02 RRRR AAAA

STORAGE PROTECT VIOLATION INDICATOR ON (DSW BIT 2) AFTER A CA INTERRUPT.

THIS INDICATOR IS TURNED ON ALONG WITH THE CHANNEL STOP INDICATOR (DSW BIT 0) WHEN THE CA TRIES TO STORE RECEIVED DATA INTO A STORAGE PROTECTED AREA OF CORE.

CA TRANSMIT/RECEIVE TEST

E003 RRRR AAAA

TIMEOUT INDICATOR ON (DSW BIT 2) AFTER A CA INTERRUPT ON A TRANSMIT ONLY OPERATION.

THE CA WAS INITIALIZED WITH A SINGLE TRANSMIT TABLE AND NO CHAINING. A TABLE COMPLETE INTERRUPT SHOULD HAVE OCCURED BEFORE THE TIMEOUT INDICATOR CAME ON - IT DID NOT.

E004 RRRR AAAA

UNEXPECTED END-CHARACTER-DECODED OR RINGING INDICATOR IN DSW (BIT 3 ON) AFTER A CA INTERRUPT.

EITHER THE CA WAS CLEARED AND THE CONTINUE TIMER STARTED OR THE CA WAS INITIALIZED WITH A SINGLE TRANSMIT TABLE WITH NO CHAINING. IN EITHER CASE, THIS INDICATOR SHOULD NOT HAVE COME ON.

E005 RRRR AAAA

UNEXPECTED TABLE COMPLETE INDICATOR IN DSW (BIT 4 ON) AFTER A CA INTERRUPT.

THE CA T/R TEST SUPPRESSES THE TABLE COMPLETE INTERRUPT ON ALL TRANSMIT TABLES THAT ARE CHAINED TO ANOTHER TABLE. RECEIVE TABLES ARE ALWAYS SUFFICIENTLY LONG TO RECEIVE ANY EXPECTED DATA. TABLE COMPLETE INTERRUPTS SHOULD THEREFORE OCCUR ONLY AT THE END OF TRANSMIT ONLY OPERATIONS.

A COMMON CAUSE OF THIS ERROR IS LOSS OF CHARACTER SYNCHRONIZATION DURING A RECEIVE OPERATION. WHEN THIS OCCURS, THE END CHARACTER WILL BE INCORRECTLY RECEIVED AND THE CA WILL CONTINUE CYCLE STEALING TO THE END OF THE RECEIVE TABLE.

E006 RRRR AAAA

DATA PARITY CHECK INDICATOR ON IN DSW (BIT 5 ON) AFTER A CA INTERRUPT.

THIS ERROR INDICATES HARDWARE DETECTION OF A PARITY ERROR DURING DATA TRANSFER CYCLES.

THE USUAL CAUSE OF THIS ERROR ON MACHINES USING ASCII CODE IS A CHARACTER RECEIVED WITH BAD (EVEN) PARITY. THIS IS USUALLY THE RESULT OF THE CHARACTER BEING ALTERED ON THE TRANSMISSION LINE BY LINE NOISE.

CA TRANSMIT/RECEIVE TEST

E007 RRRR AAAA

DATA BCC CHECK INDICATOR ON IN DSW (BIT 6 ON) AFTER A CA INTERRUPT.

THE USUAL CAUSE OF THIS ERROR IS ALTERATION OF RECEIVED DATA ON THE TRANSMISSION LINE DUE TO LINE NOISE. THIS SHOULD ONLY OCCUR WHEN TEXT IS BEING RECEIVED.

IF THIS ERROR OCCURS WHEN NO TEXT IS BEING RECEIVED THEN THE PROBLEM IS PROBABLY NOT ASSOCIATED WITH THE BCC REGISTER, BUT IS MORE LIKELY TO BE ASSOCIATED WITH THE TEXT TRIGGER OR DATA CHECK LATCH.

IF THIS ERROR OCCURS VERY FREQUENTLY, BUT ONLY WHEN TEXT IS BEING RECEIVED, THEN THE PROBABLE CAUSE IS INCORRECT CALCULATION OF BCC CHARACTERS. THE FAILURE CAN EXIST AT EITHER THE LOCAL OR THE REMOTE STATION.

E008 RRRR AAAA

THE DATA OVERRUN INDICATOR WAS ON (DSW BIT 7) AFTER A CA INTERRUPT.

THIS ERROR INDICATES THAT A CYCLE STEAL REQUEST FOR A CHARACTER TRANSFER WAS NOT ACKNOWLEDGED WITHIN THE ONE BIT TIME OF DATA BUFFERING.

E009 RRRR AAAA

DATA SET NOT READY (DSW BIT 8 OFF) AFTER A CA INTERRUPT.

THIS ERROR INDICATES THAT THE 'DATA SET READY' LINE FROM THE DATA SET WAS NOT ON WHEN IT WAS EXPECTED TO BE. ON A LEASED OR PRIVATE LINE 'DATA SET READY' SHOULD ALWAYS BE ON.

ON A SWITCHED LINE THIS ERROR INDICATES THAT 'DATA SET READY' HAD BEEN ON, BUT THAT IT WENT BACK OFF UNEXPECTEDLY. THIS CAN BE CAUSED BY THE REMOTE STATION DISCONNECTING WITHOUT FIRST SENDING THE DISC SIGNAL, OR BY THE LOCAL STATION FAILING TO RECEIVE A DISC SIGNAL.

E00A RRRR AAAA

THE COMMAND REJECT INDICATOR WAS ON IN THE DSW (BIT 9) AFTER A CA INTERRUPT.

THE CA T/R TEST ALWAYS EXECUTES A 'CLEAR CA' INSTRUCTION IMMEDIATELY BEFORE EXECUTING ANY 'INITIALIZE' INSTRUCTION. THIS SHOULD PREVENT ANY COMMAND REJECT INTERRUPTS.

E00D RRRR AAAA

A CA INTERRUPT OCCURED, BUT THE OPERATING DSW DID NOT INDICATE THE CAUSE OF THE INTERRUPT.

PROBABLY A TIMEOUT, TABLE COMPLETE, OR END-CHARACTER-DECODED INTERRUPT OCCURED, BUT THE INDICATOR FAILED TO APPEAR IN THE DSW.

E00E RRRR AAAA

AFTER A TRANSMIT OPERATION IN DIAGNOSTIC MODE, AT LEAST ONE OF THE TRANSMITTED CHARACTERS CONTAINED IN THE DIAGNOSTIC WORDS DID NOT COMPARE EQUAL TO THE CHARACTER THAT SHOULD HAVE BEEN TRANSMITTED.

THIS IS AN INDICATION OF A FAILURE TO TRANSMIT PROPERLY. THIS ERROR IS OFTEN THE RESULT OF FAILURE TO START OR COMPLETE A TRANSMIT OPERATION, IN WHICH CASE, SOME OR ALL OF THE DIAGNOSTIC WORDS IN THE TRANSMIT TABLE WILL BE ZEROS.

IF THE TRANSMIT OPERATION CONTINUED NORMALLY TO THE END OF THE TRANSMIT TABLE, THEN THIS ERROR WAS PROBABLY CAUSED BY A FAILURE TO PROPERLY LOAD OR SHIFT THE SERIALIZER-DESERIALIZER REGISTER.

E00F RRRR AAAA

AFTER A RECEIVE OPERATION IN DIAGNOSTIC MODE AT LEAST ONE OF THE RECEIVED CHARACTERS DID NOT COMPARE EQUAL TO THE CHARACTER CONTAINED IN THE ASSOCIATED DIAGNOSTIC WORD.

E010 RRRR AAAA

AFTER THE CA INTERRUPT OCCURED ON AN OPERATION WHICH CHAINED A TRANSMIT TABLE TO A RECEIVE TABLE, BIT 3 IN THE SENSED BYTE COUNT WAS ON. THIS INDICATES THAT THE INTERRUPT OCCURED DURING THE TRANSMIT TABLE.

E011 RRRR AAAA

THE BYTE COUNT SENSED AFTER A CA INTERRUPT WAS GREATER THAN THE ORIGINAL RECEIVE BYTE COUNT.

THE USUAL CAUSE OF THIS ERROR IS FAILURE TO START A TRANSMIT OPERATION WHEN A TRANSMIT TABLE IS CHAINED TO A RECEIVE TABLE AND THE TRANSMIT BYTE COUNT IS GREATER THAN THE RECEIVE BYTE COUNT.

E012 RRRR AAAA

THE BYTE COUNT SENSED AFTER A CA INTERRUPT WAS EQUAL TO THE ORIGINAL RECEIVE BYTE COUNT.

THIS CONDITION INDICATES THAT THE CA WAS INITIALIZED IN RECEIVE MODE BUT CHARACTER PHASE WAS NEVER ESTABLISHED AND NOTHING WAS RECEIVED.

E013 RRRR AAAA

THE TIMEOUT INDICATOR WAS ON (DSW BIT 2) AFTER A CA INTERRUPT.

THIS PRINTOUT CAN ONLY OCCUR FOLLOWING A PREVIOUS ERROR PRINTOUT AND IS USED ONLY TO PROVIDE THE ADDITIONAL INFORMATION THAT A TIMEOUT OCCURED.

E014 RRRR AAAA

THE TIMEOUT INDICATOR WAS ON (DSW BIT 2) AFTER A CA INTERRUPT OCCURED BUT THE BYTE COUNT SENSED INDICATED THAT SOMETHING WAS RECEIVED.

THE BYTE COUNT SENSED AFTER THE CA INTERRUPT WAS LESS THAN THE ORIGINAL RECEIVE BYTE COUNT. THIS INDICATES THAT CHARACTER PHASE WAS ESTABLISHED AND SOMETHING WAS RECEIVED BEFORE THE TIMEOUT OCCURED.

E018 RRRR AAAA

THE CA WAS CLEARED AND THE CONTINUE TIMER STARTED. AFTER THE INTERRUPT A DSW ERROR WAS DETECTED. REFER TO PRECEDING PRINTOUTS.

E01A RRRR AAAA

EOT RECEIVED BEFORE THE NORMAL END OF TEST. THIS EOT TERMINATES THE TEST PROCEDURE.

E01B RRRR AAAA

DISC RECEIVED BEFORE THE NORMAL END OF TEST. THIS DISC TERMINATES THE TEST PROCEDURE.

E01D RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE THE INITIAL ENQ OR ID ENQ FROM THE REMOTE STATION. THE CA WAS INITIALIZED IN RECEIVE MODE WITH NO CHAINING.

E01E RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE INITIAL ENQ OR ID ENQ FROM THE REMOTE STATION.

E020 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO TRANSMIT THE INITIAL ENQ OR ID ENQ AND RECEIVE THE RESPONSE. THE CA WAS INITIALIZED WITH A TRANSMIT TABLE CHAINED TO A RECEIVE TABLE.

E021 RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED IN RESPONSE TO THE INITIAL ENQ OR ID ENQ TRANSMITTED.

E023 RRRR AAAA

THE CA WAS CLEARED AND THE CONTINUE TIMER STARTED WITH THE RINGING INTERRUPT ENABLED. AFTER THE INTERRUPT OCCURED A DSW ERROR WAS DETECTED. REFER TO THE PRECEDING PRINTOUTS.

E024 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO TRANSMIT THE THREE SECOND TONE. THE CA WAS INITIALIZED WITH A TRANSMIT TABLE CHAINED TO ANOTHER TRANSMIT TABLE WHICH WAS IN TURN CHAINED BACK TO ITSELF. ONLY SYN CHARACTERS WERE CONTAINED IN THE TRANSMIT TABLES SO THAT AFTER THREE SECONDS, A TIMEOUT SHOULD HAVE OCCURED.

E026 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED WHILE THE CA WAS INITIALIZED IN THE RECEIVE PASSIVE MODE. THE CA WAS INITIALIZED WITH A RECEIVE TABLE CHAINED TO A RECEIVE TABLE WHICH WAS IN TURN CHAINED BACK TO ITSELF.

E028 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE THE POLLING OR SELECTION ADDRESS. THE CA WAS INITIALIZED WITH A RECEIVE TABLE CHAINED TO ANOTHER RECEIVE TABLE WHICH WAS IN TURN CHAINED BACK TO ITSELF.

E02A RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE THE RFT MESSAGE. NO TEXT, PROPERLY FRAMED BY START AND END CHARACTERS, WAS RECEIVED.

E02B RRRR AAAA

NOTHING WAS RECEIVED (TIMEOUT ONLY) ON AN ATTEMPT TO RECEIVE THE RFT MESSAGE.

E02C RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE THE RFT MESSAGE. TEXT, PROPERLY FRAMED BY START AND END CHARACTERS, WAS RECEIVED. THIS INDICATES THAT TRANSMISSION OF THE LAST RESPONSE WAS SUCCESSFULL, BUT AN ERROR WAS DETECTED DURING THE RECEIVE OPERATION.

E02D RRRR AAAA

ON AN ATTEMPT TO RECEIVE THE RFT MESSAGE, A SEQUENCE WAS RECEIVED THAT BEGAN WITH A PROPER START CHARACTER (SOH, STX, OR DLE STX) BUT ENDED WITH ENQ. THIS IS AN INDICATION THAT THE REMOTE STATION DETECTED AN ERROR DURING THE TRANSMISSION (A REMOTE STATION ERROR) AND ABORTED THE TRANSMISSION.

E02E RRRR AAAA

ENQ RECEIVED ON AN ATTEMPT TO RECEIVE THE RFT MESSAGE. THIS INDICATES THAT THE REMOTE STATION FAILED TO RECEIVE THE LAST TRANSMISSION BY THE LOCAL STATION.

E030 RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED FROM THE REMOTE STATION ON AN ATTEMPT TO RECEIVE THE RFT MESSAGE.

E031 RRRR AAAA

ID ENQ RECEIVED ON AN ATTEMPT TO RECEIVE THE RFT MESSAGE. THIS INDICATES THAT THE REMOTE STATION IS STILL BIDDING FOR THE LINE AND HAS AS YET RECEIVED NOTHING FROM THE LOCAL STATION.

E032 RRRR AAAA

TEXT WAS RECEIVED WITHOUT ERROR ON AN ATTEMPT TO RECEIVE THE RFT MESSAGE, BUT THE TEXT RECEIVED WAS NOT A VALID REQUEST-FOR-TEST. IF THE REMOTE STATION IS STILL ON-LINE TO THE CUSTOMERS APPLICATION, THIS MAY BE AN ATTEMPT BY THE REMOTE STATION TO TRANSMIT CUSTOMER DATA.

E034 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE ENQ DURING AN ERROR RECOVERY PROCEDURE.

E035 RRRR AAAA

NOTHING WAS RECEIVED (TIMEOUT ONLY) ON AN ATTEMPT TO RECEIVE ENQ DURING AN ERROR RECOVERY PROCEDURE.

E036 RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED ON AN ATTEMPT TO RECEIVE ENQ DURING AN ERROR RECOVERY PROCEDURE.

E038 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE THE RESPONSE TO THE RFT MESSAGE TRANSMITTED.

E039 RRRR AAAA

NOTHING WAS RECEIVED (TIMEOUT ONLY) ON AN ATTEMPT TO RECEIVE THE RESPONSE TO AN RFT MESSAGE TRANSMITTED.

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E03A RRRR AAAA

THE WRONG ALTERNATE POSITIVE ACKNOWLEDGEMENT (ACKO) WAS RECEIVED IN RESPONSE TO THE RFT MESSAGE TRANSMITTED. THIS INDICATES THAT THE REMOTE STATION HAS NOT YET RECEIVED THE RFT MESSAGE.

E03B RRRR AAAA

NAK WAS RECEIVED IN RESPONSE TO THE RFT MESSAGE TRANSMITTED. THIS INDICATES THAT THE REMOTE STATION RECEIVED THE RFT BUT WITH AN ERROR INDICATION.

E03C RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED IN RESPONSE TO THE RFT MESSAGE TRANSMITTED.

E03E RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE THE LINE TURNAROUND EOT AFTER AN RFT MESSAGE HAD BEEN RECEIVED AND ACKNOWLEDGED.

E03F RRRR AAAA

NOTHING WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE LINE TURNAROUND EOT AFTER AN RFT MESSAGE HAD BEEN RECEIVED AND ACKNOWLEDGED.

IF THE REMOTE STATION HAS TRANSMITTED THE EOT, THEN BOTH STATIONS ARE NOW WAITING FOR THE OTHER TO TRANSMIT. THIS IS AN UNRECOVERABLE ERROR CONDITION AND ANY FURTHER RECOVERY ATTEMPTS WILL FAIL.

E040 RRRR AAAA

ENQ WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE LINE TURNAROUND EOT AFTER AN RFT MESSAGE HAD BEEN RECEIVED AND ACKNOWLEDGED. THIS INDICATES THAT THE REMOTE STATION FAILED TO RECEIVE THE ACKNOWLEDGEMENT.

E041 RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE LINE TURNAROUND EOT AFTER AN RFT MESSAGE HAD BEEN RECEIVED AND ACKNOWLEDGED.

E043 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE ENQ OR THE SELECTION ADDRESS JUST PRIOR TO RECEIVING TEST MESSAGES.

E044 RRRR AAAA

NOTHING WAS RECEIVED (TIMEOUT ONLY) ON AN ATTEMPT TO RECEIVE ENQ OR THE SELECTION ADDRESS JUST PRIOR TO RECEIVING TEST MESSAGES.

IF THIS ERROR WAS CAUSED BY FAILURE OF THE REMOTE STATION TO RECEIVE THE PREVIOUSLY TRANSMITTED EOT, THEN AN UNRECOVERABLE SITUATION HAS BEEN REACHED AND ANY FURTHER RECOVERY ATTEMPTS WILL FAIL.

E045 RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED ON AN ATTEMPT TO RECEIVE ENQ OR THE SELECTION ADDRESS JUST PRIOR TO RECEIVING TEST MESSAGES.

E047 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO TRANSMIT ENQ AND RECEIVE A RESPONSE IN PREPARATION FOR TRANSMISSION OF TEST MESSAGES.

E048 RRRR AAAA

NOTHING WAS RECEIVED (TIMEOUT ONLY) IN RESPONSE TO THE ENQ TRANSMITTED IN PREPARATION FOR TRANSMISSION OF TEST MESSAGES. SEE DESCRIPTION FOR 'E049' MESSAGE BELOW

E049 RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED IN RESPONSE TO THE ENQ TRANSMITTED IN PREPARATION FOR TRANSMISSION OF TEST MESSAGES. THIS ERROR MESSAGE OR THE 'E048' ERROR MESSAGE ABOVE MAY OCCUR WHEN RUNNING WITH A 2780 OR SIMILAR DEVICE WHICH REQUIRES MANUAL INTERVENTION JUST PRIOR TO RECEIVING TEST MESSAGES. THE DELAY BEFORE TRANSMIT OPTION IN EDIT CARD 0 SHOULD BE SPECIFIED IF THIS IS THE CASE, HOWEVER, ERROR PRINTOUTS MAY STILL OCCUR IF THE DEVICE IS STILL UNABLE TO RECEIVE THE TEST MESSAGES AFTER THE TEN SECOND DELAY.

E04B RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE A RESPONSE TO A TEST MESSAGE.

E04C RRRR AAAA

NOTHING WAS RECEIVED (TIMEOUT ONLY) IN RESPONSE TO A TEST MESSAGE.

E04D RRRR AAAA

NAK WAS RECEIVED IN RESPONSE TO A TEST MESSAGE.

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CA TRANSMIT/RECEIVE TEST

E04E RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED IN RESPONSE TO A TEST MESSAGE TRANSMITTED.

E050 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE THE FIRST TEST MESSAGE.

E051 RRRR AAAA

NOTHING WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE FIRST TEST MESSAGE.

E052 RRRR AAAA

ENQ WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE FIRST TEST MESSAGE. THIS INDICATES THAT THE REMOTE STATION FAILED TO RECEIVE THE PRECEDING ACKO.

E053 RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE FIRST TEST MESSAGE.

E054 RRRR AAAA

EOT WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE FIRST TEST MESSAGE. THIS INDICATES THAT THE CONTROL STATION FAILED TO RECEIVE THE PREVIOUS ACKO AND IS GOING TO TRANSMIT THE SELECTION SEQUENCE AGAIN.

E055 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE A TEST MESSAGE. NO PROPERLY FRAMED TEXT WAS RECEIVED.

E056 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE A TEST MESSAGE. TEXT WAS RECEIVED PROPERLY FRAMED BY START AND END CHARACTERS.

E057 RRRR AAAA

A TEST MESSAGE WAS RECEIVED FROM THE REMOTE STATION WITH NO INDICATION OF AN ERROR, BUT THE TEXT RECEIVED DID NOT COMPARE EQUAL TO THE TEST MESSAGE THAT WAS REQUESTED BY THE RFT.

E058 RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED ON AN ATTEMPT TO RECEIVE A TEST MESSAGE.

E059 RRRR AAAA

A TEST MESSAGE WAS RECEIVED FROM THE REMOTE STATION THAT STARTED WITH A VALID START SEQUENCE (STX OR DLE STX) BUT THAT ENDED WITH ENQ.

E05A RRRR AAAA

NOTHING WAS RECEIVED ON AN ATTEMPT TO RECEIVE A TEST MESSAGE.

E05C RRRR AAAA

THE ERRORS INDICATED BY THE PREVIOUS PRINTOUTS OCCURED ON AN ATTEMPT TO RECEIVE THE END OF TEST EOT.

E05D RRRR AAAA

NOTHING WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE END OF TEST EOT.

E05E RRRR AAAA

AN INVALID CONTROL SEQUENCE WAS RECEIVED ON AN ATTEMPT TO RECEIVE THE END OF TEST EOT.

E060 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO TRANSMIT EOT.

E061 RRRR AAAA

THE ERRORS INDICATED BY THE PRECEDING PRINTOUTS OCCURED ON AN ATTEMPT TO TRANSMIT DISC.

5. COMMENTS

5.1 GENERAL DESCRIPTION

THE 1800 CA TRANSMIT/RECEIVE TEST PROVIDES TEST COMMUNICATIONS WITH A REMOTE BSC STATION IN ACCORDANCE WITH STANDARD BSC LINE CONTROL AND TEST PROCEDURES. IN ORDER TO COMPLY WITH THESE STANDARD PROCEDURES IT IS NECESSARY THAT THE PROGRAM CONTINUOUSLY ATTEMPT TO MAINTAIN COMMUNICATIONS WITH THE REMOTE STATION. TO PROVIDE THIS CONTINUOUS MONITORING OF THE COMMUNICATION LINE WITH AS LITTLE INTERRUPTION AS POSSIBLE, THE PROGRAM IS ALMOST ENTIRELY INTERRUPT DRIVEN. THAT IS, THE FIRST CA I/O OPERATION IS STARTED IN THE MAINLINE PROGRAM, BUT ALL FOLLOWING CA I/O OPERATIONS ARE STARTED DURING INTERRUPT SERVICING. THIS RESULTS IN THE PROGRAM ALWAYS EXPECTING A CA INTERRUPT.

SINCE A CA INTERRUPT IS ALWAYS PENDING, ANY ACTION THAT HALTS THE PROGRAM, SUCH AS USE OF THE CONSOLE STOP KEY OR THE MONITOR 'HALT ON ERROR' OPTION, MAY RESULT IN CA ERROR PRINTOUTS. IF A WAIT IS ENTERED WITH THE CA INTERRUPT LEVEL UNMASKED, SUCH AS WHEN THE MONITOR 'HALT' OPTION IS SELECTED, THE CA PROGRAM WILL CONTINUE TO RUN BY INTERRUPTING OUT OF THE WAIT.

BECAUSE THE CA IS KEPT IN CONTINUOUS OPERATION AND THE CA OPERATES AT MUCH HIGHER DATA RATES THAN EITHER THE 1443 OR 1053 PRINTER, IT IS IMPOSSIBLE TO PRINT DIAGNOSTIC INFORMATION AS FAST AS IT IS ACCUMULATED. TO HANDLE THIS SITUATION, THE CA T/R TEST STORES DIAGNOSTIC INFORMATION IN CORE WHILE A TEST IS IN PROGRESS, THEN, AT THE END OF THE TEST, PRINTS ALL OF THIS ACCUMULATED INFORMATION AT ONE TIME. DURING THE PERIOD THAT THESE PRINTOUTS ARE BEING OUTPUT, THE PROGRAM CONTINUES TO MONITOR THE LINE FOR INCOMING CALLS FROM THE REMOTE STATION. IF ANYTHING IS RECEIVED FROM THE REMOTE STATION THAT REQUIRES A RESPONSE DURING THIS PERIOD, THE PROGRAM WILL TRANSMIT AN APPROPRIATE NEGATIVE RESPONSE (NAK OR EOT) TO INDICATE THAT THE CA PROGRAM IS BUSY AND NOT READY TO PERFORM ANOTHER TEST. NO DIAGNOSTIC INFORMATION IS STORED WHILE PRINTOUTS ARE IN PROGRESS.

FOLLOWING INITIAL PROGRAM LOAD AND AT ANY TIME THAT THE CA T/R TEST IS IN EXECUTION BUT NOT ACTUALLY PERFORMING A TEST, THE PROGRAM CONTINUOUSLY MONITORS THE COMMUNICATION LINE AND THE OPTION SELECTION SWITCHES. DURING THIS PERIOD 'START OF TEST' PRINTOUTS ARE PERIODICALLY OUTPUT (UNLESS BYPASSED) TO KEEP THE OPERATOR INFORMED OF THE STATE OF THE PROGRAM. OPTION SWITCHES MAY BE CHANGED AT ANY TIME BUT WILL BE READ ONLY DURING THIS INITIALIZATION PROCEDURE. IF THE OPERATOR HAS ENTERED A FUNCTION 1 ENTRY, THE PROGRAM WILL ATTEMPT TO INITIATE A TEST PROCEDURE WITH THE REMOTE STATION. IF NO FUNCTION 1 SELECTION HAS BEEN ENTERED, THE PROGRAM WILL SIMPLY MONITOR THE LINE FOR A TEST INITIALIZATION ATTEMPT BY THE REMOTE STATION.

THE INITIALIZATION STATE IS MAINTAINED UNTIL COMMUNICATION IS ESTABLISHED WITH THE REMOTE STATION AND A TEST PROCEDURE IS STARTED.

EACH TEST PROCEDURE PERFORMED BY THE CA T/R TEST CAN BE DIVIDED INTO TWO PHASES OF OPERATION. IN THE FIRST PHASE ONE OF THE BSC STATIONS TRANSMITS A 'REQUEST FOR TEST MESSAGE' TO REQUEST THAT A TEST PROCEDURE BE INITIATED. DURING THIS PHASE OF OPERATION NORMAL BSC LINE CONTROL AND ERROR RECOVERY PROCEDURES ARE USED. ERROR RECOVERY

ATTEMPTS DURING THIS PHASE ARE LIMITED TO THE RETRY COUNT (N) SPECIFIED IN THE EDIT CARDS. IF RECOVERY FROM AN ERROR FAILS AFTER N ATTEMPTS, THE TEST IS TERMINATED.

THE SECOND PHASE OF OPERATION IS REFERED TO AS 'TEST MODE' AND IS CONSIDERED TO BE THE ACTUAL TEST OF SYSTEM PERFORMANCE. IN TEST MODE 'TEST MESSAGES' ARE TRANSMITTED BY ONE OF THE STATIONS AND THE OTHER STATION RESPONDES EITHER POSITIVLY OR NEGATIVELY TO EACH TEST MESSAGE RECEIVED. NO ERROR RECOVERY IS ATTEMPTED IN TEST MODE. THE NUMBER OF TEST MESSAGES TRANSMITTED OR THE NUMBER OF ATTEMPTS TO RECEIVE TEST MESSAGES IN TEST MODE IS LIMITED BY THE Y COUNT CONTAINED IN THE RFT MESSAGE. WHILE IN TEST MODE A STATISTICS TABLE IS ACCUMULATED TO PROVIDE A SUMMARY OF THE TEST RESULTS.

WHEN A TEST PROCEDURE ENDS FOR ANY REASON, AN 'END OF TEST' PRINTOUT IS OUTPUT TO INDICATE THE REASON FOR TERMINATION. IF TEST MODE WAS ENTERED AND ANY TEST MESSAGES HAD BEEN TRANSMITTED OR RECEIVED THE STATISTICS TABLE WILL ALSO BE PRINTED. THE 'STORED' PRINTOUTS, IF ANY, WILL THEN BE OUTPUT.

THE CA T/R TEST IS DIVIDED INTO A LARGE NUMBER OF 'TEST ROUTINES' EACH OF WHICH INITIATES A SINGLE I/O OPERATION. THESE ROUTINES ARE ALL EXECUTED DURING SERVICING OF CA INTERRUPTS. EACH ROUTINE IS SETUP SO THAT A SINGLE INTERRUPT WILL COMPLETE THE FUNCTIONS OF THAT ROUTINE.

AFTER A 'TEST ROUTINE' HAS STARTED ITS I/O OPERATION, CONTROL IS RETURNED TO THE MAINLINE PROGRAM TO WAIT FOR THE CA INTERRUPT. WHEN THE INTERRUPT OCCURS THE RESULTS OF THE I/O OPERATION ARE ANALYZED. UNLESS THE 'BYPASS ENTIRE TRACE' OPTION IS SELECTED, A 'STORED' ERROR PRINTOUT IS STORED IN A TABLE IN CORE FOR EACH ERROR THAT IS DETECTED DURING THE ANALYZATION. IF NO ERRORS ARE DETECTED AND THE OPERATOR HAS SELECTED THE 'TRACE ENTIRE TEST' OPTION, THEN A SINGLE STATUS PRINTOUT IS STORED.

AFTER THE ANALYZATION IS COMPLETE, IF ANY ERROR OR STATUS MESSAGES WERE STORED, A D003 MESSAGE IS ALSO STORED. THE D003 PRINTOUT WILL ALWAYS CONTAIN THE OPERATING AND BYTE COUNT DSW'S SENSED AT THE TIME THE INTERRUPT OCCURED. ALL OR PART OF THE TRANSMIT AND/OR RECEIVE TABLES MAY ALSO BE INCLUDED IN THE D003 PRINTOUT.

THIS PROCEDURE IS REPEATED FOR EACH TEST ROUTINE UNTIL A TEST PROCEDURE IS TERMINATED. AT THE END OF THE TEST ALL OF THIS STORED INFORMATION IS PRINTED IN THE ORDER IN WHICH IT WAS ACCUMULATED.

PRINTOUTS INITIATED BY THE CA T/R TEST ARE DIVIDED INTO FOUR GROUPS DEPENDING ON THE TYPE OF INFORMATION PROVIDED BY THE PRINTOUT.

- A) START OF TEST PRINTOUTS (AAAX AND EEEX PRINTOUTS)
- B) END OF TEST PRINTOUTS (AAOX AND EEOX PRINTOUTS)
- C) STORED OR TRACE PRINTOUTS (AOXX AND EOXX PRINTOUTS)
- D) DATA PRINTOUTS (DOOX)

- A) START OF TEST PRINTOUTS (AAAX AND EEEX PRINTOUTS)

THESE PRINTOUTS OCCUR DURING COMMUNICATION LINE INITIALIZATION ATTEMPTS. THE STATUS (AAAX) PRINTOUTS OCCUR PERIODICALLY UNTIL A TEST PROCEDURE IS SUCCESSFULLY INITIATED BY EITHER THE LOCAL OR THE REMOTE STATION. THE NUMBER OF INITIALIZATION ATTEMPTS BETWEEN

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CA TRANSMIT/RECEIVE TEST

PRINTOUTS IS DETERMINED BY THE RETRY COUNT ENTERED IN THE EDIT CARDS. UNDER CERTAIN CONDITIONS, SUCH AS A SMALL RETRY COUNT OR RAPID EXHAUSTION OF THE RETRY COUNT, THESE PRINTOUTS MAY OCCUR AT UNDESIRABLY SHORT INTERVALS. IF, FOR THIS OR OTHER REASONS, THE OPERATOR DOES NOT WISH TO MONITOR THE INITIALIZATION STATE, THE AAAX PRINTOUTS MAY BE BYPASSED BY USE OF FUNCTION 0 SW 7. THE EEEX PRINTOUTS INDICATE INCORRECT OPTION SELECTION AND CANNOT BE BYPASSED. SINCE THESE PRINTOUTS ARE NOT ASSOCIATED WITH ANY PARTICULAR TEST ROUTINE, THE RID AND RAD ARE ALWAYS PRINTED AS ZEROS.

B) END OF TEST PRINTOUTS (AAOX AND EEEX PRINTOUTS)

ONE OF THESE PRINTOUTS WILL OCCUR EACH TIME A TEST PROCEDURE IS TERMINATED FOR ANY REASON. THE PRINTOUT INDICATES THE REASON FOR TERMINATION. ANY ACCUMULATED STATISTICS OR TRACE INFORMATION IS OUTPUT FOLLOWING THE END-OF-TEST PRINTOUT. THE RID AND RAD INCLUDED IN THESE PRINTOUTS REFER TO THE LAST TEST ROUTINE EXECUTED.

C) STORED OR TRACE PRINTOUTS (AOXX AND EOXX PRINTOUTS)

THESE PRINTOUTS OCCUR AS THE RESULT OF DIAGNOSTIC INFORMATION STORED IN A TABLE IN CORE DURING THE TEST COMMUNICATIONS WITH THE REMOTE STATION. AS EACH TEST ROUTINE IS EXECUTED, THE ROUTINE NUMBER AND THE MID OF EACH APPLICABLE PRINTOUT ARE STORED IN THE TABLE. NORMALLY ONLY ERROR PRINTOUTS ARE STORED SO THAT AT THE END OF A TEST ONLY THOSE ROUTINES THAT INDICATED ERRORS ARE LISTED. AN OPERATING OPTION, 'TRACE ENTIRE TEST' (TABLE 0), IS PROVIDED WHICH WILL CAUSE STATUS MESSAGES TO ALSO BE STORED. IF THIS OPTION IS SELECTED AT LEAST ONE PRINTOUT WILL OCCUR FOR EACH TEST ROUTINE EXECUTED. ANY NUMBER OF 'STORED' PRINTOUTS MAY OCCUR FOR EACH TEST ROUTINE EXECUTED. ROUTINES WILL ALWAYS BE LISTED IN THE ORDER IN WHICH THEY WERE EXECUTED, AND PRINTOUTS APPLICABLE TO EACH ROUTINE WILL BE PRINTED IN THE SEQUENCE IN WHICH THE CONDITIONS WERE DETECTED. GENERALLY, WHEN MORE THAN ONE ERROR IS LISTED FOR A ROUTINE, THE FIRST PRINTOUTS INDICATE HARDWARE DETECTED ERRORS SUCH AS DSW ERRORS, AND THE LAST PRINTOUT INDICATES THE CONDITION FROM A LINE CONTROL STANDPOINT SUCH AS AN INVALID SEQUENCE RECEIVED FROM THE REMOTE STATION. THE LAST 'STORED' STATUS OR ERROR MESSAGE PRINTED FOR EACH ROUTINE WILL ALWAYS BE FOLLOWED BY A D003 PRINTOUT. THE D003 PRINTOUT PROVIDES THE OPERATING DSW AND BYTE DSW SENSED WHEN THE INTERRUPT FOR THE INDICATED ROUTINE OCCURED. IF ONE OF THE 'TRACE DATA' OPTIONS IS SELECTED THE D003 PRINTOUT WILL ALSO LIST THE DATA TRANSMITTED AND RECEIVED. REFER TO D003 PRINTOUT DESCRIPTION IN SECTION 4.2. OCCASIONALLY, IF LARGE AMOUNTS OF INFORMATION MUST BE STORED, CORE MAY BECOME FULL OR STORED INFORMATION. IF THIS OCCURS, THE TEST WILL CONTINUE TO COMPLETION BUT NO FURTHER INFORMATION CAN BE SAVED. LOSS OF DIAGNOSTIC INFORMATION AND EXCESSIVELY LONG TRACE PRINTOUTS CAN BE AVOIDED BY SELECTING SMALL Y COUNT VALUES AND ONLY THOSE TRACE OPTIONS THAT ARE ABSOLUTELY REQUIRED.

D) DATA PRINTOUTS (D00X)

THE FIRST TWO DATA PRINTOUTS LISTED IN 4.2 (D001 AND D002) PROVIDE A BRIEF SUMMARY OF THE RESULTS OF A TEST PROCEDURE. THESE PRINTOUTS OCCUR ONLY IF A TEST IS SUCCESSFULLY STARTED AND AT LEAST ONE TEST MESSAGE IS TRANSMITTED OR RECEIVED. THE D003 PRINTOUT PROVIDES DSW'S SENSED AND DATA TRANSMITTED AND RECEIVED.

5.2 REQUEST-FOR-TEST (RFT) MESSAGES

AN RFT MESSAGE IS DEFINED AS A MESSAGE WHICH IS TRANSMITTED BY A BSC STATION TO REQUEST THAT A TEST PROCEDURE BE INITIATED.

THE FORMAT OF THE RFT MESSAGE IS...

S	A D S	D E B	NOTE...
O % X Y N	D L T	TEXT L T C	TEXT IS INCLUDED ONLY IF X=01 AND
H	D E X	E X C	THE DLE CHARACTERS ARE INCLUDED ONLY
	R		FOR TRANSPARENT TEXT.

WHERE...

SOH % IDENTIFIES THE MESSAGE AS AN RFT MESSAGE.

X IS A FIELD OF TWO NUMERIC CHARACTERS (00-99) WHICH DEFINES THE ACTION TO BE PERFORMED DURING THE TEST AND/OR THE TEST MESSAGE TO BE USED DURING THE TEST. THE FUNCTION 1 OPTION (TABLE 1 SEC. 3.2) IS USED TO CONTROL THE X VALUE FOR RFT MESSAGES TRANSMITTED. IF SWS 0-1=00 THEN X=00, IF SWS 0-1=01 THEN X=01, IF SWS 0-1=10 THEN X=02-99 AS SELECTED IN SWS 8-15.

IF X=00 THEN THE STATION WHICH TRANSMITTED THE RFT MESSAGE (THE REQUESTOR) WILL ALSO TRANSMIT THE TEST MESSAGES.

IF X=01 THEN THE STATION WHICH RECEIVED THE RFT MESSAGE (THE RESPONDOR) WILL TRANSMIT TEST MESSAGES CONTAINING THE TEXT RECEIVED IN THE RFT MESSAGE.

IF X=02-98 THEN THE RESPONDOR WILL TRANSMIT TEST MESSAGES AS SPECIFIED BY THE X FIELD (E.G., IF X=02 THEN TEST MESSAGE NUMBER 02 IS TRANSMITTED).

IF X=99 THEN THE RESPONDOR WILL ENTER A 30 SECOND DELAY UPON RECEIPT OF THE RFT IN ORDER TO ALLOW TIME FOR OPERATOR INTERVENTION AT THE REQUESTOR STATION. THE REQUESTOR WILL THEN TRANSMIT THE TEST MESSAGES.

Y IS A FIELD OF TWO NUMERIC CHARACTERS (01-99) WHICH SPECIFIES THE NUMBER OF TEST MESSAGES TO BE TRANSMITTED. THE FUNCTION 3 OPTION (TABLE 3 SEC. 3.2) IS USED TO CONTROL THE Y VALUE FOR RFT MESSAGES TRANSMITTED.

N IS A SINGLE NUMERIC CHARACTER WHICH SPECIFIES THE SIZE OF THE ADDR FIELD.

THE ADDR FIELD CONTAINS THE STATION OR DEVICE ADDRESS TO WHICH THE TEST MESSAGES WILL BE SENT.

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CA TRANSMIT/RECEIVE TEST

5.3 TEST MESSAGES

TEST MESSAGES ARE THOSE MESSAGES TRANSMITTED BY THE REQUESTOR FOLLOWING THE RFT MESSAGE OR BY THE RESPONDOR IN RESPONSE TO THE RFT MESSAGE.

NOTE...IF AN RFT MESSAGE IS RECEIVED THAT REQUESTS ONE OF THE TEST MESSAGES THAT BEGIN WITH STX SYN SYN AND THE ADDR FIELD IN THE RFT MESSAGE IS TWO CHARACTERS IN LENGTH, THEN THE TWO SYN CHARACTERS IN THE TEST MESSAGE WILL BE REPLACED BY THE ADDR FIELD FROM THE RFT MESSAGE. THIS ALLOWS DEVICES THAT USE A UNIT SELECTION ADDRESS TO SPECIFY THE UNIT TO BE SELECTED BY THE TEST MESSAGES.

THE FOLLOWING TEST MESSAGES ARE USED BY THE CA TRANSMIT/RECEIVE TEST.

01--DEFINED BY OPERATOR VIA EDIT CARDS.
THIS TEST MESSAGE CAN BE USED ONLY WHEN TRANSMITTING AN RFT MESSAGE WITH X=00 OR 01.

02--EBCDIC - TRANSPARENT TEXT

D S D E B TEXT=256 CHARACTERS, HEX 00 THRU FF
L T TEXT L T C IN BINARY SEQUENCE ORDER.
E X E X C

04--EBCDIC - NORMAL TEXT

S S S E B TEXT=245 CHARACTERS, HEX 00 THRU HEX FF IN
T Y Y TEXT T C BINARY SEQUENCE ORDER BUT EXCLUDING THE
X N N X C 11 BSC CONTROL CHARACTERS. (SEE 6.1)

05--ASCII

S S S E B TEXT=117 7 BIT CHARACTERS, HEX 00 THRU HEX 7F
T Y Y TEXT T C (IGNORE HI ORDER BIT) IN BINARY SEQUENCE
X N N X C ORDER BUT EXCLUDING CONTROL CHARACTERS.

06--ASCII

S S S E B TEXT=36 CHARACTERS, A THRU Z AND 0 THRU 9
T Y Y TEXT T C IN COLLATING SEQUENCE ORDER.
X N N X C

07--ASCII - 2780 PRINTER

S E E B TEXT=36 CHARACTERS, A THRU Z AND 0 THRU 9
T S Q TEXT T C IN COLLATING SEQUENCE ORDER.
X C X C

08--ASCII - 2780 PUNCH

S E E B TEXT=36 CHARACTERS, A THRU Z AND 0 THRU 9
T S 4 TEXT T C IN COLLATING SEQUENCE ORDER.
X C X C

12--EBCDIC - 2780 PRINTER

S E E B TEXT=36 CHARACTERS, A THRU Z AND 0 THRU 9
T S / TEXT T C IN COLLATING SEQUENCE ORDER.
X C X C

13--EBCDIC - 2780 PUNCH

S E E B TEXT=36 CHARACTERS, A THRU Z AND 0 THRU 9
T S 4 TEXT T C IN COLLATING SEQUENCE ORDER.
X C N X C

14--EBCDIC

S S S E B TEXT=36 CHARACTERS, A THRU Z AND 0 THRU 9
T Y Y TEXT T C IN COLLATING SEQUENCE ORDER.
X N N X C

15--EBCDIC - ALL ZERO'S WEAK PATTERN

S S S E B TEXT=74 CHARACTERS HEX 00 FOLLOWED BY
T Y Y TEXT T C 6 SYN CHARACTERS.
X N N X C

16--EBCDIC - ALTERNATE ZERO-ONE WEAK PATTERN

S S S E B TEXT=40 CHARACTERS HEX AA FOLLOWED BY
T Y Y TEXT T C 40 CHARACTERS HEX 55.
X N N X C

19--EBCDIC - WEAK PATTERN TRANSPARENT TEXT

D S D E B TEXT=280 CHARACTERS HEX 00 FOLLOWED BY
L T TEXT L T C 10 SYN CHARACTERS.
E X E X C

20--EBCDIC - 80 CHARACTER TRANSPARENT TEXT

D S D E B TEXT=80 CHARACTERS, U THRU Z AND 0 THRU 9 IN
L T TEXT L T C COLLATING SEQUENCE ORDER, AND HEX 00 THRU 3F
E X E X C IN BINARY SEQUENCE ORDER.

21--EBCDIC - 120 CHARACTER TRANSPARENT TEXT

D S D E B TEXT=120 CHARACTERS, A THRU Z AND 0 THRU 9 IN
L T TEXT L T C COLLATING SEQUENCE ORDER, AND HEX 00 THRU 53
E X E X C IN BINARY SEQUENCE ORDER.

22--EBCDIC - 144 CHARACTER TRANSPARENT TEXT

D S D E B TEXT=144 CHARACTERS, A THRU Z AND 0 THRU 9 IN
L T TEXT L T C COLLATING SEQUENCE ORDER, AND HEX 00 THRU 6B
E X E X C IN BINARY SEQUENCE ORDER.

5.4 LINE CONTROL PROCEDURES

THE FOLLOWING LINE CONTROL CHARTS SHOW THE NORMAL SEQUENCE OF CONTROL AND TEXT CHARACTERS TRANSMITTED BY EACH STATION UNDER VARIOUS TEST CONDITIONS. THE EXAMPLES ALL ASSUME A Y VALUE OF ONE AND NORMAL TEXT. IN THE EXAMPLES, ID REPRESENTS THE SWITCHED LINE IDENTIFICATION SEQUENCE. THE ID CAN BE IGNORED FOR PRIVATE OR LEASED LINE. POLL REPRESENTS THE LOCAL STATIONS POLLING ADDRESS AND SEL REPRESENTS THE SELECTION ADDRESS.

FOR X=00, POINT-TO-POINT, EITHER STATION TRANSMITTING THE RFT

REQUESTOR	I E	S	A S	E B	S	E B	E
TRANSMITS	D N	O % X Y N	D T T C	T TEXT	T C	O	
	Q	H	D X X C	X	X C	T	
			R				
RESPONDOR	I A		A			A	
TRANSMITS	D C		C			C	
	K		K			K	
	O		I			O	

FOR X=00, MULTI-POINT, LOCAL STATION TRANSMITTING THE RFT.

CONTROL	E P E		A		A	
TRANSMITS	O O N		C		C	
	T L Q		K		K	
	L		I		O	
LOCAL	S	A S	E B	E	A	
TRANSMITS	O % X Y N	D T T C	T TEXT	T C	O	
	H	D X X C	X	X C	T	
		R				

FOR X=00, MULTI-POINT, CONTROL STATION TRANSMITTING THE RFT.

CONTROL	E S E	S	A S	E B	S	E B	E
TRANSMITS	O E N	O % X Y N	D T T C	T TEXT	T C	O	
	T L Q	H	D X X C	X	X C	T	
			R				
LOCAL	A		A		A		
TRANSMITS	C		C		C		
	K		K		K		
	O		I		O		

FOR X=01, POINT-TO-POINT, EITHER STATION TRANSMITTING THE RFT

REQUESTOR	I E	S	A S	E B	E	A		A
TRANSMITS	D N	O % X Y N	D T TEXT	T C	O	C		C
	Q	H	D X	X C	T	K		K
			R			O		I
RESPONDOR	I A		A	E S	E B	E		E
TRANSMITS	D C		C	N T TEXT	T C	O		O
	K		K	Q X	X C	T		
	O		I					

FOR X=01, MULTI-POINT, ONLY LOCAL STATION CAN TRANSMIT THE RFT.

CONTROL	E P E		A	E S E	S	E B	E
TRANSMITS	O O N		C	O E N	T TEXT	T C	O
	T L Q		K	T L Q	X	X C	T
	L		I				
LOCAL	S	A S	E B	E	A		A
TRANSMITS	O % X Y N	D T TEXT	T C	O	C		C
	H	D X	X C	T	K		K
		R			O		I

FOR X=02-98, POINT TO POINT, EITHER STATION TRANSMITTING THE RFT

REQUESTOR	I E	S	A S	E B	E	A		A
TRANSMITS	D N	O % X Y N	D T T C	O	C		C	
	Q	H	D X X C	T	K		K	
			R		O		I	
RESPONDOR	I A		A	E S	E B	E		E
TRANSMITS	D C		C	N T TEXT	T C	O		O
	K		K	Q X	X C	T		
	O		I					

FOR X=02-98, MULTI-POINT, ONLY LOCAL STATION CAN TRANSMIT THE RFT

CONTROL	E P E		A	E S E	S	E B	E
TRANSMITS	O O N		C	O E N	T TEXT	T C	O
	T L Q		K	T L Q	X	X C	T
	L		I				
LOCAL	S	A S	E B	E	A		A
TRANSMITS	O % X Y N	D T T C	O	C		C	
	H	D X X C	T	K		K	
		R		O		I	

FOR X=99, POINT TO POINT, ONLY REMOTE STATION CAN TRANSMIT THE RFT

REQUESTOR	I E	S	A S	E B	E	E D S	D E B	E
TRANSMITS	D N	O % X Y N	D T T C	O	30 Q	N L T TEXT	L T C	O
	Q	H	D X X C	T	EX	EX	EX C	T
			R		SECOND DELAY			
RESPONDOR	I A		A		A		A	
TRANSMITS	D C		C		C		C	
	K		K		K		K	
	O		I		O		O	

5.5 ROUTINE DESCRIPTIONS

TEST ROUTINES ARE NUMBERED SEQUENTIALLY FROM HEX 01 THROUGH HEX 22 (RTN01-RTN22). THE RID AND RAD FIELDS IN THE PRINTOUTS REFER TO THESE TEST ROUTINE NUMBERS.

ALL TEST ROUTINES ARE EXECUTED DURING SERVICING OF CA INTERRUPTS AND ALL OPERATE IN THE SAME BASIC SEQUENCE. EACH TEST ROUTINE INITIATES A SINGLE CA I/O OPERATION AND THAT OPERATION IS SET UP SO THAT A SINGLE CA INTERRUPT WILL COMPLETE THE FUNCTIONS REQUIRED OF THAT OPERATION.

EACH TEST ROUTINE INITIATES ITS UNIQUE I/O OPERATION BY A CALL ON A COMMON I/O SUBROUTINE XMRCV. XMRCV SETS UP TRANSMIT AND RECEIVE TABLES AS SPECIFIED BY THE CALLING ROUTINE, EXECUTES A CLEAR CA INSTRUCTION, STARTS THE I/O OPERATION SPECIFIED BY THE CALLING ROUTINE, AND EXITS FROM THE INTERRUPT SERVICE. NOTE THAT THE CA IS ALWAYS CLEARED JUST BEFORE AN I/O OPERATION IS STARTED.

WHEN THE CA INTERRUPT OCCURS, ENTRY IS INTO A COMMON INTERRUPT SERVICE ROUTINE 'INT'. 'INT' SENSES AND CHECKS THE OPERATING AND BYTE COUNT DSW'S AND, IF OPERATION WAS IN DIAGNOSTIC MODE, CHECKS THE DIAGNOSTIC WORDS. CONTROL IS THEN RETURNED TO THE TEST ROUTINE THAT INITIALLY CALLED XMRCV.

THE TEST ROUTINE THEN CHECKS THE RESULTS OF THE I/O OPERATION. THIS IS DONE BY EXAMINING VARIOUS PROGRAM INDICATORS AND BY EXAMINING ANY DATA THAT HAS BEEN RECEIVED FROM THE REMOTE STATION. THE RESULTS OF THIS ANALYSIS DETERMINE WHICH TEST ROUTINE IS TO BE EXECUTED NEXT AND CONTROL IS TRANSFERRED TO THAT ROUTINE. THE NEXT TEST ROUTINE THEN CALLS XMRCV AND THE SEQUENCE IS REPEATED.

TO FACILITATE EASY REFERENCE TO THE I/O OPERATION INITIATED BY EACH TEST ROUTINE, ROUTINE DESCRIPTIONS ARE SET UP IN TABULAR FORM. ALTHOUGH NOT SPECIFICALLY MENTIONED IN EACH INDIVIDUAL ROUTINE DESCRIPTION, EACH TEST ROUTINE PERFORMS AN ANALYSIS OF RESULTS OF THE OPERATION TO DETERMINE WHICH TEST ROUTINE IS TO BE EXECUTED NEXT. USUALLY PART OF THIS ANALYSIS CONSISTS OF CALLS ON COMMON ANALYSIS SUBROUTINES AND IN SOME CASES TWO OR MORE TEST ROUTINES MAY SHARE A COMMON ANALYSIS SECTION.

RTN01..CLEAR CA

I/O OPERATION STARTED - START CONTINUE TIMER (XIO SENSE DEVICE WITH MODIFIER BIT 10 ON).

TABLES USED - NONE
INTERRUPT EXPECTED - TIMEOUT.
TRANSMITTED DATA - NONE
EXPECTED RECEIVE DATA - NONE

RTN02..RECEIVE INITIAL ENQ

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - RECEIVE TABLE ONLY, NO CHAINING
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - NONE
EXPECTED RECEIVE DATA - ENQUIRY CONTROL CHARACTER (ENQ).

RTN03..RECEIVE INITIAL ID ENQ

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - RECEIVE TABLE ONLY, NO CHAINING
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - NONE
EXPECTED RECEIVE DATA - THE SWITCHED LINE INITIALIZATION SEQUENCE (ID ENQ). THE PROGRAM CHECKS ONLY THAT THE SEQUENCE ENDED WITH ENQ.

RTN04..TRANSMIT INITIAL ENQ, RECEIVE ACKO

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT SUPPRESSED CHAINED TO A RECEIVE TABLE WITH THE TABLE COMPLETE INTERRUPT SUPPRESSED.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - THE ENQUIRY CONTROL CHARACTER (ENQ).
EXPECTED RECEIVE DATA - EVEN ACKNOWLEDGE SEQUENCE (ACKO).

RTN05..TRANSMIT INITIAL ID ENQ, RECEIVE ID ACKO

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT SUPPRESSED CHAINED TO A RECEIVE TABLE WITH THE TABLE COMPLETE INTERRUPT SUPPRESSED.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - THE SWITCHED LINE INITIALIZATION SEQUENCE (ID ENQ). THE ID IS OBTAINED FROM THE EDIT CARD ENTRY.
EXPECTED RECEIVE DATA - THE SWITCHED LINE INITIALIZATION ACKNOWLEDGE (ID ACKO). THE PROGRAM CHECKS ONLY THAT THE SEQUENCE RECEIVED ENDED WITH ACKO.

RTN06..WAIT FOR RING INDICATOR

I/O OPERATION STARTED - START CONTINUE TIMER AND ENABLE RINGING INTERRUPT (XIO SENSE DEVICE WITH MODIFIER BITS 10 AND 11 ON).

TABLES USED - NONE
INTERRUPT EXPECTED - EITHER A TIMEOUT OR A RINGING INTERRUPT.
TRANSMITTED DATA - NONE
EXPECTED RECEIVE DATA - NONE

RTN07..TRANSMIT TONE

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT SUPPRESSED CHAINED TO ANOTHER TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT SUPPRESSED. THE SECOND TABLE IS CHAINED BACK TO ITSELF TO FORM AN CLOSED LOOP.
INTERRUPT EXPECTED - TIMEOUT
TRANSMITTED DATA - BOTH TABLES CONTAIN ONLY SYN CHARACTERS.
EXPECTED RECEIVE DATA - NONE

RTN08..RECEIVE PASSIVE STATE

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A RECEIVE TABLE WITH THE TABLE COMPLETE INTERRUPT
SUPPRESSED CHAINED TO ANOTHER RECEIVE TABLE WITH THE
TABLE COMPLETE INTERRUPT SUPPRESSED. THE SECOND
TABLE IS CHAINED BACK TO ITSELF TO FORM A CLOSED LOOP.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - NONE
EXPECTED RECEIVE DATA - THE PURPOSE OF THIS ROUTINE IS TO MONITOR
COMMUNICATIONS BETWEEN THE CONTROL STATION
AND OTHER TRIBUTARY STATIONS. THIS IS DONE
BY MONITORING FOR END CHARACTERS (END-
CHARACTER-DECODED INTERRUPTS). EOT MUST BE
RECEIVED BEFORE THE PROGRAM WILL PROGRESS
BEYOND THIS ROUTINE.

RTN09..RECEIVE POLL OR SELECTION ADDRESS

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A RECEIVE TABLE WITH THE TABLE COMPLETE INTERRUPT
SUPPRESSED CHAINED TO ANOTHER RECEIVE TABLE WITH THE
TABLE COMPLETE INTERRUPT SUPPRESSED. THE SECOND
TABLE IS CHAINED BACK TO ITSELF TO FORM A CLOSED LOOP.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - NONE
EXPECTED RECEIVE DATA - THE MULTIPOINT POLLING OR SELECTION ADDRESS
AS SPECIFIED IN THE EDIT CARDS.

RTNOA..TRANSMIT NAK

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - TRANSMIT TABLE ONLY, NO CHAINING
INTERRUPT EXPECTED - TABLE COMPLETE
TRANSMITTED DATA - THE NEGATIVE ACKNOWLEDGE CONTROL CHARACTER (NAK).
EXPECTED RECEIVE DATA - NONE

RTNOB..TRANSMIT ID NAK

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - TRANSMIT TABLE ONLY, NO CHAINING
INTERRUPT EXPECTED - TABLE COMPLETE
TRANSMITTED DATA - THE SWITCHED LINE NEGATIVE RESPONSE TO SELECTION
(ID NAK). THE ID IS OBTAINED FROM THE EDIT ENTRY.
EXPECTED RECEIVE DATA - NONE

RTNOC..TRANSMIT NAK, RECEIVE EOT

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
SUPPRESSED CHAINED TO A RECEIVE TABLE.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - THE NEGATIVE ACKNOWLEDGE CONTROL CHARACTER (NAK).
EXPECTED RECEIVE DATA - END OF TRANSMISSION CONTROL CHARACTER (EOT).

RTNOD..TRANSMIT ACKO, RECEIVE REQUEST-FOR-TEST

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
SUPPRESSED CHAINED TO A RECEIVE TABLE.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - EVEN ACKNOWLEDGE CONTROL SEQUENCE (ACKO).
EXPECTED RECEIVE DATA - ANY VALID REQUEST-FOR-TEST MESSAGE.

RTNOE..TRANSMIT ID ACKO, RECEIVE REQUEST-FOR-TEST

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
SUPPRESSED CHAINED TO A RECEIVE TABLE.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - THE SWITCHED LINE POSITIVE RESPONSE TO SELECTION
(ID ACKO). THE ID IS OBTAINED FROM THE EDIT ENTRY.
EXPECTED RECEIVE DATA - ANY VALID REQUEST-FOR-TEST MESSAGE.

RTNOF..RECEIVE ENQ - RETRY

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - RECEIVE TABLE ONLY, NO CHAINING
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - NONE
EXPECTED RECEIVE DATA - THE ENQUIRY CONTROL CHARACTER (ENQ).

RTNIO..RECEIVE ID ENQ - RETRY

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - RECEIVE TABLE ONLY, NO CHAINING
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - NONE
EXPECTED RECEIVE DATA - THE SWITCHED LINE INITIALIZATION SEQUENCE
(ID ENQ). THE PROGRAM CHECKS ONLY THAT THE
SEQUENCE ENDED WITH ENQ.

RTN11..TRANSMIT NAK, RECEIVE REQUEST-FOR-TEST

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
SUPPRESSED CHAINED TO A RECEIVE TABLE.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - THE NEGATIVE ACKNOWLEDGE CONTROL CHARACTER (NAK).
EXPECTED RECEIVE DATA - ANY VALID REQUEST-FOR-TEST MESSAGE

RTN12..RECEIVE REQUEST-FOR-TEST - RETRY

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - RECEIVE TABLE ONLY, NO CHAINING
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - NONE
EXPECTED RECEIVE DATA - ANY VALID REQUEST-FOR-TEST MESSAGE

RTN13..TRANSMIT REQUEST-FOR-TEST, RECEIVE ACK1

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - A TRANSMIT TABLE CHAINED TO ANOTHER TRANSMIT TABLE
 WHICH IS CHAINED TO A RECEIVE TABLE. THE TABLE
 COMPLETE INTERRUPT IS SUPPRESSED ON ALL THREE TABLES.
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - THE REQUEST-FOR-TEST MESSAGE SELECTED BY THE
 LOCAL STATION OPERATOR.
 EXPECTED RECEIVE DATA - THE ODD ACKNOWLEDGE CONTROL SEQUENCE (ACK1).

RTN14..TRANSMIT ENQ, RECEIVE ACK1 - RETRY

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
 SUPPRESSED CHAINED TO A RECEIVE TABLE WITH THE TABLE
 COMPLETE INTERRUPT SUPPRESSED.
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - THE ENQUIRY CONTROL CHARACTER (ENQ).
 EXPECTED RECEIVE DATA - THE ODD ACKNOWLEDGE CONTROL SEQUENCE (ACK1).

RTN15..TRANSMIT ACK1, RECEIVE EOT

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
 SUPPRESSED CHAINED TO A RECEIVE TABLE.
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - THE ODD ACKNOWLEDGE CONTROL SEQUENCE (ACK1).
 EXPECTED RECEIVE DATA - END OF TRANSMISSION CONTROL CHARACTER (EOT).

RTN16..RECEIVE EOT - RETRY

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - RECEIVE TABLE ONLY, NO CHAINING
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - NONE
 EXPECTED RECEIVE DATA - END OF TRANSMISSION CONTROL CHARACTER (EOT).

RTN17..TRANSMIT EOT, RECEIVE SELECT

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
 SUPPRESSED CHAINED TO A RECEIVE TABLE.
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - THE END OF TRANSMISSION CONTROL CHARACTER (EOT).
 EXPECTED RECEIVE DATA - ON A POINT-TO-POINT LINE, THE ENQUIRY CONTROL
 CHARACTER (ENQ). ON A MULTIPOINT LINE, THE
 MULTIPOINT SELECTION ADDRESS AS SPECIFIED IN
 THE EDIT CARDS.

RTN18..RECEIVE SELECT - RETRY

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - RECEIVE TABLE ONLY, NO CHAINING
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - NONE
 EXPECTED RECEIVE DATA - ON A POINT-TO-POINT LINE, THE ENQUIRY CONTROL
 CHARACTER (ENQ). ON A MULTIPOINT LINE, THE
 MULTIPOINT SELECTION ADDRESS AS SPECIFIED IN
 THE EDIT CARDS.

RTN19..TRANSMIT ENQ, RECEIVE ACKO/ACK1

THE FIRST OPERATION BELOW TAKES PLACE ONLY IF THE DELAY BEFORE
 TRANSMIT OPTION IN EDIT CARD 0 HAS BEEN SPECIFIED AND IS REPEATED
 5 TIMES TO CONSTITUTE A 10 SECOND DELAY.

I/O OPERATION STARTED - XIO START CONTINUE TIMER
 TABLES USED - NONE
 INTERRUPT EXPECTED - TIMEOUT
 TRANSMITTED DATA - NONE
 EXPECTED RECEIVE DATA - NONE

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
 SUPPRESSED CHAINED TO A RECEIVE TABLE WITH THE TABLE
 COMPLETE INTERRUPT SUPPRESSED.
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - THE ENQUIRY CONTROL CHARACTER (ENQ).
 EXPECTED RECEIVE DATA - EITHER THE ODD OR THE EVEN ACKNOWLEDGE CONTROL
 SEQUENCE (ACKO OR ACK1).

RTN1A..TRANSMIT TEST MESSAGE, RECEIVE ACKO/ACK1

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
 SUPPRESSED CHAINED TO A RECEIVE TABLE WITH THE TABLE
 COMPLETE INTERRUPT SUPPRESSED.
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - A TEST MESSAGE AS DEFINED BY THE REQUEST-FOR-
 TEST MESSAGE.
 EXPECTED RECEIVE DATA - EITHER THE ODD OR THE EVEN ACKNOWLEDGE CONTROL
 SEQUENCE (ACKO OR ACK1).

RTN1B..TRANSMIT ACKO/ACK1, RECEIVE TEST MESSAGE

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
 SUPPRESSED CHAINED TO A RECEIVE TABLE.
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - EITHER THE ODD OR THE EVEN ACKNOWLEDGE CONTROL
 SEQUENCE (ACKO OR ACK1).
 EXPECTED RECEIVE DATA - A TEST MESSAGE AS DEFINED BY THE REQUEST-FOR-
 TEST MESSAGE.

RTN1C..TRANSMIT NAK, RECEIVE TEST MESSAGE

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
 SUPPRESSED CHAINED TO A RECEIVE TABLE.
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - THE NEGATIVE ACKNOWLEDGE CONTROL CHARACTER (NAK).
 EXPECTED RECEIVE DATA - A TEST MESSAGE AS DEFINED BY THE REQUEST-FOR-
 TEST MESSAGE.

RTN1D..RECEIVE TEST MESSAGE

I/O OPERATION STARTED - XIO INITIALIZE CA
 TABLES USED - RECEIVE TABLE ONLY, NO CHAINING
 INTERRUPT EXPECTED - END-CHARACTER-DECODED
 TRANSMITTED DATA - NONE
 EXPECTED RECEIVE DATA - A TEST MESSAGE AS DEFINED BY THE REQUEST-FOR-
 TEST MESSAGE.

RTNIE..TRANSMIT ACK0/ACK1, RECEIVE END EOT/DISC

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
SUPPRESSED CHAINED TO A RECEIVE TABLE WITH THE TABLE
COMPLETE INTERRUPT SUPPRESSED.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - EITHER THE ODD OR THE EVEN ACKNOWLEDGE CONTROL
SEQUENCE (ACK0 OR ACK1).
EXPECTED RECEIVE DATA - EITHER THE END OF TRANSMISSION CONTROL
CHARACTER (EOT) OR THE DISCONNECT CONTROL
SEQUENCE (DISC).

RTNIF..TRANSMIT NAK, RECEIVE END EOT/DISC

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A TRANSMIT TABLE WITH THE TABLE COMPLETE INTERRUPT
SUPPRESSED CHAINED TO A RECEIVE TABLE WITH THE TABLE
COMPLETE INTERRUPT SUPPRESSED.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - THE NEGATIVE ACKNOWLEDGE CONTROL CHARACTER (NAK).
EXPECTED RECEIVE DATA - EITHER THE END OF TRANSMISSION CONTROL
CHARACTER (EOT) OR THE DISCONNECT CONTROL
SEQUENCE (DISC).

RECEIVE END EOT/DISC

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - A RECEIVE TABLE ONLY WITH THE TABLE COMPLETE INTERRUPT
SUPPRESSED, NO CHAINING.
INTERRUPT EXPECTED - END-CHARACTER-DECODED
TRANSMITTED DATA - NONE
EXPECTED RECEIVE DATA - EITHER THE END OF TRANSMISSION CONTROL
CHARACTER (EOT) OR THE DISCONNECT CONTROL
SEQUENCE (DISC).

RTN21..TRANSMIT EOT

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - TRANSMIT TABLE ONLY, NO CHAINING
INTERRUPT EXPECTED - TABLE COMPLETE
TRANSMITTED DATA - THE END OF TRANSMISSION CONTROL CHARACTER (EOT).
EXPECTED RECEIVE DATA - NONE

RTN22..TRANSMIT DISC

I/O OPERATION STARTED - XIO INITIALIZE CA
TABLES USED - TRANSMIT TABLE ONLY, NO CHAINING
INTERRUPT EXPECTED - TABLE COMPLETE
TRANSMITTED DATA - THE DISCONNECT CONTROL SEQUENCE (DISC).
EXPECTED RECEIVE DATA - NONE

5.6 MULTIPLE LINE OPERATION

ALTHOUGH THE CA TRANSMIT/RECEIVE TEST IS CAPABLE OF OPERATING ONLY
ONE CA LINE AT A TIME, MULTIPLE LINES CAN BE OPERATED IN OVERLAP BY
CREATING A SEPARATE PROGRAM FOR EACH LINE. TO DO THIS, NEW PROGRAMS
MUST BE CREATED AND ASSIGNED DIFFERENT PID'S. THE PROGRAM PID IS
LOCATED AT ADDRESS /07FF IN CORE AND MAY BE CHANGED BY USE OF A
PATCH CARD. PID 10 IS RECOMMENDED FOR USE WITH THE FIRST EXTRA
LINE TO BE OPERATED. REFER TO THE DIAGNOSTIC MONITOR DOCUMENTATION,
SECTION 5.5, FOR DETAILS OF MULTIPLE DEVICE OPERATION.

5.7 DIAGNOSTIC MODE

UNLESS FUNCTION 0 SWITCH 6 IS SELECTED, MOST CA OPERATIONS
ARE EXECUTED IN DIAGNOSTIC MODE. USE OF DIAGNOSTIC MODE IS
INHIBITED DURING ANY OPERATION THAT HAS A TRANSMIT OR RECEIVE
TABLE THAT IS CHAINED BACK TO ITSELF OR THAT TRANSMITS TRANSPARENT
TEXT OVER 50 CHARACTERS IN LENGTH.

OPERATION IN DIAGNOSTIC MODE CAUSES THE FOLLOWING CHANGES IN CA
HARDWARE OPERATION...

- A) ALL CHARACTERS ARE TRANSMITTED FROM OR RECEIVED INTO BIT
POSITIONS 8-15 IN THE TRANSMIT AND RECEIVE TABLES.
- B) WHEN A RECEIVED CHARACTER IS TRANSFERED TO THE RECEIVE TABLE
THE BUFFER REGISTER, WHICH SHOULD BE RESET TO ALL ONES, IS
TRANSFERED INTO BIT POSITIONS 0-7.
- C) IN RECEIVE MODE, AS EACH CHARACTER IS RECEIVED FROM THE LINE,
A DIAGNOSTIC WORD IS STORED IN THE RECEIVE TABLE. A DIAGNOSTIC
WORD IS STORED FOR EACH CHARACTER RECEIVED EVEN IF THE
CHARACTER IS DELETED FROM THE NORMAL RECEIVE TABLE. IF THE
CHARACTER RECEIVED IS ALSO STORED AS NORMAL DATA (/FFXX), IT
WILL BE PRECEDED IN CORE BY THE DIAGNOSTIC WORD.
- D) IN TRANSMIT MODE, THE SEND DATA LINE IS LOOPED BACK TO THE
INPUT OF THE SERIALIZER-DESERIALIZER, SO THAT TRANSMITTED DATA
APPEARS BACK IN THE S/D DELAYED BY ONE BIT TIME.
- E) IN TRANSMIT MODE, A DIAGNOSTIC WORD IS STORED IN THE TRANSMIT
TABLE AFTER EACH COMPLETE CHARACTER IS TRANSFERED TO THE SEND DATA
LINE. THE DIAGNOSTIC WORD IS STORED FOLLOWING THE CHARACTER IN
THE TRANSMIT TABLE THAT WAS JUST TRANSMITTED. BITS 7-14 OF THE
TRANSMIT DIAGNOSTIC WORDS WILL THUS CONTAIN THE CHARACTERS
TRANSMITTED. DIAGNOSTIC WORDS ARE ALSO INSERTED IN THE TABLE FOR
EACH CHARACTER INSERTED IN THE DATA STREAM BY THE CA HARDWARE.

OPERATION IN DIAGNOSTIC MODE CAUSES THE FOLLOWING CHANGES IN CA
PROGRAM OPERATION...

- A) RECEIVE TABLES ARE PROCESSED BY A SORTING PROCEDURE TO SEPARATE
THE CHARACTERS RECEIVED FROM THE DIAGNOSTIC WORDS. SORTING IS
DONE BY EXAMINATION OF BITS 0-7 OF EACH WORD IN THE RECEIVE
TABLE. BITS 0-7 SHOULD BE ALL ONES FOR DATA WORDS BUT DIAGNOSTIC
WORDS SHOULD ALWAYS HAVE AT LEAST ONE ZERO IN BITS 0-7.
- B) BITS 8-15 IN EACH DATA WORD IN A RECEIVE TABLE ARE COMPARED TO
BITS 8-15 OF THE ASSOCIATED DIAGNOSTIC WORD.
- C) TRANSMIT TABLES ARE SET UP TO ALLOW SPACE FOR DIAGNOSTIC WORD
INSERTION.
- D) BITS 0-7 OF EACH TRANSMIT DATA WORD ARE SET ON (/FF) SO THAT
TRANSMIT DATA WILL APPEAR IN THE SAME FORMAT AS RECEIVED DATA.
- E) AFTER THE TRANSMIT OPERATION, BITS 7-15 OF EACH TRANSMIT
DIAGNOSTIC WORD ARE SHIFTED RIGHT ONE POSITION SO THAT BITS 8-15
OF THE DIAGNOSTIC WORD WILL CONTAIN THE CHARACTER TRANSMITTED.
BITS 8-15 OF THE DIAGNOSTIC WORD ARE THEN COMPARED TO THE
CHARACTER THAT SHOULD HAVE BEEN TRANSMITTED.

5.8 SERVICE HINTS

- A) BIT POSITIONS 0, 1, AND 2 OF THE BYTE COUNT DSW ARE CE JUMPERABLE AND MAY BE USED TO SAMPLE ANY DESIRED LOGIC POINT AT THE TIME OF A CA INTERRUPT. REFER TO THE TABLE BELOW FOR JUMPER POINTS.

	LINE 0	LINE 1
BIT 0	X2C2G10	X2C2J10
BIT 1	X2C2J04	X2C2J07
BIT 2	X2C2G05	X2C2G07

- B) BIT POSITION 0 IN DIAGNOSTIC WORDS STORED IN DIAGNOSTIC MODE IS CE JUMPERABLE AND MAY BE USED TO SAMPLE ANY DESIRED LOGIC POINT AT CHARACTER TIME INTERVALS DURING A TRANSMIT OR RECEIVE OPERATION.

FOR LINE 0 JUMPER X3C2J07 TO THE DESIRED POINT.
FOR LINE 1 JUMPER X1C2J07 TO THE DESIRED POINT.

- C) ONCE AN RFT MESSAGE HAS BEEN SUCCESSFULLY TRANSMITTED OR RECEIVED AND TEST MODE HAS BEEN ENTERED, NO ATTEMPT IS MADE TO RECOVER FROM DETECTED ERRORS. THIS PROVIDES THE CAPABILITY OF KEEPING THE CA BUSY LONG ENOUGH FOR USE OF THE SCOPE. TO MAKE USE OF THIS SCOPING ABILITY, BYPASS ALL TRACE PRINTOUTS AND SELECT A LARGE Y COUNT.

- D) OCCASIONALLY FAILURES OCCUR THAT PREVENT SUCCESSFULL ENTRY INTO TEST MODE (RFT MESSAGE CANNOT BE SENT OR RECEIVED). IF THE ERROR THAT IS PREVENTING ENTRY INTO TEST MODE IS A DSW ERROR, IT IS SOMETIMES POSSIBLE TO FORCE THE PROGRAM TO ACCEPT AN RFT MESSAGE. TO TRY THIS, USE A JUMPER TO TIE THE FAILING INDICATOR TO GROUND, THUS PREVENTING PROGRAM DETECTION OF THE ERROR. THEN ASK THE REMOTE STATION OPERATOR TO SEND AN RFT MESSAGE WITH AN X VALUE OF 00 AND A LARGE Y COUNT.

6. APPENDIX

6.1 BSC LINE CONTROL CHARACTERS

FUNCTIONAL MNEMONIC	EBCDIC CODE IN HEXADECIMAL	ASCII CODE IN HEXADECIMAL	NAME OF FUNCTION
* DLE	* 10	* 10	* DATA LINK ESCAPE
* SOH	* 01	* 01	* START OF HEADING
* STX	* 02	* 02	* START OF TEXT
* ETB	* 26	* 97	* END OF TRANSMISSION BLOCK
* ETX	* 03	* 83	* END OF TEXT
* EOT	* 37	* 04	* END OF TRANSMISSION (SEE NOTE 1 BELOW)
* ENQ	* 2D	* 85	* ENQUIRY
* NAK	* 3D	* 15	* NEGATIVE ACKNOWLEDGEMENT (SEE NOTE 1 BELOW)
* ITB	* 1F	* 1F	* END OF INTERMEDIATE TRANSMISSION BLOCK
* SYN	* 32	* 16	* SYNCHRONOUS IDLE
* ACK	* 2E	* 86	* POSITIVE ACKNOWLEDGE (SEE NOTE 2 BELOW)

NOTE 1..THE EOT AND NAK CHARACTERS ARE RECOGNIZED AS CONTROL CHARACTERS ONLY IF THE FIRST FOUR BITS OF THE TRAILING PAD (ALL ONES CHARACTER) ARE SUCCESSFULLY RECEIVED.

NOTE 2..ALTHOUGH THE ACK CHARACTER IS DEFINED AS A CONTROL CHARACTER AND RESTRICTED FROM USE IN THOSE TEST MESSAGES THAT TRANSMIT NORMAL TEXT, THE USE OF ACK AS A POSITIVE ACKNOWLEDGEMENT HAS BEEN REPLACED IN BSC PROCEDURES BY THE ACKO AND ACK1 CONTROL SEQUENCES.

6.2 BSC LINE CONTROL SEQUENCE

FUNCTIONAL MNEMONIC	EBCDIC CODE IN HEXADECIMAL	ASCII CODE IN HEXADECIMAL	NAME OF FUNCTION
* ACKO	* 1070	* 10B0	* EVEN ACKNOWLEDGE
* ACK1	* 1061	* 1031	* ODD ACKNOWLEDGE
* WACK	* 106B	* 103B	* WAIT BEFORE TRANSMIT - POSITIVE ACKNOWLEDGE
* DISC	* 1037	* 1004	* MANDATORY DISCONNECT
* RVI	* 107C	* 10BC	* REVERSE INTERRUPT
* TTD	* 022D	* 0285	* TEMPORARY TEXT DELAY
* XSTX	* 1002	* ----	* TRANSPARENT START OF TEXT
* XETB	* 1026	* ----	* TRANSPARENT END OF TRANSMISSION BLOCK
* XETX	* 1003	* ----	* TRANSPARENT END OF TEXT
* XENQ	* 102D	* ----	* TRANSPARENT BLOCK CANCEL
* XSYN	* 1032	* ----	* TRANSPARENT SYNCHRONOUS IDLE
* XITB	* 101F	* ----	* TRANSPARENT END OF INTERMEDIATE TRANSMISSION BLOCK
* XDLE	* 1010	* ----	* DATA DLE IN TRANSPARENT TEXT

6.3 CA DSW, BCW, AND DIAGNOSTIC WORD FORMATS

BYTE COUNT DSW FORMAT

BITS 0-2....C.E. JUMPERABLE - READ AS ONES IF NOT JUMPERED
BIT 3.....ON=TRANSMIT MODE
BITS 4-15...BYTE COUNT IN ONES COMPLEMENT FORM

OPERATING DSW FORMAT

BIT 0 = 1 = CHANNEL STOP INDICATOR - INTERRUPTING CONDITION
BIT 1 = 1 = STORAGE PROTECT VIOLATION INDICATOR - INTERRUPTING COND.
BIT 2 = 1 = TIMED OUT INDICATOR - INTERRUPTING CONDITION
BIT 3 = 1 = END-CHARACTER-DECODED OR RINGING IND - INTERRUPTING COND.
BIT 4 = 1 = TABLE COMPLETE INDICATOR - INTERRUPTING CONDITION
BIT 5 = 1 = DATA PARITY CHECK INDICATOR
BIT 6 = 1 = DATA BCC CHECK INDICATOR
BIT 7 = 1 = DATA OVERRUN INDICATOR
BIT 8 = 1 = DATA SET READY CONDITION
BIT 9 = 1 = COMMAND REJECT INDICATOR - INTERRUPTING CONDITION
BIT 10= 1 = CARRIER ON CONDITION

DIAGNOSTIC DSW AND DIAGNOSTIC CS WORD FORMAT

BIT 0 = 1 = C.E. JUMPERABLE BIT - ON IF NOT JUMPERED
BIT 1 = 1 = CHARACTER PHASE ON
BIT 2 = 1 = CHARACTER TRIGGER 1 ON
BIT 3 = 1 = NOT CLEAR TO SEND
BIT 4 = 1 = TRANSPARENT TRIGGER ON
BIT 5 = 1 = TEXT TRIGGER ON
BIT 6 = 1 = END TRIGGER ON
BIT 7 = 1 = RECEIVE DATA = MARK
BIT 8 = 1 = S/D BIT 0 ON
BIT 9 = 1 = S/D BIT 1 ON
BIT 10= 1 = S/D BIT 2 ON
BIT 11= 1 = S/D BIT 3 ON
BIT 12= 1 = S/D BIT 4 ON
BIT 13= 1 = S/D BIT 5 ON
BIT 14= 1 = S/D BIT 6 ON
BIT 15= 1 = S/D BIT 7 ON

6.4 PROGRAM EDIT PROCEDURE

THE 1800 CA TRANSMIT/RECEIVE TEST REQUIRES THE USE OF TWO PROGRAM EDIT CARDS AND AN END EDIT CARD. UP TO FIVE ADDITIONAL CARDS MAY BE USED IF THE OPERATOR WISHES TO ENTER THE CONTENT OF TEST MESSAGE 01.

THE FORMS ON THE FOLLOWING PAGES SHOULD BE USED TO PREPARE THE EDIT CARDS. FILL IN THE NECESSARY ENTRIES IN THE FORMS BEFORE PUNCHING THE CARDS. FOR PAPER TAPE LOAD, THE FORMS MAY BE USED TO MANUALLY ENTER THE EDIT INFORMATION (SEE DM USE PROCEDURE). ALL ENTRIES ON CARDS 0 AND 1 MUST BE USED. CARDS 2 THROUGH 6 ARE OPTIONAL.

CA TRANSMIT/RECEIVE TEST

CA TRANSMIT/RECEIVE TEST

```

*****
*****
**
**
** NN      NN 0000000000 TTTTTTTTTT EEEEEEEEEEE **
** NNN     NN 0000000000 TTTTTTTTTT EEEEEEEEEEE **
** NNNN    NN 00      00      TT      EE      **
** NN NN   NN 00      00      TT      EE      **
** NN NN   NN 00      00      TT      EE      **
** NN NN   NN 00      00      TT      EEEEEEEE **
** NN NN   NN 00      00      TT      EEEEEEEE **
** NN NN   NN 00      00      TT      EE      **
** NN NN   NN 00      00      TT      EE      **
** NN NN   NNN 00      00      TT      EE      **
** NN NN   NNN 0000000000 TT      EEEEEEEEEEE **
** NN NN   NN 0000000000 TT      EEEEEEEEEEE **
**
**
***** 6 APPENDIX PAGES TO FOLLOW *****
**
*****
*****

```

*****INSERT EDIT PAGES IN PLACE OF THIS PAGE*****

----- LAST PAGE -----

EDIT CARD 0 (CONTINUED)

ENTRY A - DATA SET TURNAROUND DELAY COUNT. THIS ENTRY IS USED TO SPECIFY THE NUMBER OF 3 SECOND TIME PERIOD TO BE ALLOWED FOR DATA SET TURNAROUND DELAYS. FOR MOST DATA SETS AND FOR ALL FOUR WIRE LINE CONNECTIONS, THE TURNAROUND DELAY IS NEGLIGIBLE AND ENTRY A SHOULD BE 0000. HOWEVER, WHEN SELF EQUALIZING DATA SETS ARE USED ON TWO WIRE LINES, THE DATA SET DELAY MAY BE CONSIDERABLE. ENTRY A SHOULD THEN SPECIFY THE NUMBER OF 3 SECOND TIMEOUTS TO BE ALLOWED DURING LINE TURNAROUND. FOR EXAMPLE, IF THE DATA SET TURNAROUND TIME IS 20 SECONDS, THEN ENTRY A SHOULD BE 0007 (3 SEC X 7 = 21 SECONDS TURNAROUND TIME).

ENTRY B - DELAY BEFORE TRANSMIT OF TEST MESSAGES. THIS ENTRY IS USED TO CAUSE A TEN SECOND DELAY JUST BEFORE TRANSMITTING TEST MESSAGES WHEN PROCESSING A REQUEST-FOR-TEST MESSAGE WITH AN 'X' VALUE OF 01 OR 02 THRU 98. THIS DELAY IS REQUIRED IN ORDER TO ALLOW FOR OPERATOR INTERVENTION WHEN RUNNING WITH CERTAIN DEVICES SUCH AS THE 2780 OR 2770.

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	26	31	36	41	46	51	56	61	66	71	

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EDIT CARD 1 (REQUIRED) FOR POINT TO POINT (SEE NEXT PAGE FOR MULTI-POINT)

ENTRY 1 = (A) FOR LEASED OR PRIVATE LINE OR SWITCHED LINE OPERATION WITH NO IDENTIFICATION SEQUENCE: THIS ENTRY MUST BE 0000, AND ENTRY 3 IN EDIT CARD 0 MUST SPECIFY POINT TO POINT OPERATION. IF CA IS WIRED FOR OTHER THAN CONTINUOUS CARRIER OPERATION, JUMPER Z-X3L2D04 (MK181) TO GROUND TO PROVIDE CA READY INDICATION. (B) FOR SWITCHED LINE OPERATION USING IDENTIFICATION SEQUENCE: THIS ENTRY MUST CONTAIN THE NUMBER OF CHARACTERS IN THE SWITCHED LINE IDENTIFICATION SEQUENCE. THE IDENTIFICATION SEQUENCE MAY CONTAIN ANYWHERE FROM ONE TO FIFTEEN CHARACTERS, THEREFORE, THIS ENTRY SHOULD RANGE FROM 0001 TO 000F. WHEN ENTERING THIS COUNT, DO NOT COUNT THE TURNAROUND CHARACTER (ENQ). COUNT ONLY THE LEADING GRAPHIC CHARACTERS. THE PROGRAM WILL ADD THE ENDING CHARACTER.

ENTRIES 2 THROUGH 9 = THE IDENTIFICATION SEQUENCE LEADING GRAPHIC CHARACTERS. WHEN RUNNING WITHOUT IDENTIFICATION SEQUENCE, ALL ENTRIES MUST BE 0000. IF USING IDENTIFICATION SEQUENCE, MUST CONTAIN FROM ONE TO FIFTEEN CHARACTERS. PAD REMAINING ENTRIES WITH ZEROES. CHARACTERS MUST BE ENTERED IN EBCDIC OR ASCII CODE, TWO CHARACTERS PER ENTRY AS FOLLOWS: AN EBCDIC 99 WOULD BE ENTERED AS F9F9, AND AN ASCII 99 WOULD BE ENTERED AS B9B9. NONE OF THE ELEVEN DSC LINE CONTROL CHARACTERS (SEE 6.1) MAY BE ENTERED IN THIS FIELD.

ENTRY 10 = THIS ENTRY MUST BE 0000.

CODE CHART FOR ENTERING SWITCHED LINE IDENTIFICATION SEQUENCE

Table with columns: CHARACTER, EBCDIC, ASCII, CHARACTER, EBCDIC, ASCII. It lists mappings for characters A through S.

Grid for entering data into EDIT CARD 1. Columns are labeled ENTRY 1 through ENTRY 10. Row 1 contains the characters 'E', '0', 'D', '0', '0' in columns 1-5, and 'E', 'D', '0', '1' in columns 7-10. Other cells are empty or contain diagonal lines.

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END OF EDIT CARD (REQUIRED)

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	26	31	36	41	46	51	56	61	66	71	
	E	0	D	0	0	/	F	F	F	F	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

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```
07FF          *      ORG      **/07FF          80D00020
*              *              *              80D00030
*              *              *              80D00040
*              *              *              80D00050
*****
*              *              *              80D00070
*              *              *              80D00080
*              *              *              80D00090
*              *              *              80D00100
*              *              *              80D00110
012C 0        BEGIN EQU      /012C      MONITOR BEGIN RTN      80D00120
012D 0        START EQU     BEGIN+1    MONITOR POLLING RTN   80D00130
012E 0        END EQU       START+1    MONITOR END RTN      80D00140
012F 0        LOG EQU       END+1     LOG ROUTINE           80D00150
0130 0        ERROR EQU    LOG+1     ERROR LOG ROUTINE    80D00160
0131 0        REQDV EQU    ERROR+1    RELEASE DEVICE ROUTINE 80D00180
0132 0        RELDV EQU    REQDV+1
*
*****
*              *              *              80D00210
*              *              *              80D00220
*              *              *              80D00230
*              *              *              80D00240
*****
*              *              *              80D00250
*              *              *              80D00260
*              *              *              80D00270
*              *              *              80D00280
*              *              *              80D00290
*              *              *              80D00300
*              *              *              80D00310
*              *              *              80D00320
*              *              *              80D00330
*              *              *              80D00340
*              *              *              80D00350
*              *              *              80D00360
*              *              *              80D00370
*              *              *              80D00380
*              *              *              80D00390
*              *              *              80D00400
*              *              *              80D00410
*              *              *              80D00420
*              *              *              80D00430
*              *              *              80D00440
*              *              *              80D00450
*              *              *              80D00460
*              *              *              80D00470
*****
*              *              *              80D00480
*              *              *              80D00490
*              *              *              80D00500
*              *              *              80D00510
*****
*              *              *              80D00520
*              *              *              80D00530
*              *              *              80D00540
*              *              *              80D00550
*              *              *              80D00560
*              *              *              80D00570
*              *              *              80D00580
*              *              *              80D00590
*              *              *              80D00600
*              *              *              80D00610
*              *              *              80D00620
*              *              *              80D00630
*              *              *              80D00640
*              *              *              80D00650
*              *              *              80D00660
*              *              *              80D00670
*              *              *              80D00680
*              *              *              80D00690
```

```
081F 0 0000
0820 0 0000
0821 0 0000
0822 0 0000
0823 0 0000
0824 0 0000
0825 0 0000
0826 0 0000
0827 0 0000
0828 0 0000
```

```
0829 0 0004
082A 0 027F
082B 0 8003
082C 003A
```

```
0866 0 0000
0867 1 6500 087F
0869 1 6D00 080A
086B 1 4C80 0866
```

```
086D 0 0000
086E 0 C093
086F 0 1803
0870 0 1003
0871 0 D090
```

```
0872 0 1010
0873 0 D08F
```

```
0874 1 0C00 14E6
```

```
0876 0 4480 0132
0878 1 0814
0879 1 080D
```

```
087A 1 4C80 086D
```

```
087C 0 40F0
```

```
* POLID DC ** MULTIPPOINT POLLING 80D00700
* DC ** ADDRESS OR 80D00710
* DC ** SWITCHED LINE 80D00720
* DC ** ID SEQUENCE 80D00730
* DC ** 80D00740
* DC ** 80D00750
* DC ** 80D00760
* SELID DC ** MULTIPPOINT SELECTION 80D00770
* DC ** ADDRESS OR CONTINUATION 80D00780
* DC ** OF SWITCHED LINE 80D00790
* DC ** ID SEQUENCE 80D00800
* DC ** 80D00810
* 80D00820
* 80D00830
*****
* 80D00840
* 80D00850
* TEST MSG 01 FOR USE WITH RFT X=00-01 80D00860
* 80D00870
*****
* 80D00880
* 80D00890
* TMO1 DC 4 BYTE COUNT 80D00900
* DC /027F STX, 7F 80D00910
* DC /8003 80, ETX 80D00920
* BSS 58 RESERVED FOR LONGER MSGS 80D00930
* 80D00940
* 80D00950
*****
* 80D00960
* 80D00970
* EXECUTE PROGRAM 80D00980
* 80D00990
*****
* 80D1000
* XEQ DC ** ENTER TO XEQ PROG 80D1010
* 80D1020
* LDX L1 STRT SET MLSCF ENTRY TO 80D1030
* STX L1 MLSCF START CA ROUTINE 80D1040
* 80D1050
* BSC I XEQ RETURN TO MONITOR 80D1060
* 80D1070
* 80D1080
* 80D1090
*****
* 80D1100
* DE-EXECUTE PROGRAM 80D1120
* 80D1130
*****
* 80D1140
* 80D1150
* DXEQ DC ** ENTER TO END PROGRAM 80D1160
* 80D1170
* LD SWO RESET 80D1180
* SRA 3 TERMINATION 80D1190
* SLA 3 OPTIONS 80D1200
* STO SWO 80D1210
* 80D1220
* SLA 16 RESET 80D1230
* STO SW1 XMIT RFT SELECTION 80D1240
* 80D1250
* XIO L RESET RESET CA 80D1260
* 80D1270
* BSI I RELDV RELEASE CA 80D1280
* DC DDEF DDEF ADDRESS 80D1290
* DC TERM TERMINATOR ADDR 80D1300
* 80D1310
* BSC I DXEQ RETURN 80D1320
* 80D1330
* 80D1340
*****
* END PROGRAM 80D1350
* 80D1360
* QUIT BSI DXEQ END PROG OPTION SELECTED 80D1370
```


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```

08FB 0 1001      *   SLA  1  DELETE MESSAGE ID      80D02740
08FC 0 1801      SRA  1  FLAG BIT                80D02750
08FD 0 4032      BSI  RDRAD STORE RID/RID--BUILD MID 80D02760
08FE 0 D202      STO  2 2  STORE MID                    80D02770
                                     80D02780
08FF 0 1010      *   SLA  16 80D02790
0900 0 D200      STO  2 0  SET MESSAGE STRING CONTROL 80D02800
0901 0 D201      STO  2 1  WORDS TO ZERO          80D02810
0902 0 4043      BSI  LGCAL PRINT MESSAGE          80D02820
                                     80D02830
0903 0 7201      *   MDX  2 1 POINT TO NEXT TRACE TBL WD 80D02840
0904 0 70E6      MDX  PRNT1 GO TO PROCESS NEXT ENTRY 80D02850
                                     80D02860
0905 0 9100      * PRNT2 S  1 D1-T 80D02870
0906 0 E90F      OR  1 H8000-T SET FIRST LINE IND 80D02880
0907 0 4055      BSI  DUMP PRINT 0003 MESSAGE 80D02890
                                     80D02900
0908 0 1010      *   SLA  16 80D02910
0909 1 4400 095D BSI  L DUMP PRINT BLANK LINE 80D02920
                                     80D02930
090B 0 7201      * PRNT3 MDX 2 1 POINT TO NEXT TRACE TBL WD 80D02940
090C 0 C202      LD  2 2  GET WORD FROM TABLE 80D02950
090D 1 4C08 08EB BSC  L PRNT1,+ BR IF NOT WORD COUNT 80D02960
                                     80D02970
090F 0 9103      *   S  1 D2-T 80D02980
0910 0 D1C8      STO  1 WDCNT-T SAVE WORD COUNT 80D02990
0911 1 4C28 090B BSC  L PRNT3,Z+ BR IF CNT LESS THAN TWO 80D03000
                                     80D03010
0913 0 C100      *   LD  1 D1-T 80D03020
0914 0 4048      BSI  DUMP SET UP PRINT MOD COUNT 80D03030
                                     80D03040
0915 0 C1C8      * PRNT4 LD  1 WDCNT-T 80D03050
0916 1 4C08 090B BSC  L PRNT3,+ FETCH WORD COUNT 80D03060
                                     80D03070
0918 0 9105      *   S  1 D14-T 80D03080
0919 1 4C08 091F BSC  L PRNT5,+ DECRE BY 14 80D03090
                                     80D03100
091B 0 D1C8      *   STO 1 WDCNT-T 80D03110
091C 0 C105      LD  1 D14-T SAVE REMAINING WORD CNT 80D03120
091D 0 403F      BSI  DUMP PRINT 14 WORDS 80D03130
091E 0 70F6      MDX  PRNT4 GO TO PRINT NEXT LINE 80D03140
                                     80D03150
091F 0 C1C8      * PRNT5 LD  1 WDCNT-T 80D03160
0920 0 403C      BSI  DUMP GET WORD COUNT 80D03170
                                     80D03180
0921 0 1010      *   SLA  16 80D03190
0922 0 403A      BSI  DUMP PRINT BLANK LINE 80D03200
                                     80D03210
0923 0 70E7      *   MDX  PRNT3 80D03220
                                     80D03230
0924 1 C400 0802 * PRNT7 LD  L SWO 80D03240
0926 0 E127      AND 1 HFFF9-T RESET PROGRAM 80D03250
0927 1 D400 0802 STO  L SWO CONTROL 80D03260
                                     80D03270
0929 0 C1C8      *   LD  1 PGRDY-T 80D03280
092A 1 4C18 087F BSC  L STRT,+ CHECK PRG READY IND 80D03290
                                     80D03300
092C 0 1010      *   SLA  16 80D03310
092D 0 D1F4      STO  1 ENDSW-T RESET END OF TEST IND 80D03320
092E 1 4C00 08A7 BSC  L WAIT 80D03330
                                     80D03340
0930 0 0000      *-----*
0931 0 1888      *   BUILD RID, RAD, MID 80D03350
                                     80D03360
RDRAD DC *-* EP 80D03370
                                     80D03380
SRT 8 80D03390
SAVE MID IN Q 80D03400
80D03410

```

```

0932 1 D400 0800 STO  L RID STORE RID IN PST 80D03420
0934 1 6780 0800 LDX  I3 RID 80D03430
0936 1 C700 1580 LD  L3 RTTBL 80D03440
0938 1 D400 0801 STO  L RAD STORE IN PST 80D03450
                                     80D03460
093A 0 1090      *   SLT  16 80D03470
093B 1 4C10 0942 BSC  L RDRD1,- LEFT JUSTIFY MID IN A 80D03480
                                     80D03490
093D 0 F111      *   EOR  1 HFF00-T 80D03500
093E 0 1808      SRA  8  RIGHT JUSTIFY MID 80D03510
093F 0 8100      A  1 D1-T CORRECT FOR TWOS COMP 80D03520
0940 0 E912      OR  1 HE000-T INDICATE E MSG IN MID 80D03530
0941 0 7002      MDX  RDRD2 BRANCH 80D03540
                                     80D03550
0942 0 1808      * RDRD1 SRA  8 80D03560
0943 0 E913      OR  1 HA000-T RIGHT JUSTIFY MID 80D03570
                                     80D03580
0944 1 4C80 0930 * RDRD2 BSC  I RDRAD RETURN 80D03590
                                     80D03600
*-----*
* CALL ON MONITOR LOG ROUTINE 80D03610
* 80D03620
* LGCAL DC *-* EP 80D03630
0946 0 0000      * 80D03640
0947 0 6A0F      STX  2 LGCL4 STO LOG STRING ADDR 80D03650
0948 0 C0FD      LD  LGCAL 80D03660
0949 0 D00F      STO  LGCL4+2 STO LOG TERM ADR RETURN 80D03670
094A 0 7006      MDX  LGCL3 80D03680
                                     80D03690
094B 1 6500 0951 * LGCL1 LDX  L1 LGCL3 SET UP MLSCF ENTRY 80D03700
094D 1 6D00 080A STX  L1 MLSCF FOR RETURN TO LOG CALL 80D03710
094F 0 4C80 012D * LGCL2 BSC  I START GO TO MONITOR 80D03720
0951 1 6500 1545 * LGCL3 LDX  L1 T XR1=CONSTANT TABLE ADDR 80D03730
0953 1 6680 0957 LDX  I2 LGCL4 RESTORE XR2 80D03740
0955 0 4480 012F BSI  I LOG CALL MONITOR LOG ROUTINE 80D03750
0957 0 0000      LGCL4 DC *-* LOG STRING ADDR 80D03760
0958 1 0948      DC LGCL1 BUSY RETURN 80D03770
0959 0 0000      DC *-* TERMINATION RETURN ADDR 80D03780
095A 0 1010      *   SLA  16 80D03790
095B 0 D202      STO  2 2 CLEAR MESSAGE PRINT IND 80D03800
095C 0 70F2      MDX  LGCL2 BRANCH--GO TO MONITOR 80D03810
095D 0 0000      * 80D03820
*-----*
* PRINT ONE LINE OF XM/RVC TBL DUMP 80D03830
* 80D03840
* DUMP DC *-* EP 80D03850
095E 0 F10F      *   EOR  1 H8000-T 80D03860
095F 0 D200      STO  2 0 CORRECT FIRST LINE BIT 80D03870
0960 0 1001      SLA  1 STO CONT WD IN LOG STRING 80D03880
0961 0 1801      SRA  1 80D03890
0962 0 D00F      STO  DUMP1+1 SAVE FOR NEXT TBL UPDATE 80D03900
0963 0 1010      SLA  16 80D03910
0964 0 D201      STO  2 1 80D03920
0965 0 C114      DOO3 LD  1 HD003-T CLEAR HEX/DEC CONTROL WD 80D03930
0966 0 D202      STO  2 2 80D03940
0967 1 C400 0802 *   LD  L SWO 80D03950
0969 1 4C04 087C BSC  L QUIT,E GET CONTROL OPTIONS 80D03960
                                     80D03970
096B 0 1801      *   SRA  1 80D03980
096C 1 4C04 0924 BSC  L PRNT7,E BR IF TERM PROGRAM 80D03990
096E 0 100E      *   SLA  14 80D04000
096F 1 4410 0946 BSI  L LGCAL,- PRINT UNLESS SKIP SELECTED 80D04010
80D04020
80D04030
80D04040
80D04050
80D04060
80D04070
80D04080
80D04090

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TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

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0971 0 7600 0000 * DUMP1 MDX L2 *-* POINT TO NEXT PRINT ADDR 80D04100
0973 1 4C80 095D * BSC I DUMP RETURN 80D04110
* 80D04120
* 80D04130
* 80D04140
***** 80D04150
* 80D04160
* CA INTERRUPT SERVICE 80D04170
* 80D04180
***** 80D04190
* 80D04200
0975 0 0000 DVA DC *-* AREA CODE 80D04210
* 80D04220
0976 0 0000 INT DC *-* INTERRUPT ENTRY 80D04230
* 80D04240
0977 1 7400 150D MDX L PGRDY CK PROG READY IND 80D04250
0979 0 7004 MDX INT01 BR IF PROGRAM READY 80D04260
* 80D04270
097A 1 0C00 14E6 XIO L RESET RESET CA 80D04280
097C 1 4C80 097E BSC I INT EXIT INTERRUPT 80D04290
* 80D04300
097E 1 6D00 1499 INT01 STX L1 INTX+1 SAVE XR1 80D04310
0980 1 6E00 149B STX L2 INTX+3 SAVE XR2 80D04320
0982 1 6500 1545 LDX L1 T XR1=CONSTANT TABLE ADDR 80D04330
* 80D04340
0984 0 099B SENSE XIO 1 SNSOP-T SENSE OPERATING DSW 80D04350
0985 0 019B STO 1 SNSOP-T SAVE DSW 80D04360
0986 0 099D XIO 1 SNSBC-T SENSE BYTE COUNT 80D04370
0987 0 019D STO 1 SNSBC-T SAVE BYTE COUNT 80D04380
* 80D04390
0988 0 099B XIO 1 SNSOP-T SENSE DSW AGAIN 80D04400
0989 0 019B EOR 1 SNSOP-T 80D04410
098A 1 4C20 0984 BSC L SENSE,Z BR IF DSW CHANGED 80D04420
* 80D04430
098C 0 099D XIO 1 SNSBC-T SENSE BC AGAIN 80D04440
098D 0 019D EOR 1 SNSBC-T 80D04450
098E 1 4C20 0984 BSC L SENSE,Z BR IF BC CHANGED 80D04460
* 80D04470
0990 0 1010 SLA 16 80D04480
0991 0 01CE STO 1 INTM-T RESET INTERRUPT TIMER 80D04490
0992 0 01CF STO 1 ANYMS-T RESET MESSAGE IND 80D04500
0993 0 01D0 STO 1 ANYER-T RESET AND ERROR IND 80D04510
0994 0 01D1 STO 1 TEXT-T RESET TEXT INDICATOR 80D04520
0995 0 01D3 STO 1 ABORT-T RESET ABORT TEXT IND 80D04530
0996 0 01D4 STO 1 NORCV-T RESET NOTHING RCVD IND 80D04540
* 80D04550
0997 0 019B LD 1 SNSOP-T FETCH OPERATING DSW 80D04560
0998 0 0125 AND 1 HF840-T ISOLATE INTERRUPT BITS 80D04570
0999 0 011C EOR 1 H2000-T CHECK FOR TIMEOUT ONLY 80D04580
099A 1 4C20 0980 BSC L RDYCK,Z BR IF INTRP OTHER THAN TO 80D04590
* 80D04600
099C 0 019D LD 1 SNSBC-T FETCH BYTE COUNT DSW 80D04610
099D 0 1003 SLA 3 80D04620
099E 1 4C10 09A6 BSC L RCVDL,- BR IF RECEIVE MODE 80D04630
* 80D04640
09A0 0 01F8 LD 1 XMTAC-T CHECK XMIT TURNAROUND CNT 80D04650
09A1 1 4C08 0980 BSC L RDYCK,+ BR IF COUNT ZERO 80D04660
* 80D04670
09A3 0 0100 S 1 D1-T DECREMENT 80D04680
09A4 0 01F8 STO 1 XMTAC-T XMIT TURNAROUND COUNT 80D04690
09A5 0 7007 MDX EXIT EXIT INTERRUPT 80D04700
* 80D04710
09A6 0 1010 RCVDL SLA 16 SET TRANSMIT 80D04720
09A7 0 01F8 STO 1 XMTAC-T TURNAROUND COUNT TO ZERO 80D04730
09A8 0 01F9 LD 1 RCTAC-T CHECK RCV TURNAROUND CNT 80D04740
09A9 1 4C08 0980 BSC L RDYCK,+ BR IF COUNT ZERO 80D04750
* 80D04760
09AB 0 0100 S 1 D1-T DECREMENT 80D04770

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09AC 0 01F9 STO 1 RCTAC-T RECEIVE TURNAROUND CNT 80D04780
80D04790
09AD 0 09A8 * EXIT XIO 1 DSWRS-T SENSE DSW WITH RESET 80D04800
09AE 1 4C00 0ACA BSC L INTX1 EXIT INTERRUPT 80D04810
09B0 0 01D5 RDYCK LD 1 RDYSW-T CK DATA SET READY IND 80D04820
09B1 1 4C18 09BE BSC L DSWCK,+ BR IF D.S. SHOULD BE RDY 80D04830
80D04840
* LD 1 SNSOP-T CHECK DSW 80D04850
09B3 0 019B LD 1 SNSOP-T CHECK DSW 80D04860
09B4 0 1008 SLA 8 80D04870
09B5 1 4C28 09B9 BSC L **2,Z+ BR IF D.S. READY 80D04880
* LD 1 SNSOP-T FETCH DSW 80D04890
09B7 0 019B MDX DSWCK+2 GO TO CHECK DSW 80D04900
80D04910
* SLA 16 80D04920
09B9 0 1010 STO 1 RDYSW-T RESET D.S. READY IND 80D04930
80D04940
* LD L TRIES 80D04950
09BB 1 4C00 0818 STO 1 RETRY-T SET RETRY COUNT TO N 80D04960
80D04970
* DSWCK LD 1 SNSOP-T FETCH DSW 80D04980
09BE 0 019B EOR 1 H0080-T COMPLEMENT D.S. READY BIT 80D04990
80D05000
* AND 1 MASK-T MASK ALLOWED BITS 80D05010
09C0 0 01CC LDX 3 -1 80D05020
09C1 0 03FF LDX 2 10 CHECK 10 BITS 80D05030
80D05040
* EOXX BSI L SVMMSG,Z+ STORE AN 80D05050
09C3 1 4428 12B8 MDX 3 -1 ERROR MSG IN 80D05060
09C5 0 03FF SLA 1 TRACE TABLE FOR 80D05070
09C6 0 1001 MDX 2 -1 EACH DSW BIT STILL ON 80D05080
09C7 0 02FF MDX EOXX 80D05090
80D05100
* LD 1 SNSOP-T FETCH DSW 80D05110
09C9 0 019B AND 1 HF840-T CHECK INTERRUPT BITS 80D05120
09CA 0 0125 EOOD LDX 3 -13 PREPARE TO STORE EOOD MSG 80D05130
09CB 0 03F3 BSI L SVMMSG,+ STO ERR MSG IF NO INT BITS 80D05140
80D05150
* MDX L CLRSW 80D05160
09CE 1 7400 151C MDX INT02 BR IF CA CLEAR IND ON 80D05170
80D05180
09D0 0 7003 * LD 1 RDYSW-T 80D05190
09D1 0 01D5 BSC L INT03,+ BR IF DS RDY IND IS ZERO 80D05200
80D05210
* INT02 SLA 16 80D05220
09D4 0 1010 STO 1 RCVBC-T NOTHING RECEIVED 80D05230
80D05240
* BSC L INTEX RETURN TO TEST ROUTINE 80D05250
80D05260
* INT03 LD 1 INITL+1-T 80D05270
09D8 0 01A4 SLA 8 80D05280
09D9 0 1008 BSC L RCTCK,- BR IF NOT DIAG MODE 80D05290
80D05300
* SLA 16 80D05310
09DC 0 1010 STO 1 TEMP1-T RESET ERROR IND 80D05320
09DD 0 01DE LDX L2 XMRCT XR2=POINT TO XM/RCV TABLE 80D05330
09DE 1 6600 176B LD 1 XMADR-T GET XMIT TABLE ADDR 80D05340
09E0 0 01D8 BSC L RCTCK,+ BR IF NO XMIT TABLE 80D05350
80D05360
* S XMTCK+1 80D05370
09E3 0 09FB BSC L XMCK1,+ BR IF ONLY ONE XMIT TBL 80D05380
80D05390
* S 1 D2-T CALCULATE TABLE LENGTH 80D05400
09E6 0 0103 BSI CKXMT GO TO SHIFT AND CHECK TBL 80D05410
09E7 0 400A MDX 2 2 80D05420
09E8 0 7202 * 80D05430
* XMCK1 LD 1 RCADR-T CALCULATE 80D05440
09E9 0 01D9 S 1 XMADR-T TABLE 80D05450

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09EB 0 9103	S	1	D2-T	LENGTH	80D05460
09EC 0 4005	BSI		CKXMT	GO TO SHIFT AND CHECK TBL	80D05470
	*				80D05480
09ED 0 63F2	E00E	L	3 -14	PREPARE TO STORE E00E MSG	80D05490
09EE 0 C1DE	LD	1	TEMP1-T		80D05500
09EF 1 4420 1288	BSI	L	SVMSG,Z	STO ERR MSG IF DIAG WD ERR	80D05510
	*				80D05520
09F1 0 7026	MDX		RCTCK	BRANCH	80D05530
	*				80D05540
	*				80D05550
09F2 0 0000	CKXMT	DC	*--*	ENTRY	80D05560
	*				80D05570
09F3 0 D1CD	STO	1	CNTA-T	SAVE TABLE LENGTH	80D05580
	*				80D05590
09F4 0 10A0	CKXM1	SLT	32		80D05600
09F5 0 C201	LD	2	1	GET WORD FROM XMIT TBL	80D05610
09F6 0 1889	SRT		9		80D05620
09F7 0 F126	EOR	1	HFFFF-T		80D05630
09F8 1 4C20 09FF	BSC	L	CKXM2,Z	BR IF DIAGNOSTIC WORD	80D05640
	*				80D05650
09FA 0 108A	SLT		10	POSITION DATA BITS	80D05660
09FB 0 F202	EOR	2	2	COMPARE WITH DIAG WORD	80D05670
09FC 0 1801	SRA		1		80D05680
09FD 0 1008	SLA		8		80D05690
09FE 0 7005	MDX		CKXM3		80D05700
	*				80D05710
09FF 0 F126	CKXM2	EOR	1	HFFFF-T	80D05720
0A00 0 1001	SLA		1	RESTORE DIAG WORD	80D05730
0A01 0 1088	SLT		8	SHIFT DIAG WORD BITS 7-14	80D05740
0A02 0 D201	STO	2	1	TO BIT 8-15 POSITIONS	80D05750
0A03 0 10A0	SLT		32	STORE DIAG WD BACK IN TBL	80D05760
	*				80D05770
0A04 0 7201	CKXM3	MDX	2	1	80D05780
0A05 1 7400 0815	MDX	L	CODE	POINT TO NEXT XM TBL WORD	80D05790
0A07 0 7006	MDX		CKXM5	CHECK EDIT	80D05800
	*			BR IF USASCII CODE	80D05810
0A08 0 E9DE	CKXM4	OR	1	TEMP1-T	80D05820
0A09 1 74FF 1512	MDX	L	CNTA,-1		80D05830
0A0B 0 700A	MDX		CKXM6	DECRE WORD COUNT	80D05840
	*				80D05850
0A0C 1 4C80 09F2	BSC	I	CKXMT	RETURN	80D05860
	*				80D05870
0A0E 1 4C18 0A08	CKXM5	BSC	L	CKXM4,+--	80D05880
	*			BR IF COMPARE OK	80D05890
0A10 0 C202	LD	2	2	CHECK IF	80D05900
0A11 0 1801	SRA		1	TWO DIAGNOSTIC	80D05910
0A12 0 F201	EOR	2	1	WORDS	80D05920
0A13 0 1008	SLA		8	COMPARE	80D05930
0A14 1 4C00 0A08	BSC	L	CKXM4	GO TO SET ERR IF NO CMP	80D05940
	*				80D05950
0A16 0 D1DE	CKXM6	STO	1	TEMP1-T	80D05960
0A17 0 70DC	MDX		CKXM1		80D05970
	*				80D05980
	*				80D05990
0A18 0 C1DA	RCTCK	LD	1	RCVBC-T	80D06000
0A19 1 4C18 0AC1	BSC	L	INTEX,+--	EXIT IF NO RECEIVE TABLE	80D06010
	*				80D06020
0A1B 0 63F0	E010	L	3 -16	PREPARE TO STORE E010 MSG	80D06030
0A1C 0 C19D	LD	1	SNSBC-T	FETCH BYTE COUNT SENSED	80D06040
0A1D 0 1003	SLA		3	CK XMIT BIT	80D06050
0A1E 1 4C28 0A3A	BSC	L	NOTHN,Z+	BR IF XMIT MODE	80D06060
	*				80D06070
0A20 0 1001	SLA		1		80D06080
0A21 0 F126	EOR	1	HFFFF-T	COMPLEMENT BYTE COUNT	80D06090
0A22 0 1804	SRA		4		80D06100
0A23 0 D1DE	STO	1	TEMP1-T	SAVE BYTE COUNT	80D06110
	*				80D06120
0A24 0 C1DA	LD	1	RCVBC-T	FETCH ORIG RCV BC	80D06130

0A25 0 1004	SLA		4		80D06140
0A26 0 1804	SRA		4		80D06150
0A27 0 91DE	S		1	TEMP1-T	80D06160
0A28 0 D1DA	STO	1	RCVBC-T	SUBTRACT END BC	80D06170
0A29 1 0400 16D0	STO	L	RCVTB	SAVE NUMBER OF	80D06180
0A2B 0 63EF	E011	L	3 -17	CHARACTERS RECEIVED	80D06190
0A2C 1 4C28 0A3A	BSC	L	NOTHN,Z+	PREPARE TO STORE E011 MSG	80D06200
	*			BR IF CHAR CNT IS MINUS	80D06210
0A2E 1 4C20 0A4A	BSC	L	CKRCV,Z	BR IF CHAR CNT IS PLUS	80D06220
	*				80D06230
0A30 0 63EE	E012	L	3 -18	PREPARE TO STORE E012 MSG	80D06240
0A31 0 C19B	LD	1	SNSOP-T	CHECK	80D06250
0A32 0 1002	SLA		2	OPERATION DSW	80D06260
0A33 1 4C10 0A3A	BSC	L	NOTHN,-	BR IF NO TIMEOUT	80D06270
	*				80D06280
0A35 1 6C00 1519	STX	L	NORCV	SET NOTHING RECEIVED IND	80D06290
	*				80D06300
0A37 0 C1D0	LD	1	ANYER-T		80D06310
0A38 1 4C18 0A3C	BSC	L	NOTHN2,+--	BR IF ANY ERROR IND OFF	80D06320
	*				80D06330
0A3A 1 4400 1288	NOTHN	BSI	L	SVMSG	80D06340
	*			SAVE ERROR MESSAGE	80D06350
0A3C 0 1010	SLA		16		80D06360
0A3D 0 D1DA	STO	1	RCVBC-T	SET CHAR RCVD COUNT TO 0	80D06370
	*				80D06380
0A3E 0 C1D0	LD	1	ANYER-T		80D06390
0A3F 1 4C18 0AC1	BSC	L	INTEX,+--	EXIT IF NO ERRORS	80D06400
	*				80D06410
0A41 0 C19B	LD	1	SNSOP-T		80D06420
0A42 0 1002	SLA		2	CHECK DSW	80D06430
0A43 1 4C10 0AC1	BSC	L	INTEX,-	EXIT IF NO TIMEOUT	80D06440
	*				80D06450
0A45 0 63ED	E013	L	3 -19	PREPARE TO STORE E013 MSG	80D06460
0A46 1 4400 1288	BSI	L	SVMSG		80D06470
0A48 1 4C00 0AC1	BSC	L	INTEX	EXIT TO TEST ROUTINE	80D06480
	*				80D06490
0A4A 1 6780 151E	CKRCV	L	13	RCADR	80D06500
0A4C 0 1010	SLA		16	POINT TO RECEIVE TABLE	80D06510
0A4D 0 D1CD	STO	1	CNTA-T	CLEAR WORD COUNTER	80D06520
0A4E 1 6600 16D0	L	L2	RCVTB	POINT TO RCV DATA SAVE TBL	80D06530
	*				80D06540
0A50 0 C1A4	LD	1	INITL+1-T	CK INITIALIZE IOCC	80D06550
0A51 0 1008	SLA		8		80D06560
0A52 1 4C10 0A7F	BSC	L	INT04,-	BR IF NOT DIAG MODE	80D06570
	*				80D06580
0A54 0 7201	CKRC	MDX	2	1	80D06590
0A55 0 4018	BSI		MDATA	ADVANCE SAVE DATA ADDR	80D06600
0A56 0 1010	SLA		16	FETCH FIRST DATA WORD	80D06610
0A57 0 D1DE	STO	1	TEMP1-T	CLEAR ERROR INDICATOR	80D06620
0A58 0 7002	MDX		CKRC1+2		80D06630
	*				80D06640
0A59 0 7201	CKRC1	MDX	2	1	80D06650
0A5A 0 4013	BSI		MDATA	ADVANCE SAVE DATA ADDR	80D06660
	*			FETCH ONE DATA WD	80D06670
0A5B 0 1088	SLT		8		80D06680
0A5C 0 1008	SLA		8		80D06690
0A5D 0 D200	STO	2	0	STO DATA IN SAVE TABLE	80D06700
0A5E 1 74FF 151F	MDX	L	RCVBC,-1	DECRE CHAR COUNT	80D06710
0A60 0 7001	MDX		*+1		80D06720
0A61 0 7007	MDX		E00F	BR IF ALL DATA MOVED	80D06730
	*				80D06740
0A62 0 400B	BSI		MDATA	FETCH NEXT DATA WD	80D06750
0A63 0 1088	SLT		8		80D06760
0A64 0 EA00	OR		2	0	80D06770
0A65 0 D200	STO	2	0	COMBINE TWO CHARACTERS	80D06780
0A66 1 74FF 151F	MDX	L	RCVBC,-1	STO IN SAVE TABLE	80D06790
0A68 0 70F0	MDX		CKRC1	DECRE CHAR COUNT	80D06800
	*				80D06810

TCA TRANSMIT/RECEIVE TEST

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0A69 0 63F1      E00F LDX 3 -15      PREPARE TO STORE E00F MSG 80D06820
0A6A 0 C1DE      LD 1 TEMP1-T      CHECK ERROR INDICATOR 80D06830
0A6B 1 4420 12B8 BSI L SVMMSG,Z    STORE MSG IF ANY ERROR 80D06840
0A6D 0 701D      MDX          INT06    BRANCH 80D06850
*
*
*
0A6E 0 0000      * MDATA DC *-*      ENTRY 80D06860
*
*
0A6F 1 7401 1512 MDX L CNTA,1      INCRE WORD COUNT 80D06870
0A71 0 7301      MDX 3 1          POINT TO NEXT WORD 80D06880
0A72 0 C300      LD 3 0          FETCH WORD FROM RCV TBL 80D06890
0A73 0 1888      SRT 8          SAVE CHAR IN Q 80D06900
0A74 0 F126      EOR 1 HFFFF-T   BR IF DIAG WORD 80D06910
0A75 1 4C20 0A6F BSC L MDATA+1,Z 80D06920
*
*
0A77 0 C300      LD 3 0          FETCH DATA WORD 80D06930
0A78 0 F3FF      EOR 3 -1       COMPARE WITH DIAG WORD 80D06940
0A79 0 1008      SLA 8          80D06950
0A7A 0 E9DE      OR 1 TEMP1-T   80D06960
0A7B 0 D1DE      STO 1 TEMP1-T  SET ERR IND IF NO COMPARE 80D06970
0A7C 0 1010      SLA 16         80D06980
0A7D 1 4C80 0A6E BSC I MDATA     GO TO STORE DATA IN TBL 80D06990
*
*
0A7F 0 C1DA      INT04 LD 1 RCVBC-T  GET RCV CHAR COUNT 80D07000
0A80 0 8100      A 1 D1-T      80D07010
0A81 0 1801      SRA 1         DIVIDE BY TWO 80D07020
0A82 0 D1DA      STO 1 RCVBC-T  SAVE RCV TBL LENGTH 80D07030
0A83 0 D1CD      STO 1 CNTA-T   80D07040
*
*
0A84 0 7201      INT05 MDX 2 1    POINT TO NEXT RCV TBL WD 80D07050
0A85 0 7301      MDX 3 1    POINT TO NEXT SAVE TBL WD 80D07060
0A86 0 C300      LD 3 0    MOVE TWO CHARACTERS 80D07070
0A87 0 D200      STO 2 0    TO SAVE TABLE 80D07080
0A88 1 74FF 151F MDX L RCVBC,-1  DECRE CHAR COUNT 80D07090
0A8A 0 70F9      MDX          INT05    BR IF MORE TO MOVE 80D07100
*
*
0A8B 0 C1CD      INT06 LD 1 CNTA-T  SAVE RCV TBL LENGTH 80D07110
0A8C 0 8100      A 1 D1-T    80D07120
0A8D 0 D1DA      STO 1 RCVBC-T 80D07130
*
*
0A8E 0 63EC      E014 LDX 3 -20    PREPARE TO STORE E014 MSG 80D07140
0A8F 0 C19B      LD 1 SNSOP-T  FETCH DSW 80D07150
0A90 0 1002      SLA 2         80D07160
0A91 1 4428 12B8 BSI L SVMMSG,Z+ SAVE MSG IF TIMEOUT 80D07170
*
*
0A93 1 4C28 0AC1 BSC L INTEX,Z+  EXIT IF TIMEOUT 80D07180
*
*
0A95 0 1001      SLA 1         80D07190
0A96 1 4C10 0AC1 BSC L INTEX,-  EXIT IF NO END CHARACTER 80D07200
*
*
0A98 1 C400 16D0 LD L RCVTB     FETCH CHAR RCVD COUNT 80D07210
0A9A 0 1881      SRT 1         DIVIDE BY TWO 80D07220
0A9B 0 D001      STO **+1     STO SAVE TBL LENGTH 80D07230
*
*
0A9C 0 6700 0000 LDX L3 *-*     X3 POINT TO END CHAR 80D07240
0A9E 0 1081      SLT 1         80D07250
0A9F 1 4C04 0AAB BSC L INT07,E  BR IF ODD NO OF CHARS 80D07260
*
*
0AA1 1 C700 16D0 LD L3 RCVTB     FETCH END CHAR 80D07270
0AA3 0 1890      SRT 16        SAVE IN Q 80D07280
0AA4 1 C700 16CF LD L3 RCVTB-1  FETCH PRECEEDING CHAR 80D07290
0AA6 0 1088      SLT 8         COMBINE TWO CHARACTERS 80D07300
0AA7 0 7002      MDX **+2     80D07310
*
*
0AA8 1 C700 16D0 INT07 LD L3 RCVTB  FETCH LAST TWO CHARS RCVD 80D07320
0AAA 0 D1DB      STO 1 ENDCH-T  SAVE END CHARACTERS 80D07330
*

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```

OAA8 1 C400 16D1 * LD L RCVTB+1  FETCH 1ST 2 CHARS RCVD 80D07500
OAAD 1 4400 14A2 * BSI L DCODE    BUILD DECODE WORDS 80D07510
*
*
OAAF 1 4C10 0AB5 * BSC L INT08,-  BR IF 1ST CHAR NOT DLE 80D07520
*
*
OAB1 0 1092      SLT 18        80D07530
OAB2 1 4C10 0AC1 * BSC L INTEX,-  EXIT IF NOT DLE STX 80D07540
*
*
OAB4 0 7003      MDX          INT09    BR IF DLE STX 80D07550
*
*
OAB5 0 180D      INT08 SRA 13   80D07560
OAB6 1 4C08 0AC1 * BSC L INTEX,+  EXIT IF NOT SOH OR STX 80D07570
*
*
OAB8 0 C1DB      INT09 LD 1 ENDCH-T  FETCH END CHARACTER 80D07580
OAB9 1 4400 14A2 BSI L DCODE    BUILD DECODE WORDS 80D07590
OABB 0 1085      SLT 5         80D07600
OABC 0 100E      SLA 14        80D07610
OABD 0 D1D1      STO 1 TEXT-T   SET TEXT IND IF ETX OR ETB 80D07620
OABE 0 1082      SLT 2         80D07630
OABF 0 100F      SLA 15        80D07640
OAC0 0 D1D3      STO 1 ABORT-T  SET ABORT IND IF ENQ 80D07650
*
*
OAC1 1 C400 081C INT09 LD L TSSW  80D07660
OAC3 1 4C98 12F1 * BSC I XMRCV,+  BR IF NO CHAN TIMESHARE 80D07670
*
*
OAC5 1 6700 0AD0 LDX L3 INTX2   SET UP MLSCF RETURN 80D07680
OAC7 1 6F00 0809 STX L3 MLSCF-1 TO RELEASE DEVICE 80D07690
*
*
OAC9 0 09A1      XIO 1 RESET-T  RESET CA 80D07700
*
*
OACA 1 6580 1499 INTX1 LDX I1 INTX+1  RESTORE XR1 80D07710
OACC 1 6680 1498 LDX I2 INTX+3  RESTORE XR2 80D07720
OACE 1 4C80 0976 BSC I INT       EXIT INTERRUPT 80D07730
*
*
OAD0 0 4480 0132 INTX2 BSI I RELDV  RELEASE DEVICE 80D07740
OAD2 1 0814      DC DDEF        80D07750
OAD3 1 080D      DC TERM        80D07760
*
*
OAD4 1 6700 0ADA INTX3 LDX L3 INTX4  SET UP MLSCF RETURN 80D07770
OAD6 1 6F00 080B STX L3 MLSCF+1  TO REQUEST DEVICE 80D07780
OAD8 0 4C80 012D BSC I START     GO TO MONITOR 80D07790
*
*
OADA 0 4480 0131 INTX4 BSI I REQDV  REQUEST DEVICE 80D07800
OADC 1 0AD4      DC INTX3       80D07810
OADD 1 0814      DC DDEF        80D07820
OADE 1 0975      DC DVA         80D07830
OADF 1 080D      DC TERM        80D07840
*
*
OAE0 1 6500 1545 LDX L1 T       RESTORE XR1 80D07850
OAE2 1 4C80 12F1 BSC I XMRCV    RETURN TO TEST ROUTINE 80D07860
*
*
*****
*
* CLEAR CA
*
*****
*
OAE4 1 6C00 151A RTN01 STX L RDYSW  SET D.S. NOT READY IND 80D07870
OAE6 0 1010      SLA 16        80D07880
OAE7 0 D1E5      STO 1 CMODE-T  RESET CONTROL MODE 80D07890
*
*
OAE8 1 4400 12F1 BSI L XMRCV    CLEAR CA 80D07900
OAEA 0 2001      DC /2001      80D07910
OAEB 0 0000      DC 0          80D07920
*

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OAEC 0 6306	A006 LDX 3 6	PREPARE TO STORE A006 MSG	80D08180
OAED 1 7400 1515	MDX L ANYER	SKIP IF NO DSW ERROR	80D08190
OAEE 0 63E8	E018 LDX 3 -24	PREPARE TO STORE E018 MSG	80D08200
	*		80D08210
OAFO 0 1010	RT01A SLA 16		80D08220
OAF1 0 D1E7	STO 1 MXFER-T	RESET MESSAGE TRANSFER IND	80D08230
OAF2 0 D1D5	STO 1 RDYSW-T	RESET DATA SET NOT RDY SW	80D08240
	*		80D08250
OAF3 1 7400 150E	MDX L PGBSY	CK PROG BUSY IND	80D08260
OAF5 0 7006	MDX RT01B	BR IF PROGRAM BUSY	80D08270
	*		80D08280
OAF6 0 C1F4	LD 1 ENDSW-T	CK END MSG PRINT SW	80D08290
OAF7 1 4C18 OAFc	BSC L RT01B,+	BR IF NOT END OF TEST	80D08300
	*		80D08310
OAF9 0 E9E9	OR 1 RTNNO-T	COMBINE MID AND RID	80D08320
OAFa 1 D400 1AC9	STO L ENMSG	SET END MSG PRINT IND	80D08330
	*		80D08340
OAFc 1 C400 0818	RT01B LD L TRIES		80D08350
OAFE 0 D1D6	STO 1 RETRY-T	SET RETRY COUNT=N	80D08360
	*		80D08370
OAFf 1 4400 11FC	BSI L RDSWS	GO TO READ OPTION SWITCHES	80D08380
	*		80D08390
OB01 1 C400 0816	RT01C LD L NET	CK NETWORK TYPE	80D08400
OB03 0 1881	SRT 1		80D08410
OB04 1 4C20 0B36	BSC L AAA1,Z	BR IF MULTIPPOINT	80D08420
	*		80D08430
OB06 1 6C00 152A	STX L CMODE	SET CONTROL MODE	80D08440
	*		80D08450
OB08 0 1081	SLT 1		80D08460
OB09 1 4C08 0B26	BSC L NONSW,+	BR IF NOT SWITCHED LINE	80D08470
	*		80D08480
OB0B 0 C1D7	LD 1 CLRSW-T	CK CA CLEAR IND	80D08490
OB0C 0 E9E8	OR 1 IDSW-T	CK ID MODE IND	80D08500
OB0D 1 4C18 0B26	BSC L NONSW,+	BR IF NOT CLEAR OR NOT ID	80D08510
	*		80D08520
OB0F 0 D1D5	STO 1 RDYSW-T	SET DATA SET NOT RDY SW	80D08530
OB10 0 D1E8	STO 1 IDSW-T	SET ID MODE	80D08540
	*		80D08550
OB11 0 C1C9	LD 1 PGBSY-T	CK PROGRAM BUSY IND	80D08560
OB12 0 E9F4	OR 1 ENDSW-T	CK END OF TEST IND	80D08570
OB13 1 4C20 0B19	BSC L AAA6,Z	BR IF PROG BSY OR END TEST	80D08580
	*		80D08590
OB15 0 6205	AAA5 LDX 2 5	PREPARE START MSG AAA5	80D08600
OB16 1 7400 1530	MDX L REQ	CK IF XMIT RFT REQUESTED	80D08610
OB18 0 7009	MDX GO	BR IF RFT REQUEST	80D08620
	*		80D08630
OB19 0 6206	AAA6 LDX 2 6	PREPARE START MSG AAA6	80D08640
OB1A 1 7400 0B1A	MDX L ANSRQ	CK EDIT - AUTO ANSWER	80D08650
OB1C 0 7005	MDX GO	BR IF RING WAIT SELECTED	80D08660
	*		80D08670
OB1D 0 6207	AAA7 LDX 2 7	PREPARE START MSG AAA7	80D08680
OB1E 1 7400 081B	MDX L TONE	CK EDIT - TONE OPTION	80D08690
OB20 0 7001	MDX GO	BR IF XMIT TONE SELECTED	80D08700
	*		80D08710
OB21 0 6203	AAA3 LDX 2 3	PREPARE START MSG AAA3	80D08720
	*		80D08730
OB22 1 4400 11D4	GO BSI L STPRT	GO TO SET START MSG PRT SW	80D08740
OB24 1 4E80 1580	BSC I2 RTTBL	BR TO STARTING ROUTINE	80D08750
	*		80D08760
OB26 0 C1C9	NONSW LD 1 PGBSY-T	CK PROGRAM BUSY IND	80D08770
OB27 0 E9F4	OR 1 ENDSW-T	CK END OF TEST IND	80D08780
OB28 1 4C20 0B34	BSC L AAA2,Z	BR IF PROGRAM BUSY	80D08790
	*		80D08800
OB2A 0 C1E6	LD 1 MASTR-T	CK MASTER STATUS IND	80D08810
OB2B 1 4C18 0B30	BSC L AAA4,+	BR IF NOT MASTER STATUS	80D08820
	*		80D08830
OB2D 0 1010	SLA 16		80D08840
OB2E 0 D1E6	STO 1 MASTR-T	RESET MASTER STATUS	80D08850

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OB2F 0 7004	MDX AAA2	GO TO RECEIVE ENQ	80D08860
	*		80D08870
OB30 0 6204	AAA4 LDX 2 4	PREPARE START MSG AAA4	80D08880
OB31 1 7400 1530	MDX L REQ	CK IF XMIT RFT REQUESTED	80D08890
OB33 0 70EE	MDX GO	BR IF RFT REQUEST	80D08900
	*		80D08910
OB34 0 6202	AAA2 LDX 2 2	PREPARE START MSG AAA2	80D08920
OB35 0 70EC	MDX GO	BRANCH	80D08930
	*		80D08940
OB36 0 6201	AAA1 LDX 2 1	PREPARE START MSG AAA1	80D08950
OB37 1 4400 11D4	BSI L STPRT	SET START MSG PRINT IND	80D08960
	*		80D08970
OB39 0 C1E5	LD 1 CMODE-T	CK CONTROL MODE IND	80D08980
OB3A 1 4C18 0C06	BSC L RTN08,&-	BR IF NOT CONTROL MODE	80D08990
	*		80D09000
OB3C 1 4C00 0C32	BSC L RTN09	BR IF CONTROL MODE	80D09010
	*		80D09020
	*		80D09030
	*		80D09040
	*		80D09050
	*	RECEIVE INITIAL ENQ	80D09060
	*		80D09070
	*		80D09080
	*		80D09090
OB3E 1 4400 12F1	RTN02 BSI L XMRCV		80D09100
OB40 0 3002	DC /3002		80D09110
OB41 0 0004	DC /0004	RECEIVE 4 CHARACTERS	80D09120
	*		80D09130
OB42 0 63E3	E01D LDX 3 -29	PREPARE TO STORE E01D MSG	80D09140
OB43 1 7400 1515	MDX L ANYER		80D09150
OB45 0 7011	MDX E01E+1	BR IF DSW OR BCW ERROR	80D09160
	*		80D09170
OB46 0 6308	A008 LDX 3 8	PREPARE TO STORE A008 MSG	80D09180
OB47 1 7400 151A	MDX L RDYSW	CK DATA SET READY SW	80D09190
OB49 0 701B	MDX RT02C	BR IF DATA SET NOT RDY	80D09200
	*		80D09210
OB4A 0 6309	A009 LDX 3 9	PREPARE TO STORE A009 MSG	80D09220
OB4B 1 7400 1519	MDX L NORCV		80D09230
OB4D 0 7014	MDX RT02B	BR IF NOTHING RECEIVED	80D09240
	*		80D09250
OB4E 1 4400 10A2	BSI L ENDCK	CK FOR EOT OR DISC RCVD	80D09260
	*		80D09270
OB50 0 630A	A00A LDX 3 10	PREPARE TO STORE A00A MSG	80D09280
OB51 0 C1DB	LD 1 ENDCR-T		80D09290
OB52 0 F1B9	EOR 1 ENQ-T	CK FOR ENQ RECEIVED	80D09300
OB53 0 1008	SLA 8		80D09310
OB54 1 4C18 0B6B	BSC L RT02D,+	BR IF ENQ RCVD	80D09320
	*		80D09330
OB56 0 63E2	E01E LDX 3 -30	PREPARE TO STORE E01E MSG	80D09340
OB57 0 1010	SLA 16		80D09350
OB58 0 D1E5	STO 1 CMODE-T	RESET CONTROL MODE	80D09360
	*		80D09370
OB59 1 4400 1084	RT02A BSI L CKTRY	GO TO CK RETRY COUNTER	80D09380
	*		80D09390
OB5B 0 C1C9	LD 1 PGBSY-T	CK PROG BUSY IND	80D09400
OB5C 1 4C20 0B01	BSC L RT01C,Z	BR IF PROGRAM PRINT BUSY	80D09410
	*		80D09420
OB5E 1 7400 152D	MDX L IDSW	CK ID MODE IND	80D09430
OB60 0 7021	MDX RTN03	BR IF ID MODE	80D09440
OB61 0 70DC	MDX RTN02	BR IF NOT ID MODE	80D09450
	*		80D09460
OB62 0 C1E5	RT02B LD 1 CMODE-T	CK CONTROL MODE IND	80D09470
OB63 1 4C18 0B59	BSC L RT02A,+	BR IF NOT CONTROL MODE	80D09480
	*		80D09490
OB65 1 4400 11FC	RT02C BSI L RDSWS	GO TO READ OPTION SWITCHES	80D09500
	*		80D09510
OB67 0 C1EB	LD 1 REQ-T	CK IF XMIT RFT REQUESTED	80D09520
OB68 1 4C20 0AFO	BSC L RT01A,Z	BR IF RFT REQUESTED	80D09530

TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

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*
OB6A 0 70EE          *      MDX      RT02A      BRANCH
*
OB6B 0 C1D2          *      RT02D LD   1 X99ID-T  BR IF X=99
OB6C 1 4C18 0B75    *      BSC L  RT02E,+-- IND NOT ON
*
OB6E 1 C400 0B18    *      LD   L  TRIES
OB70 0 D1D6          *      STO  1  RETRY-T   SET RETRY COUNT=N
*
OB71 0 C9AF          *      LDD  1  ACK0-T   INITIALIZE ACKS
OB72 0 D9AD          *      STD  1  ACKS-T   TO ACK0/ACK1
*
OB73 1 4C00 0F55    *      BSC L  RTN1B    GO TO RECEIVE TEST MSGS
*
OB75 0 C1C9          *      RT02E LD  1  PGBSY-T  CK PRG BUSY IND
OB76 1 4C18 0CA2    *      BSC L  RTNOD,+-- BR IF PRG NOT BUSY
*
OB78 0 1010          *      SLA   16
OB79 0 D1E5          *      STO  1  CMODE-T   RESET CONTROL MODE
*
OB7A 1 C400 0B18    *      LD   L  TRIES
OB7C 0 D1D6          *      STO  1  RETRY-T   SET RETRY COUNT=N
*
OB7D 0 C1E8          *      LD   1  IDSW-T   CK ID MODE IND
OB7E 1 4C20 0C8C    *      BSC L  RTNOB,Z   BR IF ID MODE
*
OB80 1 4C00 0C85    *      BSC L  RTNOA    GO TO XMIT NAK
*
*
*****
*
RECEIVE INITIAL ID ENQ
*
*****
*
OB82 1 4400 12F1    *      RTN03 BSI L  XMRCV
OB84 0 3003          *      DC    /3003
OB85 0 0012          *      DC    /0012    RECEIVE 18 CHARACTERS
*
OB86 0 70BB          *      MDX      E01D      BRANCH
*
*
*****
*
XMIT INITIAL ENQ, RECEIVE ACKO
*
*****
*
OB87 1 4400 12F1    *      RTN04 BSI L  XMRCV
OB89 0 3004          *      DC    /3004
OB8A 0 E003          *      DC    /E003    TRANSMIT
OB8B 1 14FE          *      DC    ENQ       ENQ
OB8C 0 4004          *      DC    /4004    RECEIVE 4 CHARACTERS
*
OB8D 0 63E0          *      E020 LDX  3 -32   PREPARE TO STORE E020 MSG
OB8E 1 7400 1515    *      MDX L  ANYER
OB90 0 7014          *      MDX      RT04A    BR IF DSW OR BCW ERROR
*
OB91 0 630C          *      A00C LDX  3 12    PREPARE TO STORE A00C MSG
OB92 1 7400 151A    *      MDX L  RDYSW
OB94 0 7010          *      MDX      RT04A    BR IF DATA SET NOT READY
*
OB95 0 630D          *      A00D LDX  3 13    PREPARE TO STORE A00D MSG
OB96 1 7400 1519    *      MDX L  NORCV
OB98 0 700C          *      MDX      RT04A    BR IF NOTHING RECEIVED
*
OB99 1 4400 10A2    *      BSI L  ENDCK    CK FOR EOT OR DISC RCVD
*

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OB9B 0 C1DB          LD   1  ENDCH-T
OB9C 0 F1B9          EOR  1  ENQ-T      CK FOR ENQ RCVD
OB9D 0 1008          SLA   8
0F9E 1 4C20 0BAB    BSC L  A00F,Z      BR IF NOT ENQ
*
OBAA 0 630E          *      A00E LDX  3 14    PREPARE TO STORE A00E MSG
01A1 1 C400 0B17    LD   L  SECND      CK EDIT - SECONDARY OPTION
0BA3 1 4C20 0CA2    BSC L  RTNOD,Z    BR IF SECONDARY STATION
*
OBAA 1 4400 1084    *      RT04A BSI L  CKTRY  GO TO CHECK RETRY COUNTER
*
OBAA 1 7400 152D    *      MDX L  IDSW      CK ID MODE IND
OBAA 0 7013          MDX      RTN05      BR IF ID MODE
OBAA 0 70DC          MDX      RTN04      BR IF NO ID MODE
*
OBAB 0 630F          *      A00F LDX  3 15    PREPARE TO STORE A00F MSG
OBAC 0 C1DB          LD   1  ENDCH-T
OBAD 0 F1AF          EOR  1  ACK0-T      CK FOR ACKO RCVD
0BAE 1 4C18 0DEA    BSC L  RTN13,+--  BR IF ACKO RECEIVED
*
OBBO 0 6310          *      A010 LDX  3 16    PREPARE TO STORE A010 MSG
OBBI 0 C1DB          LD   1  ENDCH-T
OBBI 0 F1BA          EOR  1  NAK-T      CK FOR NAK RECEIVED
OBBI 0 1008          SLA   8
OBBA 1 4C18 0BA5    BSC L  RT04A,+--  BR IF NAK RCVD
*
OBBI 0 6311          *      A011 LDX  3 17    PREPARE TO STORE A011 MSG
OBBI 0 C1DB          LD   1  ENDCH-T
OBBI 0 F1B1          EOR  1  WACK-T      CK FOR WACK RECEIVED
OBBI 1 4C18 0BA5    BSC L  RT04A,+--  BR IF WACK RCVD
*
OBBI 0 63DF          *      E021 LDX  3 -33   PREPARE TO STORE E021 MSG
OBBC 0 70E8          MDX      RT04A      BRANCH
*
*
*****
*
XMIT INITIAL ID ENQ, RECEIVE ID ACKO
*
*****
*
RTN05 LD  1  IDENQ-T  BUILD ID ENQ
STO  1  IDEND        SEQUENCE
LD  1  IDCNT-T      STORE ID SEQUENCE
STO *+3              LENGTH IN XMIT/RCV CALL
*
OBBC 1 4400 12F1    *      BSI L  XMRCV
OBCC 0 3005          *      DC    /3005
OBCC 0 0000          *      DC    *-*      TRANSMIT
OBCC 1 0820          *      DC    POLID+1   ID ENQ
OBCC 0 4012          *      DC    /4012    RECEIVE 18 CHARACTERS
*
OBCC 0 70C4          *      MDX      E020      BRANCH
*
*
*****
*
WAIT FOR RING INDICATOR
*
*****
*
OBCC 1 4400 12F1    *      RTN06 BSI L  XMRCV
OBCC 0 3006          *      DC    /3006    ENABLE CA AND
OBCC 0 FFFF          *      DC    /FFFF    START CONTINUE TIMER
*
OBCC 0 63DD          *      E023 LDX  3 -35   PREPARE TO STORE E023 MSG
OBCE 1 7400 1515    *      MDX L  ANYER
OBDO 0 7009          *      MDX      RT06A    BR IF DSW ERROR OCCURED

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TCA TRANSMIT/RECEIVE TEST

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OC44 0 1001          SLA      1          OR DLE STX          80D12260
OC45 0 180E          SRA      14         RECEIVED           80D12270
OC46 1 4C08 OC4A    BSC      L RT09A,+  BR IF NOT SOH, STX, DLE STX 80D12280
*
OC48 0 631F          A01F   LDX      3 31      PREPARE TO STORE A01F MSG  80D12290
OC49 0 70CE          MDX      RT08A    GO TO RCV PASSIVE        80D12300
*
OC4A 1 6700 081F    RT09A  LDX      L3 POLID   X3=POLLING SEQUENCE ADDR  80D12320
OC4C 0 4019          BSI      L3  ADRCCK   GO TO CK POLL RECEIVED   80D12330
OC4D 0 700C          MDX      RT09B    BR IF NOT POLL RECEIVED  80D12340
*
OC4E 0 6320          A020   LDX      3 32      PREPARE TO STORE A020 MSG  80D12350
OC4F 0 C1C9          LD       1 PGBSY-T    CK PROGRAM BUSY IND      80D12360
OC50 1 4C20 OC57    BSC      L RT09C,Z  BR IF PROGRAM BUSY      80D12370
*
OC52 1 4400 11FC    BSI      L RDSWS    READ OPTION SWITCHES     80D12380
*
OC54 0 C1EB          LD       1 REQ-T     BR IF XMIT RFT REQUESTED  80D12390
OC55 1 4C20 ODEA    BSC      L RTN13,Z  BR IF XMIT RFT REQUESTED  80D12400
*
OC57 1 4400 1067    RT09C  BSI      L RTN21   GO TO XMIT EOT           80D12410
OC59 0 70CE          MDX      RT08B    GO TO CK RETRY COUNT     80D12420
*
OC5A 1 6700 0824    RT09B  LDX      L3 SELID   X3=SELECTION SEQUENCE ADDR 80D12430
OC5C 0 4009          BSI      ADRCCK   GO TO CK ADDR            80D12440
OC5D 0 7006          MDX      A022     BR IF NOT SELECT         80D12450
*
OC5E 0 6321          A021   LDX      3 33      PREPARE TO STORE A021 MSG  80D12460
OC5F 0 C1C9          LD       1 PGBSY-T    CK PROGRAM BUSY IND      80D12470
OC60 1 4C20 OC9A    BSC      L RTNOC,Z  BR IF PROGRAM BUSY      80D12480
*
OC62 1 4C00 OCA2    BSC      L RTNOD    GO TO XMIT ACKO, RCV RFT  80D12490
*
OC64 0 6322          A022   LDX      3 34      PREPARE TO STORE A022 MSG  80D12500
OC65 0 70C2          MDX      RT08B    GO TO CK RETRY COUNT     80D12510
*
OC66 0 0000          ADRCK   DC      *-*    ENTRY                  80D12520
*
OC67 0 C300          LD       3 0        FETCH ADDR CHAR COUNT    80D12530
OC68 0 1881          SRT      1          DIVIDE BY TWO           80D12540
OC69 0 D1CD          STO     1 CNTA-T    SAVE TABLE LENGTH      80D12550
OC6A 0 1081          SLT      1          BR IF ODD CHAR CNT      80D12560
OC6B 1 4C04 OC7C    BSC      L ADCK2,E  BR IF ODD CHAR CNT      80D12570
*
OC6D 1 6600 16D1    ADCK1  LDX      L2 RCVTB+1  COMPARE ADDR RECEIVED    80D12580
OC6F 0 C301          LD       3 1        TO ADDR IN POLL        80D12590
OC70 0 F200          EOR     2 0        OR SELECT ADDR TABLE   80D12600
OC71 1 4CA0 OC66    BSC      I ADRCCK,Z  RETURN IF NOT EQUAL CMP  80D12610
*
OC73 0 7301          MDX     3 1        EQUAL CMP - INCRE RETURN 80D12620
OC74 0 7201          MDX     2 1        RETURN TO CALLING RTN   80D12630
OC75 1 74FF 1512    MDX     L CNTA,-1    80D12640
OC77 0 70F7          MDX     ADCK1+2    80D12650
*
OC78 1 7401 OC66    MDX     L ADRCCK,1  EQUAL CMP - INCRE RETURN 80D12660
OC7A 1 4C80 OC66    BSC     I ADRCCK   RETURN TO CALLING RTN   80D12670
*
OC7C 1 6680 1512    ADCK2  LDX     L2 CNTA   X2=ADDRESS LENGTH       80D12680
OC7E 1 C600 16D2    LD      L2 RCVTB+2  FETCH END CHAR          80D12690
OC80 0 F1B9          EOR     1 ENQ-T    CK FOR ENQ END          80D12700
OC81 0 1808          SRA     8          80D12710
OC82 1 4CA0 OC66    BSC     I ADRCCK,Z  EXIT IF NOT ENQ END     80D12720
*
OC84 0 70E8          MDX     ADCK1     GO TO CK ADDR SEQUENCE  80D12730
*
*****
80D12740
80D12750
80D12760
80D12770
80D12780
80D12790
80D12800
80D12810
80D12820
80D12830
80D12840
80D12850
80D12860
80D12870
80D12880
80D12890
80D12900
80D12910
80D12920
*****
80D12930

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TCA TRANSMIT/RECEIVE TEST

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*
* XMIT NAK
*
*****
OC85 1 4400 12F1    RTNOA  BSI      L XMRCV   80D12940
OC87 0 080A          DC       /080A        80D12950
OC88 0 2003          DC       /2003        80D12960
OC89 1 14FF          DC       NAK           80D12970
*
OC8A 1 4C00 0B34    BSC      L AAA2     BRANCH                   80D12980
*
* XMIT ID NAK
*
*****
OC8C 0 C1E4          RTNOB  LD       1 IDNAK-T  BUILD ID NAK             80D12990
OC8D 1 D480 1526    STO     I IDEND        SEQUENCE                 80D13000
OC8F 0 C1ED          LD       1 IDCNT-T    FETCH ID SEQ CHAR COUNT  80D13010
OC90 0 1002          SLA     2              80D13020
OC91 0 1802          SRA     2              80D13030
OC92 0 D003          STO     +-3           STO CNT IN XMIT/RCV CALL 80D13040
*
OC93 1 4400 12F1    BSI      L XMRCV   80D13050
OC95 0 080B          DC       /080B        80D13060
OC96 0 0000          DC       *-*          TRANSMIT                 80D13070
OC97 1 0820          DC       POLID+1     ID NAK                   80D13080
*
OC98 1 4C00 0B21    BSC      L AAA3     BRANCH                   80D13090
*
* TRANSMIT NAK, RECEIVE EOT
*
*****
OC9A 1 4400 12F1    RTNOC  BSI      L XMRCV   80D13100
OC9C 0 300C          DC       /300C        80D13110
OC9D 0 E003          DC       /E003        TRANSMIT                 80D13120
OC9E 1 14FF          DC       NAK           NAK                       80D13130
OC9F 0 0004          DC       /0004        RECEIVE 4 CHARACTERS    80D13140
*
OCA0 1 4C00 0C0A    BSC      L E026     BRANCH                   80D13150
*
* XMIT ACKO, RECEIVE REQUEST-FOR-TEST
*
*****
OCA2 1 C400 0818    RTNOD  LD       L TRIES   80D13160
OCA4 0 D1D6          STO     1 RETRY-T    SET RETRY COUNT=N       80D13170
*
OCA5 1 6C00 152C    STX     L MXFER     SET MESSAGE TRANSFER STATE 80D13180
*
OCA7 0 C1E8          LD       1 IDSW-T    CK ID MODE IND          80D13190
OCA8 1 4C20 ODA2    BSC     L RTNOE,Z  BR IF ID MODE           80D13200
*
OCAA 1 4400 12F1    RTOD1  BSI      L XMRCV   80D13210
OCAC 0 300D          DC       /300D        80D13220
OCAD 0 E004          DC       /E004        TRANSMIT                 80D13230
OCAE 1 14F4          DC       ACKO        ACKO                     80D13240
OCAF 0 0190          DC       /0190        RECEIVE 400 CHARACTERS  80D13250

```

```

*
OCB0 0 1010      * RTOD2 SLA 16
OCB1 0 D1EE      *   STO 1 NKLST-T   RESET NAK LAST XMIT IND
*
OCB2 1 7400 1515 * RTOD3 MDX L ANYER
OCB4 0 702E      *   MDX E02C       BR IF DSW OR BCW ERROR
*
OCB5 1 7400 1519 *   MDX L NORCV
OCB7 0 7026      *   MDX E02B       BR IF NOTHING RECEIVED
*
OCB8 0 63D3      * E02D LDX 3 -45   PREPARE TO STORE E02D MSG
OCB9 1 7400 1518 *   MDX L ABORT
OCB8 0 7037      *   MDX E032+1    BR IF END CHAR IS ENQ
*
OCBC 1 7400 1516 *   MDX L TEXT
OCBE 0 703A      *   MDX RTOD4     BR IF TEXT RECEIVED
*
OCBF 1 4400 10A2 *   BSI L ENDCK   CK FOR EOT OR DISC RCVD
*
OCC1 1 C400 16D1 *   LD L RCVTB+1
OCC3 0 F1B9      *   EOR 1 ENQ-T   CK FOR ENQ RECEIVED
OCC4 0 1808      *   SRA 8
OCC5 1 4C20 0CDO *   BSC L E030,Z BR IF NOT ENQ
*
OCC7 0 63D2      * E02E LDX 3 -46   PREPARE TO STORE E02E MSG
OCC8 0 1010      *   SLA 16
OCC9 0 D1E8      *   STO 1 IDSW-T  RESET ID MODE
OCCA 1 4400 1084 *   BSI L CKTRY   GO TO CK RETRY COUNT
*
OCCC 0 C1EE      * RTD2A LD 1 NKLST-T CK NAK LAST XMIT IND
OCCD 1 4C20 0DDA *   BSC L RTN11,Z BK IF NAK SENT LAST TRY
*
OCCF 0 70DA      *   MDX RTOD1     GO TO XMIT ACKO AGAIN
*
OCD0 0 63D0      * E030 LDX 3 -48   PREPARE TO STORE E030 MSG
OCD1 0 C1E8      *   LD 1 IDSW-T  CK ID MODE IND
OCD2 1 4C18 0CEB *   BSC L E02A+1,+ BR IF NOT ID MODE
*
OCD4 0 C1DB      *   LD 1 ENDCB-T
OCD5 0 F1B9      *   EOR 1 ENQ-T  CK FOR ID ENQ RCVD
OCD6 0 1008      *   SLA 8
OCD7 1 4C20 0CEB *   BSC L E02A+1,Z BR IF NOT ID ENQ
*
OCD9 0 63CF      * E031 LDX 3 -49   PREPARE TO STORE E031 MSG
OCDA 1 4400 1084 *   BSI L CKTRY   GO TO CK RETRY COUNT
OCDC 1 4C00 0DA2 *   BSC L RTNOE   GO TO SEND ID ACKO AGAIN
*
OCDE 0 63D5      * E02B LDX 3 -43   PREPARE TO STORE E02B MSG
OCDF 1 4400 1084 *   BSI L CKTRY   GO TO CK RETRY COUNT
OCE1 1 4C00 0DE4 *   BSC L RTN12   GO TO RCV RFT AGAIN
*
OCE3 0 63D4      * E02C LDX 3 -44   PREPARE TO STORE E02C MSG
OCE4 1 7400 1516 *   MDX L TEXT    CK IF TEXT RECEIVED
OCE6 0 700C      *   MDX E032+1    BR IF TEXT RECEIVED
*
OCE7 1 7400 1518 *   MDX L ABORT
OCE9 0 7009      *   MDX E032+1    BR IF END CHAR IS ENQ
*
OCEA 0 63D6      * E02A LDX 3 -42   PREPARE TO STORE E02A MSG
OCEB 1 4400 1084 *   BSI L CKTRY   GO TO CK RETRY COUNT
OCED 0 C1E8      *   LD 1 IDSW-T  CK ID MODE IND
OCEE 1 4C18 0DB0 *   BSC L RTNOF,+ BR IF NOT ID MODE
*
OCF0 1 4C00 0DD5 *   BSC L RTN10   GO TO RCV ID ENQ
*
OCF2 0 63CE      * E032 LDX 3 -50   PREPARE TO STORE E032 MSG
OCF3 0 1010      *   SLA 16
OCF4 0 D1EE      *   STO 1 IDSW-T  RESET ID MODE

```

```

80D13620
80D13630
80D13640
80D13650
80D13660
80D13670
80D13680
80D13690
80D13700
80D13710
80D13720
80D13730
80D13740
80D13750
80D13760
80D13770
80D13780
80D13790
80D13800
80D13810
80D13820
80D13830
80D13840
80D13850
80D13860
80D13870
80D13880
80D13890
80D13900
80D13910
80D13920
80D13930
80D13940
80D13950
80D13960
80D13970
80D13980
80D13990
80D14000
80D14010
80D14020
80D14030
80D14040
80D14050
80D14060
80D14070
80D14080
80D14090
80D14100
80D14110
80D14120
80D14130
80D14140
80D14150
80D14160
80D14170
80D14180
80D14190
80D14200
80D14210
80D14220
80D14230
80D14240
80D14250
80D14260
80D14270
80D14280
80D14290

```

```

OCF5 1 4400 1084
OCF7 1 4C00 0DDA
*
OCF9 0 1010
OCFA 0 D1E8
*
OCFB 1 6600 16D0
OCFD 0 C201
OCFE 1 F400 1632
OD00 1 4C20 0CF2
*
OD02 0 C202
OD03 1 4400 128C
OD05 1 D400 1AC1
*
OD07 0 C203
OD08 1 4400 128C
OD0A 1 D400 1AC2
OD0C 0 D1F1
OD0D 0 910C
OD0E 1 4C30 0CF2
*
OD10 0 7204
OD11 0 C201
OD12 0 1890
OD13 0 C200
OD14 0 1004
OD15 0 1804
OD16 0 1888
OD17 1 4C18 0D1F
*
OD19 0 9103
OD1A 1 4C20 0CF2
*
OD1C 0 7201
OD1D 0 1090
OD1E 0 7003
*
OD1F 1 7402 16D0
OD21 0 C18C
OD22 0 D1F5
*
OD23 1 C400 1AC1
OD25 1 4C18 0D8C
*
OD27 0 B10C
OD28 0 1000
OD29 0 7001
OD2A 0 706E
*
OD2B 1 C400 0816
OD2D 0 1801
OD2E 1 4C20 0CF2
*
OD30 1 C400 1AC1
OD32 0 1881
OD33 1 4C20 0D6D
*
OD35 1 C400 16D0
OD37 0 9106
OD38 1 4C08 0CF2
*
OD3A 0 E912
OD3B 1 D400 0F1D
OD3D 0 6700 FF6A
*
OD3F 0 C201
OD40 0 1890

```

```

BSI L CKTRY
BSC L RTN11
*
RTOD4 SLA 16
STO 1 IDSW-T
*
LDX L2 RCVTB
LD 2 1
EOR L RFT
BSC L E032,Z
*
LD 2 2
BSI L DECHX
STO L XHEX
*
LD 2 3
BSI L DECHX
STO L YHEX
STO 1 YCNT-T
S 1 D99-T
BSC L E032,Z-
*
MDX 2 4
LD 2 1
SRT 16
LD 2 0
SLA 4
SRA 4
SRT 8
BSC L RTOD5,+
*
S 1 D2-T
BSC L E032,Z
*
MDX 2 1
SLT 16
MDX *+3
*
RTOD5 MDX L RCVTB,2
LD 1 SYN-T
STO 1 RMADR-T
*
LD L XHEX
BSC L A025,+
*
CMP 1 D99-T
NOP
MDX *+1
MDX X99
*
LD L NET
SRA 1
BSC L E032,Z
*
LD L XHEX
SRT 1
BSC L RTOD6,Z
*
LD L RCVTB
S 1 D8-T
BSC L E032,+
*
OR 1 HE000-T
STO L TMCNT
LDX L3 -150
*
RTOD8 LD 2 1
SRT 16

```

```

GO TO CK RETRY COUNT
GO TO XMIT NAK, RCV RFT
80D14300
80D14310
80D14320
80D14330
80D14340
80D14350
80D14360
80D14370
80D14380
80D14390
80D14400
80D14410
80D14420
80D14430
80D14440
80D14450
80D14460
80D14470
80D14480
80D14490
80D14500
80D14510
80D14520
80D14530
80D14540
80D14550
80D14560
80D14570
80D14580
80D14590
80D14600
80D14610
80D14620
80D14630
80D14640
80D14650
80D14660
80D14670
80D14680
80D14690
80D14700
80D14710
80D14720
80D14730
80D14740
80D14750
80D14760
80D14770
80D14780
80D14790
80D14800
80D14810
80D14820
80D14830
80D14840
80D14850
80D14860
80D14870
80D14880
80D14890
80D14900
80D14910
80D14920
80D14930
80D14940
80D14950
80D14960
80D14970

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TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

```

OD41 0 C200          LD 2 0          TO TEST
OD42 0 1088          SLT 8          MESSAGE
OD43 1 D700 16CF    STO L3 TM+150  TRANSMIT
OD45 0 7201          MDX 2 1          TABLE
OD46 0 7301          MDX 3 1
OD47 0 70F7          MDX RTOD8
*
OD48 1 C400 1639    LD L TM        FETCH 1ST WORD OF TEST MSG
OD4A 0 F1B3          EOR 1 DLE-T    80D15050
OD4B 0 1808          SRA 8          80D15060
OD4C 1 4C20 0D8C    BSC L A025,Z   BR IF NOT DLE      80D15070
*
OD4E 1 C400 0F1D    LD L TMCNT     INCREMENT          80D15080
OD50 0 8100          A 1 D1-T      TEST MESSAGE       80D15090
OD51 1 D400 0F1D    STO L TMCNT   COUNT BY ONE   80D15100
OD53 0 1004          SLA 4          80D15110
OD54 0 1885          SRT 5          80D15120
OD55 0 D001          STO **1       80D15130
OD56 0 6700 0000    LDX L3 *-+    XR3=TEST MSG LENGTH 80D15140
OD58 0 1081          SLT 1          80D15150
OD59 1 4C04 0D63    BSC L RTODA,E BR IF ODD NO. OF CHARS 80D15160
*
OD5B 1 C700 1637    LD L3 TM-2    INSERT            80D15170
OD5D 0 1890          SRT 16        DLE AHEAD         80D15180
OD5E 0 C183          LD 1 DLE-T    OF END CHARACTER  80D15190
OD5F 0 1088          SLT 8          IN TEST           80D15200
OD60 1 D700 1637    STO L3 TM-2   MESSAGE           80D15210
OD62 0 7029          MDX A025      BRANCH            80D15220
*
OD63 1 C700 1637    RTODA LD L3 TM-2 INSERT           80D15230
OD65 0 18D8          RTE 24        DLE AHEAD         80D15240
OD66 1 D700 1638    STO L3 TM-1   OF END           80D15250
OD68 0 C183          LD 1 DLE-T    CHARACTER         80D15260
OD69 0 18C8          RTE 8          IN TEST           80D15270
OD6A 1 D700 1637    STO L3 TM-2   MESSAGE           80D15280
OD6C 0 701F          MDX A025      BRANCH            80D15290
*
OD6D 1 6700 1573    RTOD6 LDX L3 TMVLD XR3=TEST MSG NO. TBL ADDR 80D15300
*
OD6F 0 C300          LD 3 0        FETCH TEST MSG NUMBER 80D15310
OD70 1 4C18 0CF2    BSC L E032,+- BR IF END OF TABLE 80D15320
*
OD72 1 F400 1AC1    EOR L XHEX    COMPARE TO X VALUE BCVD 80D15330
OD74 1 4C18 0D78    BSC L RTOD7,+- BR IF NUMBER FOUND 80D15340
*
OD76 0 7301          MDX 3 1        POINT TO NEXT NUMBER 80D15350
OD77 0 70F7          MDX RTOD6+2   GO TO TRY NEXT NUMBER 80D15360
*
OD78 1 C400 1AC1    RTOD7 LD L XHEX  FETCH X VALUE      80D15370
OD7A 1 4400 10D1    BSI L GENTM   GENERATE TEST MSG  80D15380
*
OD7C 1 C400 163A    LD L TM+1     CK FOR            80D15390
OD7E 0 1890          SRT 16        SYN CHARACTERS    80D15400
OD7F 1 C400 1639    LD L TM        IN 2ND + 3RD CHAR 80D15410
OD81 0 18D8          RTE 24        POSITIONS IN      80D15420
OD82 0 F18C          EOR 1 SYN-T   TEST MESSAGE       80D15430
OD83 1 4C20 0D8C    BSC L A025,Z  BR IF NO SYN SYN SEQUENCE 80D15440
*
OD85 0 C1F5          LD 1 RMADR-T  INSERT            80D15450
OD86 0 18C8          RTE 8          UNIT SELECTION    80D15460
OD87 1 D400 1639    STO L TM      ADDRESS           80D15470
OD89 0 1090          SLT 16        IN TEST           80D15480
OD8A 1 D400 163A    STO L TM+1    MESSAGE           80D15490
*
OD8C 0 6325          A025 LDX 3 37  PREPARE TO STORE A025 MSG 80D15500
OD8D 1 C400 0818    LD L TRIES    80D15510
OD8F 0 D1D6          STO 1 RETRY-T SET RETRY COUNT=N 80D15520
*

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```

OD90 1 C400 1AC1    LD L XHEX     CK X VALUE        80D15660
OD92 1 4C20 0E70    BSC L RTN15,Z BR IF X NOT EQUAL OO 80D15670
*
OD94 0 C9AF          LDD 1 ACKO-T  INITIALIZE        80D15680
OD95 0 18D0          RTE 16        ACKS TO           80D15690
OD96 0 D9AD          STD 1 ACKS-T  ACK1/ACKO        80D15700
OD97 1 4C00 0F55    BSC L RTN1B   GO TO RECEIVE TEST MSGS 80D15710
*
OD98 0 6325          X99 LDX 3 37  PREPARE TO STORE A025 MSG 80D15720
*
OD9A 1 7400 1AC2    MDX L YHEX,0  SK IF Y-COUNT=ZERO 80D15730
OD9C 0 D1D2          STO 1 X99ID-T SET X=99 IND      80D15740
*
OD9D 0 C9AF          LDD 1 ACKO-T  INITIALIZE        80D15750
OD9E 0 18D0          RTE 16        ACKS TO           80D15760
OD9F 0 D9AD          STD 1 ACKS-T  ACK1/ACKO        80D15770
*
ODAA 1 4C00 1017    BSC L RTN1E   GO XMIT ACK1,RECEIVE EOT 80D15780
*
*****
*
* XMIT ID ACKO, RECV REQUEST-FOR-TEST
*
*****
RTNOE LD 1 IDACK-T SET UP
STO 1 IDEND ID SEQUENCE
LD 1 IDCNT-T AND COUNT
A 1 D1-T TO TRANSMIT
STO **3 ID ACKO
*
ODAA 1 4400 12F1    BSI L XMRCV   80D15920
ODAA 0 300E DC /300E 80D15930
ODAB 0 0000 DC *-+ TRANSMIT 80D15940
ODAC 1 0820 DC POLID+1 ID ACKO 80D15950
ODAD 0 0190 DC /0190 RECEIVE 400 CHARACTERS 80D15960
*
ODAE 1 4C00 0C80    BSC L RTOD2   GO TO ANALYZE OPERATION 80D15970
*
*
* RECEIVE ENQ - RETRY
*
*****
RTNOF BSI L XMRCV 80D15980
DC /300F 80D15990
DC /0004 RECEIVE 4 CHARACTERS 80D16000
*
E034 LDX 3 -52 PREPARE TO STORE E034 MSG 80D16010
LD 1 ANYER-T 80D16020
BSC L E02A+1,Z BR IF DSW OR BCW ERROR 80D16030
*
E035 LDX 3 -53 PREPARE TO STORE E035 MSG 80D16040
LD 1 NORCV-T 80D16050
BSC L E02A+1,Z BR IF ANYTHING RECEIVED 80D16060
*
ODBC 1 4400 10A2    BSI L ENDCK   CK FOR EOT OR DISC RCVD 80D16070
*
ODBE 1 7400 1518    MDX L ABORT   80D16080
ODCO 0 700A MDX E036 BR IF END CHAR IS ENQ 80D16090
*
A027 LDX 3 39 PREPARE TO STORE A027 MSG 80D16100
LD L RCVTB+1 80D16110
EOR 1 ENQ-T CK FOR ENQ RECEIVED 80D16120
SRA 8 80D16130

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TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

```

ODC6 1 4C18 OCCC      *   BSC L RTD2A,+-- BR IF ENQ RECEIVED      80D16340
ODC8 1 7400 152D      *   MDX L  IDSW   CK ID MODE INDICATOR      80D16350
ODCA 0 7003           *   MDX   A028   BR IF ID MODE                80D16360
                        *   MDX   A028   BR IF ID MODE                80D16370
ODCB 0 63CA          *   E036 LDX 3 -54   PREPARE TO STORE E036 MSG 80D16380
ODCC 1 4C00 OCEB     *   BSC L  E02A+1 GO TO CHECK RETRY COUNT 80D16390
                        *   BSC L  E02A+1 GO TO CHECK RETRY COUNT 80D16400
ODCE 0 6328          *   A028 LDX 3 40   PREPARE TO STORE A028 MSG 80D16410
ODCF 0 C1DB         *   LD 1 ENDCH-T 80D16420
ODDO 0 F1B9         *   EOR 1 ENQ-T  CK FOR ENQ RECEIVED 80D16430
ODD1 0 1008         *   SLA 8 80D16440
ODD2 1 4C18 ODA2    *   BSC L RTNOE,+-- BR IF ENQ RECEIVED 80D16450
                        *   BSC L RTNOE,+-- BR IF ENQ RECEIVED 80D16460
ODD4 0 70F6         *   MDX   E036   BRANCH                80D16470
                        *   MDX   E036   BRANCH                80D16480
                        *   MDX   E036   BRANCH                80D16490
                        *   MDX   E036   BRANCH                80D16500
                        *   MDX   E036   BRANCH                80D16510
                        *   MDX   E036   BRANCH                80D16520
                        *   MDX   E036   BRANCH                80D16530
                        *   MDX   E036   BRANCH                80D16540
                        *   MDX   E036   BRANCH                80D16550
                        *   MDX   E036   BRANCH                80D16560
ODD5 1 4400 12F1    *   RTN10 BSI L XMRCV 80D16570
ODD7 0 3010         *   DC /3010 80D16580
ODD8 0 0012         *   DC /0012  RECEIVE 18 CHARACTERS 80D16590
                        *   DC /0012  RECEIVE 18 CHARACTERS 80D16600
ODD9 0 70DA         *   MDX   E034   BRANCH                80D16610
                        *   MDX   E034   BRANCH                80D16620
                        *   MDX   E034   BRANCH                80D16630
                        *   MDX   E034   BRANCH                80D16640
                        *   MDX   E034   BRANCH                80D16650
                        *   MDX   E034   BRANCH                80D16660
                        *   MDX   E034   BRANCH                80D16670
                        *   MDX   E034   BRANCH                80D16680
                        *   MDX   E034   BRANCH                80D16690
ODDA 1 4400 12F1    *   RTN11 BSI L XMRCV 80D16700
ODDC 0 3011         *   DC /3011 80D16710
ODDD 0 E003         *   DC /E003  TRANSMIT                80D16720
ODED 1 14FF         *   DC NAK  NAK                80D16730
ODEE 0 0190         *   DC /0190  RECEIVE 400 CHARACTERS 80D16740
                        *   DC /0190  RECEIVE 400 CHARACTERS 80D16750
ODEF 0 16C00 1533  *   STX L NKLST  SET NAK LAST XMIT IND 80D16760
ODE2 1 4C00 OCB2    *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16770
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16780
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16790
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16800
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16810
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16820
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16830
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16840
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16850
ODE4 1 4400 12F1    *   RTN12 BSI L XMRCV 80D16860
ODE6 0 3012         *   DC /3012 80D16870
ODE7 0 0190         *   DC /0190  RECEIVE 400 CHARACTERS 80D16880
ODE8 1 4C00 OCB2    *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16890
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16900
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16910
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16920
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16930
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16940
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16950
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16960
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16970
                        *   BSC L RTOD3  GO TO ANALYZE OPERATION 80D16980
ODEA 1 C400 0818    *   RTN13 LD L TRIES 80D16990
ODEC 0 D1D6         *   STO 1 RETRY-T SET RETRY COUNT=N 80D17000
                        *   STO 1 RETRY-T SET RETRY COUNT=N 80D17010

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ODED 1 6C00 152C    *   STX L MXFER  SET MESSAGE TRANSFER STATE 80D17020
ODEF 1 6C00 1535    *   STX L WACKS  SET WACK RECEIVED IMD 80D17030
ODF1 1 6C00 1534    *   STX L TOSW  SET TIMEOUT IND 80D17040
                        *   STX L TOSW  SET TIMEOUT IND 80D17050
ODF3 0 1010         *   SLA 16 80D17060
ODF4 0 D1E8         *   STO 1 IDSW-T RESET ID MODE 80D17070
                        *   STO 1 IDSW-T RESET ID MODE 80D17080
ODF5 1 C400 1634    *   LD L YDEC  FETCH Y VALUE 80D17090
ODF7 1 4400 128C    *   BSI L DECHX CONVERT TO HEX 80D17100
ODF9 1 D400 1AC2    *   STO L YHEX  SAVE Y HEX 80D17110
ODFB 0 D1F1         *   STO 1 YCNT-T SET Y COUNT 80D17120
                        *   STO 1 YCNT-T SET Y COUNT 80D17130
ODFC 0 C115         *   LD 1 HE004-T 80D17140
ODFD 0 D015         *   STO RFTCT+2 SET RFT TEXT COUNT TO TWO 80D17150
                        *   STO RFTCT+2 SET RFT TEXT COUNT TO TWO 80D17160
ODFE 0 C1C0         *   LD 1 STETX-T 80D17170
ODFF 1 D400 1639    *   STO L TM  STO STX ETX IN TM TABLE 80D17180
                        *   STO L TM  STO STX ETX IN TM TABLE 80D17190
OE01 1 C400 1633    *   LD L XDEC  FETCH X VALUE 80D17200
OE03 1 4400 128C    *   BSI L DECHX CONVERT TO HEX 80D17210
OE05 1 D400 1AC1    *   STO L XHEX  SAVE X HEX 80D17220
OE07 0 9100         *   S 1 D1-T 80D17230
OE08 1 4C20 0E0E    *   BSC L RT13A,Z BR IF TYPE 00 OR 02 RFT 80D17240
                        *   BSC L RT13A,Z BR IF TYPE 00 OR 02 RFT 80D17250
OE0A 0 C1E8         *   LD 1 REQ-T 80D17260
OE0B 1 4400 10D1    *   BSI L GENTM 80D17270
OE0D 0 D005         *   STO RFTCT+2 STORE IN XMIT/RCV CALL 80D17280
                        *   STO RFTCT+2 STORE IN XMIT/RCV CALL 80D17290
OE0E 1 4400 12F1    *   RT13A BSI L XMRCV 80D17300
OE10 0 3013         *   DC /3013 80D17310
OE11 0 E009         *   RFTCT DC /E009  TRANSMIT 80D17320
OE12 1 1632         *   DC RFT  REQUEST-FOR-TEST 80D17330
OE13 0 0000         *   DC *-  TRANSMIT 80D17340
OE14 1 1639         *   DC TM  TEST MESSAGE 80D17350
OE15 0 4014         *   DC /4014  RECEIVE 20 CHARACTERS 80D17360
                        *   DC /4014  RECEIVE 20 CHARACTERS 80D17370
OE16 0 63C8         *   E038 LDX 3 -56 80D17380
OE17 1 7400 1515    *   MDX L ANYER  PREPARE TO STORE E038 MSG 80D17390
OE19 0 704A         *   MDX   E03C+1 BR IF DSW OR BCW ERROR 80D17400
                        *   MDX   E03C+1 BR IF DSW OR BCW ERROR 80D17410
OE1A 0 C1D4         *   LD 1 NORCV-T 80D17420
OE1B 1 4C18 0E26    *   BSC L RT13B,+-- BR IF ANYTHING RECEIVED 80D17430
                        *   BSC L RT13B,+-- BR IF ANYTHING RECEIVED 80D17440
OE1D 0 63C7         *   E039 LDX 3 -57 80D17450
OE1E 0 C1D6         *   LD 1 RETRY-T 80D17460
OE1F 1 F400 0818    *   EOR L TRIES  CK RETRY CNT=N 80D17470
OE21 1 4C20 0E64    *   BSC L E03C+1,Z BR IF CNT NOT=N 80D17480
                        *   BSC L E03C+1,Z BR IF CNT NOT=N 80D17490
OE23 0 1010         *   SLA 16 80D17500
OE24 0 D1EF         *   STO 1 TOSW-T 80D17510
OE25 0 7040         *   MDX   E03C+3 BRANCH 80D17520
                        *   MDX   E03C+3 BRANCH 80D17530
OE26 1 4400 10A2    *   RT13B BSI L ENDCK 80D17540
                        *   RT13B BSI L ENDCK 80D17550
OE28 1 C400 16D1    *   LD L RCVTB+1 80D17560
OE2A 0 F1B1         *   EOR 1 WACK-T 80D17570
OE2B 1 4C20 0E31    *   BSC L E03A,Z 80D17580
                        *   BSC L E03A,Z 80D17590
OE2D 0 632A         *   A02A LDX 3 42 80D17600
OE2E 0 1010         *   SLA 16 80D17610
OE2F 0 D1F0         *   STO 1 WACKS-T 80D17620
OE30 0 7033         *   MDX   E03C+1 BRANCH 80D17630
                        *   MDX   E03C+1 BRANCH 80D17640
OE31 0 63C6         *   E03A LDX 3 -58 80D17650
OE32 0 C1DB         *   LD 1 ENDCH-T 80D17660
OE33 0 F1AF         *   EOR 1 ACKO-T 80D17670
OE34 1 4C20 0E3E    *   BSC L E03B,Z BR IF NOT ACKO 80D17680
                        *   BSC L E03B,Z BR IF NOT ACKO 80D17690

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TCA TRANSMIT/RECEIVE TEST

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OF20 0 63B5      E04B LDX 3 -75      PREPARE TO STORE E04B MSG 80D20420
OF21 1 7400 1515 MDX L ANYER      80D20430
OF23 0 7025      MDX E04E+1      BR IF DSW OR BCW ERROR 80D20440
*
OF24 0 C1D4      * LD 1 NORCV-T      80D20450
OF25 1 4C18 OF28 BSC L RT1A2,+-- BR IF ANYTHING RECEIVED 80D20460
*
OF27 0 63B4      E04C LDX 3 -76      PREPARE TO STORE E04C MSG 80D20490
OF28 1 7401 1AC5 MDX L TMTD,1      INCREMENT TIMEOUT COUNT 80D20500
OF2A 0 7020      MDX RT1A4      GO TO DECREMENT Y COUNT 80D20510
*
OF2B 1 4400 10A2 RT1A2 BSI L ENDCK   CK FOR EOT OR DISC RCVD 80D20520
*
OF2D 0 C1DB      * LD 1 ENDCH-T      80D20550
OF2E 0 F1BA      EOR 1 NAK-T      CK FOR NAK RECEIVED 80D20560
OF2F 0 1008      SLA 8
OF30 1 4C20 OF36 BSC L RT1A3,Z    BR IF NOT NAK RECEIVED 80D20570
*
OF32 0 63B3      E04D LDX 3 -77      PREPARE TO STORE E04D MSG 80D20600
OF33 1 7401 1AC4 MDX L TMBD,1      IMCRE NAK RECEIVED COUNT 80D20610
OF35 0 7015      MDX RT1A4      GO TO DECREMENT Y COUNT 80D20620
*
OF36 0 C1DB      * RT1A3 LD 1 ENDCH-T 80D20630
OF37 0 F1AF      EOR 1 ACKO-T      80D20640
OF38 1 4C18 OF3E BSC L A037,+-- BR IF ACKO RECEIVED 80D20650
*
OF3A 0 F1AF      EOR 1 ACKO-T      80D20660
OF3B 0 F1B0      EOR 1 ACK1-T      80D20670
OF3C 1 4C20 OF42 BSC L A036,Z    BR IF ACK1 NOT RECEIVED 80D20680
*
OF3E 0 6337      A037 LDX 3 55      PREPARE TO STORE A037 MSG 80D20700
OF3F 1 7401 1AC3 MDX L TMGD,1      IMCRE GOOD TEST MSG COUNT 80D20710
OF41 0 7009      MDX RT1A4      BR TO DECRE Y CNT 80D20720
*
OF42 0 6336      A036 LDX 3 54      PREPARE TO STORE A036 MSG 80D20730
OF43 1 C400 16D1 LD L RCVTB+1      80D20740
OF45 0 F1B1      EOR 1 WACK-T      80D20750
OF46 1 4C18 OF11 BSC L E049+1,+-- BR IF WACK RECEIVED 80D20760
*
OF48 0 63B2      E04E LDX 3 -78      PREPARE TO STORE E04E MSG 80D20770
OF49 1 7401 1AC6 MDX L TMINV,1    IMCRE INVALID RESPONSE CNT 80D20780
*
OF4B 1 74FF 1536 RT1A4 MDX L YCNT,-1 DECREMENT Y COUNTER 80D20790
OF4D 0 70C9      MDX RT1A1      BR IF Y CNT NOT YET ZERO 80D20800
*
OF4E 1 4400 1067 BSI L RTN21      GO TO XMIT EOT 80D20810
*
OF50 0 6202      AA02 LDX 2 2      PREPARE END MSG AA02 80D20820
OF51 1 4400 11E9 BSI L ENPRT      GO TO SET END MSG SW 80D20830
OF53 1 4C00 OAF0 BSC L RTO1A      BRANCH 80D20840
*
*****
* XMIT ACKO/ACK1, RECEIVE TEST MESSAGE
*****
OF55 1 4400 12F1 RTN1B BSI L XMRCV 80D20850
OF57 0 301B      DC /301B      80D20860
OF58 0 E004      DC /E004      TRANSMIT 80D20870
OF59 1 14F2      DC ACKS      ACKO OR ACK1 80D20880
OF5A 0 0190      DC /0190      RECEIVE 400 CHARACTERS 80D20890
*
OF5B 0 C1D2      RT1B1 LD 1 X991D-T BR IF X 80D20900
OF5C 1 4C18 OF60 BSC L **2,+-- NOT 99 80D20910
OF5E 0 C107      LD 1 D10-T      RESET 80D20920
OF5F 0 D1F1      STO 1 YCNT-T      Y COUNT 80D20930

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TCA TRANSMIT/RECEIVE TEST

```

OF60 1 7400 1ABF * MDX L TMODE      CHECK TEST MODE 80D21100
OF62 0 7035      MDX D001+3      BR IF TEST MODE IS SET 80D21110
*
OF63 1 C400 16D1 * LD L RCVTB+1    FETCH 1ST TWO CHARS RCVD 80D21120
OF65 1 4400 14A2 BSI L DCODE      BUILD DECODE WORDS 80D21130
*
OF67 0 4828      * BSC Z+      SKIP IF 1ST CHAR NOT DLE 80D21140
OF68 0 1090      SLT 16      SHIFT IN 2ND CHAR DECODE 80D21150
OF69 0 1001      SLA 1
OF6A 0 180E      SRA 14      CK FOR SOH OR STX 80D21160
OF6B 1 4C20 OF95 BSC L D001,Z    BR IF SOH, STX, OR DLE STX 80D21170
*
OF6D 0 63B0      E050 LDX 3 -80      PREPARE TO STORE E050 MSG 80D21180
OF6E 1 7400 1515 MDX L ANYER      BR IF DSW OR BCW ERROR 80D21190
OF70 0 7020      MDX E053+1
*
OF71 0 63AF      E051 LDX 3 -81      PREPARE TO STORE E051 MSG 80D21200
OF72 1 7400 1519 MDX L NORCV      BR IF NOTHING RECEIVED 80D21210
OF74 0 701C      MDX E053+1
*
OF75 1 7400 1AC1 * MDX L XHEX      CK X VALUE 80D21220
OF77 0 7005      MDX RT1B2      BR IF X NOT EQUAL 00 80D21230
*
OF78 1 C400 0816 * LD L NET      CK NETWORK TYPE 80D21240
OF7A 0 1801      SRA 1
OF7B 1 4C20 OF89 BSC L E054,Z    BR IF MULTIPPOINT 80D21250
*
OF7D 1 4400 10A2 RT1B2 BSI L ENDCK   CK FOR EOT OR DISC RCVD 80D21260
*
OF7F 1 C400 16D1 * LD L RCVTB+1    FETCH 1ST CHAR RCVD 80D21270
OF81 0 F1B9      EOR 1 ENQ-T      CK FOR ENQ 80D21280
OF82 0 1808      SRA 8
OF83 1 4C20 OF90 BSC L E053,Z    BR IF NOT ENQ RECEIVED 80D21290
*
OF85 0 63AE      E052 LDX 3 -82      PREPARE TO STORE E052 MSG 80D21300
OF86 1 4400 1084 BSI L CKTRY      GO TO CHECK RETRY COUNTER 80D21310
OF88 0 70CC      MDX RTN1B      GO TO XMIT ACK, RCV TM 80D21320
*
OF89 0 63AC      E054 LDX 3 -84      PREPARE TO STORE E054 MSG 80D21330
OF8A 1 C400 16D1 LD L RCVTB+1    FETCH 1ST CHAR RCVD 80D21340
OF8C 0 F1B8      EOR 1 EOT-T      CK FOR EOT 80D21350
OF8D 0 1808      SRA 8
OF8E 1 4C18 0ED7 BSC L RTN18,+-- BR IF EOT RECEIVED 80D21360
*
OF90 0 63AD      E053 LDX 3 -83      PREPARE TO STORE E053 MSG 80D21370
OF91 1 4400 1084 BSI L CKTRY      GO TO CK RETRY COUNTER 80D21380
OF93 1 4C00 100C BSC L RTN1D      GO TO RECEIVE TEST MSG 80D21390
*
OF95 0 C123      D001 LD 1 HD001-T  PREPARE FOR D001 MSG 80D21400
OF96 1 D400 1ABF STO L TMODE      SET TEST MODE 80D21410
*
OF98 0 C1D0      * LD 1 ANYER-T      80D21420
OF99 1 4C18 OFAB BSC L E05A,+-- BR IF NO DSW OR BCW ERRORS 80D21430
*
OF9B 1 7400 1516 * MDX L TEXT      80D21440
OF9D 0 7008      MDX E056      BR IF TEXT RECEIVED 80D21450
*
OF9E 1 7400 1518 * MDX L ABORT      80D21460
OFA0 0 7005      MDX E056      BR IF END CHAR IS ENQ 80D21470
*
OFA1 0 63AB      E055 LDX 3 -85      PREPARE TO STORE E055 MSG 80D21480
OFA2 1 7401 1AC6 MDX L TMINV,1    INCRE INVALID TEST MSG CNT 80D21490
OFA4 1 4C00 100C BSC L RTN1D      GO TO RCV NEXT TEST MSG 80D21500
*
OFA6 0 63AA      E056 LDX 3 -86      PREPARE TO STORE E056 MSG 80D21510
OFA7 1 7401 1AC4 MDX L TMBD,1      INCRE BAD TEST MSG COUNT 80D21520
OFA9 1 4C00 OFFF BSC L RTN1C      GO TO XMIT NAK, RCV TM 80D21530

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TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

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1020 0 702B      * MDX E05E+1 BR IF ERROR OCCURED 80D23140
                  * E05D LDX 3 -93 PREPARE TO STORE E05D MSG 80D23150
1021 0 63A3      * MDX L NORCV CK IF ANYTHING RECEIVED 80D23160
1022 1 7400 1519 * MDX E05E+1 BR IF NOTHING RECEIVED 80D23170
1024 0 7027      *                               80D23180
                  *                               80D23190
1025 0 1010      * SLA 16 80D23200
1026 0 D1E6      * STO 1 MASTR-T RESET MASTER STATUS 80D23210
1027 1 C400 16D1 * LD L RCVTB+1 FETCH 1ST CHAR RCVD 80D23220
1029 0 F188      * EOR 1 EOT-T CK FOR EOT 80D23230
102A 0 1808      * SRA 8 80D23240
102B 1 4C18 103D * BSC L EOTRC,+ BR IF EOT RECEIVED 80D23250
                  *                               80D23260
102D 1 C400 0816 * LD L NET CK NETWORK TYPE 80D23270
102F 0 9100      * S 1 D1-T 80D23280
1030 1 4C20 104B * BSC L E05E,Z BR IF NOT SWITCHED LINE 80D23290
                  *                               80D23300
1032 1 C400 16D1 * LD L RCVTB+1 FETCH 1ST TWO CHARS RCVD 80D23310
1034 0 F18F      * EOR 1 DISC-T CK FOR DISC 80D23320
1035 1 4C20 104B * BSC L E05E,Z BR IF NOT DISC RECEIVED 80D23330
                  *                               80D23340
1037 0 633C      * A03C LDX 3 60 PREPARE TO STORE A03C MSG 80D23350
1038 0 6201      * AA01 LDX 2 1 PREPARE END MSG AA01 80D23360
1039 1 4400 11E9 * BSI L ENPRT GO TO SET END MESSAGE SW 80D23370
103B 1 4C00 0AE4 * BSC L RTN01 GO TO CLEAR CA 80D23380
                  *                               80D23390
103D 0 6340      * EOTRC LDX 3 64 PREPARE TO STORE A040 MSG 80D23400
                  *                               80D23410
103E 0 C1D2      * LD 1 X99ID-T BR IF X=99 80D23420
103F 1 4C18 1043 * BSC L A03B,+ IND NOT ON 80D23430
                  *                               80D23440
1041 1 4C00 083E * BSC L RTN02 GO RECEIVE ENQUIRY 80D23450
                  *                               80D23460
1043 0 633B      * A03B LDX 3 59 PREPARE TO STORE A03B MSG 80D23470
1044 0 6201      * AA01A LDX 2 1 PREPARE END MSG AA01 80D23480
1045 1 4400 11E9 * BSI L ENPRT GO TO SET END MESSAGE SW 80D23490
1047 1 6C00 152A * STX L CMODE SET CONTROL MODE 80D23500
1049 1 4C00 0AFO * BSC L RT01A RETURN TO INITIALIZATION 80D23510
                  *                               80D23520
104B 0 63A2      * E05E LDX 3 -94 PREPARE TO STORE E05E MSG 80D23530
104C 1 C400 0816 * LD L NET CHECK NETWORK TYPE 80D23540
104E 0 9100      * S 1 D1-T 80D23550
104F 1 4C18 1054 * BSC L RT1E1,+ BR IF SWITCHED LINE 80D23560
                  *                               80D23570
1051 1 4400 1067 * BSI L RTN21 GO TO XMIT EOT 80D23580
1053 0 7002      * MDX EE03 BRANCH 80D23590
                  *                               80D23600
1054 1 4400 1078 * RT1E1 BSI L RTN22 GO TO XMIT DISC 80D23610
                  *                               80D23620
1056 0 62FD      * EE03 LDX 2 -3 PREPARE END MSG EE03 80D23630
1057 1 4400 11E9 * BSI L ENPRT GO TO SET END MESSAGE SW 80D23640
1059 1 4C00 0AE4 * BSC L RTN01 GO TO CLEAR CA 80D23650
                  *                               80D23660
                  *                               80D23670
                  * ***** 80D23680
                  * XMIT NAK, RECEIVE END EOT/DISC 80D23690
                  * ***** 80D23700
                  * ***** 80D23710
                  * ***** 80D23720
                  * ***** 80D23730
105B 1 4400 12F1 * RTN1F BSI L XMRCV 80D23740
105D 0 301F      * DC /301F 80D23750
105E 0 E003      * DC /E003 TRANSMIT 80D23760
105F 1 14FF      * DC NAK NAK 80D23770
1060 0 4004      * DC /4004 RECEIVE 4 CHARACTERS 80D23780
                  *                               80D23790
1061 0 70BB      * MDX E05C BRANCH 80D23800
                  *                               80D23810

```

```

1062 1 4400 12F1
1064 0 3020
1065 0 4004
1066 0 70BB

```

```

1067 0 0000
1068 1 4400 12F1
106A 0 0821
106B 0 2003
106C 1 14FD

```

```

106D 0 63A0
106E 1 7400 1515
1070 0 7001

```

```

1071 0 633E
1072 1 6C00 152B
1074 1 6C00 152A
1076 1 4C80 1067

```

```

1078 0 0000
1079 1 4400 12F1
107B 0 0822
107C 0 2004
107D 1 1504

```

```

107E 0 633F
107F 1 7400 1515
1081 0 639F

```

```

1082 1 4C80 1078

```

```

1084 0 0000
1085 1 74FF 151B
1087 0 7001
1088 0 7002

```

```

* 80D23820
***** 80D23830
* 80D23840
* RECEIVE END EOT/DISC 80D23850
* 80D23860
***** 80D23870
* 80D23880
RTN20 BSI L XMRCV 80D23890
      DC /3020 80D23900
      DC /4004 RECEIVE 4 CHARACTERS 80D23910
* MDX E05C BRANCH 80D23920
* 80D23930
* 80D23940
* 80D23950
***** 80D23960
* 80D23970
* XMIT EOT 80D23980
* 80D23990
***** 80D24000
* 80D24010
RTN21 DC *-* ENTRY 80D24020
* 80D24030
      BSI L XMRCV 80D24040
      DC /0821 80D24050
      DC /2003 TRANSMIT 80D24060
      DC EOT EOT 80D24070
* 80D24080
E060 LDX 3 -96 PREPARE TO STORE E060 MSG 80D24090
      MDX L ANYER CHECK FOR DSW ERROR 80D24100
      MDX *+1 BR IF ERROR OCCURED 80D24110
* 80D24120
A03E LDX 3 62 PREPARE TO STORE A03E MSG 80D24130
      STX L MASTR SET MASTER STATUS 80D24140
      STX L CMODE SET CONTROL MODE 80D24150
      BSC I RTN21 RETURN 80D24160
* 80D24170
* 80D24180
***** 80D24190
* 80D24200
* XMIT DISC 80D24210
* 80D24220
***** 80D24230
* 80D24240
RTN22 DC *-* ENTRY 80D24250
* 80D24260
      BSI L XMRCV 80D24270
      DC /0822 80D24280
      DC /2004 TRANSMIT 80D24290
      DC DISC DISCONNECT 80D24300
* 80D24310
A03F LDX 3 63 PREPARE TO STORE A03F MSG 80D24320
      MDX L ANYER SKIP IF NO DSW ERROR 80D24330
E061 LDX 3 -97 PREPARE TO STORE E061 MSG 80D24340
* 80D24350
      BSC I RTN22 RETURN 80D24360
* 80D24370
* 80D24380
***** 80D24390
* 80D24400
* CHECK RETRY COUNTER 80D24410
* 80D24420
***** 80D24430
* 80D24440
CKTRY DC *-* ENTRY 80D24450
* 80D24460
      MDX L RETRY,-1 DECREMENT RETRY COUNTER 80D24470
      MDX *+1 BR IF NOT YET ZERO 80D24480
      MDX *+2 BR IF ZERO 80D24490

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TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

```

*
1089 1 4C80 1084      *   BSC  I  CKTRY   RETURN IF CNT NOT YET ZERO 80D24500
*
108B 0 1810          *   SRA   16        RESET X=99 INDICATOR 80D24510
108C 0 D1D2          *   STO  1 X99ID-T  80D24520
*
108D 0 C1D5          *   LD   1 RDYSW-T  CK DATA SET READY IND 80D24530
108E 1 4C20 109D    *   BSC  L  EE04,Z  BR IF DATA SET NOT READY 80D24540
*
1090 1 C400 0802    *   LD   L  SWO     GET SW FNC 0 INFO 80D24550
1092 0 1005          *   SLA  5         CHECK EOT BYPASS SW FNC 80D24560
1093 1 4C10 109D    *   BSC  L  EE04,-  BR IF ZERO OR PLUS 80D24570
*
1095 1 C400 0816    *   LD   L  NET     CHECK NETWORK TYPE 80D24580
1097 0 9100          *   S    1 D1-T    80D24590
1098 1 4C20 109C    *   BSC  L  CKTR1,Z BR IF NOT SWITCHED LINE 80D24600
*
109A 0 40DD          *   BSI   RTN22    GO TO XMIT DISCONNECT 80D24610
109B 0 7001          *   MDX   EE04     BRANCH 80D24620
*
109C 0 40CA          *   CKTR1 BSI  RTN21 GO TO XMIT EOT 80D24630
*
109D 0 62FC          *   EE04 LDX  2 -4  PREPARE END MSG EE04 80D24640
109E 1 4400 11E9    *   BSI  L  ENPRT  GO TO SET END TEST IND 80D24650
10A0 1 4C00 0AE4    *   BSC  L  RTN01  GO TO CLEAR CA 80D24660
*
*****
*
*           CHECK FOR EOT OR DISC RECEIVED
*
*****
*
10A2 0 0000          *   ENDCK DC  *--
*
10A3 1 C400 0816    *   LD   L  NET     CK NETWORK TYPE 80D24670
10A5 0 9100          *   S    1 D1-T    80D24680
10A6 1 4C20 1086    *   BSC  L  ENCK1,Z BR IF NOT SWITCHED LINE 80D24690
*
10A8 1 C400 16D1    *   LD   L  RCVTB+1 80D24700
10AA 0 F1BF          *   EOR  1 DISC-T  CK FOR DISC RECEIVED 80D24710
10AB 1 4C20 1086    *   BSC  L  ENCK1,Z BR IF NOT DISC 80D24720
*
10AD 0 6304          *   A004 LDX  3 4   PREPARE TO STORE A004 MSG 80D24730
10AE 1 7400 152C    *   MDX  L  MXFER   SKIP IF NOT MSG XFER STATE 80D24740
10B0 0 63E6          *   E01A LDX  3 -26 PREPARE TO STORE E01A MSG 80D24750
*
10B1 0 62FA          *   EE06 LDX  2 -6  PREPARE END MSG EE06 80D24760
10B2 1 4400 11E9    *   BSI  L  ENPRT  SET END-OF-TEST IND 80D24770
10B4 1 4C00 0AE4    *   BSC  L  RTN01  GO TO CLEAR CA 80D24780
*
10B6 1 C400 16D1    *   ENCK1 LD  L  RCVTB+1 80D24790
10B8 0 F188          *   EOR  1 EOT-T  CK FOR EOT RECEIVED 80D24800
10B9 0 1808          *   SRA  8        80D24810
10BA 1 4CA0 10A2    *   BSC  I  ENDCK,Z RETURN IF NOT EOT 80D24820
*
10BC 1 6C00 152A    *   STX  L  CMODE  SET CONTROL MODE 80D24830
10BE 0 1010          *   SLA  16       80D24840
10BF 0 D1E6          *   STO  1 MASTR-T RESET MASTER STATUS 80D24850
10C0 0 D1E8          *   STO  1 IDSW-T  RESET ID MODE 80D24860
*
10C1 0 C1D2          *   LD   1 X99ID-T BR IF X 80D24870
10C2 1 4C18 10C8    *   BSC  L  **+,+- NOT 99 80D24880
10C4 0 1810          *   SRA  16       CLEAR 80D24890
10C5 0 D1D2          *   STO  1 X99ID-T X=99 INDICATOR 80D24900
10C6 1 4C00 1043    *   BSC  L  A03B   END TEST 80D24910
*
10C8 0 6303          *   A003 LDX  3 3   PREPARE TO STORE A003 MSG 80D24920

```

```

10C9 1 7400 152C
10CB 0 63E5
10CC 0 62FB
10CD 1 4400 11E9
10CF 1 4C00 0AF0
10D1 0 0000
10D2 1 6F00 11C1
10D4 1 6600 1639
10D6 1 6700 10DB
10D8 0 D001
10D9 0 4F80 0000
10DB 1 115F
10DC 1 115F
10DD 1 10F2
10DE 1 115F
10DF 1 1102
10E0 1 1102
10E1 1 1113
10E2 1 1118
10E3 1 111D
10E4 1 115F
10E5 1 115F
10E6 1 115F
10E7 1 1118
10E8 1 111D
10E9 1 1113
10EA 1 112B
10EB 1 113C
10EC 1 115F
10ED 1 115F
10EE 1 1152
10EF 1 116A
10F0 1 11A3
10F1 1 11A1
10F2 0 C1C6
10F3 0 D200
10F4 0 6700 0080
10F6 0 C100
10F7 0 D201
10F8 0 8116
10F9 0 7201
10FA 0 73FF
10FB 0 70FB
10FC 0 C1C7
10FD 0 D201
10FE 0 6700 0106
1100 1 4C00 11BE

```

```

E01B MDX L MXFER SKIP IF NOT MSG XFER STATE 80D25100
LDX 3 -27 PREPARE TO STORE E01B MSG 80D25190
*
EE05 LDX 2 -5 PREPARE END MSG EE05 80D25200
BSI L ENPRT SET END OF TEST IND 80D25210
BSC L RT01A GO TO INITIALIZE LINE 80D25220
*
*****
*
*           GENERATE TEST MESSAGE
*
*****
*
GENTM DC *--
*
STX L3 GNTMX+3 SAVE XR3 80D25230
LDX L2 TM XR2=POINT TO TEST MSG TBL 80D25240
LDX L3 *+3 SET UP BRANCH TO PROPER 80D25250
STO *+1 TEST MESSAGE GENERATION 80D25260
BSC I3 *--
*
DC SPECL NOT USED 80D25270
DC SPECL TEST MSG 01 80D25280
DC TM2 TEST MSG 02 80D25290
DC SPECL NOT USED 80D25300
DC TM45 TEST MSG 04 80D25310
DC TM45 TEST MSG 05 80D25320
DC TM614 TEST MSG 06 80D25330
DC TM712 TEST MSG 07 80D25340
DC TM813 TEST MSG 08 80D25350
DC SPECL NOT USED 80D25360
DC SPECL NOT USED 80D25370
DC SPECL NOT USED 80D25380
DC TM712 TEST MSG 12 80D25390
DC TM813 TEST MSG 13 80D25400
DC TM614 TEST MSG 14 80D25410
DC TM15 TEST MSG 15 80D25420
DC TM16 TEST MSG 16 80D25430
DC SPECL NOT USED 80D25440
DC SPECL NOT USED 80D25450
DC TM19 TEST MSG 19 80D25460
DC TM20 TEST MSG 20 80D25470
DC TM21 TEST MSG 21 80D25480
DC TM22 TEST MSG 22 80D25490
*
-----
*
*           GENERATE TEST MESSAGE 02
*
TM2 LD 1 DLSTX-T STORE DLE STX IN 80D25500
STO 2 0 TEST MESSAGE 80D25510
*
TWO LDX L3 128 STORE HEX 80D25520
LD 1 D1-T CHARACTERS 80D25530
STO 2 1 /0000 THRU /00FF 80D25540
A 1 H0202-T IN TEST 80D25550
MDX 2 1 MESSAGE 80D25560
MDX 3 -1 80D25570
MDX TWOA 80D25580
*
LD 1 DLETX-T STORE DLE ETX 80D25590
STO 2 1 IN TEST MESSAGE 80D25600
*
LDX L3 262 XR3=TEST MESSAGE LENGTH 80D25610
BSC L GNTMX GO TO EXIT 80D25620
*
-----
*
*           GENERATE TEST MESSAGE 04 OR 05
*

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TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

```

*
1102 0 C1C1      * TM45 LD 1 STSYN-T  STORE STX SYN      80D25860
1103 0 D200      *   STO 2 0          IN TEST MESSAGE      80D25870
*
1104 1 6780 15A3 *   LDX 13 TM4      XR3=TEST MESSAGE LENGTH 80D25880
1106 0 6200      *   LDX 2 0          MOVE TEST                80D25890
1107 1 C600 15A4 * TM45A LD L2 TM4+1  MESSAGE FOUR            80D25900
1109 1 D600 163A *   STO L2 TM+1     OR FIVE TO              80D25910
1108 0 7201      *   MDX 2 1          TEST MESSAGE            80D25920
110C 0 73FE      *   MDX 3 -2        TABLE                80D25930
110D 0 70F9      *   MDX           TM45A                                80D25940
*
110E 1 6780 15A3 *   LDX 13 TM4      XR3=TEST MESSAGE LENGTH 80D25950
1110 0 7304      *   MDX 3 4          GO TO EXIT                80D25960
1111 1 4C00 11BE *   BSC L GNTMX
*
*-----*
* GENERATE TEST MESSAGE 06 OR 14
*
1113 0 C1C1      * TM614 LD 1 STSYN-T  STORE STX SYN      80D25970
1114 0 D200      *   STO 2 0          IN TEST MESSAGE      80D25980
*
1115 0 C1C3      *   LD 1 SYNA-T     STORE SYN A              80D25990
1116 0 D201      *   STO 2 1          IN TEST MESSAGE      80D26000
*
1117 0 7009      *   MDX           TMOVE
*
*-----*
* GENERATE TEST MESSAGE 07 OR 12
*
1118 0 C1C2      * TM712 LD 1 STESC-T  STORE STX ESC        80D26010
1119 0 D200      *   STO 2 0          IN TEST MESSAGE      80D26020
*
111A 0 C1C4      *   LD 1 PRNTA-T    STORE UNIT ADR AND A CHAR 80D26030
111B 0 D201      *   STO 2 1          IN TEST MESSAGE      80D26040
*
111C 0 7004      *   MDX           TMOVE
*
*-----*
* GENERATE TEST MESSAGE 08 OR 13
*
111D 0 C1C2      * TM813 LD 1 STESC-T  STORE STX ESC        80D26050
111E 0 D200      *   STO 2 0          IN TEST MESSAGE      80D26060
*
111F 0 C1C5      *   LD 1 PNCHA-T    STORE UNIT ADR AND A CHAR 80D26070
1120 0 D201      *   STO 2 1          IN TEST MESSAGE      80D26080
*
1121 0 63EE      * TMOVE LDX 3 -18    MOVE TEST                80D26090
1122 1 C700 1632 *   LD L3 TM12+18  MESSAGE 6, 7, 8,      80D26100
1124 0 D202      *   STO 2 2          12, 13, OR 14        80D26110
1125 0 7201      *   MDX 2 1          TO TEST                80D26120
1126 0 7301      *   MDX 3 1          MESSAGE                80D26130
1127 0 70FA      *   MDX           TMOVE+1 AREA                80D26140
*
1128 0 632A      *   LDX 3 42        XR3=TEST MESSAGE LENGTH 80D26150
1129 1 4C00 11BE *   BSC L GNTMX    GO TO EXIT                80D26160
*
*-----*
* GENERATE TEST MESSAGE 15
*
112B 0 C1C1      * TM15 LD 1 STSYN-T  STORE STX SYN      80D26170
112C 0 D200      *   STO 2 0          IN TEST MESSAGE      80D26180
*
112D 0 6326      *   LDX 3 38        STORE 74 ZEROS AND 4 SYNS 80D26190
112E 1 4400 11C9 *   BSI L ZEROS    IN TEST MESSAGE      80D26200
*
1130 0 1008      *   SLA 8           STORE SYN 00            80D26210
1131 1 D400 163A *   STO L TM+1     IN TEST MESSAGE      80D26220

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1133 0 1808      *   SRA 8           STORE 00 SYN            80D26540
1134 0 D200      *   STO 2 0          IN TEST MESSAGE      80D26550
1135 0 1800      *   RTE 16          80D26560
1136 0 C1B7      *   LD 1 ETX-T     STORE SYN ETX          80D26570
1137 0 18C8      *   RTE 8           IN TEST MESSAGE      80D26580
1138 0 D203      *   STO 2 3          80D26590
*
1139 0 6356      *   LDX 3 86        XR3=TEST MSG LENGTH    80D26600
113A 1 4C00 11BE *   BSC L GNTMX    GO TO EXIT            80D26610
*
*-----*
* GENERATE TEST MESSAGE 16
*
113C 0 C1C1      * TM16 LD 1 STSYN-T  STORE STX SYN      80D26620
113D 0 D200      *   STO 2 0          IN TEST MESSAGE      80D26630
*
113E 0 C121      *   LD 1 H32AA-T   STORE SYN AA            80D26640
113F 0 D201      *   STO 2 1          IN TEST MSG            80D26650
1140 0 6313      *   LDX 3 19        STORE 38                80D26660
1141 0 C120      *   LD 1 HAAAA-T   /AA CHARACTERS        80D26670
1142 0 D202      * TM16A STO 2 2     IN TEST                80D26680
1143 0 7201      *   MDX 2 1          MESSAGE                80D26690
1144 0 73FF      *   MDX 3 -1        80D26700
1145 0 70FC      *   MDX           TM16A 80D26710
*
1146 0 C11F      *   LD 1 HAA55-T   STORE /AA /55          80D26720
1147 0 D202      *   STO 2 2          IN TEST MESSAGE      80D26730
*
1148 0 6313      *   LDX 3 19        STORE 38                80D26740
1149 0 C11E      *   LD 1 H5555-T   /55 CHARACTERS        80D26750
114A 0 D203      * TM16B STO 2 3     IN TEST                80D26760
114B 0 7201      *   MDX 2 1          MESSAGE                80D26770
114C 0 73FF      *   MDX 3 -1        80D26780
114D 0 70FC      *   MDX           TM16B 80D26790
*
114E 0 C11D      *   LD 1 H5503-T   STORE /55 ETX          80D26800
114F 0 D203      *   STO 2 3          IN TEST MSG            80D26810
*
1150 0 6356      *   LDX 3 86        XR3=TEST MSG LENGTH    80D26820
1151 0 706C      *   MDX           GNTMX 80D26830
*
*-----*
* GENERATE TEST MESSAGE 19
*
1152 0 C1C6      * TM19 LD 1 DLSTX-T  STORE DLE STX          80D26840
1153 0 D200      *   STO 2 0          IN TEST MESSAGE      80D26850
*
1154 0 6700 008C *   LDX L3 140     STORE 280 ZEROS AND 4 SYNS 80D26860
1155 0 4072      *   BSI           ZEROS IN TEST MESSAGE      80D26870
*
1157 0 D203      *   STO 2 3          STORE 6                 80D26880
1158 0 D204      *   STO 2 4          SYNS IN                80D26890
1159 0 D205      *   STO 2 5          TEST MSG               80D26900
115A 0 C1C7      *   LD 1 DLETX-T   STORE DLE ETX          80D26910
115B 0 D206      *   STO 2 6          IN TEST MSG            80D26920
*
115C 0 6700 0128 *   LDX L3 296     XR3=TEST MSG LENGTH    80D26930
115E 0 705F      *   MDX           GNTMX 80D26940
*
115F 0 63C4      *   LDX 3 -60      MOVE TEST                80D26950
1160 1 C700 0866 *   LD L3 TM01+61  MESSAGE 01            80D26960
1162 0 D200      *   STO 2 0          TO TEST                80D26970
1163 0 7201      *   MDX 2 1          MESSAGE                80D26980
1164 0 7301      *   MDX 3 1          AREA                    80D26990
1165 0 70FA      *   MDX           SPECL+1 80D27000
*
1166 1 6780 0829 *   LDX I3 TM01    XR3=TEST MESSAGE LENGTH 80D27010
1168 0 7302      *   MDX 3 2          80D27100

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TCA TRANSMIT/RECEIVE TEST

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1169 0 7054          MDX      GNTMX          80D27220
*
*-----*
*          GENERATE TEST MESSAGE 20
*
116A 0 C1C6        TM20 LD      1 DLSTX-T    STORE DLE STX IN
116B 0 D200          STO      2 0          TEST MESSAGE
*
116C 0 63F8          LDX      3 -8          MOVE U THRU Z AND
116D 1 C700 1632    TM20A LD      L3 TM12+18    O THRU 9 TO
116F 0 1890          SRT      16          TEST MESSAGE
1170 1 C700 1631    LD      L3 TM12+17
1172 0 1088          SLT      8
1173 0 D201          STO      2 1
1174 0 7201          MDX      2 1
1175 0 7301          MDX      3 1
1176 0 70F6          MDX      TM20A
*
1177 0 6320          LDX      3 32          STORE HEX 00 THRU 3F
1178 0 C100          LD      1 D1-T          IN TEST MESSAGE
1179 0 D201          TM20B STO     2 1
117A 0 8116          A      1 H0202-T
117B 0 7201          MDX      2 1
117C 0 73FF          MDX      3 -1
117D 0 70FB          MDX      TM20B
*
117E 0 C1C7          LD      1 DLETX-T     STORE DLE ETX
117F 0 D201          STO      2 1          IN TEST MESSAGE
*
1180 0 6700 0056    *          LDX      L3 86          XR3=TEST MESSAGE LENGTH
1182 0 703B          MDX      GNTMX
*
*-----*
*          GENERATE TEST MESSAGE 21
*
1183 0 C1C6        TM21 LD      1 DLSTX-T    STORE DLE STX IN
1184 0 D200          STO      2 0          TEST MESSAGE
*
1185 0 6700 C1C2    *          LDX      L3 /C1C2     STORE A THRU Z AND
1187 1 6F00 163A    STX      L3 TM+1       O THRU 9 IN
1189 0 7201          MDX      2 1          TEST MESSAGE
118A 0 63EF          LDX      3 -17
118B 1 C700 1632    TM21A LD      L3 TM12+18
118D 0 1890          SRT      16
118E 1 C700 1631    LD      L3 TM12+17
1190 0 1088          SLT      8
1191 0 D201          STO      2 1
1192 0 7201          MDX      2 1
1193 0 7301          MDX      3 1
1194 0 70F6          MDX      TM21A
*
1195 0 632A          LDX      3 42          STORE HEX 00 THRU 53
1196 0 C100          LD      1 D1-T          IN TEST MESSAGE
1197 0 D201          TM21B STO     2 1
1198 0 8116          A      1 H0202-T
1199 0 7201          MDX      2 1
119A 0 73FF          MDX      3 -1
119B 0 70FB          MDX      TM21B
*
119C 0 C1C7          LD      1 DLETX-T     STORE DLE ETX IN
119D 0 D201          STO      2 1          TEST MESSAGE
*
119E 0 6700 007E    *          LDX      L3 126          XR3=TEST MESSAGE LENGTH
11A0 0 701D          MDX      GNTMX
*
*-----*
*          GENERATE TEST MESSAGE 22
*

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TCA TRANSMIT/RECEIVE TEST

```

11A1 0 C1C6        TM22 LD      1 DLSTX-T    STORE DLE STX
11A2 0 D200          STO      2 0          IN TEST MESSAGE
*
11A3 0 6700 C1C2    *          LDX      L3 /C1C2     STORE A THRU Z AND
11A5 1 6F00 163A    STX      L3 TM+1       O THRU 9 IN
11A7 0 7201          MDX      2 1          TEST MESSAGE
11A8 0 63EF          LDX      3 -17
11A9 1 C700 1632    TM22A LD      L3 TM12+18
11AB 0 1890          SRT      16
11AC 1 C700 1631    LD      L3 TM12+17
11AE 0 1088          SLT      8
11AF 0 D201          STO      2 1
11B0 0 7201          MDX      2 1
11B1 0 7301          MDX      3 1
11B2 0 70F6          MDX      TM22A
*
11B3 0 6336          LDX      3 54          STORE HEX 00 THRU 6B
11B4 0 C100          LD      1 D1-T          IN TEST MESSAGE
11B5 0 D201          TM22B STO     2 1
11B6 0 8116          A      1 H0202-T
11B7 0 7201          MDX      2 1
11B8 0 73FF          MDX      3 -1
11B9 0 70FB          MDX      TM22B
*
11BA 0 C1C7          LD      1 DLETX-T     STORE DLE ETX IN
11BB 0 D201          STO      2 1          TEST MESSAGE
*
11BC 0 6700 0096    *          LDX      L3 150          XR3=TEST MESSAGE LENGTH
*
11BE 1 6F00 0F1D    *          GNTMX STX      L3 TMCNT     SAVE MSG LENGTH
11C0 0 6700 0000    LDX      L3 *-*        RESTORE XR3
11C2 1 C400 0F1D    LD      L TMCNT
11C4 0 E912          OR      1 HE000-T     SET BYTE COUNT XMIT BITS
11C5 1 D400 0F1D    STO      L TMCNT      STORE IN XMIT TM CALL
11C7 1 4C80 10D1    BSC      I GENTM      RETURN
*
*-----*
*          STORE ZEROS IN TEST MESSAGES
*
11C9 0 0000          ZEROS DC    *-*        ENTRY
*
11CA 0 1010          SLA      16
11CB 0 D201          ZEROA STO     2 1          STORE
11CC 0 7201          MDX      2 1          ZEROS IN
11CD 0 73FF          MDX      3 -1          TEST MESSAGE
11CE 0 70FC          MDX      ZEROA        TABLE
*
11CF 0 C18C          LD      1 SYN-T       STORE FOUR
11D0 0 D201          STO      2 1          SYNS IN TEST
11D1 0 D202          STO      2 2          MESSAGE
*
11D2 1 4C80 11C9    *          BSC      I ZEROS     RETURN
*
*****
*          SET UP START OF TEST MESSAGE
*****
11D4 0 0000          STPRT DC    0          ENTRY
*
11D5 0 C1F4          LD      1 ENDSW-T     CHECK MESSAGE
11D6 0 E9FF          OR      1 STMSG-T     PRINT INDICATORS
11D7 1 4CA0 11D4    BSC      I STPRT,Z    RETURN IF MSG RDY TO PRINT
*
11D9 1 C400 0802    *          LD      L SWO        CK PRINT OPTIONS
11DB 0 1007          SLA      7

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TCA TRANSMIT/RECEIVE TEST

```

11DC 1 4C28 11E3      BSC L STPRX,Z+ BR IF BYPASS START MSGS 80D28580
*
11DE 1 6E00 1523      STX L2 TEMPI STORE MSG NUMBER 80D28590
11E0 0 C1DE           LD 1 TEMPI-T 80D28600
11E1 0 E90D           OR 1 HAAA0-T 80D28610
11E2 0 D1FF           STO 1 STMSG-T SET START MSG PRINT IND 80D28620
*
11E3 1 C400 0818      STPRX LD L TRIES SET RETRY 80D28630
11E5 0 D1D6           STO 1 RETRY-T COUNT EQUAL TO N 80D28640
11E6 0 D1F3           STO 1 STSW-T SET START OF TEST IND 80D28650
11E7 1 4C80 11D4      BSC I STPRT RETURN 80D28660
*
*****
*
*          SET UP END OF TEST MESSAGE
*
*****
11E9 0 0000           ENPRT DC *-- ENTRY 80D28670
*
11EA 0 C1C9           LD 1 PGBSY-T CK PROGRAM BUSY IND 80D28680
11EB 1 4CA0 11E9      BSC I ENPRT,Z RETURN IF PROG BUSY 80D28690
*
11ED 0 C1E7           LD 1 MXFER-T CK MSG XFER STATE 80D28800
11EE 1 4C20 11F5      BSC L EE07+1,Z BR IF MSG XFER STATE 80D28810
*
11F0 0 C1F2           LD 1 OPTIN-T CHECK SWITCH OPTIONS 80D28820
11F1 0 100C           SLA 12 80D28830
11F2 1 4CA8 11E9      BSC I ENPRT,Z+ RETURN IF NO INITIAL TRACE 80D28840
*
11F4 0 62F9           EE07 LDX 2 -7 PREPARE END MSG EE07 80D28850
*
11F5 1 6E00 1523      STX L2 TEMPI SAVE MESSAGE ID 80D28860
11F7 0 C1DE           LD 1 TEMPI-T 80D28870
11F8 0 E129           AND 1 H00FF-T 80D28880
11F9 0 D1F4           STO 1 ENDSW-T SET END OF TEST IND 80D28890
11FA 1 4C80 11E9      BSC I ENPRT RETURN 80D28900
*
*****
*
*          READ OPTION SELECT SWITCHES
*
*****
11FC 0 0000           RDSWS DC *-- ENTRY 80D28910
*
11FD 1 C400 0805      RDSWA LD L SW3 FETCH FUNCTION 3 SELECTION 80D28920
11FF 1 4400 129D      BSI L ZONE ADD DECIMAL ZONE 80D28930
1201 1 D400 1634      STO L YDEC SAVE Y VALUE 80D28940
1203 1 4400 128C      BSI L DECHX CONVERT TO HEX 80D28950
1205 1 4C08 120A      BSC L RDSWB,+ BR IF INVALID ENTRY 80D28960
*
1207 0 910C           S 1 D99-T CK IF OVER 99 80D28970
1208 1 4C08 1210      BSC L RDSWC,+ BR IF NOT OVER 99 80D28980
*
120A 0 C101           RDSWB LD 1 D3-T ERRONEOUS ENTRY 80D28990
120B 1 D400 0805      STO L SW3 SET FUNCTION 3 ENTRY TO 03 80D29000
120D 0 C10E           LD 1 HEEE1-T PREPARE FOR EEE1 MSG 80D29010
120E 0 D1FC           STO 1 OPERR-T SET OPTION ERR PRINT IND 80D29020
120F 0 70ED           MDX RDSWA 80D29030
*
1210 1 C400 0803      RDSWC LD L SW1 FETCH FUNCTION 1 OPTIONS 80D29040
1212 1 4C18 1286      BSC L RDSWM,+ BR IF NO SELECTION 80D29050
*
1214 0 F126           EOR 1 HFFFF-T CK FOR NEW SELECTION 80D29060
1215 1 4C18 1254      BSC L RDSWH,+ BR IF NO NEW SELECTION 80D29070

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TCA TRANSMIT/RECEIVE TEST

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1217 0 F126           * EOR 1 HFFFF-T 80D29260
1218 0 D1EA           STO 1 RFTSL-T SAVE RFT SELECTION 80D29270
1219 0 C126           LD 1 HFFFF-T 80D29280
121A 1 D400 0803      STO L SW1 FLAG SW1 FOR NEXT CHECK 80D29290
*
121C 0 1010           RDSWD SLA 16 80D29300
121D 0 D1EC           STO 1 ALL-T CLEAR ALL RFT REQUEST IND 80D29310
*
121E 0 C1EA           * LD 1 RFTSL-T 80D29320
121F 1 4C10 125F      BSC L RDSWI,- BR IF TYPE 0 OR 1 REQ 80D29330
*
1221 0 1001           * SLA 1 80D29340
1222 1 4C10 126A      BSC L RDSWK,- BR IF TYPE 2 REQ 80D29350
*
1224 0 1010           * SLA 16 80D29360
1225 0 4077           RDSWE BSI ZONE SET UP 80D29370
1226 1 D400 1633      STO L XDEC X VALUE 80D29380
*
1228 1 6C00 1531      * STX L ALL SET ALL RFT REQ IND 80D29390
*
122A 1 6600 1572      * LDX L2 TMVLD-1 XR2=ADR OF TM NUMBER TBL 80D29400
122C 0 6A01           STX 2 RDSWF+1 80D29410
*
122D 0 6600 0000      * RDSWF LDX L2 *-- XR2=ADR OF TEST MSG NUMBER 80D29420
122F 0 7201           MDX 2 1 POINT TO NEXT TM NUMBER 80D29430
1230 0 6AFD           STX 2 RDSWF+1 SAVE ADR FOR NEXT TEST 80D29440
*
1231 1 C400 1633      * LD L XDEC FETCH X VALUE 80D29450
1233 0 4058           BSI DECHX CONVERT TO HEX 80D29460
1234 0 1881           SRT 1 80D29470
1235 1 4C20 1249      BSC L RDSWG,Z BR IF X NOT ZERO OR ONE 80D29480
*
1237 0 C200           LD 2 0 FETCH TEST MSG NUMBER 80D29490
1238 0 D1EB           STO 1 REQ-T SET RFT REQ IND 80D29500
1239 1 4C18 1242      BSC L RSWF1,+ BR IF END OF TM TABLE 80D29510
*
123B 0 F108           * EOR 1 D19-T CK FOR TEST MSG 19 80D29520
123C 1 4CA0 11FC      BSC I RDSWS,Z RETURN IF NOT TM 19 80D29530
*
123E 0 1081           * SLT 1 80D29540
123F 1 4C88 11FC      BSC I RDSWS,+ RETURN IF X=00 80D29550
*
1241 0 70EB           * MDX RDSWF BRANCH - X=01 80D29560
*
1242 0 1081           RSWF1 SLT 1 80D29570
1243 0 8100           A 1 D1-T 80D29580
1244 1 4C04 1225      BSC L RDSWE,E BR IF X=01 NEXT RFT 80D29590
*
1246 1 6600 1573      * LDX L2 TMVLD 80D29600
1248 0 6AE5           STX 2 RDSWF+1 SAVE TM NUMBER ADR 80D29610
*
1249 0 C200           RDSWG LD 2 0 FETCH TEST MSG NUMBER 80D29620
124A 0 D1EB           STO 1 REQ-T SET/RESET RFT REQ IND 80D29630
124B 0 D1EC           STO 1 ALL-T SET/RESET ALL RFT REQ IND 80D29640
*
124C 0 1890           * SRT 16 CONVERT 80D29650
124D 0 A907           D 1 D10-T TEST 80D29660
124E 0 108C           SLT 12 MESSAGE 80D29670
124F 0 180C           SRA 12 NUMBER TO 80D29680
1250 0 1084           SLT 4 DECIMAL 80D29690
1251 0 404B           BSI ZONE ADD DECIMAL ZONE 80D29700
1252 1 D400 1633      STO L XDEC SAVE X VALUE 80D29710
*
1254 0 C1EB           RDSWH LD 1 REQ-T CK RFT REQ IND 80D29720
1255 1 4CA0 11FC      BSC I RDSWS,Z EXIT IF NOT ZERO 80D29730
*

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TCA TRANSMIT/RECEIVE TEST

12C0 0 1008	SLA 8	80D31300
12C1 1 4C28 12CF	BSC L SVMS2,Z+	80D31310
		80D31320
12C3 0 1002	SLA 2	80D31330
12C4 1 4C28 12C9	BSC L SVMS1,Z+	80D31340
		80D31350
12C6 0 C1DF	LD 1 TEMP2-T	80D31360
12C7 1 4C10 12CF	BSC L SVMS2,-	80D31370
		80D31380
12C9 0 C1DF	SVMS1 LD 1 TEMP2-T	80D31390
12CA 0 1008	SLA 8	80D31400
12CB 0 1808	SRA 8	80D31410
12CC 0 E9E9	OR 1 RTNNO-T	80D31420
12CD 0 E90F	OR 1 H8000-T	80D31430
12CE 0 4008	BSI STORE	80D31440
		80D31450
12CF 0 C1DF	SVMS2 LD 1 TEMP2-T	80D31460
12D0 0 4828	BSC Z+	80D31470
12D1 0 D1D0	STO 1 ANYER-T	80D31480
12D2 0 C1DE	LD 1 TEMP1-T	80D31490
12D3 1 6780 1524	LDX 13 TEMP2	80D31500
12D5 1 4C80 12B8	BSC I SVMSG	80D31510
		80D31520
		80D31530
		80D31540
		80D31550
		80D31560
		80D31570
		80D31580
		80D31590
12D7 0 0000	STORE DC *-*	80D31600
		80D31610
12D8 0 6B15	STX 3 STOR2+2	80D31620
12D9 1 6780 150F	LDX 13 TRCPT	80D31630
12DB 0 D300	STO 3 0	80D31640
		80D31650
12DC 0 C1CA	LD 1 TRCPT-T	80D31660
12DD 1 F400 1FF8	EOR L PEND	80D31670
12DF 1 4C20 12E3	BSC L STOR1,Z	80D31680
		80D31690
12E1 0 C118	A001 LD 1 H8001-T	80D31700
12E2 0 7009	MDX STOR2	80D31710
		80D31720
12E3 0 7301	STOR1 MDX 3 1	80D31730
12E4 1 6F00 150F	STX L3 TRCPT	80D31740
12E6 1 7401 1512	MDX L CNTA,1	80D31750
12E8 0 1000	NOP	80D31760
12E9 1 6C00 1514	STX L ANYMS	80D31770
12EB 0 1010	SLA 16	80D31780
		80D31790
12EC 0 D300	STOR2 STO 3 0	80D31800
12ED 0 6700 0000	LDX L3 *-*	80D31810
12EF 1 4C80 12D7	BSC I STORE	80D31820
		80D31830
		80D31840
		80D31850
		80D31860
		80D31870
		80D31880
		80D31890
12F1 0 0000	XMRCV DC *-*	80D31900
		80D31910
12F2 0 40C5	BSI SVMSG	80D31920
		80D31930
12F3 0 C1C9	LD 1 PGBSY-T	80D31940
12F4 1 4C20 1346	BSC L XMR13,Z	80D31950
		80D31960
		80D31970

TCA TRANSMIT/RECEIVE TEST

12F6 0 C1CF	LD 1 ANYMS-T	80D31980
12F7 1 4C18 1346	BSC L XMR13,+	80D31990
		80D32000
12F9 0 C1CA	LD 1 TRCPT-T	80D32010
12FA 0 D1F6	STO 1 CNTPT-T	80D32020
		80D32030
12FB 0 1010	SLA 16	80D32040
12FC 0 D1CD	STO 1 CNTA-T	80D32050
12FD 0 40D9	BSI STORE	80D32060
		80D32070
12FE 0 C19B	LD 1 SNSOP-T	80D32080
12FF 0 40D7	BSI STORE	80D32090
		80D32100
1300 0 C19D	LD 1 SNSBC-T	80D32110
1301 0 40D5	BSI STORE	80D32120
		80D32130
1302 0 C1CD	LD 1 CNTA-T	80D32140
1303 1 4C08 1346	BSC L XMR13,+	80D32150
		80D32160
1305 1 D480 153B	STO I CNTPT	80D32170
		80D32180
1307 1 6600 176B	XMR10 LDX L2 XMRCV	80D32190
1309 0 C1D8	LD 1 XMADR-T	80D32200
130A 1 4C18 1315	BSC L XMR12,+	80D32210
		80D32220
130C 0 90FB	S XMR10+1	80D32230
130D 1 4C18 1311	BSC L XMR11,+	80D32240
		80D32250
130F 0 9100	S 1 D1-T	80D32260
1310 0 4008	BSI STDTA	80D32270
		80D32280
1311 0 C1D9	XMR11 LD 1 RCADR-T	80D32290
1312 0 91D8	S 1 XMADR-T	80D32300
1313 0 9100	S 1 D1-T	80D32310
1314 0 4004	BSI STDTA	80D32320
		80D32330
1315 0 C1DA	XMR12 LD 1 RCVBC-T	80D32340
1316 1 4420 1319	BSI L STDTA,Z	80D32350
		80D32360
1318 0 702D	MDX XMR13	80D32370
		80D32380
		80D32390
1319 0 0000	STDTA DC *-*	80D32400
		80D32410
131A 0 D01D	STO STDT3+1	80D32420
		80D32430
131B 0 C1CA	LD 1 TRCPT-T	80D32440
131C 0 D1F6	STO 1 CNTPT-T	80D32450
		80D32460
131D 0 C1F2	LD 1 OPTIN-T	80D32470
131E 0 1009	SLA 9	80D32480
131F 1 4CA8 1319	BSC I STDTA,+Z	80D32490
		80D32500
1321 0 1010	SLA 16	80D32510
1322 0 D1CD	STO 1 CNTA-T	80D32520
1323 0 40B3	BSI STORE	80D32530
		80D32540
1324 0 C1F2	LD 1 OPTIN-T	80D32550
1325 0 1804	SRA 4	80D32560
1326 1 4C04 1337	BSC L STDT3,E	80D32570
		80D32580
1328 0 C00F	LD STDT3+1	80D32590
1329 0 9109	S 1 D29-T	80D32600
132A 1 4C08 1337	BSC L STDT3,+	80D32610
		80D32620
132C 0 D007	STO STDT2+1	80D32630
		80D32640
132D 0 630F	LDX 3 15	80D32650

TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

132E 0 C200	STDT1 LD 2 0	FIFTEEN TABLE	80D32660
132F 0 40A7	BSI STORE	ENTRIES	80D32670
1330 0 7201	MDX 2 1	INTG TRACE	80D32680
1331 0 73FF	MDX 3 -1	TABLE	80D32690
1332 0 70FB	MDX STDT1		80D32700
*			
1333 0 7600 0000	STDT2 MDX L2 *--		80D32710
1335 0 630E	LDX 3 14		80D32720
1336 0 7002	MDX STDT3+2		80D32730
*			
1337 0 6700 0000	STDT3 LDX L3 *--	XR3=TABLE LENGTH	80D32740
1339 0 C200	LD 2 0	MOVE XMIT OR	80D32750
133A 0 409C	BSI STORE	RECEIVE TABLE	80D32760
133B 0 7201	MDX 2 1	TO TRACE	80D32770
133C 0 73FF	MDX 3 -1	TABLE	80D32780
133D 0 70FB	MDX STDT3+2		80D32790
*			
133E 0 7201	MDX 2 1		80D32800
133F 0 C1CD	LD 1 CNTA-T	FETCH CHARACTER COUNT	80D32810
1340 1 4C88 1319	BSC I STDTA,+	RETURN IF ZERO COUNT	80D32820
*			
1342 1 D480 153B	STO I CNTPT	STO CHAR CNT IN TRACE TBL	80D32830
1344 1 4C80 1319	BSC I STDTA	RETURN	80D32840
*			
1346 0 C1F4	XMR13 LD 1 ENDSW-T	CK END OF TEST IND	80D32850
1347 1 4C18 134F	BSC L XMR14,+	BRA IF NOT ON	80D32860
*			
1349 1 C400 1AC9	LD L ENMSG	CK END MSG PRINT IND	80D32870
134B 1 4C18 1361	BSC L XMR16,+	BR IF NOT ON	80D32880
*			
134D 0 D1C9	STO 1 PGBSY-T	SET PROGRAM BUSY IND	80D32890
134E 0 7012	MDX XMR16	BRANCH	80D32900
*			
134F 0 C1F3	XMR14 LD 1 STSW-T	CK START OF TEST IND	80D32910
1350 1 4C18 1361	BSC L XMR16,+	BR IF NOT ON	80D32920
*			
1352 1 6700 1ACC	LDX L3 TRCTB	INITIALIZE POINTER TO	80D32930
1354 1 6F00 150F	STX L3 TRCPT	START OF TRACE TABLE	80D32940
*			
1356 0 1010	SLA 16	CLEAR END	80D32950
1357 0 63EE	LDX 3 -18	OF TEST	80D32960
1358 1 D700 1AD1	XMR15 STO L3 TMODE+18	STATISTICS	80D32970
135A 0 7301	MDX 3 1	TABLE	80D32980
135B 0 70FC	MDX XMR15		80D32990
*			
135C 0 D1F3	STO 1 STSW-T	RESET START OF TEST IND	80D33000
135D 0 D1C9	STO 1 PGBSY-T	RESET PRG BUSY IND	80D33010
*			
135E 1 C400 0802	LD L SW0	SET UP	80D33020
1360 0 D1F2	STO 1 OPTIN-T	PRINT OPTIONS	80D33030
*			
1361 0 1010	XMR16 SLA 16	CLEAR	80D33040
1362 0 D1D8	STO 1 XMADR-T	XMIT/RECEIVE	80D33050
1363 0 D1D9	STO 1 RCADR-T	TABLE	80D33060
1364 0 D1DA	STO 1 RCVBC-T	POINTERS	80D33070
*			
1365 0 D1F8	STO 1 XMTAC-T	RESET	80D33080
1366 0 D1F9	STO 1 RCTAC-T	TURNAROUND COUNTERS	80D33090
*			
1367 0 6700 FC18	LDX L3 -1000	CLEAR	80D33100
1369 1 D700 1AB8	XMR17 STO L3 RCVTB+1000	XMIT/RECEIVE	80D33110
136B 0 7301	MDX 3 1	TABLES	80D33120
136C 0 70FC	MDX XMR17		80D33130
*			
136D 1 C480 12F1	LD I XMRCV	FETCH 1ST CALL PARAMETER	80D33140
136F 0 1887	SRT 7		80D33150
1370 0 F126	EOR 1 HFFFF-T		80D33160

1371 0 1007	SLA 7		80D33170
1372 0 D1CC	STO 1 MASK-T	SET DSW MASK IND	80D33180
*			
1373 0 1087	SLT 7		80D33190
1374 0 1008	SLA 8		80D33200
1375 0 D1E9	STO 1 RTNNO-T	SAVE ROUTINE NUMBER	80D33210
*			
1376 1 7401 12F1	MDX L XMRCV,1	POINT TO NEXT PARAMETER	80D33220
1378 1 6C00 151C	STX L CLRSW	SET CA CLEAR IND	80D33230
*			
137A 1 C480 12F1	LD I XMRCV	FETCH PARAMETER	80D33240
137C 1 4C20 1387	BSC L XMR18,Z	BR IF NOT ZERO	80D33250
*			
137E 1 7401 12F1	MDX L XMRCV,1	POINT TO RETURN	80D33260
1380 0 C1C8	LD 1 PGRDY-T	CK PROGRAM READY IND	80D33270
1381 1 4C18 08A3	BSC L STRT3,+	BR IF NOT READY	80D33280
*			
1383 0 09A1	XIO 1 RESET-T	RESET CA	80D33290
1384 0 09A7	XIO 1 TIMER-T	START CONTINUE TIMER	80D33300
1385 1 4C00 1498	BSC L INTX	GO TO EXIT INTERRUPT	80D33310
*			
1387 0 F126	XMR18 EOR 1 HFFFF-T	CK FOR FFFF PARAMETER	80D33320
1388 1 4C20 1390	BSC L XMRC0,Z	BR IF NOT FFFF	80D33330
*			
138A 1 7401 12F1	MDX L XMRCV,1	POINT TO RETURN	80D33340
138C 0 09A1	XIO 1 RESET-T	RESET CA	80D33350
138D 0 09A9	XIO 1 ANSWR-T	ENABLE AND START TIMER	80D33360
138E 1 4C00 1498	BSC L INTX	GO TO EXIT INTERRUPT	80D33370
*			
1390 0 C1A4	XMRC0 LD 1 INITL+1-T	SET UP INITIALIZE	80D33380
1391 0 E91B	OR 1 H0080-T	IOCC FOR	80D33390
1392 0 D1A4	STO 1 INITL+1-T	DIAGNOSTIC MODE	80D33400
*			
1393 1 6680 12F1	LDX 12 XMRCV	XR2=CALL STRING ADDR	80D33410
1395 0 1010	SLA 16		80D33420
1396 0 D1D7	STO 1 CLRSW-T	RESET CA CLEAR IND	80D33430
*			
1397 0 C200	XMRC1 LD 2 0	FETCH CALL BYTE CNT WD	80D33440
1398 0 1002	SLA 2		80D33450
1399 1 4C10 13AF	BSC L XMRC3,-	BR IF RECEIVE TABLE	80D33460
*			
139B 0 C680 0001	LD 12 1	GET 1ST TWO XMIT CHARS	80D33470
139D 1 4400 14A2	BSI L DCODE	BUILD DECODE WORDS	80D33480
*			
139F 1 4C10 13AA	BSC L XMRC2,-	BR IF 1ST CHAR NOT DLE	80D33490
*			
13A1 0 1092	SLT 18		80D33500
13A2 1 4C10 13AA	BSC L XMRC2,-	BR IF 2ND CHAR NOT STX	80D33510
*			
13A4 0 C200	LD 2 0	FETCH BYTE COUNT WORD	80D33520
13A5 0 1007	SLA 7		80D33530
13A6 0 1807	SRA 7		80D33540
13A7 0 910A	S 1 D50-T		80D33550
13A8 1 4C30 1386	BSC L XMRC5,Z-	BR IF BC GREATER THAN 50	80D33560
*			
13AA 0 C200	XMRC2 LD 2 0	FETCH BYTE COUNT WORD	80D33570
13AB 1 4C10 1382	BSC L XMRC4,-	BR IF NO CHAIN	80D33580
*			
13AD 0 7202	MDX 2 2	POINT TO NEXT BCW	80D33590
13AE 0 70E8	MDX XMRC1	GO TO CHECK NEXT TABLE	80D33600
*			
13AF 0 C200	XMRC3 LD 2 0	FETCH BYTE COUNT WD	80D33610
13B0 1 4C08 1386	BSC L XMRC5,+	BR IF CHAIN OR ZERO BCW	80D33620
*			
13B2 0 C1F2	XMRC4 LD 1 OPTIN-T	GET PRG CONTROL OPTION	80D33630
13B3 0 1006	SLA 6		80D33640
13B4 1 4C10 1389	BSC L XMRC6,-	BR IF DIAG MODE	80D33650
*			

TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

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1386 0 C1A4      XMRCS LD 1 INITL+1-T SET UP INITIALIZE      80D34020
1387 0 F11B      EOR 1 H0080-T      IOCC FOR          80D34030
1388 0 D1A4      STO 1 INITL+1-T      NORMAL MODE      80D34040
*
1389 1 6600 176B XMRCS LDX L2 XMRCT   XR2=XMIT/RCV TABLE ADDR 80D34050
138B 1 6E00 151E STX L2 RCADR      SET RCV TABLE ADDR 80D34060
*
138D 1 C480 12F1 LD I XMRCV        FETCH BYTE COUNT WORD 80D34070
138F 1 7401 12F1 XMR6A MDX L XMRCV,1 POINT TO NEXT PARAMETER 80D34080
13C1 0 D200      STO 2 0           STO BCW IN XMIT/RCV TBL 80D34090
13C2 0 188D      SRT 13           80D34100
13C3 1 4C04 13E4 BSC L XMR7,E     BR IF XMIT TABLE 80D34110
*
13C5 0 108D      SLT 13           80D34120
13C6 0 D1DA      STO 1 RCVBC-T    SAVE BYTE COUNT WORD 80D34130
*
13C7 0 C1D2      LD 1 X99ID-T     BR IF X=99 IND      80D34140
13C8 1 4C18 13D1 BSC L XMR6B,+-- NOT ON              80D34150
*
13CA 0 C1E9      LD 1 RTNNO-T     80D34160
13CB 0 1808      SRA 8            80D34170
13CC 0 F103      EOR 1 D2-T      80D34180
13CD 1 4C20 13D1 BSC L XMR6B,Z   BR IF RTN NO. NOT 2 80D34190
*
13CF 0 C107      LD 1 D10-T      SET-UP RECEIVE TURNAROUND 80D34200
*
13D0 0 7002      MDX ++2         DELAY FOR 30 SECONDS 80D34210
*
13D1 1 C400 081D XMR6B LD L TADLY   SET-UP RECEIVE      80D34220
13D3 0 D1F9      STO 1 RCTAC-T   TURNAROUND COUNT   80D34230
*
13D4 0 C1DA      LD 1 RCVBC-T    FETCH BYTE COUNT WORD 80D34240
13D5 1 4C10 1494 BSC L CA10,-    BR IF NO CHAIN     80D34250
*
13D7 0 1005      SLA 5           CALCULATE          80D34260
13D8 0 1806      SRA 6           RECEIVE TABLE     80D34270
13D9 0 8100      A 1 D1-T       LENGTH             80D34280
13DA 0 D001      STO ++1        80D34290
13DB 0 7600 0000 MDX L2 *-*     POINT TO NEXT TBL 80D34300
*
13DD 0 80DC      A XMR6+1       A REG=ADDR OF 2ND TABLE 80D34310
13DE 0 D200      STO 2 0        STORE CHAIN        80D34320
13DF 0 D203      STO 2 3        ADDRESSES         80D34330
13E0 0 C119      LD 1 HC002-T   STORE 2ND          80D34340
13E1 0 D201      STO 2 1        TABLE BCW        80D34350
13E2 1 4C00 1494 BSC L CA10     GO TO START I/O   80D34360
*
13E4 1 6E00 151D XMRCS STX L2 XMADR  STORE XMIT TABLE ADDR 80D34370
13E6 1 6E00 1476 STX L2 XMRCK+1  80D34380
13E8 0 108D      SLT 13         80D34390
13E9 0 D1F7      STO 1 BCSAV-T  SAVE BYTE COUNT WORD 80D34400
*
13EA 0 1005      SLA 5           80D34410
13EB 0 1805      SRA 5           80D34420
13EC 0 9103      S 1 D2-T       CORRECT BC FOR PAD/ANY CH 80D34430
13ED 0 D1DD      STO 1 CRCNT-T SAVE XMIT CHARACTER CNT 80D34440
*
13EE 1 C400 081D LD L TADLY     SET-UP TRANSMIT    80D34450
13FO 0 D1F8      STO 1 XMTAC-T  TURNAROUND COUNT   80D34460
*
13F1 1 C480 12F1 LD I XMRCV     FETCH DATA ADDR   80D34470
13F3 1 7401 12F1 MDX L XMRCV,1  POINT TO NEXT PARAMETER 80D34480
13F5 0 D1DC      STO 1 CRADR-T  SAVE DATA ADDR    80D34490
*
13F6 0 C1A4      LD 1 INITL+1-T GET INITIALIZE IOCC 80D34500
13F7 0 1008      SLA 8           80D34510
13F8 1 4C28 142C BSC L XMRCC,Z+ BRANCH IF DIAG MODE 80D34520

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13FA 0 10A0      * SLT 32       CLEAR A AND Q      80D34700
*
13FB 0 C1DD      XMRCS LD 1 CRCNT-T  FETCH CHARACTER COUNT 80D34710
13FC 1 4C04 1402 BSC L XMR9,E     BR IF COUNT ODD     80D34720
*
13FE 1 C480 1521 LD I CRADR      FETCH TWO CHARACTERS 80D34730
1400 1 D201      STO 2 1        STORE IN XMIT TABLE 80D34740
1401 0 7005      MDX XMRCA      BRANCH              80D34750
*
1402 1 C480 1521 XMRCS LD I CRADR  FETCH TWO CHARACTERS 80D34760
1404 0 18C8      RTE 8           80D34770
1405 0 D201      STO 2 1        STORE IN XMIT TABLE 80D34780
1406 0 18C8      RTE 8           80D34790
*
1407 0 7201      XMRCA MDX 2 1    POINT TO NEXT XMIT TBL WD 80D34800
1408 1 7401 1521 MDX L CRADR,1   POINT TO NEXT TWO CHARS 80D34810
140A 1 74FE 1522 MDX L CRCNT,-2 DECREASE CHAR CNT BY TWO 80D34820
140C 0 70EE      MDX XMR8      BR IF MORE CHARACTERS 80D34830
*
140D 0 C126      LD 1 HFFFF-T    80D34840
140E 0 D201      STO 2 1        STORE PAD CHARACTER 80D34850
140F 0 7203      MDX 2 3        POINT TO NEXT TABLE 80D34860
1410 1 6E00 151E STX L2 RCADR    SAVE TABLE ADDR    80D34870
*
1412 0 C1F7      LD 1 BCSAV-T    CK BYTE COUNT WORD   80D34880
1413 1 4C10 1494 BSC L CA10,-    BR IF NO CHAIN      80D34890
*
1415 0 C1D9      LD 1 RCADR-T    SET UP              80D34900
1416 0 9100      S 1 D1-T       CHAIN              80D34910
1417 0 D2FF      STO 2 -1       ADDRESS           80D34920
*
1418 1 C480 12F1 LD I XMRCV     FETCH NEXT BCW      80D34930
141A 0 1002      SLA 2           80D34940
141B 1 4C30 138B BSC L XMR6+2,Z- BR IF RECEIVE NEXT 80D34950
*
141D 0 C1BC      LD 1 SYN-T     STORE SYN'S        80D34960
141E 0 D2FE      STO 2 -2      IN TRANSMIT        80D34970
141F 0 D201      STO 2 1       TABLE            80D34980
1420 1 C480 12F1 LD I XMRCV     FETCH NEXT BCW      80D34990
1422 1 4C20 138F BSC L XMR6A,Z  BR IF NOT ZERO     80D35000
*
1424 0 C2FF      LD 2 -1       SET UP 2ND         80D35010
1425 0 D202      STO 2 2       TABLE CHAIN ADDR 80D35020
*
1426 0 C11A      LD 1 HE002-T   STORE 2ND          80D35030
1427 0 D200      STO 2 0       TABLE BCW        80D35040
1428 1 7401 12F1 MDX L XMRCV,1  SET UP RETURN ADDR 80D35050
142A 1 4C00 1494 BSC L CA10     GO TO START I/O   80D35060
*
142C 1 C480 1521 XMRCS LD I CRADR  FETCH TWO CHARACTERS 80D35070
142E 1 4400 14A2 BSI L DCODE     BUILD DECODE WORDS 80D35080
1430 0 180F      SRA 15        80D35090
1431 0 D1DE      STO 1 TEMP1-T SET IND IF 1ST CHAR DLE 80D35100
*
1432 1 C480 1521 LD I CRADR     FETCH TWO CHARACTERS 80D35110
1434 0 1808      SRA 8         POSITION RIGHT CHAR 80D35120
1435 0 E911      OR 1 HFF00-T  SET DATA FLAG BITS 80D35130
1436 0 D201      STO 2 1       STORE IN XMIT TABLE 80D35140
1437 1 74FF 1522 MDX L CRCNT,-1 DECREASE CHARACTER COUNT 80D35150
1439 0 7001      MDX XMRCE     SKIP IF CNT NOT ZERO 80D35160
143A 0 7042      MDX XMRCL     BR IF COUNT ZERO   80D35170
*
143B 0 C10B      XMRCE LD 1 D51-T SET COUNTER A=51    80D35180
143C 0 D1CD      STO 1 CNTA-T  80D35190
*
143D 0 7202      XMRCS MDX 2 2  UPDATE XMIT TABLE ADDR 80D35200

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TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

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*
143E 0 C1CD      * LD 1 CNTA-T      80D35380.
143F 0 9100      S 1 D1-T      80D35390
1440 1 4C08 1475 BSC L XMRCK,+  DEGRE COUNT A BY ONE 80D35400
                                     BR IF ZERO      80D35410
*
1442 0 D1CD      * STO 1 CNTA-T    80D35420
1443 1 4C04 144A BSC L XMRCG,E  BR IF CNT A ODD 80D35430
                                     80D35440
*
1445 1 C480 1521 * LD I CRADR     80D35450
1447 1 7401 1521 MDX L CRADR,1  FETCH TWO CHARACTERS 80D35460
1449 0 7003      MDX XMRCG+3  POINT TO NEXT TWO CHARS 80D35470
                                     BR TO STORE RIGHT CHAR 80D35480
*
144A 1 C480 1521 * XMRCG LD I CRADR 80D35490
144C 0 1808      SRA 8          80D35500
144D 0 E911      OR 1 HFF00-T   POSITION TO STORE LEFT CH 80D35510
144E 0 D201      STO 2 1       SET DATA FLAG BITS 80D35520
144F 1 4400 14A2 BSI L DCODE   STORE CHAR IN XMIT TABLE 80D35530
                                     BUILD DECODE WORDS 80D35540
*
1451 1 74FF 1522 * XMRCH MDX L CRCNT,-1 80D35550
1453 0 700D      MDX XMR CJ  DEGRE CHARACTER COUNT 80D35560
                                     BR IF COUNT NOT ZERO 80D35570
*
1454 0 1085      * SLT 5         80D35580
1455 0 100E      SLA 14        CHECK 80D35590
1456 1 4C20 145B BSC L XMRCI,Z  END CHARACTER 80D35600
                                     BR IF ETB OR ETX 80D35610
*
1458 0 1093      * SLT 19        80D35620
1459 1 4C10 147D BSC L XMRCL,-  BR IF NOT ITB END CHAR 80D35630
*
145B 0 7201      * XMRCI MDX 2 1     80D35640
145C 1 C400 0815 LD L CODE     SAVE SPACE FOR ONE BCC 80D35650
145E 0 4818      BSC +-        CHECK EDIT 80D35660
145F 0 7201      MDX 2 1     SKIP IF USASCII 80D35670
1460 0 701C      MDX XMRCL  2ND BCC IF EBCDIC 80D35680
                                     BRANCH 80D35690
*
1461 0 C1DE      * XMR CJ LD 1 TEMP1-T 80D35700
1462 1 4C18 146C BSC L XMRJ1,+ BR IF NORMAL TEXT 80D35710
*
1464 0 1090      * SLT 16        80D35720
1465 1 4C10 143D BSC L XMRCF,-  CK FOR DLE CHAR 80D35730
                                     BR IF CHAR IS NOT DLE 80D35740
*
1467 0 C1DD      * LD 1 CRCNT-T   80D35750
1468 0 1801      SRA 1          CK IF DLE IS 80D35760
1469 0 4820      BSC Z          PART OF END SEQUENCE 80D35770
146A 0 7201      MDX 2 1     SKIP IF DLE END 80D35780
146B 0 70D1      MDX XMRCF  SAVE SPACE FOR DLE DIAG WD 80D35790
                                     GO TO PROCESS NEXT WD 80D35800
*
146C 0 1098      * XMRJ1 SLT 24     80D35810
146D 1 4C10 143D BSC L XMRCF,-  CK FOR ITB CHAR 80D35820
                                     BR IF NOT ITB 80D35830
*
146F 0 7201      * MDX 2 1     80D35840
1470 1 C400 0815 LD L CODE     SAVE SPACE FOR ONE BCC 80D35850
1472 0 4818      BSC +-        CK CODE 80D35860
1473 0 7201      MDX 2 1     SKIP IF USASCII 80D35870
1474 0 70C8      MDX XMRCF  SAVE SPACE FOR 2ND BCC 80D35880
                                     GO TO PROCESS NEXT CHAR 80D35890
*
1475 0 7402 0000 * XMRCK MDX L *-*,2 80D35900
1477 0 C1BC      LD 1 SYN-T   INCRE XMIT BYTE CNT BY 2 80D35910
1478 0 E911      OR 1 HFF00-T  INSERT TWO EXTRA 80D35920
1479 0 D201      STO 2 1     SYN CHARACTERS IN 80D35930
147A 0 D203      STO 2 3     XMIT TABLE TO 80D35940
147B 0 7202      MDX 2 2     PREVENT HARDWARE 80D35950
147C 0 70BE      MDX XMRCE  INSERTION 80D35960
                                     BRANCH 80D35970
*
147D 0 C126      * XMRCL LD 1 HFFFF-T 80D35980
147E 0 D203      STO 2 3     STORE PAD 80D35990
147F 0 D205      STO 2 5     CHARACTERS 80D36000
1480 0 7207      MDX 2 7     IN XMIT TABLE 80D36010
1481 1 6E00 151E STX L2 RCADR  POINT TO NEXT TABLE 80D36020
                                     SAVE NEXT TABLE ADDR 80D36030
                                     80D36040
                                     80D36050

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*
1483 0 C1F7      * LD 1 BCSAV-T    80D36060
1484 1 4C10 1494 BSC L CAIO,-  CK BCW 80D36070
                                     BR IF NO CHAIN 80D36080
*
1486 0 C1D9      * LD 1 RCADR-T    80D36090
1487 0 9100      S 1 D1-T     SET UP 80D36100
1488 0 D2FF      STO 2 -1     CHAIN 80D36110
                                     ADDRESS 80D36120
*
1489 1 C480 12F1 * LD I XMR CV     80D36130
148B 0 1002      SLA 2          80D36140
148C 1 4C30 13BB BSC L XMR6+2,Z- BR IF RECEIVE NEXT 80D36150
*
148E 0 C1BC      * LD 1 SYN-T     80D36160
148F 0 E911      OR 1 HFF00-T   REPLACE 80D36170
1490 0 D2FE      STO 2 -2     PADS WITH 80D36180
1491 0 D2FC      STO 2 -4     SYN CHARACTERS 80D36190
1492 1 4C00 13BB BSC L XMR6+2  GO TO PROCESS NEXT TABLE 80D36200
*
1494 0 099F      * CAIO XIO 1 CLEAR-T 80D36210
1495 0 09A5      XIO 1 ENABL-T  CLEAR CA 80D36220
1496 0 09AB      XIO 1 DSWS-T  ENABLE CA 80D36230
1497 0 09A3      XIO 1 INITL-T  RESET DSW 80D36240
                                     INITIALIZE CA 80D36250
*
1498 0 6500 0000 * INTX LDX L1 *-* 80D36260
149A 0 6600 0000 LDX L2 *-* 80D36270
149C 1 C400 081C LD L TSSW 80D36280
149E 1 4C98 0976 BSC I INT,+  EXIT INT IF NO TIMESHARE 80D36290
*
14A0 0 4C80 012D * BSC I START 80D36300
                                     GO TO MONITOR 80D36310
*
*****80D36320
*****80D36330
*****80D36340
*****80D36350
*****80D36360
*****80D36370
*****80D36380
*****80D36390
*****80D36400
*****80D36410
*****80D36420
*****80D36430
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*****80D36660
*****80D36670
*****80D36680
*****80D36690
*****80D36700
*****80D36710
*****80D36720
*****80D36730

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TCA TRANSMIT/RECEIVE TEST

14B7 1 F700 14F3	EOR	L3	ACK0-1	COMPARE TO CONTROL CHAR	80D36740
14B9 1 E400 156E	AND	L	HOOFF		80D36750
14BB 1 4C18 14D6	BSC	L	SCAN6,+-	BR IF CONT CHAR FOUND	80D36760
	*				80D36770
14BD 0 73FF	MDX	3	-1	SKIP IF NOT A CONT CHAR	80D36780
14BE 0 70F7	MDX		SCAN1	TRY NEXT CONTROL CHAR	80D36790
	*				80D36800
14BF 0 C01C	LD		CHAR1	FETCH CHARACTER	80D36810
14C0 0 4804	SCAN2 BSC		E	SKIP IF BIT 15 OFF	80D36820
14C1 0 7301	MDX	3	1	ADD ONE TO COUNT	80D36830
14C2 0 1801	SRA		1	DROP ONE BIT	80D36840
14C3 1 4C20 14C0	BSC	L	SCAN2,Z	BR IF MORE BITS	80D36850
	*				80D36860
14C5 0 6818	STX	3	CHAR3		80D36870
14C6 0 C017	LD		CHAR3	GET BIT COUNT IN ACC	80D36880
14C7 1 4C04 14CC	BSC	L	SCAN4,E	BRACH IF ODD COUNT	80D36890
	*				80D36900
14C9 0 6316	LDX	3	22		80D36910
14CA 0 73FA	SCAN3 MDX	3	-6	NOP IF EBCDIC CODE	80D36920
14CB 0 700A	MDX		SCAN6	GO TO POSITION DECODE BIT	80D36930
	*				80D36940
14CC 0 630F	SCAN4 LDX	3	15	SET X3 TO SEVEN	80D36950
14CD 0 C00E	LD		CHAR1	FETCH CHARACTER	80D36960
14CE 0 1008	SLA		8		80D36970
14CF 0 1001	SCAN5 SLA		1	NOP IF EBCDIC CODE	80D36980
14D0 0 180D	SRA		13		80D36990
14D1 1 F400 1546	EOR	L	D3		80D37000
14D3 1 4C18 14D6	BSC	L	SCAN6,+-	BR IF POSSIBLE STICK SEQ	80D37010
	*				80D37020
14D5 0 6316	LDX	3	22	NOT CONTROL CHARACTER	80D37030
	*				80D37040
14D6 0 10A0	SCAN6 SLT		32	CLEAR A AND Q	80D37050
14D7 1 C400 156D	LD	L	H0010	GET DECODE BIT AND	80D37060
14D9 0 1880	SRT	3	0	POSITION IN A OR Q	80D37070
14DA 1 4C80 1483	BSC	I	SCAN	RETURN	80D37080
	*				80D37090
	*				80D37100
14DC 0 0000	CHAR1 DC		--	TEMPORARY	80D37110
14DD 0 0000	CHAR2 DC		--	STORAGE	80D37120
14DE 0 0000	CHAR3 DC		--	AREA	80D37130
	*				80D37140
	*				80D37150
	*				80D37160
	*				80D37170
	*			CONSTANTS, INDICATORS, IOCC'S	80D37180
	*				80D37190
	*				80D37200
14E0 0000	IOCCS BSS	E	0	IOCC'S	80D37210
	*				80D37220
14E0 0 0000	SNSOP DC		--	SENSE OPERATING DSW	80D37230
14E1 0 0700	DC		/0700	IOCC	80D37240
	*				80D37250
14E2 0 0000	SNSBC DC		--	SENSE BYTE COUNT DSW	80D37260
14E3 0 0704	DC		/0704	IOCC	80D37270
	*				80D37280
14E4 0 0000	CLEAR DC		0	CLEAR CA	80D37290
14E5 0 0718	DC		/0718	IOCC	80D37300
	*				80D37310
14E6 0 0000	RESET DC		0	RESET CA	80D37320
14E7 0 0709	DC		/0709	IOCC	80D37330
	*				80D37340
14E8 1 176B	INITL DC		XMRCT	INITIALIZE TCA	80D37350
14E9 0 0500	DC		/0500	IOCC	80D37360
	*				80D37370
14EA 0 0000	ENABL DC		0	ENABLE TCA	80D37380
14EB 0 0710	DC		/0710	IOCC	80D37390
	*				80D37400
14EC 0 0000	TIMER DC		0	START CONTINUE TIMER	80D37410

TCA TRANSMIT/RECEIVE TEST

14ED 0 0720	DC		/0720	IOCC	80D37420
	*				80D37430
14EE 0 0000	ANSWR DC		0	ENABLE AUTO ANSWER	80D37440
14EF 0 0730	DC		/0730	IOCC	80D37450
	*				80D37460
14F0 0 0000	DSWRS DC		0	SENSE DSW WITH RESET	80D37470
14F1 0 0701	DC		/0701	IOCC	80D37480
	*				80D37490
	*				80D37500
	*			CONTROL CHARACTERS AND SEQUENCES	80D37510
	*				80D37520
14F2 0 0000	ACKS DC		--	CURRENT ACK	80D37530
14F3 0 0000	DC		--	NEXT ACK	80D37540
	*				80D37550
14F4 0 1070	ACK0 DC		/1070	EVEN ACKNOWLEDGE	80D37560
14F5 0 1061	ACK1 DC		/1061	ODD ACKNOWLEDGE	80D37570
	*				80D37580
14F6 0 106B	WACK DC		/106B	WAIT - POSITIVE ACK	80D37590
14F7 0 107C	RVI DC		/107C	REVERSE INTERRUPT	80D37600
	*				80D37610
14F8 0 1010	DLE DC		/1010	DATA LINK ESCAPE	80D37620
14F9 0 0101	SOH DC		/0101	START OF HEADING	80D37630
14FA 0 0202	STX DC		/0202	START OF TEXT	80D37640
14FB 0 2626	ETB DC		/2626	END OF BLOCK	80D37650
14FC 0 0303	ETX DC		/0303	END OF TEXT	80D37660
14FD 0 3737	EOT DC		/3737	END OF TRANSMISSION	80D37670
14FE 0 2D2D	ENQ DC		/2D2D	ENQUIRY	80D37680
14FF 0 3D3D	NAK DC		/3D3D	NEGATIVE ACKNOWLEDGE	80D37690
1500 0 1F1F	ITB DC		/1F1F	END OF INTERMEDIATE BLOCK	80D37700
1501 0 3232	SYN DC		/3232	SYNCHRONOUS IDLE	80D37710
1502 0 2E2E	ACK DC		/2E2E	POSITIVE ACKNOWLEDGEMENT	80D37720
	*				80D37730
1503 0 022D	TTD DC		/022D	TEMPORARY TIME DELAY	80D37740
1504 0 1037	DISC DC		/1037	DISCONNECT	80D37750
1505 0 0203	STETX DC		/0203	STX ETX SEQUENCE	80D37760
1506 0 0232	STSYN DC		/0232	STX SYN SEQUENCE	80D37770
1507 0 0227	STESC DC		/0227	STX ESC SEQUENCE	80D37780
1508 0 32C1	SYNAA DC		/32C1	SYN, A	80D37790
1509 0 61C1	PRNTA DC		/61C1	PRINTER SELECT, A	80D37800
150A 0 F4C1	PNCHA DC		/F4C1	PUNCH SELECT, A	80D37810
150B 0 1002	DLSTX DC		/1002	DLE STX SEQUENCE	80D37820
150C 0 1003	DLETX DC		/1003	DLE ETX SEQUENCE	80D37830
	*				80D37840
	*				80D37850
	*			PROGRAM INDICATORS	80D37860
	*				80D37870
150D 0 0000	PGRDY DC		--	PROGRAM READY	80D37880
150E 0 0000	PGBSY DC		--	PROGRAM BUSY	80D37890
150F 0 0000	TRCPT DC		--	TRACE TABLE POINTER	80D37900
1510 0 0000	WDCNT DC		--	WORD COUNTER	80D37910
1511 0 0000	MASK DC		--	DSW MASK	80D37920
1512 0 0000	CNTA DC		--	GENERAL COUNTER A	80D37930
1513 0 0000	INTTM DC		--	INTERRUPT WAIT TIMER	80D37940
1514 0 0000	ANYMS DC		--	MESSAGE STORED IND	80D37950
1515 0 0000	ANYER DC		--	ERROR OCCURED IND	80D37960
1516 0 0000	TEXT DC		--	TEXT RECEIVED IND	80D37970
1517 0 0000	X99ID DC		--	X=99 RFT RECEIVED	80D37980
1518 0 0000	ABORT DC		--	CANCEL OR TTD.RCVD IND	80D37990
1519 0 0000	NORCV DC		--	NOTHING RCVD IND	80D38000
151A 0 0000	RDYSW DC		--	D.S. READY INDICATOR	80D38010
151B 0 0000	RETRY DC		--	RETRY COUNTER	80D38020
151C 0 0000	CLRSW DC		--	CA CLEAR IND	80D38030
151D 0 0000	XMADR DC		--	XMIT TABLE ADDR	80D38040
151E 0 0000	RCADR DC		--	RECEIVE TABLE ADDR	80D38050
151F 0 0000	RCVBC DC		--	RECEIVE BYTE COUNT	80D38060
1520 0 0000	ENDCH DC		--	END CHARACTERS RECEIVED	80D38070
1521 0 0000	CRADR DC		--	GENERAL CHAR ADDR POINTER	80D38080
1522 0 0000	CRCNT DC		--	GENERAL CHAR COUNTER	80D38090

TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

1523 0 0000 TEMP1 DC *-* TEMPORARY STORAGE 80D38100
1524 0 0000 TEMP2 DC *-* TEMPORARY STORAGE 80D38110
1525 0 0000 TEMP3 DC *-* TEMPORARY STORAGE 80D38120
1526 0 0000 IDEND DC *-* ID SEQ END CHAR ADDR 80D38130
1527 0 0000 IDENQ DC *-* ID ENQ END SEQ 80D38140
1528 0 0000 IDACK DC *-* ID ACKO END SEQ 80D38150
1529 0 0000 IDNAK DC *-* ID NAK END SEQ 80D38160
152A 0 0000 CMODE DC *-* CONTROL MODE IND 80D38170
152B 0 0000 MASTR DC *-* MASTER STATUS IND 80D38180
152C 0 0000 MXFER DC *-* MSG TRANSFER STATE IND 80D38190
152D 0 0000 IDSW DC *-* ID MODE INDICATOR 80D38200
152E 0 0000 RTNND DC *-* CURRENT ROUTINE NUMBER 80D38210
152F 0 0000 RFTSL DC *-* RFT SELECTION STORAGE 80D38220
1530 0 0000 REQ DC *-* XMIT RFT REQUEST IND 80D38230
1531 0 0000 ALL DC *-* ALL RFT REQUEST IND 80D38240
1532 0 0000 IDCNT DC *-* ID SEQUENCE CHAR COUNT 80D38250
1533 0 0000 NKLSI DC *-* NAK SENT LAST XMIT IND 80D38260
1534 0 0000 TOSW DC *-* TIMEOUT OCCURED IND 80D38270
1535 0 0000 WACKS DC *-* RECEIVING WACKS IND 80D38280
1536 0 0000 YCNT DC *-* Y COUNTER 80D38290
1537 0 0000 OPTIN DC *-* OPTION SWITCH STORAGE 80D38300
1538 0 0000 STSW DC *-* START OF TEST IND 80D38310
1539 0 0000 ENDWS DC *-* END OF TEST IND 80D38320
153A 0 0000 RMADR DC *-* REMOTE UNIT ADDR 80D38330
153B 0 0000 CNTPT DC *-* TRACE CHAR CNT ADR POINTER 80D38340
153C 0 0000 BCSAV DC *-* BYTE CNT WD STORAGE 80D38350
153D 0 0000 XMTAC DC *-* TRANSMIT TURNAROUND COUNT 80D38360
153E 0 0000 RCTAC DC *-* RECEIVE TURNAROUND COUNT 80D38370
153F 0 0000 DC 0 80D38390
1540 0 0000 DC 0 80D38400
1541 0 0000 DPERR DC *-* OPTION ERROR PRINT IND 80D38410
1542 0 0000 DC 0 80D38420
1543 0 0000 DC 0 80D38430
1544 0 0000 STMSG DC *-* START MSG PRINT IND 80D38440
* 80D38450
* 80D38460
* 80D38470
* 80D38480
* 80D38490
* 80D38500
* 80D38510
* 80D38520
* 80D38530
* 80D38540
* 80D38550
* 80D38560
* 80D38570
* 80D38580
* 80D38590
* 80D38600
* 80D38610
* 80D38620
* 80D38630
* 80D38640
* 80D38650
* 80D38660
* 80D38670
* 80D38680
* 80D38690
* 80D38700
* 80D38710
* 80D38720
* 80D38730
* 80D38740
* 80D38750
* 80D38760
* 80D38770
* 80D38780
* 80D38790
* 80D38800
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* 80D38980
* 80D38990
* 80D39000
* 80D39010
* 80D39020
* 80D39030
* 80D39040
* 80D39050
* 80D39060
* 80D39070
* 80D39080
* 80D39090
* 80D39100
* 80D39110
* 80D39120
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* 80D39200
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* 80D39360
* 80D39370
* 80D39380
* 80D39390
* 80D39400
* 80D39410
* 80D39420
* 80D39430
* 80D39440
* 80D39450

155E 0 C002 HC002 DC /C002 80D38780
155F 0 E002 HE002 DC /E002 80D38790
1560 0 0080 H0080 DC /0080 80D38800
1561 0 2000 H2000 DC /2000 80D38810
1562 0 5503 H5503 DC /5503 80D38820
1563 0 5555 H5555 DC /5555 80D38830
1564 0 AA55 HAA55 DC /AA55 80D38840
1565 0 AAAA HAAAA DC /AAAA 80D38850
1566 0 32AA H32AA DC /32AA 80D38860
1567 0 7000 H7000 DC /7000 80D38870
1568 0 D001 HD001 DC /D001 80D38880
1569 0 D002 HD002 DC /D002 80D38890
156A 0 F840 HF840 DC /F840 80D38900
156B 0 FFFF HFFFF DC /FFFF 80D38910
156C 0 FFF9 HFFF9 DC /FFF9 80D38920
156D 0 0010 H0010 DC /0010 80D38930
156E 0 00FF H00FF DC /00FF 80D38940
156F 0 F000 HF000 DC /F000 80D38950
1570 0 3000 ZONED DC /3000 DECIMAL 80D38960
1571 0 B000 ZONEE DC /B000 ZONE FIELDS 80D38970
1572 0 1000 NOP NOP 0 80D38980
* 80D38990
* 80D39000
* 80D39010
* 80D39020
* 80D39030
* 80D39040
* 80D39050
* 80D39060
* 80D39070
* 80D39080
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* 80D39380
* 80D39390
* 80D39400
* 80D39410
* 80D39420
* 80D39430
* 80D39440
* 80D39450

VALID TEST MESSAGE NUMBERS

ROUTINE ADDRESS TABLE

RTTBL DC 0
DC RTN01 ROUTINE 01
DC RTN02 ROUTINE 02
DC RTN03 ROUTINE 03
DC RTN04 ROUTINE 04
DC RTN05 ROUTINE 05
DC RTN06 ROUTINE 06
DC RTN07 ROUTINE 07
DC RTN08 ROUTINE 08
DC RTN09 ROUTINE 09
DC RTN0A ROUTINE 0A
DC RTN0B ROUTINE 0B
DC RTN0C ROUTINE 0C
DC RTN0D ROUTINE 0D
DC RTN0E ROUTINE 0E
DC RTN0F ROUTINE 0F
DC RTN10 ROUTINE 10
DC RTN11 ROUTINE 11
DC RTN12 ROUTINE 12
DC RTN13 ROUTINE 13
DC RTN14 ROUTINE 14
DC RTN15 ROUTINE 15
DC RTN16 ROUTINE 16

TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

1617 0 F0F1 DC /F0F1 80D40820
 1618 0 F2F3 DC /F2F3 80D40830
 1619 0 F4F5 DC /F4F5 80D40840
 161A 0 F6F7 DC /F6F7 80D40850
 161B 0 F8F9 DC /F8F9 80D40860
 161C 0 FAFB DC /FAFB 80D40870
 161D 0 FCFD DC /FCFD 80D40880
 161E 0 FEFF DC /FEFF 80D40890
 161F 0 0300 DC /0300 80D40900
 * 80D40910
 * 80D40920
 TM12 DC /C2C3 B, C 80D40930
 DC /C4C5 D, E 80D40940
 DC /C6C7 F, G 80D40950
 DC /C8C9 H, I 80D40960
 DC /D1D2 J, K 80D40970
 DC /D3D4 L, M 80D40980
 DC /D5D6 N, O 80D40990
 DC /D7D8 P, Q 80D41000
 DC /D9E2 R, S 80D41010
 DC /E3E4 T, U 80D41020
 DC /E5E6 V, W 80D41030
 DC /E7E8 X, Y 80D41040
 DC /E9F0 Z, 0 80D41050
 DC /F1F2 1, 2 80D41060
 DC /F3F4 3, 4 80D41070
 DC /F5F6 5, 6 80D41080
 DC /F7F8 7, 8 80D41090
 DC /F903 9, ETX 80D41100
 * 80D41110
 * 80D41120
 * 80D41130
 * 80D41140
 * TABLE BUILD AREAS 80D41150
 * 80D41160
 * 80D41170
 * 80D41180
 * 80D41190
 * 80D41200
 * 80D41210
 * 80D41220
 * 80D41230
 * 80D41240
 * 80D41250
 * 80D41260
 * 80D41270
 * 80D41280
 * 80D41290
 * 80D41300
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 * 80D41390
 * 80D41400
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 * 80D41430
 * 80D41440
 * 80D41450
 * 80D41460
 * 80D41470
 * 80D41480
 * 80D41490
 * 80D41490

1ACC 0 0000
 1ACD 1 6500 1AD3
 1ACF 1 6D00 080A
 1AD1 0 4C80 012D
 1AD3 0 4480 0131
 1AD5 1 1ACD
 1AD6 1 0814
 1AD7 1 0975
 1AD8 1 080D
 1AD9 0 61EE
 1ADA 1 C400 0975
 1ADC 1 ED00 14F3
 1ADE 1 D500 14F3
 1AE0 0 7102
 1AE1 0 70F8
 1AE2 1 C400 0815
 1AE4 1 4C18 1B10
 1AE6 0 61E9
 1AE7 1 C500 1C65
 1AE9 1 D500 150B
 1AEB 0 7101
 1AEC 0 70FA
 1AED 1 C400 082B
 1AEF 1 F400 1C65
 1AF1 1 4C20 1AF7
 1AF3 1 C400 1C66
 1AF5 1 D400 082B
 1AF7 0 6105
 1AF8 1 6D00 1573
 1AFA 0 7101
 1AFB 1 6D00 1574
 1AFD 0 7101
 1AFE 1 6D00 1575
 1B00 0 7101
 1B01 1 6D00 1576
 1B03 1 C400 1C67
 1B05 1 D400 1632
 1B07 0 6500 FF71
 1B09 1 C500 1CF7
 1B0B 1 D500 1632
 1B0D 0 7101
 1B0E 0 70FA
 1B0F 0 7033
 1B10 1 C400 1572
 1B12 1 D400 14CA
 1B14 1 D400 14CF
 1B16 1 C400 156F
 1B18 1 D400 1635
 1B1A 1 D400 1570

TRCTB DC *-* START OF TRACE TABLE 80D41500
 * 80D41510
 * 80D41520
 * 80D41530
 * 80D41540
 * 80D41550
 * 80D41560
 * 80D41570
 * 80D41580
 * 80D41590
 * 80D41600
 * 80D41610
 * 80D41620
 * 80D41630
 * 80D41640
 * 80D41650
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 * 80D41700
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 * 80D41860
 * 80D41870
 * 80D41880
 * 80D41890
 * 80D41900
 * 80D41910
 * 80D41920
 * 80D41930
 * 80D41940
 * 80D41950
 * 80D41960
 * 80D41970
 * 80D41980
 * 80D41990
 * 80D42000
 * 80D42010
 * 80D42020
 * 80D42030
 * 80D42040
 * 80D42050
 * 80D42060
 * 80D42070
 * 80D42080
 * 80D42090
 * 80D42100
 * 80D42110
 * 80D42120
 * 80D42130
 * 80D42140
 * 80D42150
 * 80D42160
 * 80D42170

TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

181C 1 D400 1571	*	STO	L	ZONEE	EBCDIC CODE	80D42180
181E 0 6104		LDX	1	4	EBCDIC	80D42190
181F 1 6D00 1573		STX	L1	TMVLD	TEST MSG 04 IS VALID	80D42200
1821 0 7108		MDX	1	8		80D42210
1822 1 6D00 1574		STX	L1	TMVLD+1	TEST MSG 12 IS VALID	80D42220
1824 0 7101		MDX	1	1		80D42230
1825 1 6D00 1575		STX	L1	TMVLD+2	TEST MSG 13 IS VALID	80D42240
1827 0 7101		MDX	1	1		80D42250
1828 1 6D00 1576		STX	L1	TMVLD+3	TEST MSG 14 IS VALID	80D42260
182A 0 7101		MDX	1	1		80D42270
182B 1 6D00 1577		STX	L1	TMVLD+4	TEST MSG 15 IS VALID	80D42280
182D 0 7101		MDX	1	1		80D42290
182E 1 6D00 1578		STX	L1	TMVLD+5	TEST MSG 16 IS VALID	80D42300
1830 1 C400 0819	*	LD	L	TRANS	CK EDIT ENTRY	80D42310
1832 1 4C20 1843		BSC	L	RT00G,Z	BR IF NO TRANSPARENT TEXT	80D42320
1834 0 6113	*	LDX	1	19		80D42330
1835 1 6D00 1579		STX	L1	TMVLD+6	TEST MSG 19 IS VALID	80D42340
1837 0 6114		LDX	1	20		80D42350
1838 1 6D00 157A		STX	L1	TMVLD+7	TEST MSG 20 IS VALID	80D42360
183A 0 6115		LDX	1	21		80D42370
183B 1 6D00 157B		STX	L1	TMVLD+8	TEST MSG 21 IS VALID	80D42380
183D 0 6116		LDX	1	22		80D42390
183E 1 6D00 157C		STX	L1	TMVLD+9	TEST MSG 22 IS VALID	80D42400
1840 0 6102		LDX	1	2		80D42410
1841 1 6D00 157D		STX	L1	TMVLD+10	TEST MSG 02 IS VALID	80D42420
1843 1 C400 0829	* RT00G	LD	L	TM01	FETCH TEST MSG 01 COUNT	80D42430
1845 0 1004		SLA	4		DELETE	80D42440
1846 0 1804		SRA	4		4 HIGH	80D42450
1847 1 D400 0829		STO	L	TM01	ORDER BITS	80D42460
1849 1 9400 1547		S	L	D118		80D42470
184B 1 4C08 1850		BSC	L	RT00H,+	BR IF CNT LESS THAN 119	80D42480
184D 1 4400 1CF7	* EEE4	BSI	L	EDERR	PRINT ERROR MSG EEE4	80D42490
184F 0 EEE4		DC		/EEE4		80D42500
1850 1 6680 0829	* RT00H	LDX	12	TM01	XR2=TEST MSG 01 CHAR CNT	80D42510
1852 1 6500 082A		LDX	L1	TM01+1	XR1=TEST MSG 01 ADDR	80D42520
1854 0 C100	*	LD	1	0	GET 1ST TWO CHARACTERS	80D42530
1855 1 4400 14A2		BSI	L	DCODE	BUILD DECODE WORDS	80D42540
1857 1 4C28 187D	*	BSC	L	RT00M,Z+	BR IF TRANSPARENT TEXT	80D42550
1859 0 1002		SLA	2			80D42560
185A 1 4C10 184D	*	BSC	L	EEE4,-	BR IF 1ST CHAR NOT STX	80D42570
185C 0 72FF	*	MDX	2	-1	DECRE CHAR CNT	80D42580
185D 0 7001		MDX		**1	BR IF OK	80D42590
185E 0 70EE		MDX		EEE4	BR IF CNT LESS THAN 2	80D42600
185F 0 1090	* RT00J	SLT	16		GET DECODE FOR 2ND CHAR	80D42610
1860 0 72FF		MDX	2	-1	DECRE CHAR CNT	80D42620
1861 0 7001		MDX		**1	BR IF NOT END	80D42630
1862 0 700C		MDX		RT00K	BR IF END OF TM01 TABLE	80D42640
1863 0 1804	*	SRA	4			80D42650
1864 1 4C04 184D		BSC	L	EEE4,E	BR IF USASCII PARITY ERR	80D42660
1866 0 1804	*	SRA	4			80D42670
1867 1 4C20 184D		BSC	L	EEE4,Z	BR IF CONTROL CHAR IN TBL	80D42680
1869 0 7101	*	MDX	1	1	INCREMENT ADDRESS	80D42690
186A 0 C100		LD	1	0	FETCH NEXT TWO CHARACTERS	80D42700
186B 1 4400 14A2		BSI	L	DCODE	BUILD DECODE WORDS	80D42710

186D 0 72FF	*	MDX	2	-1	DECREMENT CHAR COUNT	80D42860
186E 0 7006		MDX		RT00L	BR IF NOT END	80D42870
186F 0 180B	* RT00K	SRA	11		CHECK FOR ETX OR	80D42880
1870 0 100E		SLA	14		ETB END CHARACTER	80D42890
1871 1 4C20 189A		BSC	L	RT00Q,Z	BR IF PROPER END CHAR	80D42900
1873 1 4C00 184D	*	BSC	L	EEE4	BR - IMPROPER END	80D42910
1875 0 1804	* RT00L	SRA	4			80D42920
1876 1 4C04 184D		BSC	L	EEE4,E	BR IF USASCII PARITY ERR	80D42930
1878 0 1804	*	SRA	4			80D42940
1879 1 4C18 185F		BSC	L	RT00J,+	BR IF NOT CONTROL CHAR	80D42950
187B 1 4C00 184D	* RT00M	LD	L	CODE	GET CODE EDIT WORD	80D42960
187D 1 C400 0815		BSC	L	EEE4,Z	BR IF USASCII	80D42970
187F 1 4C20 184D	*	SLT	18		CHECK START CHARACTERS	80D42980
1881 0 1092		BSC	L	EEE4,-	BR IF NOT DLE STX	80D42990
1882 1 4C10 184D	*	MDX	2	-3	DECRE CHAR CNT BY 3	80D43000
1884 0 72FD		MDX		**1	BR IF COUNT OK	80D43010
1885 0 7001		MDX		EEE4	BR IF CNT LESS THAN 4	80D43020
1886 0 70C6	* RT00N	MDX	1	1	INCREMENT ADDRESS	80D43030
1887 0 7101		MDX	2	-1	DECREMENT CHAR COUNT	80D43040
1888 0 72FF		MDX		RT00D	BR IF NOT END	80D43050
1889 0 7002	*	LD	1	0	GET END CHARACTERS	80D43060
188A 0 C100		MDX		RT00P	BR TO CHECK	80D43070
188B 0 7006	* RT00D	MDX	2	-1	DECREMENT CHAR COUNT	80D43080
188C 0 72FF		MDX		RT00N	BR IF NOT END	80D43090
188D 0 70F9	*	LD	1	1	FETCH AND	80D43100
188E 0 C101		SRT	16		COMBINE	80D43110
188F 0 1890		LD	1	0	TWO END	80D43120
1890 0 C100		SLT	8		CHARACTERS	80D43130
1891 0 1088	* RT00P	BSI	L	DCODE	BUILD DECODE WORD	80D43140
1892 1 4400 14A2		BSC	L	EEE4,-	BR IF NOT PROPER END	80D43150
1894 1 4C10 184D	*	SLT	19			80D43160
1896 0 1093		SRA	14			80D43170
1897 0 180E		BSC	L	EEE4,+	BR IF NOT PROPER END	80D43180
1898 1 4C18 184D	* RT00Q	LD	L	TRIES	FETCH EDIT RETRY COUNT	80D43190
189A 1 C400 0818		SLA	1		DELETE	80D43200
189C 0 1001		SRA	1		SIGN BIT	80D43210
189D 0 1801		STO	**1			80D43220
189E 0 D001		LDX	L1	**	XR1=RETRY COUNT	80D43230
189F 0 6500 0000		BSC	+		SKIP IF COUNT NOT ZERO	80D43240
18A1 0 4808		LDX	1	8	COUNT ZERO - CHANGE TO 8	80D43250
18A2 0 6108		STX	L1	TRIES	STORE RETRY COUNT	80D43260
18A3 1 6D00 0818	*	LDX	L1	POLID	XR1=POLL OR ID SEQ ADDR	80D43270
18A5 1 6500 081F	* RT00R	LDX	3	12		80D43280
18A7 0 630C		LD	L	NET	CHECK NETWORK TYPE	80D43290
18A8 1 C400 0816		BSC	L	RT00W,+	BR IF PT-TO-PT NON-SWT	80D43300
18AA 1 4C18 1C11	*	SRA	1			80D43310
18AC 0 1801		BSC	2		SKIP IF NOT MULTIPOINT	80D43320
18AD 0 4820		MDX	3	1		80D43330
18AE 0 7301						80D43340

80D42860
80D42870
80D42880
80D42890
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80D42980
80D42990
80D43000
80D43010
80D43020
80D43030
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80D43070
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80D43090
80D43100
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80D43120
80D43130
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80D43500
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80D43520
80D43530

TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

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*      LD      1 0      FETCH CHAR COUNT FOR      80D43540
18AF 0 C100      SLA    3 0      POLL OR ID SEQ AND      80D43550
18B0 0 1300      SRA    3 0      DELETE 12 HIGH ORDER      80D43560
18B1 0 1800      STO    1 0      BITS FOR PT-TO-PT OR      80D43570
18B2 0 D100      STO    **1      13 BITS FOR MULTI-PT      80D43580
18B3 0 D001
*      LDX    L2 *-+    XR2=CHAR COUNT      80D43600
18B4 0 6600 0000 MDX    1 1      POINT TO 1ST TWO CHARS      80D43610
18B6 0 7101
*      S      L D1      80D43620
18B7 1 9400 1545 BSC    L EEE5,+    BR IF CNT LESS THAN 2      80D43630
18B9 1 4C08 18BC
*      MDX      RT00S    BR TO CONTINUE      80D43640
18BB 0 7003
*      EEE5 BSI    L EDERR PRINT ERROR MSG EEE5      80D43650
18BC 1 4400 1CF7 DC      /EEE5
18BE 0 EEE5
*      RT00S LD      1 0      FETCH TWO CHARACTERS      80D43660
18BF 0 C100      BSI    L DCODE    BUILD DECODE WORDS      80D43670
18C0 1 4400 14A2
*      SRA      4      80D43680
18C2 0 1804      BSC    L EEE5,E    BR IF PARITY ERROR      80D43690
18C3 1 4C04 18BC
*      SRA      2      80D43700
18C5 0 1802      BSC    L EEE5,Z    BR IF CONT CHAR      80D43710
18C6 1 4C20 18BC
*      MDX      2 -1    DECRE CHARACTER COUNT      80D43720
18C8 0 72FF      MDX      RT00T    BR IF MORE CHARACTERS      80D43730
18C9 0 7007
*      LD      L ENQ    PREPARE TO      80D43740
18CA 1 C400 14FE SRT      8      STORE ENQ      80D43750
18CC 0 1888      LD      1 0      AS LAST CHARACTER      80D43760
18CD 0 C100      SRA      8      OF ADDRESS SEQUENCE      80D43770
18CE 0 1808      SLT      8      BRANCH      80D43780
18CF 0 1088      MDX      RT00U    BR IF PARITY ERROR      80D43790
18D0 0 7008
*      RT00T SLT     12    GET DECODE FOR RH CHAR      80D43800
18D1 0 108C      BSC    L EEE5,E    BR IF MORE CHARACTERS      80D43810
18D2 1 4C04 18BC
*      SRA      2      80D43820
18D4 0 1802      BSC    L EEE5,Z    BR IF CONT CHAR      80D43830
18D5 1 4C20 18BC
*      MDX      1 1    POINT TO NEXT TWO CHARS      80D43840
18D7 0 7101      MDX     2 -1    DECRE CHAR CNT      80D43850
18D8 0 72FF      MDX     RT00S    BR IF MORE TO CHECK      80D43860
18D9 0 70E5      LD      L ENQ    GET ENQ CHARACTER      80D43870
18DA 1 C400 14FE
*      RT00U STO     1 0    STORE ADDR END SEQUENCE      80D43880
18DC 0 D100      MDX     **1      NOP AFTER FIRST PASS      80D43890
18DD 0 7001      MDX     RT00X    BR IF 2ND PASS      80D43900
18DE 0 7043
*      MDX    L RT00U+1,-1 SET 2ND PASS SWITCH      80D43910
18DF 1 74FF 18DD LD      L NET      CK NETWORK TYPE      80D43920
18E1 1 C400 0816 SRA      1      80D43930
18E3 0 1801      BSC    L RT00V,+  BR IF PT-TO-PT      80D43940
18E4 1 4C08 18E9
*      LDX    L1 SELID XR1=SELECTION ADDR LOC      80D43950
18E6 1 6500 0824 MDX     RT00R    BRANCH      80D43960
18E8 0 70BE
*      RT00V STX    L1 IDEND SAVE LAST ID SEQ CHAR      80D43970
18E9 1 6D00 1526 LD      1 0      80D43980
18EB 0 C100      STO     L IDENQ  SAVE ID ENQ END      80D43990
18EC 1 D400 1527
*      SRT      24      80D44000
18EE 0 1898      LD      L ACKO    BUILD AND      80D44010
18EF 1 C400 14F4 RTE      8      SAVE      80D44020
18F1 0 18C8      STO     L IDACK  ID ACKO END      80D44030
18F2 1 D400 1528

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18F4 0 18D0      RTE     16      SEQUENCE      80D44220
18F5 0 D101      STO     1 1      80D44230
*      RTE     8      BUILD AND      80D44240
18F6 0 18C8      LD      L NAK    SAVE      80D44250
18F7 1 C400 14FF LD      L NAK    ID NAK END      80D44260
18F9 0 18C8      RTE     8      SEQUENCE      80D44270
18FA 1 D400 1529 STO     L IDNAK  80D44280
*      LD      L POLID CHECK ID SEQ      80D44290
18FC 1 C400 081F SLA     15      CHARACTER COUNT      80D44300
18FE 0 100F      BSC    L RT00Y,Z BR IF ODD COUNT      80D44310
18FF 1 4C20 1C09
*      LD      L ACKO BUILD AND SAVE      80D44320
1C01 1 C400 14F4 STO     L IDACK ID ACKO END SEQUENCE      80D44330
1C03 1 D400 1528 LD      L NAK    BUILD AND SAVE      80D44340
1C05 1 C400 14FF STO     L IDNAK ID NAK END SEQUENCE      80D44350
1C07 1 D400 1529
*      RT00Y LD      L POLID 80D44360
1C09 1 C400 081F A      L D3      80D44370
1C0B 1 8400 1546 OR      L HE000 80D44380
1C0D 1 EC00 1557 STO     L IDCNT 80D44390
1C0F 1 D400 1532
*      RT00W LD      L BGIN+2 80D44400
1C11 1 C400 1D0F EOR     L PEND 80D44410
1C13 1 F400 1FFB BSC     L EEE6,Z+ BR IF PROG LOAD ACROSS 32K 80D44420
1C15 1 4C28 1C1F
*      LD      L NOP 80D44430
1C17 1 C400 1572 STO     L STRT 80D44440
1C19 1 D400 087F STO     L STRT+1 OF EDIT CARD CHECK      80D44450
1C1B 1 D400 0880 BSC     L STRT 80D44460
1C1D 1 4C00 087F
*      EEE6 BSI    L EDERR PRINT ERROR MSG EEE6      80D44470
1C1F 1 4400 1CF7 DC      /EEE6
*      RT00X LDX     13 RFTCT CALCULATE AND      80D44480
1C21 0 EEE6      MDX     13 SELID SAVE RFT MSG      80D44490
1C22 1 6780 0E11 STX     L3 RFTCT LENGTH      80D44500
1C24 1 7780 0824
*      LDX     L1 T      XR1=CONSTANT TABLE ADDR      80D44510
1C26 1 6F00 0E11
*      LD      L1 T      80D44520
1C28 1 6500 1545 LD      L SELID 80D44530
1C2A 1 C400 0824 BSI     L ZONE 80D44540
1C2C 1 4400 129D SLA     8      80D44550
1C2E 0 1008      STO     L NADDR 80D44560
1C2F 1 D400 1635
*      LD      L SELID+1 80D44570
1C31 1 C400 0825 SRA     8      80D44580
1C33 0 1808      OR      L NADDR MOVE      80D44590
1C34 1 EC00 1635 STO     L NADDR SELECTION      80D44600
1C36 1 D400 1635 LD      L SELID+2 ADDRESS      80D44610
1C38 1 C400 0826 SRT     16      INTO      80D44620
1C3A 0 1890      LD      L SELID+1 RFT MSG      80D44630
1C3B 1 C400 0825 SLT     8      80D44640
1C3D 0 1088      STO     L NADDR+1 80D44650
1C3E 1 D400 1636 LD      L SELID+4 80D44660
1C40 1 C400 0828 SRA     8      80D44670
1C42 0 1808      SRT     8      80D44680
1C43 0 1888      LD      L SELID+3 80D44690
1C44 1 C400 0827 RTE     8      80D44700
1C46 0 18C8      STO     L NADDR+2 80D44710
1C47 1 D400 1637 SLT     16      80D44720
1C49 0 1090      STO     L NADDR+3 80D44730
1C4A 1 D400 1638 BSC     L RT00W 80D44740
1C4C 1 4C00 1C11
*      -----
*      USASCII CONTROL CHARACTERS      80D44750
*      ACK0A DC    /10B0  EVEN ACKNOWLEDGE      80D44760
*      ACK1A DC    /1031  ODD ACKNOWLEDGE      80D44770
1C4E 0 1080
1C4F 0 1031

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TCA TRANSMIT/RECEIVE TEST

TCA TRANSMIT/RECEIVE TEST

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*
1C50 0 1038 WACKA DC /1038 WAIT - POSITIVE ACK 80D44900
1C51 0 10BC RVIA DC /10BC REVERSE INTERRUPT 80D44910
*
1C52 0 1010 DLEA DC /1010 DATA LINK ESCAPE 80D44930
1C53 0 0101 SOHA DC /0101 START OF HEADING 80D44940
1C54 0 0202 STXA DC /0202 START OF TEXT 80D44950
1C55 0 9797 ETBA DC /9797 END OF BLOCK 80D44960
1C56 0 8383 ETXA DC /8383 END OF TEXT 80D44970
1C57 0 0404 EOTA DC /0404 END OF TRANSMISSION 80D44980
1C58 0 8585 ENQA DC /8585 ENQUIRY 80D44990
1C59 0 1515 NAKA DC /1515 NEGATIVE ACKNOWLEDGE 80D45000
1C5A 0 1F1F ITBA DC /1F1F END OF INTERMEDIATE BLOCK 80D45010
1C5B 0 1616 SYNA DC /1616 SYNCHRONOUS IDLE 80D45020
1C5C 0 8686 ACKA DC /8686 POSITIVE ACKNOWLEDGEMENT 80D45030
*
1C5D 0 0285 TTDA DC /0285 TEMPORARY TIME DELAY 80D45040
1C5E 0 1004 DISCA DC /1004 DISCONNECT 80D45050
1C5F 0 0283 DC /0283 STX ETX SEQUENCE 80D45060
1C60 0 0216 DC /0216 STX SYN SEQUENCE 80D45070
1C61 0 029B DC /029B STX ESC SEQUENCE 80D45080
1C62 0 16C1 DC /16C1 SYN, A 80D45090
1C63 0 51C1 DC /51C1 PRINT SELECT, A 80D45100
1C64 0 34C1 DC /34C1 PUNCH SELECT, A 80D45110
*
1C65 0 8003 TMO1E DC /8003 80D45120
1C66 0 8083 TMO1A DC /8083 80D45130
1C67 0 0125 RFTA DC /0125 SOH % 80D45140
*
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* USASCII TEST MESSAGE TABLES
*
1C68 0 0077 TM5 DC 119 80D45150
1C69 0 1680 DC /1680 80D45160
1C6A 0 0708 DC /0708 80D45170
1C6B 0 898A DC /898A 80D45180
1C6C 0 088C DC /088C 80D45190
1C6D 0 0D0E DC /0D0E 80D45200
1C6E 0 8F91 DC /8F91 80D45210
1C6F 0 9213 DC /9213 80D45220
1C70 0 9498 DC /9498 80D45230
1C71 0 191A DC /191A 80D45240
1C72 0 981C DC /981C 80D45250
1C73 0 9D9E DC /9D9E 80D45260
1C74 0 20A1 DC /20A1 80D45270
1C75 0 A223 DC /A223 80D45280
1C76 0 A425 DC /A425 80D45290
1C77 0 26A7 DC /26A7 80D45300
1C78 0 A829 DC /A829 80D45310
1C79 0 2AAB DC /2AAB 80D45320
1C7A 0 2CAD DC /2CAD 80D45330
1C7B 0 AE2F DC /AE2F 80D45340
1C7C 0 B031 DC /B031 80D45350
1C7D 0 32B3 DC /32B3 80D45360
1C7E 0 34B5 DC /34B5 80D45370
1C7F 0 B637 DC /B637 80D45380
1C80 0 38B9 DC /38B9 80D45390
1C81 0 BA3B DC /BA3B 80D45400
1C82 0 BC3B DC /BC3B 80D45410
1C83 0 3EBF DC /3EBF 80D45420
1C84 0 40C1 DC /40C1 80D45430
1C85 0 C243 DC /C243 80D45440
1C86 0 C445 DC /C445 80D45450
1C87 0 46C7 DC /46C7 80D45460
1C88 0 C849 DC /C849 80D45470
1C89 0 4ACB DC /4ACB 80D45480
1C8A 0 4CCD DC /4CCD 80D45490
1C8B 0 CE4F DC /CE4F 80D45500

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1C8C 0 D051 DC /D051 80D45580
1C8D 0 52D3 DC /52D3 80D45590
1C8E 0 54D5 DC /54D5 80D45600
1C8F 0 D657 DC /D657 80D45610
1C90 0 58D9 DC /58D9 80D45620
1C91 0 DA5B DC /DA5B 80D45630
1C92 0 DC5D DC /DC5D 80D45640
1C93 0 5EDF DC /5EDF 80D45650
1C94 0 E061 DC /E061 80D45660
1C95 0 62E3 DC /62E3 80D45670
1C96 0 64E5 DC /64E5 80D45680
1C97 0 E667 DC /E667 80D45690
1C98 0 68E9 DC /68E9 80D45700
1C99 0 EA6B DC /EA6B 80D45710
1C9A 0 EC6D DC /EC6D 80D45720
1C9B 0 6EEF DC /6EEF 80D45730
1C9C 0 70F1 DC /70F1 80D45740
1C9D 0 F273 DC /F273 80D45750
1C9E 0 F475 DC /F475 80D45760
1C9F 0 76F7 DC /76F7 80D45770
1CA0 0 F879 DC /F879 80D45780
1CA1 0 7AFB DC /7AFB 80D45790
1CA2 0 7CFD DC /7CFD 80D45800
1CA3 0 FE7F DC /FE7F 80D45810
1CA4 0 8300 DC /8300 80D45820
1CA5 0040 BSS 64 80D45830
*
1CE5 0 C243 TM6 DC /C243 B, C 80D45840
1CE6 0 C445 DC /C445 D, E 80D45850
1CE7 0 46C7 DC /46C7 F, G 80D45860
1CE8 0 C849 DC /C849 H, I 80D45870
1CE9 0 4ACB DC /4ACB J, K 80D45880
1CEA 0 4CCD DC /4CCD L, M 80D45890
1CEB 0 CE4F DC /CE4F N, O 80D45900
1CEC 0 D051 DC /D051 P, Q 80D45910
1CED 0 52D3 DC /52D3 R, S 80D45920
1CEE 0 54D5 DC /54D5 T, U 80D45930
1CEF 0 D657 DC /D657 V, W 80D45940
1CF0 0 58D9 DC /58D9 X, Y 80D45950
1CF1 0 DAB0 DC /DAB0 Z, 0 80D45960
1CF2 0 3132 DC /3132 1, 2 80D45970
1CF3 0 8334 DC /8334 3, 4 80D45980
1CF4 0 B5B6 DC /B5B6 5, 6 80D45990
1CF5 0 3738 DC /3738 7, 8 80D46000
1CF6 0 B983 DC /B983 9, ETX 80D46010
*
-----
* PRINT EDIT ERROR MESSAGE
*
1CF7 0 0000 EDERR DC ** ENTER ON EDIT ERROR 80D46020
*
1CF8 1 C480 1CF7 LD I EDERR GET MID 80D46030
1CF9 0 D011 STO EDMSG+2 PUT IN MSG STRING 80D46040
*
1CFB 1 6500 1D01 LDX L1 EDER1 SET MLSCF ENTRY TO 80D46050
1CFD 1 6D00 080A STX L1 MLSCF EDIT ERROR LOG CALL 80D46060
1CFF 0 4C80 012D BSC I START GO TO MONITOR 80D46070
*
1D01 0 4480 012F EDER1 BSI I LOG PRINT EDIT ERROR MESSAGE 80D46080
1D03 1 1D0A DC EDMSG MSG STRING ADDR 80D46090
1D04 1 1CF8 DC EDERR+1 BUSY RETURN 80D46100
1D05 1 1D08 DC WTCA TERM ADDR 80D46110
*
1D06 0 4C80 012D BSC I START GO TO MONITOR 80D46120
*
1D08 0 30CA WTCA WAIT /CA ERROR WAIT 80D46130
1D09 0 70FE MDX WTCA INCORRECT PROGRAM LOAD 80D46140

```

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*-----*
*          EDIT ERROR MESSAGE STRING
*
EDMSG DC      0      NO MODIFIERS
      DC      0
      DC      *-#      MID
*
*
*****
*          END CARD XFER AND RESERVED CORE
*
*****
*
1D0D 0 4480 012C  BGIN BSI I BEGIN GO TO MONITOR BEGIN RTN
1D0F 1 07FF      DC   PID PST ADDRESS
*
      ORG  PID+/17F8 RESERVE 8K OF CORE
*
      DC      0
      DC      0
      DC      0
      DC      0
1FFB 1 1FF6      PEND DC  PEND-5
*
1FFC 1D0D      END BGIN
      NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY

```

```

80D46260
80D46270
80D46280
80D46290
80D46300
80D46310
80D46320
80D46330
80D46340
80D46350
80D46360
80D46370
80D46380
80D46390
80D46400
80D46410
80D46420
80D46430
80D46440
80D46450
80D46460
80D46470
80D46480
80D46490
80D46500
80D46510

```

```

AAA1 0B36 0B04
AAA2 0B34 0B28 0B2F 0C8A
AAA3 0B21 0C98
AAA4 0B30 0B28
AAA5 0B15
AAA6 0B19 0B13
AAA7 0B1D
AA01 1038
AA01A 1044
AA02 0F50
ABORT 1518 0995 0AC0 0CB9 0CE7 0DBE 0F9E 0FBA 0FC1
ACK 1502
ACKA 1C5C
ACKS 14F2 0B72 0D96 0D9F 0EB9 0F59 0FCF 0FD1 101B
ACKO 14F4 0B71 0BAD 0CAE 0D94 0D9D 0E33 0EB8 0F07 0FOA 0F37 0F3A 14B7 1AE9
      1BEF 1C01
ACKOA 1C4E 1AE7
ACK1 14F5 0E4F 0E74 0F0B 0F3B
ACK1A 1C4F
ADCK1 0C6D 0C77 0C84
ADCK2 0C7C 0C6B
ADRCK 0C66 0C4C 0C5C 0C71 0C78 0C7A 0C82 0EB4
ALL 1531 121D 1228 124B 1257
ANSRQ 0B1A 0B1A
ANSWR 14EE 138D
ANYER 1515 0993 0A37 0A3E 0AED 0B43 0B8E 0BCE 0BEC 0C0B 0C37 0CB2 0DB5 0E17
      0E77 0EA6 0EE7 0EF7 0F21 0F6E 0F98 101E 106E 107F 12D1
      0992 12E9 12F6
ANYMS 1514
A00A 0B50
A00C 0B91
A00D 0B95
A00E 0BA0
A00F 0B8B 0B9E
A001 12E1
A003 10C8
A004 10AD
A006 0AEC
A008 0B46
A009 0B4A
A01A 0C0E
A01B 0C12
A01C 0C21 0C16
A01E 0C3A
A01F 0C48 0C39 0C3D
A010 0B80
A011 0B86
A013 0BD5
A014 0BD1
A015 0BDC 0BD3 0BD8
A017 0BF2 0BEE
A018 0BF5 0BFO
A02A 0E2D
A02B 0E48 0E42
A02C 0E52 0E4C
A02E 0E88 0E82
A020 0C4E
A021 0C5E
A022 0C64 0C5D
A025 0D8C 0D25 0D4C 0D62 0D6C 0D83
A027 0DC1
A028 0DCE 0DCA
A03B 1043 103F 10C6
A03C 1037
A03E 1071
A03F 107E
A030 0ECF 0EB6
A031 0EB7 0EC2
A033 0F00

```

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A034 OF0E OF08
A036 OF42 OF3C
A037 OF3E OF38
A039 OFCC OFE9
BCSAV 153C 13E9 1412 1483
BEGIN 012C 1D0D
BGIN 1D0D 1C11 1FFC
CAIO 1494 13D5 13E2 1413 142A 1484
CHAR1 14DC 14B4 14B6 14BF 14CD
CHAR2 14DD 14A4 14A7 14A9 14AE
CHAR3 14DE 14C5 14C6
CKRC 0A54
CKRCV 0A4A 0A2E
CKRC1 0A59 0A58 0A68
CKTRY 1084 0859 08A5 08FC OCCA OCDA OCDF OCEB OCF5 OE3B OE66 OE85 OE97 OF11
OF86 OF91 1089
CKTR1 109C 1098
CKXMT 09F2 09E7 09EC 0A0C
CKXM1 09F4 0A17
CKXM2 09FF 09F8
CKXM3 0A04 09FE
CKXM4 0A08 0A0E 0A14
CKXM5 0A0E 0A07
CKXM6 0A16 0A0B
CLEAR 14E4 1494
CLRSW 151C 09CE 080B 1378 1396
CMODE 152A 0AE7 0806 0839 0858 0862 0879 0C19 0C22 0C25 0EC9 1047 1074 10BC
CNTA 1512 09F3 0A09 0A4D 0A6F 0A83 0A8B 0C69 0C75 0C7C 0FDB 0FE6 12E6 12FC
1302 1322 133F 143C 143E 1442
CNTPT 153B 12FA 1305 131C 1342
CODE 0815 0A05 145C 1470 1AE2 1B7D
CRADR 1521 13F5 13FE 1402 1408 142C 1432 1445 1447 144A
CRCNT 1522 13ED 13FB 140A 1437 1451 1467
DCDX 14AF 14A3
DCHXX 129B 1296
DCHX1 1297 1293
DCODE 14A2 0AAD 0AB9 0C40 0F65 12A3 139D 142E 144F 14B1 1855 186B 1892 18C0
DDEF 0814 0878 088F 089C 0AD2 0ADD 1AD6
DECHX 128C 0D03 0D08 0DF7 0E03 1203 1233 1271 129B
DISC 1504 1034 107D 10AA
DISCA 1C5E
DLAY 081E 0EDC
DLE 14F8 0D4A 0D5E 0D68
DLEA 1C52
DLETX 150C 10FC 115A 117E 119C 11BA
DLSTX 150B 10F2 1152 116A 1183 11A1
DSWCK 098E 09B1 0988
DSWRS 14F0 09AD 1496
DUMP 095D 0907 0909 0914 091D 0920 0922 0973
DUMP1 0971 0962
DVA 0975 089D 0ADE 1AD7 1ADA
DXEQ 086D 0808 087A 087C 08CD
D001 0F95 0F62 0F68
D002 0F15
D003 0965
D1 1545 0905 0913 093F 09A3 09AB 0A80 0A8C 0D50 0DA6 0E07 102F 104E 1097
10A5 10F6 1178 1196 1184 1243 1266 1280 1284 130F 1313 13D9 1416
143F 1487 18B7
D10 154C 0F5E 124D 1292 1298 13CF
D118 1547 1849
D14 154A 0918 091C
D19 154D 123B
D2 1548 08CB 090F 09E6 09EB 0D19 0FDA 13CC 13EC
D29 154E 1329
D3 1546 120A 14D1 1C0B
D5 1549 0EE0
D50 154F 13A7
D51 1550 143B

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D8 154B 0D37
D99 1551 0D0D 0D27 1207
EDERR 1CF7 1B4D 1B8C 1C1F 1CF8 1D04
EDER1 1D01 1CFB
EDMSG 1D0A 1CFA 1D03
EEE1 120D
EEE2 1283 1264 1273 127D
EEE4 1B4D 1B5A 1B5E 1B64 1B67 1B73 1B76 1B7B 1B7F 1882 1886 1894 1898
EEE5 1B8C 1B89 1BC3 1BC6 1BD2 1BD5
EEE6 1C1F 1C15
EE01 08BE
EE02 0ECA
EE03 1056 1053
EE04 109D 108E 1093 109B
EE05 10CC
EE06 10B1
EE07 11F4 11EE
ENABL 14EA 1495
ENCK1 10B6 10A6 10AB
END 012E 087D
ENDCH 1520 0AAA 0AB8 0B51 0B9B 0BAC 0BB1 0BB7 0C13 0CD4 0DCF 0E32 0E3F 0F2D
0F36
ENDCK 10A2 0B4E 0B99 0CBF 0DBC 0E26 0E94 0EBC 0EFE 0F2B 0F7D 0F82 10BA
ENDSW 1539 0886 092D 0AF6 0B12 0B27 11D5 11F9 1346
ENMSG 1AC9 0889 08AD 08C3 08D9 0AFA 1349
ENPRT 11E9 08C1 0C2E 0ECB 0F51 1039 1045 1057 109E 1082 10CD 11EB 11F2 11FA
ENQ 14FE 0852 088B 089C 0C80 0CC3 0CD5 0DC4 0DDO 0E6D 0E80 0ECO 0EF1 0F81
18CA 18DA
ENQA 1C58
EOT 14FD 0C14 0E8B 0EA3 0ED2 0F8C 1029 106C 10B8
EOTA 1C57
EOTRC 103D 102B
EPA 0808
ERROR 0130
ETB 14FB
ETBA 1C55
ETX 14FC 1136
ETXA 1C56
EXIT 09AD 09A5
EOXX 09C3 09C8
E00 09CB
E00E 09ED
E00F 0A69 0A61
E01A 10B0
E01B 10CB
E01D 0B42 0886
E01E 0B56 0B45
E010 0A1B
E011 0A2B
E012 0A30
E013 0A45
E014 0A8E
E018 0AEF
E02A 0CEA 0CD2 0CD7 0DB6 0DBA 0DCC
E02B 0CDE 0CB7
E02C 0CE3 0CB4
E02D 0CB8
E02E 0CC7
E020 0B8D 0BC8
E021 0BBB
E023 0BCD
E024 0BEB
E026 0COA 0CA0
E028 0C36
E03A 0E31 0E2B
E03B 0E3E 0E34
E03C 0E63 0E19 0E21 0E25 0E30 0E38 0E47 0E50
E03E 0E76 0E9E

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E03F OE7A
E030 OCD0 OCC5
E031 OCD9
E032 OCF2 OCB8 OCE6 OCE9 OD00 OD0E OD1A OD2E OD38 OD70
E034 ODB4 ODD9
E035 ODB8
E036 ODCB ODC0 ODD4
E038 OE16 OE6F
E039 OE1D
E04B OF20 OEF5
E04C OF27
E04D OF32
E04E OF48 OF23
E040 OE84
E041 OE96 OE79 OE7D OE8D
E043 OEA5 OEDB
E044 OEA9
E045 OEC4 OEA8 OEAC OED4
E047 OEF6
E048 OEFA
E049 OF10 OEF9 OEFD OF04 OF0C OF46
E05A OFAB OF99
E05C 101D 1061 1066
E05D 1021
E05E 1048 1020 1024 1030 1035
E050 OF6D
E051 OF71
E052 OF85
E053 OF90 OF70 OF74 OF83
E054 OF89 OF7B
E055 OFA1 OFC5
E056 OFA6 OF9D OFA0 OFC3 OFFE
E057 OFFD OFF1
E058 OFC4
E059 OFC0
E060 106D
E061 1081
GENTM 10D1 OD7A OE08 OE59 11C7
GNTMX 11BE 10D2 1100 1111 1129 113A 1151 115E 1169 1182 11A0
GO 0822 0818 081C 0820 0833 0835
HAAAA 1565 1141
HAAA0 1552 11E1
HAA55 1564 1146
HA000 1558 0943
HC002 155E 13E0
HD001 1568 OF95
HD002 1569 OF14
HD003 1559 0965
HEEE1 1553 120D 1283
HE000 1557 0940 OD3A 11C4 1C0D
HE002 155F 1426
HE004 155A ODFC
HFFFF 156B 09F7 09FF OA21 OA74 1214 1217 1219 1370 1387 140D 147D
HFFF9 156C 0926
HFF00 1556 093D 1435 144D 1478 148F
HF000 156F 1B16
HF840 156A 0998 09CA
HOF0F 155C 128D
HO0FF 156E 11F8 1295 1489
H0010 156D 12A5 12AE 14D7
H0080 1560 098F 1391 1387
H0202 155B 10F8 117A 1198 1186
H1900 1555 1263
H2000 1561 0999
H32AA 1566 113E
H5503 1562 114E
H5555 1563 1149
H7000 1567

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H8000 1554 0906 095E 12CD
H8001 155D 12E1
IDACK 1528 ODA2 1BF2 1C03
IDCNT 1532 OBC0 OC8F ODA5 1COF
IDEND 1526 OBBE OC8D ODA3 1BE9
IDENQ 1527 OBBD 1BEC
IDNAK 1529 OC8C 1BFA 1C07
IDSW 152D OBOC OB10 OB5E OB7D OBA7 OCA7 OCC9 OCD1 OCED OCF4 OCFA ODC8 ODF4
10C0
INITL 14E8 09D8 OA50 1390 1392 13B6 1388 13F6 1497
INT 0976 097C OACE 149E
INTEX OAC1 09D6 OA19 OA3F OA43 OA48 OA93 OA96 OAB2 OAB6
INTTM 1513 08B9 0991
INTX 1498 097E 0980 OACA OACC 1385 138E
INTX1 OACA 09AE
INTX2 OAD0 OAC5
INTX3 OAD4 OADC
INTX4 OADA OAD4
INT01 097E 0979
INT02 09D4 09D0
INT03 09D8 09D2
INT04 OA7F OA52
INT05 OA84 OA8A
INT06 OA88 OA6D
INT07 OAA8 OA9F
INT08 OAB5 OAAF
INT09 OAB8 OAB4
IOCCS 14E0 1ADC 1ADE
IPA 0806
ITB 1500
ITBA 1C5A
LGCAL 0946 08D2 08D7 08E3 08E7 0902 0948 096F
LGCL1 0948 0958
LGCL2 094F 095C
LGCL3 0951 094A 094B
LGCL4 0957 0947 0949 0953
LOG 012F 0955 1D01
LPA 0807
MASK 1511 09C0 1372
MASTR 152B 0885 082A 082E 1026 1072 10BF
MDATA OA6E OA55 OA5A OA62 OA75 OA7D
MLSCF 080A 0869 0895 08B3 094D OAC7 OAD6 1ACF 1CFD
MXFER 152C 088F OAF1 OCA5 ODED IOAE IOC9 11ED
NADDR 1635 1B18 1C2F 1C34 1C36 1C3E 1C47 1C4A
NAK 14FF 08B2 0C89 0C9E ODDE OE40 OF2E 1008 105F 1BF7 1C05
NAKA 1C59
NET 0816 0801 0D2B OEAD OF78 102D 104C 1095 10A3 1BA8 1BE1
NKLST 1533 0CB1 OCCC ODE0
NONSW 0826 0B09 0B0D
NOP 1572 1B10 1C17
NORCV 1519 0996 OA35 084B 0896 OC0F OC3B OC85 ODB9 OE1A OE7B OEAA OEFB OF24
OF72 OFAC 1022
NOTHN OA3A OA1E OA2C OA33 OA38
OPERR 1541 0887 08AB 08CF 120E 1285
OPTIN 1537 11F0 12BF 131D 1324 1360 1382
PEND 1FFB 080E 12DD 1C13 1FFB
PGBSY 150E 088D 08C6 OAF3 OB11 0826 085B 0875 OC01 OC1A OC28 OC4F OC5F 11EA
128C 12F3 134D 135D
PGRDY 150D 0884 08A3 08BD 0929 0977 1380
PID 07FF 1D0F
PNCHA 150A 111F
POLID 081F 08C6 OC4A OC97 ODAC 1BA5 1BFC 1C09
PRINT 08CF 08AF
PRNTA 1509 111A
PRNT1 08EB 0904 090D
PRNT2 0905 08F9
PRNT3 090B 0911 0916 0923
PRNT4 0915 091E

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PRNT5 091F 0919
 PRNT7 0924 08DC 08F0 08F7 096C
 QUIT 087C 08A9 08ED 0969
 RAD 0801 0938
 RCADR 151E 09E9 0A4A 1311 1363 1388 1410 1415 1481 1486
 RCTAC 153E 09A8 09AC 1366 13D3
 RCTCK 0A18 09DA 09E1 09F1
 RCVBC 151F 09D5 0A18 0A24 0A28 0A3D 0A5E 0A66 0A7F 0A82 0A88 0A8D 1315 1364
 13C6 13D4
 RCVDL 09A6 099E
 RCVTB 16D0 0A29 0A4E 0A98 0AA1 0AA4 0AA8 0AAB 0C3E 0C6D 0C7E 0CC1 0CFB 0D1F
 0D35 0DC2 0E28 0E49 0E7E 0E89 0EBE 0ED0 0F01 0F43 0F63 0F7F 0F8A
 0FB4 0FDE 1027 1032 10A8 10B6 1369
 RDRAD 0930 08DE 08FD 0944
 RDRD1 0942 093B
 RDRD2 0944 0941
 RDSWA 11FD 120F
 RDSWB 120A 1205
 RDSWC 1210 1208
 RDSWD 121C 125E
 RDSWE 1225 1244
 RDSWF 122D 122C 1230 1241 1248 1258
 RDSWG 1249 1235
 RDSWH 1254 1215
 RDSWI 125F 121F
 RDSWJ 1268 1260
 RDSWK 126A 1222 1267 1269
 RDSWL 1275 127B
 RDSWM 1286 1212
 RDSWS 11FC 0AFF 0B65 0BFE 0C52 123C 123F 1255 125C 1278 1281 128A
 RDYCK 09B0 099A 09A1 09A9
 RDYSW 151A 09B0 09BA 09D1 0AE4 0AF2 0B0F 0B47 0B92 0BD2 0BEF 108D
 RELDV 0132 0876 0AD0
 REQ 1530 0B16 0B31 0B67 0C00 0C54 0E0A 0E56 0E5C 1238 124A 1254 1272 1275
 127F 1287
 REQDV 0131 0899 0ADA 1AD3
 RESET 14E6 0874 08A5 097A 0AC9 1383 138C
 RETRY 151B 09BD 0AFE 0B70 0B7C 0BDF 0BF8 0C1D 0C2B 0CA4 0D8F 0DEC 0E1E 0E55
 0E91 0EC5 0F19 1085 11E5
 RFT 1632 0CFE 0E12 1B05
 RFTA 1C67 1B03
 RFTCT 0E11 0DFD 0E0D 1C22 1C26
 RFTSL 152F 1218 121E 125A 126A 126F 127C
 RID 0800 0932 0934
 RMADR 153A 0D22 0D85
 RSWF1 1242 1239
 RTD2A 0CCC 0DC6
 RTNNO 152E 0AF9 12CC 1375 13CA
 RTNOA 0C85 0B80 158A
 RTNOB 0C8C 0B7E 158B
 RTNOC 0C9A 0C60 158C
 RTNOD 0CA2 0B76 0BA3 0C62 158D
 RTNOE 0DA2 0CA8 0CDC 0DD2 158E
 RTNOF 0DB0 0CEE 158F
 RTNOO 1ACD 087F 1AD5
 RTNO1 0AE4 0BA1 0C02 0ECD 103B 1059 10A0 10B4 1581
 RTNO2 0B3E 0B61 1041 1582
 RTNO3 0B82 0B60 0BE3 0BF9 1583
 RTNO4 0B87 0BAA 1584
 RTNO5 0BBD 0BA9 1585
 RTNO6 0BC9 0BDB 1586
 RTNO7 0BE5 0BE2 0BF4 1587
 RTNO8 0C06 0B3A 0C1F 1588
 RTNO9 0C32 0B3C 0C27 0C2D 1589
 RTN1A 0F14 0E61 0F0F 159A
 RTN1B 0F55 0B73 0D97 0EBA 0F88 0FD4 159B
 RTN1C 0FFF 0FA9 0FBB 159C
 RTN1D 100C 0F93 0FA4 0FB1 159D

RTN1E 1017 0DA0 0FD5 159E
 RTN1F 105B 1002 159F
 RTN10 0DD5 0CF0 1590
 RTN11 0DDA 0CCD 0CF7 1591
 RTN12 0DE4 0CE1 1592
 RTN13 0DEA 0BAE 0C55 1593
 RTN14 0E69 0E68 1594
 RTN15 0E70 0D92 0E87 1595
 RTN16 0E9A 0E99 1596
 RTN17 0E9F 0E5F 1597
 RTN18 0ED7 0EC7 0ED6 0F8E 1598
 RTN19 0EDC 0E92 1599
 RTN20 1062 100F 15A0
 RTN21 1067 0C57 0F4E 1051 1076 109C 15A1
 RTN22 1078 1054 1082 109A 15A2
 RTOOT 1B01 1BC9
 RTTBL 1580 0936 0B24
 RTODA 0D63 0D59
 RTOD1 0CAA 0CCF
 RTOD2 0C80 0DAE
 RTOD3 0CB2 0DE2 0DE8
 RTOD4 0CF9 0CBE
 RTOD5 0D1F 0D17
 RTOD6 0D6D 0D33 0D77
 RTOD7 0D78 0D74
 RTOD8 0D3F 0D47
 RTOOB 1AD3 1ACD
 RTOOC 1AD9 1AE1
 RTOOD 1AE6 1AEC
 RTOOE 1AF7 1AF1
 RTOOF 1B10 1AE4
 RTOOG 1B43 1B0F 1B32
 RTOOH 1B50 1B4B
 RTOOJ 1B5F 1B79
 RTOOK 1B6F 1B62
 RTOOL 1B75 1B6E
 RTOOM 1B7D 1B57
 RTOON 1B87 1B8D
 RTOOD 1B8C 1B89
 RTOOP 1B92 1B8B
 RTOOQ 1B9A 1B71
 RTOOR 1BA7 1BE8
 RTOOS 1BBF 1BBB 1BD9
 RTOOU 1BDC 1BD0 1BDF
 RTOOV 1BE9 1BE4
 RTOOW 1C11 1BAA 1C4C
 RTOOX 1C22 1BDE
 RTOOY 1C09 1BFF
 RTOOO 1B09 1BOE
 RT01A 0AF0 0B68 0C1B 0C29 0C30 0F53 1049 10CF
 RT01B 0AFC 0AF5 0AF7
 RT01C 0B01 0B5C
 RT02A 0B59 0B63 0B6A
 RT02B 0B62 0B4D
 RT02C 0B65 0B49
 RT02D 0B6B 0B54
 RT02E 0B75 0B6C
 RT04A 0BA5 0B90 0B94 0B98 0BB4 0BB9 0BBC
 RT06A 0BDA 0BD0
 RT07A 0BF8 0BDA 0BF3 0C04
 RT08A 0C18 0C0D 0C11 0C49
 RT08B 0C28 0C24 0C59 0C65
 RT08C 0C2E 0C20
 RT09A 0C4A 0C46
 RT09B 0C5A 0C4D
 RT09C 0C57 0C50
 RT1A1 0F17 0F4D
 RT1A2 0F2B 0F25

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RT1B6 OFE0 OFE8
RT1B7 OFE4 OFF5 OFFB
RT1B8 OFEA OFE2
RT1B9 OFF3 OFEB
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RT13A OE0E OE08 OE3D
RT13B OE26 OE18
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RT17A OEBC OEBO
RT19A OEE2 OEEC
RT19B OEE0 OEDE OF13
RVI 14F7 OE4B OE4E
RVIA 1C51
SCAN 1483 14A6 14AD 14DA
SCAN1 1486 14BE
SCAN2 14C0 14C3
SCAN3 14CA 1B12
SCAN4 14CC 14C7
SCAN5 14CF 1B14
SCAN6 14D6 1488 14CB 14D3
SECND 0817 OBA1
SELID 0824 OC5A OEB2 1BE6 1C24 1C2A 1C31 1C38 1C3B 1C40 1C44
SENSE 0984 098A 098E
SNSBC 14E2 08C9 0986 0987 098C 098D 099C 0A1C 1300
SNSOP 14E0 08C7 0984 0985 0988 0989 0997 09B3 09B7 09BE 09C9 0A31 0A41 0A8F
08D6 12FE
SOH 14F9
SOHA 1C53
SPECL 115F 10DB 10DC 10DE 10E4 10E5 10E6 10EC 10ED 1165
START 012D 0897 08B5 094F 0AD8 14A0 1AD1 1CFF 1D06
STDTA 1319 1310 1314 1316 131F 1340 1344
STDT1 132E 1332
STDT2 1333 132C
STDT3 1337 131A 1326 1328 132A 1336 133D
STESC 1507 1118 111D
STETX 1505 ODFE
STMSG 1544 0888 08AC 08D4 11D6 11E2
STORE 12D7 12CE 12EF 12FD 12FF 1301 1323 132F 133A
STOR1 12E3 12DF
STOR2 12EC 12D8 12E2
STPRT 11D4 0822 0837 11D7 11E7
STPRX 11E3 11DC
STR1 087F 0867 0898 092A 1C19 1C1B 1C1D
STR11 0899 0893
STR12 089F 0891
STR13 08A3 1381
STSW 1538 088E 11E6 134F 135C
STSYN 1506 1102 1113 1128 113C
STX 14FA
STXA 1C54
SVMSG 12B8 09C3 09CC 09EF 0A3A 0A46 0A6B 0A91 12D5 12F2
SVMS1 12C9 12C4
SVMS2 12CF 12BE 12C1 12C7
SW0 0802 086E 0871 08A7 08EB 08F4 0924 0927 0967 1090 1109 135E
SW1 0803 0873 1210 121A 1288
SW2 0804
SW3 0805 11FD 120B
SYN 1501 0BE9 OD21 OD82 OFEF OFF9 11CF 141D 1477 148E
SYNA 1C5B
SYNAA 1508 1115
T 1545 0881 0884 0885 0886 0887 0888 088B 088D 088E 089F 08A5 08A6 08AB

08AC 08B7 08BD 08C6 08C7 08C9 08CB 0905 0906 090F 0910 0913 0915
0918 091B 091C 091F 0926 0929 092D 093D 093F 0940 0943 0951 095E
0965 0982 0984 0985 0986 0987 0988 0989 098C 098D 0991 0992 0993
0994 0995 0996 0997 0998 0999 099C 09A0 09A3 09A4 09A7 09A8 09AB
09AC 09AD 09B0 09B3 09B7 09BA 09BD 09BE 09BF 09C0 09C9 09CA 09D1
09D5 09D8 09DD 09E0 09E6 09E9 09EA 09EB 09EE 09F3 09F7 09FF 0A08
0A16 0A18 0A1C 0A21 0A23 0A24 0A27 0A28 0A31 0A37 0A3D 0A3E 0A41
0A4D 0A50 0A57 0A6A 0A74 0A7A 0A7F 0A80 0A82 0A83 0A8B 0A8C
0A8D 0A8F 0AAA 0AB8 0ABD 0AC0 0AC9 0AE0 0AE7 0AF1 0AF2 0AF6 0AF9
0AFE 0B0B 0B0C 0B0F 0B10 0B11 0B12 0B26 0B27 0B2A 0B2E 0B39 0B51
0B52 0B58 0B5B 0B62 0B67 0B6B 0B70 0B71 0B72 0B75 0B79 0B7C 0B7D
0B9B 0B9C 0BAC 0BAD 0BB1 0BB2 0BB7 0BB8 0BBD 0BC0 0BD2 0BD6 0BDF
0BEF 0BF8 0C00 0C01 0C13 0C14 0C19 0C1A 0C28 0C4F 0C54 0C5F 0C69
0C80 0C8C 0C8F 0CA4 0CA7 0CB1 0CC3 0CC9 0CC0 0CD1 0CD4 0CD5 0CED
0CF4 0CFA 0D0C 0D0D 0D19 0D21 0D22 0D27 0D37 0D3A 0D4A 0D50 0D5E
0D68 0D82 0D85 0D8F 0D94 0D96 0D9C 0D9D 0D9F 0DA2 0DA5 0DA6 0DB5
0DB9 0DC4 0DCF 0DD0 0DEC 0DF4 0DFB 0DFC 0DFE 0E07 0E0A 0E1A 0E1E
0E24 0E2A 0E2F 0E32 0E33 0E3F 0E40 0E4B 0E4E 0E4F 0E55 0E56 0E5C
0E80 0E8B 0E91 0EB8 0EB9 0EC0 0EC9 0ED2 0EE0 0EE1 0F03 0F06 0F07
0FOA 0F0B 0F14 0F19 0F24 0F2D 0F2E 0F36 0F37 0F3A 0F3B 0F45 0F5B
0F5E 0F5F 0F81 0F8C 0F95 0F98 0FAC 0FB6 0FBA 0FC6 0FCF 0FD1 0FDA
0FDB 0FEF 0FF9 1026 1029 102F 1034 103E 104E 108C 108D 1097 10A5
10AA 10B8 10BF 10C0 10C1 10C5 10F2 10F6 10F8 10FC 1102 1113 1115
1118 111A 111D 111F 112B 1136 113C 113E 1141 1146 1149 114E 1152
115A 116A 1178 117A 117E 1183 1196 1198 119C 11A1 11B4 11B6 11BA
11C4 11CF 11D5 11D6 11E0 11E1 11E2 11E5 11E6 11EA 11ED 11F0 11F7
11F8 11F9 1207 120A 120D 120E 1214 1217 1218 1219 121D 121E 1238
123B 1243 124A 124B 124D 1254 1257 125A 1263 1266 126A 126F 1272
1275 127C 127F 1280 1283 1284 1285 1287 128D 1291 1292 1295 1298
129A 12A2 12A5 12A8 12AA 12AB 12AC 12AE 12B1 12B3 12B5 12B9 12BF
12C6 12C9 12CC 12CD 12CF 12D1 12D2 12DC 12E1 12F3 12F6 12F9 12FA
12FC 12FE 1300 1302 1309 130F 1311 1312 1313 1315 131B 131C 131D
1322 1324 1329 133F 1346 134D 134F 135C 135D 1360 1362 1363 1364
1365 1366 1370 1372 1375 1380 1383 1384 1387 138C 138D 1390 1391
1392 1396 13A7 13B2 13B6 13B7 13B8 13C6 13C7 13CA 13CC 13CF 13D3
13D4 13D9 13E0 13E9 13EC 13ED 13F0 13F5 13F6 13F8 1400 1412 1415
1416 141D 1426 1431 1435 143B 143C 143E 143F 1442 144D 1461 1467
1477 1478 147D 1483 1486 1487 148E 148F 1494 1495 1496 1497 1C28
TADLY 081D 13D1 13EE
TEMP1 1523 09DD 09EE 0A08 0A16 0A23 0A27 0A57 0A6A 0A7A 0A7B 11DE 11E0 11F5
11F7 12B9 12D2 1431 1461
TEMP2 1524 1291 129A 12A2 12AB 12AC 12B5 12BA 12C6 12C9 12CF 12D3
TEMP3 1525 0EE1 0EEA
TERM 080D 0879 089E 0AD3 0ADF 1AD8
TEXT 1516 099A 0ABD 0CBC 0CE4 0F9B 0FB8
TIMER 14EC 08A6 1384
TM 1639 0D43 0D48 0D5B 0D60 0D63 0D66 0D6A 0D7C 0D7F 0D87 0D8A 0DFF 0E14
0F1E 0FDC 10D4 1109 1131 1187 11A5
TMBD 1AC4 0F33 0FA7
TMCNT 0F1D 0D3B 0D4E 0D51 0FD6 11BE 11C2 11C5
TMGD 1AC3 0F3F 0FCD
TMHEX 1AC0 0E57
TMINV 1AC6 0F49 0FA2
TMODE 1ABF 08E4 0EF3 0F15 0F60 0F96 1358
TMOVE 1121 1117 111C 1127
TMTO 1AC5 0F28 0FAF
TMVLD 1573 0D6D 122A 1246 1276 1AF8 1AFB 1AFE 1B01 1B1F 1B22 1B25 1B28 1B2B
1B2E 1B35 1B38 1B3B 1B3E 1B41
TM01 0829 1160 1166 1AED 1AF5 1B43 1B47 1B50 1B52
TM01A 1C66 1AF3
TM01E 1C65 1AEF
TM12 1620 1122 116D 1170 118B 118E 11A9 11AC
TM15 112B 10EA
TM16 113C 10EB
TM16A 1142 1145
TM16B 114A 114D
TM19 1152 10EE
TM2 10F2 10DD

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TM20 116A 10EF
 TM20A 116D 1176
 TM20B 1179 117D
 TM21 1183 10F0
 TM21A 1188 1194
 TM21B 1197 1198
 TM22 11A1 10F1
 TM22A 11A9 1182
 TM22B 1185 1189
 TM4 15A3 1104 1107 110E 1B0B
 TM45 1102 10DF 10E0
 TM45A 1107 110D
 TM5 1C68 1B09
 TM6 1CE5
 TM614 1113 10E1 10E9
 TM712 1118 10E2 10E7
 TM813 1110 10E3 10E8
 TONE 0818 0B1E 0BE0
 TOSW 1534 0DF1 0E24 0E36 0E39 0E64
 TRANS 0819 1B30
 TRCPT 150F 12D9 12DC 12E4 12F9 131B 1354
 TRCTB 1ACC 08E9 1352
 TRIES 0818 098B 0AFC 0B6E 0B7A 0BDD 0BF6 0CA2 0D8D 0DEA 0E1F 0E53 0E8F 0F17
 11E3 1B9A 1BA3
 TSSW 081C 0AC1 149C
 TTD 1503 0FB6
 TTDA 1C5D
 TWO 10F4
 TWDA 10F7 10FB
 WACK 14F6 08B8 0E2A 0F03 0F06 0F45
 WACKA 1C50
 WACKS 1535 0DEF 0E2F 0E44
 WAIT 08A7 08BB 092E
 WAIT1 0887 08B1
 WDCNT 1510 0910 0915 091B 091F
 WTC A 1D08 1D05 1D09
 XDEC 1633 0E01 1226 1231 1252 126C
 XEQ 0866 0806 0807 086B
 XHEX 1AC1 0D05 0D23 0D30 0D72 0D78 0D90 0E05 0E5D 0F75 0FC9
 XMADR 151D 09E0 09EA 1309 1312 1362 13E4
 XMCK1 09E9 09E4
 XMCCA 1407 1401
 XMCCC 142C 13F8
 XMCCF 143B 1439 147C
 XMRCF 143D 1465 146B 146D 1474
 XMRCG 144A 1443 1449
 XMRC H 1451
 XMRC I 145B 1456
 XMRCJ 1461 1453
 XMRC K 1475 13E6 1440
 XMRC L 147D 143A 1459 1460
 XMRC T 1768 09DE 1307 1389 14E8
 XMRC V 12F1 0AC3 0AE2 0AE8 0B3E 0B82 0B87 0BC2 0BC9 0BE5 0C06 0C32 0C85 0C93
 0C9A 0CAA 0DA8 0DB0 0DD5 0DDA 0DE4 0E0E 0E69 0E70 0E9A 0E9F 0ED7
 0EE2 0EED 0F1A 0F55 1004 1011 1017 1058 1062 1068 1079 136D 1376
 137A 137E 138A 1393 13BD 13BF 13F1 13F3 1418 1420 1428 1489
 XMRC0 1390 1388
 XMRC1 1397 13AE
 XMRC2 13AA 139F 13A2
 XMRC3 13AF 1399
 XMRC4 13B2 13AB
 XMRC5 13B6 13A8 1380
 XMRC6 13B9 1384 13DD 141B 148C 1492
 XMRC7 13E4 13C3
 XMRC8 13FB 140C
 XMRC9 1402 13FC
 XMRJ1 146C 1462
 XMR10 1307 130C

XMR11 1311 130D
 XMR12 1315 130A
 XMR13 1346 12F4 12F7 1303 1318
 XMR14 134F 1347
 XMR15 1358 135B
 XMR16 1361 134B 134E 1350
 XMR17 1369 136C
 XMR18 1387 137C
 XMR6A 13BF 1422
 XMR6B 13D1 13C8 13CD
 XMTAC 153D 09A0 09A4 09A7 1365 13F0
 XMTCK 09DE 09E3
 X99 0D99 0D2A
 X99ID 1517 088B 086B 0D9C 0F5B 0FC6 103E 108C 10C1 10C5 13C7
 YCNT 1536 0D0C 0DFB 0F4B 0F5F 0FD2 0FFF 100C
 YDEC 1634 0DF5 1201
 YHEX 1AC2 0D0A 0D9A 0DF9
 ZEROA 11CB 11CE
 ZEROS 11C9 112E 1156 11D2
 ZONE 129D 11FF 1225 1251 126B 1270 1286 1C2C
 ZONEE 1571 12AA 12B3 1B1C
 ZONEO 1570 12A8 12B1 1B1A
 ZONE1 12AA 12A6
 ZONE2 12B3 12AF
 END OF ASSEMBLY

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1. PURPOSE

THE PURPOSE OF THE 1800 CA WRAPAROUND TEST IS TO PROVIDE A MEANS FOR LOCAL TESTING AND DIAGNOSIS OF THE COMMUNICATIONS ADAPTER AND FOR LIMITED TESTING OF THE LOCAL DATA SET.

2. REQUIREMENTS

2.1 PROGRAM REQUIREMENTS

THE 1800 CA WRAPAROUND TEST MUST OPERATE UNDER CONTROL OF THE 1800 DIAGNOSTIC MONITOR.

2.2 EQUIPMENT REQUIREMENTS

- A) EQUIPMENT AS REQUIRED FOR OPERATION OF THE 1800 DIAGNOSTIC MONITOR.
- B) A MINIMUM OF 8K OF CORE STORAGE.
- C) THE 1800 COMMUNICATIONS ADAPTER FEATURE.
- D) SLT BOARD SLIP-ON TEST JUMPERS.

3. OPERATING PROCEDURE

CAUTION THE 1800 CA WRAPAROUND TEST CANNOT BE OPERATED IN OVERLAP WITH OTHER MONITOR CONTROLLED PROGRAMS AND MUST BE LOADED IMMEDIATELY FOLLOWING THE MONITOR WHEN LOADED WITH OTHER MONITOR CONTROLLED PROGRAMS.

3.1 LOADING

LOADING PROCEDURES ARE SUMMARIZED HERE. REFER TO DIAGNOSTIC MONITOR USE PROCEDURE FOR ADDITIONAL DETAILS.

- A) CLEAR CORE TO /70FF.
- B) LOAD THE DIAGNOSTIC MONITOR.
- C) SELECT DIAGNOSTIC MONITOR PROGRAM LOAD OPTIONS. (SEE NOTE BELOW)
- D) LOAD THE 1800 CA WRAPAROUND TEST. (SEE 6.4 FOR EDIT PROCEDURE)
- E) SELECT MONITOR PROGRAM CONTROL OPTIONS IF DESIRED.
- F) INSTRUCT MONITOR TO EXECUTE.

NOTE...BECAUSE OF CRITICAL PROGRAM TIMING, THE CA WRAPAROUND TEST CANNOT BE OPERATED IN OVERLAP WITH OTHER MONITOR CONTROLLED PROGRAMS.

3.2 OPERATION

OPERATING PROCEDURES ARE SUMMARIZED HERE. REFER TO DIAGNOSTIC MONITOR USE PROCEDURE AND SECTION 5 OF THIS DOCUMENT FOR ADDITIONAL DETAILS.

DATA SET CABLE TEST SWITCH MUST BE IN THE 'TEST' POSITION AND THE CABLE MUST BE DISCONNECTED FROM THE DATA SET IN ORDER TO RUN THIS PROGRAM.

- A) LOAD PROGRAMS (REFER 3.1).
- B) SELECT MONITOR CONTROL OPTIONS IF DESIRED.
- C) SELECT CA PROGRAM CONTROL OPTIONS FROM TABLE 0 IF DESIRED.
- D) SELECT A SPECIFIC ROUTINE FOR EXECUTION IF DESIRED (SEE TABLE 1).
- E) SELECT CA LINE(S) TO BE TESTED (SEE TABLE 2).
- F) INSTALL SLT BOARD TEST JUMPERS ON SELECTED LINES (SEE 5.4).
- G) SELECT VARIABLE DATA FOR USE IN ROUTINES USING VARIABLE DATA IF DESIRED (SEE TABLE 3). THIS OPTION IS INOPERATIVE UNLESS THE ROUTINE SELECTION OPTION (TABLE 1) IS ALSO SPECIFIED.
- H) INSTRUCT MONITOR TO EXECUTE. PROGRAM SHOULD BEGIN EXECUTING THE TEST ROUTINES SEQUENTIALLY. A START OF ROUTINE MESSAGE (AOCA) WILL BE PRINTED AT THE BEGINNING OF EXECUTION OF EACH ROUTINE.

NOTE...OPTIONS MAY BE CHANGED AT ANY TIME, HOWEVER, CONSOLE INTERRUPTS DURING CA OPERATION AT FASTER BAUD RATES MAY CAUSE ERROR PRINTOUTS DUE TO LOSS OF SYNCHRONIZATION BETWEEN PROGRAM AND CA OPERATION. OPTION CHANGES MADE DURING CA OPERATION MAY NOT TAKE EFFECT UNTIL THE NEXT ROUTINE IS STARTED.

TABLE 0 - FUNCTION 0
PROGRAM CONTROL OPTIONS

```
***** 1. SET FUNCTION 00 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15.
* * 4. PRESS CONSOLE INTERRUPT.
* 0 0 0 0 1 1 1 0 *
*****
* DATA ENTRY SWITCHES * DESCRIPTION *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* . . . . . *
* . . . . . 1.....LOCK ON ERROR *
* . . . . . 1.....TERMINATE ROUTINE ON ERROR *
* . . . . . 1.....BYPASS TABLE DUMP ('SHOULD BE' DATA)*
* . . . . . 1.....BYPASS TABLE DUMP ('WAS' DATA) *
* . . . . . 1.....BYPASS START OF ROUTINE MESSAGES *
* . . . . . 1.....BYPASS TIME DELAYS *
*****
* FUNCTION 0 COMMENTS *
* DE SW *
* 15-ON=LOCK ON ERROR *
* CAUSES PROGRAM TO GO INTO TIGHT LOOP ON DETECTION OF AN ERROR, *
* LOOPING ON THE OPERATION WHICH CAUSED THE ERROR. THE PROGRAM WILL *
* REMAIN IN THIS TIGHT LOOP UNTIL THE LOCK ON ERROR OPTION IS *
* DE-SELECTED. *
* *
* 14-ON=TERMINATE ROUTINE ON ERROR *
* CAUSES ROUTINE CURRENTLY IN OPERATION TO BE ABORTED IMMEDIATELY IF *
* AN ERROR IS DETECTED. *
* *
* 13-ON=BYPASS TABLE DUMP ('SHOULD BE' DATA) *
* INHIBITS PRINTOUT OF DATA TABLE TRANSMITTED DURING A TRANSMIT *
* OPERATION OR PLACED ON RECEIVE DATA LINE VIA PROGRAMMED RECEIVE *
* TRIGGER DURING RECEIVE OPERATION FROM DATA COMPARE ERROR PRINTOUTS. *
* *
* 12-ON=BYPASS TABLE DUMP ('WAS' DATA) *
* INHIBITS PRINTOUT OF DATA SENSED FROM RECEIVE DATA LINE DURING A *
* TRANSMIT OPERATION OR OF RECEIVE DATA TABLE FROM DATA COMPARE ERROR *
* PRINTOUTS. *
* *
* 11-ON=BYPASS START OF ROUTINE MESSAGES *
* INHIBITS PRINTING OF START OF ROUTINE MESSAGES *
* *
* 10-ON=BYPASS TIME DELAYS *
* BYPASS TIME DELAY ROUTINE. THIS OPTION CAUSES ERRORS IN ROUTINES *
* WHICH CHECK TIMEOUTS AND SHOULD BE USED ONLY AS A DEBUGGING AID TO *
* PROVIDE BETTER SCOPE LOOPS. *
*****
```

TABLE 1 - FUNCTION 1
ROUTINE SELECTION OPTION

```
***** 1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SET ROUTINE NO. IN HEX IN DATA ENTRY SWITCHES 8-15.
* * 4. PRESS CONSOLE INTERRUPT.
* 0 1 0 0 1 1 1 0 *
*****
* DATA ENTRY SWITCHES * DESCRIPTION *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* *
* X X X X X X X X.....ROUTINE NO. IN HEX *
*****
* FUNCTION 1 COMMENTS *
* DE SWS *
* 8-15=ROUTINE NUMBER IN HEXADECIMAL *
* CAUSES SELECTED ROUTINE TO BE EXECUTED AND LOOPED ON UNTIL DE-SELECTED*
* USASCII MODE CA LINES SHOULD NOT BE SELECTED FOR OPERATION (SEE TABLE *
* 2) WHEN LOOPING ON TRANSPARENT MODE ROUTINES OR AUTOMATIC DE-SELECTION*
* OF THE ROUTINE WILL OCCUR. *
*****
```

TABLE 2 - FUNCTION 2
LINE SELECTION OPTION

```
***** 1. SET FUNCTION 10 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SELECT DESIRED CA LINE(S) FOR OPERATION IN DE SWS 0-7.
* * 4. PRESS CONSOLE INTERRUPT.
* 1 0 0 0 1 1 1 0 *
*****
* DATA ENTRY SWITCHES * DESCRIPTION *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* . . . . . *
* . . . . . 1.....LINE 7 *
* . . . . . 1.....LINE 6 *
* . . . . . 1.....LINE 5 *
* . . . . . 1.....LINE 4 *
* . . . . . 1.....LINE 3 *
* . . . . . 1.....LINE 2 *
* . . . . . 1.....LINE 1 *
* . . . . . 1.....LINE 0 *
*****
* FUNCTION 2 COMMENTS *
* DE SWS *
* 0-ON=SELECT LINE 0 *
* 1-ON=SELECT LINE 1 *
* 2-ON=SELECT LINE 2 *
* 3-ON=SELECT LINE 3 *
* 4-ON=SELECT LINE 4 *
* 5-ON=SELECT LINE 5 *
* 6-ON=SELECT LINE 6 *
* 7-ON=SELECT LINE 7 *
* CAUSES PROGRAM TO OPERATE TEST ROUTINES USING LINE(S) SELECTED IN *
* THIS FUNCTION. IF MORE THAN ONE LINE IS SELECTED THE PROGRAM WILL *
* LOOP ON EACH ROUTINE, EXECUTING IT ON EACH CA LINE SELECTED, UNTIL *
* IT HAS BEEN RUN ON ALL SELECTED LINES BEFORE PROCEEDING ON TO THE *
* NEXT SEQUENTIAL ROUTINE. IF NO CA LINES ARE SELECTED, A COCA MESSAGE *
* WILL BE PRINTED AND THE PROGRAM WILL COME TO A WAIT WITH /30CA IN THE *
* B-REGISTER. *
*****
```

TABLE 3 - FUNCTION 3
SELECT VARIABLE DATA OPTION

***** 1. SET FUNCTION 11 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SET DATA ENTRY SWITCH 0 ON.
* * 4. SET VARIABLE DATA IN DATA ENTRY SWITCHES 4 THROUGH 15.
* 1 1 0 0 1 1 1 0 * 5. PRESS CONSOLE INTERRUPT.

DATA ENTRY SWITCHES	DESCRIPTION
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	*
X X X X X X X X X X X X X X X X	VARIABLE DATA
1.....	MUST BE ON

FUNCTION 3 COMMENTS
* DE SWS
* 0-ON=USE VALUE IN BITS 4 THROUGH 15 AS VARIABLE DATA
* 4-15=VARIABLE DATA
* CERTAIN TEST ROUTINES ARE EXECUTED REPEATEDLY USING SOME PARAMETER
* WHICH IS VARIED EACH TIME THE ROUTINE IS EXECUTED UNTIL THE ROUTINE
* HAS BEEN EXECUTED FOR EACH VALUE OF THE VARIABLE OVER A CERTAIN RANGE
* THIS PARAMETER (VARIABLE DATA) MAY BE HELD TO A CERTAIN VALUE BY
* PLACING THIS VALUE IN FUNCTION 3. THE ROUTINE WILL THEN BE EXECUTED
* CONTINUOUSLY USING THE VALUE SPECIFIED IN FUNCTION 3. THIS OPTION IS
* OPERATIVE ONLY WHEN SELECTED SIMULTANEOUSLY WITH THE LOOP ON ROUTINE
* OPTION IN TABLE 1.
* VALID VALUES FOR USE AS VARIABLE DATA ARE

ROUTINE NUMBER	RANGE OF VALID VALUES
07	/001 - /FFF
10	/000 - /OFF
11	/000 - /OFF
12	/000 - /OFF
13	/000 - /OFF
15	/1FF - /FFF
1A	VALID BSC END CHARACTERS (SEE 6.1)
1B	VALID BSC END CHARACTERS (SEE 6.1)
1E	/032 - /2BC
1F	/032 - /2BC
25	VALID BSC END CHARACTERS (SEE 6.1)
26	/004 - /OFF

3.3 PROGRAM HALTS

THE 1800 CA WRAPAROUND TEST CONTAINS ONLY ONE PROGRAM HALT. THIS HALT INDICATES THAT NO CA LINE HAS BEEN SELECTED FOR OPERATION. THE HALT IS ALWAYS PRECEDED BY A COCA MESSAGE PRINTOUT. REFER TO SECTION 3.2 TABLE 2 FOR ACTION TO BE TAKEN. THIS HALT MAY BE IDENTIFIED BY THE PRINTOUT OR BY THE CONTENTS OF THE B-REGISTER, WHICH WILL CONTAIN /30CA.

3.4 PROGRAM TERMINATION

THE 1800 CA WRAPAROUND TEST TERMINATES AFTER THE LAST TEST ROUTINE IN THE NORMAL SEQUENCE HAS BEEN EXECUTED OR IF THE MONITOR HALT OPTION HAS BEEN SELECTED.

3.5 RESTART PROCEDURE

STANDARD MONITOR RESTART PROCEDURES MAY BE USED.

4. PRINTOUTS

ALL PRINTOUTS PRODUCED BY THIS PROGRAM ARE IN THE STANDARD DIAGNOSTIC MONITOR FORMAT (PID MID RID RAD MODIFIERS). IN ALL FOLLOWING SAMPLE PRINTOUTS, THE PID IS OMITTED. ROUTINE ID NUMBER (RID) IS REPRESENTED BY RRRR OR LRRR, THE L BEING THE NUMBER OF THE CA LINE SELECTED FOR OPERATION AT THE TIME OF THE PRINTOUT (0-7). ROUTINE ADDRESS (RAD) IS REPRESENTED BY AAAA. AND HEXADECIMAL MODIFIERS ARE REPRESENTED BY MOD1..MOD2..ETC.

4.1 STATUS (AXXX) PRINTOUTS

AOCA LRRR AAAA

START OF ROUTINE MESSAGE. THE PROGRAM HAS STARTED EXECUTION OF THE ROUTINE SPECIFIED IN THE RID (RRR) PORTION OF THE PRINTOUT AND ON CA LINE NUMBER (L) ALSO SPECIFIED IN THE RID.

4.2 COMMAND (CXXX) PRINTOUTS

COCA LRRR AAAA

NO CA LINES ARE SELECTED FOR OPERATION. REFER TO SECTION 3.2 TABLE 2 FOR LINE SELECTION PROCEDURE. THIS PRINTOUT IS FOLLOWED BY A WAIT IDENTIFIED BY THE B-REGISTER CONTAINING /30CA.

4.3 DATA (DXXX) PRINTOUTS

DOO1 LRRR AAAA MOD1

SYN-SYN SEQUENCE OR DLE-SYN SEQUENCE INSERTION RATE. MODIFIER 1 CONTAINS THE NUMBER (IN HEX) OF CHARACTERS TRANSMITTED BEFORE A SYN-SYN OR DLE-SYN SEQUENCE WAS INSERTED BY HARDWARE INTO THE DATA STREAM.

DOCA LRRR AAAA MOD1 MOD2 MOD3....MOD10

TEST SUMMARY. THIS PRINTOUT OCCURS AT THE END OF THE PROGRAM AND GIVES A SUMMARY OF THE ERRORS THAT OCCURRED DURING THE TESTS. MODIFIER 1 IS THE PASS COUNT. IF THE LOOP PROGRAM OPTION IS SPECIFIED, THIS COUNT IS INCREMENTED EACH PASS THROUGH THE PROGRAM. MODIFIER 2 SHOWS WHICH LINES WERE SELECTED FOR OPERATION DURING THE TEST. BITS 0 THROUGH 7 OF MODIFIER 2 CORRESPOND RESPECTIVELY TO CA LINES 0 THROUGH 7. A BIT BEING ON MEANS THAT LINE WAS SELECTED. MODIFIERS 3 THROUGH 10 ARE THE ERROR COUNTS FOR THE RESPECTIVE CA LINES ON THE 1800. ONLY AS MANY MODIFIERS AS THERE ARE CA LINES SPECIFIED IN THE PROGRAM EDIT CARDS WILL BE PRINTED.

4.4 ERROR (EXXX) PRINTOUTS

E001 LRRR AAAA MOD1 MOD2 MOD3 MOD4
MOD5 MOD6 MOD7

THE OPERATING, BYTE COUNT, OR DIAGNOSTIC DSW SENSED WAS NOT AS EXPECTED. MODIFIERS 1, 2, AND 3 ARE THE OPERATING, BYTE COUNT, AND DIAGNOSTIC DSW SENSED RESPECTIVELY. MODIFIER 4 IS PRINTED ONLY DURING EXECUTION OF ROUTINES USING VARIABLE DATA, AND CONTAINS THE DATA IN USE AT THE TIME OF THE ERROR. MODIFIERS 5, 6, AND 7 CONTAIN THE BITS IN ERROR IN THE RESPECTIVE DSWs. A BIT BEING ON ONE OF THESE MODIFIERS MEANS THAT THE CORRESPONDING BIT IN THE DSW PRINTED DIRECTLY ABOVE IT IS IN ERROR.

E002 LRRR AAAA MOD1 MOD2 MOD3 MOD4
MOD5 MOD6 MOD7

THE OPERATING, BYTE COUNT, OR DIAGNOSTIC DSW SENSED WHILE SERVICING AN INTERRUPT WAS NOT AS EXPECTED. MODIFIERS 1, 2, AND 3 ARE THE OPERATING, BYTE COUNT, AND DIAGNOSTIC DSWs RESPECTIVELY AS SENSED. MODIFIER 4 IS PRINTED ONLY DURING EXECUTION OF ROUTINES USING VARIABLE DATA, AND CONTAINS THE DATA IN USE AT THE TIME OF THE ERROR. MODIFIERS 5, 6, AND 7 CONTAIN THE BITS IN ERROR IN THE RESPECTIVE DSWs. A BIT BEING ON IN ONE OF THESE MODIFIERS MEANS THAT THE CORRESPONDING BIT IN THE DSW PRINTED DIRECTLY ABOVE IT IS IN ERROR.

E003 LRRR AAAA MOD1 MOD2 MOD3 MOD4

AN UNEXPECTED CA INTERRUPT OCCURRED. MODIFIERS 1, 2, AND 3 ARE THE OPERATING, BYTE COUNT, AND DIAGNOSTIC DSWs SENSED DURING THE SERVICING OF THE INTERRUPT. MODIFIER 4 CONTAINS THE VARIABLE DATA IN USE AT THE TIME AND IS PRINTED ONLY DURING OPERATION OF ROUTINES USING VARIABLE DATA.

E004 LRRR AAAA MOD1 MOD2 MOD3 MOD4

AN EXPECTED INTERRUPT FAILED TO OCCUR. MODIFIERS 1, 2, AND 3 ARE THE OPERATING, BYTE COUNT, AND DIAGNOSTIC DSWs SENSED AT THE TIME THE PROGRAM CHECKED FOR THE MISSING INTERRUPT. MODIFIER 4 IS THE VARIABLE DATA IN USE AT THE TIME THE ERROR WAS DETECTED. MODIFIER 4 IS PRINTED ONLY IF VARIABLE DATA IS IN USE AT THE TIME OF THE ERROR.

E005 LRRR AAAA MOD1 MOD2 MOD3 MOD4

XXXX XXXX XXXX XXXX
YYYY YYYY YYYY YYYY

A DATA COMPARE ERROR OCCURRED IN COMPARING DATA TABLES TRANSMITTED OR RECEIVED BY THE CA. MODIFIER 1 CONTAINS THE RELATIVE POSITION OF THE FIRST CHARACTER IN THE TABLE WHICH DID NOT COMPARE (IN HEX). IF MODIFIER 1 CONTAINS 0001, THE FIRST CHARACTER IN THE TABLE DID NOT COMPARE. MODIFIER 2 IS THE WORD CONTAINING THIS CHARACTER, AND MODIFIER 3 IS THE SAME WORD AS IT SHOULD HAVE APPEARED. MODIFIER 4 IS THE VARIABLE DATA IN USE AT THE TIME OF THE ERROR AND IS PRINTED ONLY IF THERE IS VARIABLE DATA IN USE AT THE TIME. A DUMP OF THE RETRIEVED DATA (XXXX MODIFIERS) AND EXPECTED DATA (YYYY MODIFIERS) IS PRINTED ALSO IF THE OPTION TO BYPASS THESE PRINTOUTS IS NOT SELECTED (SEE 3.2 TABLE 0). ALL DATA COMPARED IS PRINTED OUT.

E006 LRRR AAAA

TRANSITIONS ON THE TRANSMIT TIMING LINE ARE NOT BEING SENSED BY THE PROGRAM OR ARE OCCURRING TOO INFREQUENTLY. CHECK THE INSTALLATION OF THE TRANSMIT TIMING JUMPER (SEE 5.4). THIS ERROR ALSO INDICATES INABILITY TO EXECUTE A SENSE DIAGNOSTIC DSW INSTRUCTION.

E007 LRRR AAAA

TRANSITIONS ARE NOT APPEARING ON RECEIVE DATA LINE DURING TRANSMIT OPERATION. CHECK WRAPAROUND PATH AND INSTALLATION OF TEST JUMPER CONNECTING RECEIVE DATA MARK TO BYTE COUNT DSW BIT ONE (SEE 5.4).

E008 LRRR AAAA

HARDWARE IS NOT INSERTING SYN-SYN OR DLE-SYN SEQUENCES DURING TRANSMIT OPERATION.

5. COMMENTS

5.1 GENERAL PROGRAM DESCRIPTION

THE 1800 CA WRAPAROUND TEST PROVIDES FOR TESTING OF THE CA HARDWARE WITHOUT THE USE OF A REMOTE STATION. THE PROGRAM IS WRITTEN TO BE RUN UNDER THE CONTROL OF A DIAGNOSTIC MONITOR, BUT, DUE TO TIMING CONSIDERATIONS, MUST BE RUN AS A STAND-ALONE PROGRAM.

THE DATA SET CABLE TEST SWITCH MUST BE IN THE 'TEST' POSITION WHEN RUNNING THE CA WRAPAROUND TEST, AND THE DATA SET CABLE SHOULD BE DISCONNECTED FROM THE DATA SET. THE INSTALLATION OF TEST JUMPERS IS ALSO NECESSARY AS OUTLINED IN SECTION 5.4.

AN OPTIONAL ROUTINE IS PROVIDED TO ALLOW WRAPAROUND THROUGH THE DATA SET FOR DATA SETS HAVING THAT FEATURE. THIS ROUTINE (2C) MUST BE SELECTED IN ORDER TO BE RUN.

TWO ADDITIONAL OPTIONAL ROUTINES ARE PROVIDED IN ORDER TO TEST THE ADVANCE/RETARD CIRCUITRY. THESE ROUTINES REQUIRE OBSERVATION USING AN OSCILLOSCOPE (SEE 5.4, SERVICE HINTS) AND MUST BE SELECTED IN ORDER TO BE RUN.

THE CA WRAPAROUND TEST IS DIVIDED INTO A LARGE NUMBER OF 'TEST ROUTINES' EACH OF WHICH INITIATES A SINGLE I/O OPERATION. NO MANUAL INTERVENTION IS REQUIRED DURING OPERATION OF THE PROGRAM UNLESS ONE OF THE OPTIONAL ROUTINES IS SELECTED.

THE 1800 CA WRAPAROUND PROGRAM TESTS TRANSMIT OPERATIONS BY SENSING TRANSMITTED DATA ON THE RECEIVE DATA LINE AND COMPARING THIS DATA AGAINST THE DATA WHICH SHOULD HAVE BEEN TRANSMITTED. RECEIVE OPERATIONS ARE TESTED BY GENERATING MESSAGES ON THE RECEIVE DATA LINE VIA THE PROGRAMMED RECEIVE INPUT TRIGGER. TRANSMIT AND RECEIVE OPERATIONS ARE ALSO TESTED IN DIAGNOSTIC MODE.

5.2 TEST ROUTINE DESCRIPTIONS

THE NUMBERS IN THE PARENTHESES FOLLOWING THE ROUTINE DESCRIPTIONS INDICATE THE MID'S OF THE ERROR PRINTOUTS THAT MAY OCCUR AT THAT POINT IN THE TEST PROCEDURE (SEE 4.4).

ROUTINE 01--TESTS ABILITY TO CLEAR CA WHILE IN TRANSMIT MODE.

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE AND IMMEDIATELY CLEARS THE CA. THE THREE DSW'S ARE THEN SENSED AND CHECKED TO MAKE SURE THE CA HAS BEEN CLEARED (E001). THE PROGRAM THEN WAITS FOUR SECONDS AND CHECKS TO SEE IF AN INTERRUPT HAS OCCURRED (E003).

ROUTINE 02--TESTS ABILITY TO INITIALIZE TO TRANSMIT TABLE.

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE, THEN IMMEDIATELY SENSES AND SAVES THE THREE DSW'S. THE CA IS THEN CLEARED AND THE SENSED DSW'S ARE CHECKED (E001). THE PROGRAM THEN WAITS FOUR SECONDS AND CHECKS FOR AN INTERRUPT (E003).

ROUTINE 03--TESTS ABILITY TO CLEAR THE CA WHILE IN RECEIVE MODE.

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE, THEN IMMEDIATELY CLEARS THE CA. THE THREE DSW'S ARE THEN SENSED AND CHECKED TO MAKE SURE THE CA HAS BEEN CLEARED (E001). THE PROGRAM THEN WAITS FOUR SECONDS AND CHECKS TO SEE IF AN INTERRUPT HAS OCCURRED (E003).

ROUTINE 04--TESTS ABILITY TO INITIALIZE TO RECEIVE TABLE.

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE, THEN IMMEDIATELY SENSES AND SAVES THE THREE DSW'S. THE CA IS THEN CLEARED AND THE SENSED DSW'S ARE CHECKED (E001). THE PROGRAM THEN WAITS FOUR SECONDS AND CHECKS FOR AN INTERRUPT (E003).

ROUTINE 05--TESTS COMMAND REJECT IN TRANSMIT MODE.

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE, THEN IMMEDIATELY ISSUES ANOTHER INITIALIZE INSTRUCTION TO THE SAME TABLE IN ORDER TO FORCE A COMMAND REJECT. THE PROGRAM THEN SENSES AND STORES THE THREE DSW'S AND CLEARS THE CA. THE PROGRAM NEXT CHECKS FOR RECEIPT OF A COMMAND REJECT INTERRUPT (E002, E004), AND CHECKS THE SENSED DSW'S (E001).

ROUTINE 06--TESTS PROGRAMMED RECEIVE TRIGGER.

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE, WAITS 20 MILLISECONDS, AND SENSES AND SAVES THE THREE DSW'S. THE DSW'S ARE THEN CHECKED TO ENSURE THAT ALL SER/DES BITS ARE ON (E001). THE PROGRAM THEN ISSUES A SENSE DSW INSTRUCTION WITH BIT 8 ON IN THE IOCC MODIFIER IN ORDER TO TURN ON THE PROGRAMMED RECEIVE INPUT TRIGGER, WAITS ANOTHER 20 MILLISECONDS, SENSES AND SAVES THE THREE DSW'S, AND CLEARS THE CA. THE SENSED DSW'S ARE THEN CHECKED TO ENSURE THAT ALL SER/DES BITS ARE NOW OFF (E001).

ROUTINE 07--TESTS ABILITY TO LOAD BYTE COUNTER.

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE WITH A BYTE COUNT OF ONE. THE THREE DSW'S ARE IMMEDIATELY SENSED, AND THE CA IS THEN CLEARED. THE SENSED DSW'S ARE THEN CHECKED TO ENSURE THAT THE BYTE COUNTER HAS BEEN PROPERLY LOADED (E001). THE BYTE COUNT IS THEN INCREMENTED BY FIVE, AND THE ROUTINE IS RE-RUN USING THE NEW BYTE COUNT. THE ROUTINE IS LOOPED ON, INCREMENTING THE BYTE COUNT BY FIVE EACH TIME UNTIL THE BYTE COUNT EXCEEDS 4095 (/OFFF), AT WHICH TIME THE PROGRAM PROCEEDS TO THE NEXT SEQUENTIAL ROUTINE. THE BYTE COUNT IS USED AS VARIABLE DATA BY THIS ROUTINE.

ROUTINE 08--TESTS CONTINUE TIMER

THIS ROUTINE ISSUES A SENSE DSW INSTRUCTION WITH BIT 10 ON IN THE IOCC MODIFIER IN ORDER TO START THE CONTINUE TIMER. THE PROGRAM THEN DELAYS FOR 1.8 SECONDS AND CHECKS FOR AN UNEXPECTED INTERRUPT (E003). THE PROGRAM THEN WAITS 0.4 SECONDS LONGER AND CHECKS TO MAKE SURE A TIMEOUT INTERRUPT HAS OCCURRED (E002, E004).

ROUTINE 09--TESTS RECEIVE TIMEOUT

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE, WAITS 2.5 SECONDS, AND CHECKS FOR AN UNEXPECTED INTERRUPT (E003). THE PROGRAM THEN WAITS 0.7 SECONDS LONGER AND CHECKS FOR A TIMEOUT INTERRUPT (E002, E004).

ROUTINE 0A--TESTS ABILITY TO SUPPRESS TIMEOUT INTERRUPTS

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE WITH TIMEOUT INTERRUPTS SUPPRESSED. THE PROGRAM THEN WAITS FOUR SECONDS AND CLEARS THE CA. THE PROGRAM THEN CHECKS TO MAKE SURE NO INTERRUPT HAS OCCURRED (E003).

ROUTINE 0B--TEST FOR TRANSMISSION OF FIRST PRE-SYN PAD.

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE AND RETRIEVES THE FIRST CHARACTER TRANSMITTED. THE THREE DSW'S ARE THEN SENSED AND STORED AND THE CA IS CLEARED. THE SENSED DSW'S ARE THEN CHECKED (E001), AND THE TRANSMITTED DATA IS CHECKED TO MAKE SURE IT IS A PRE-SYN PAD (/55) (E005). THE PROGRAM THEN CHECKS TO MAKE SURE NO INTERRUPT HAS OCCURRED (E003).

ROUTINE 0C--TESTS TRANSMISSION OF PRE-SYN PADS AND SYN-SYN SEQUENCE

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE AND RETRIEVES THE FIRST FIVE CHARACTERS TRANSMITTED. THE THREE DSW'S ARE THEN SENSED AND SAVED AND THE CA IS CLEARED. THE SENSED DSW'S ARE THEN CHECKED (E001), AND THE RETRIEVED DATA IS CHECKED TO MAKE SURE IT CONSISTS OF THREE PRE-SYN PADS AND TWO SYN CHARACTERS (E005). THE PROGRAM THEN CHECKS TO MAKE SURE NO INTERRUPT HAS OCCURRED (E003).

ROUTINE 0D--TESTS TRANSMISSION OF MESSAGE WITH EVEN BYTE COUNT AND TESTS FOR TABLE COMPLETE INTERRUPT.

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE AND RETRIEVES ELEVEN TRANSMITTED CHARACTERS. THE CA IS THEN CLEARED AND THE RETRIEVED DATA IS COMPARED WITH THE DATA WHICH SHOULD HAVE BEEN TRANSMITTED (E005). THE PROGRAM THEN CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004).

ROUTINE 0E--TESTS TRANSMISSION OF MESSAGE WITH ODD BYTE COUNT AND TESTS FOR TABLE COMPLETE INTERRUPT

THIS ROUTINE INITIALIZES CA TO A TRANSMIT TABLE WITH AN ODD BYTE COUNT AND RETRIEVES NINE TRANSMITTED CHARACTERS. THE CA IS THEN CLEARED AND THE RETRIEVED DATA IS COMPARED WITH THE DATA WHICH SHOULD HAVE BEEN TRANSMITTED (E005). THE PROGRAM THEN CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004).

ROUTINE 0F--TESTS ABILITY TO SUPPRESS TABLE COMPLETE INTERRUPT AND TESTS TRANSMIT TIMEOUT

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE WITH TABLE COMPLETE INTERRUPT SUPPRESSED. THE PROGRAM THEN DELAYS FOR 2.5 SECONDS AND CHECKS TO MAKE SURE NO INTERRUPT HAS OCCURRED (E003). THE PROGRAM THEN WAITS 0.7 SECONDS LONGER AND CHECKS TO MAKE SURE A TIMEOUT INTERRUPT HAS OCCURRED (E002, E004).

ROUTINE 10--TESTS DECODE OF CONTROL CHARACTERS IN NORMAL MODE

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE CONTAINING THE CHARACTER /00, AND RETRIEVES THE FIRST FIVE CHARACTERS TRANSMITTED WHICH ARE THE PRE-SYN PADS AND SYN-SYN SEQUENCE. THE /00 CHARACTER HAS BEEN FETCHED FROM CORE AND LOADED INTO SER/DES AT THIS TIME, BUT HAS NOT BEEN TRANSMITTED. THE THREE DSW'S ARE IMMEDIATELY SENSED AND SAVED, AND THE CA IS CLEARED. THE SENSED DSW'S ARE THEN CHECKED (E001) THE RETRIEVED DATA IS CHECKED (E005), AND THE PROGRAM CHECKS TO MAKE SURE NO INTERRUPT OCCURRED (E003). THE CHARACTER /00 IS THEN INCREMENTED BY ONE AND THE ROUTINE IS RE-RUN. THE ROUTINE IS LOOPED ON UNTIL ALL CHARACTERS (00-FF) HAVE BEEN TRIED. THE PROGRAM CHECKS FOR THE PROPER BITS TO COME ON IN THE DSW'S AS THE VARIOUS BSC CONTROL CHARACTERS ARE DECODED. THE /00 CHARACTER WHICH IS VARIED EACH TIME THE ROUTINE IS RUN IS USED AS VARIABLE DATA BY THIS ROUTINE.

ROUTINE 11--TESTS DECODE OF CONTROL CHARACTERS IN NORMAL MODE

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE CONTAINING THE CHARACTER /00, AND RETRIEVES THE FIRST SIX CHARACTERS TRANSMITTED WHICH ARE THE PRE-SYN PADS, THE SYN-SYN SEQUENCE, AND THE CHARACTER /00. THE THREE DSW'S ARE IMMEDIATELY SENSED AND SAVED, AND THE CA IS CLEARED. THE SENSED DSW'S ARE THEN CHECKED (E001), THE RETRIEVED DATA IS CHECKED (E005), AND THE PROGRAM CHECKS TO MAKE SURE THAT NO INTERRUPT OCCURRED (E003). THE CHARACTER /00 IS THEN INCREMENTED BY ONE AND THE ROUTINE IS RE-RUN. THE ROUTINE IS LOOPED ON UNTIL ALL CHARACTERS (00-FF) HAVE BEEN TRIED. THE PROGRAM CHECKS FOR THE PROPER BITS TO COME ON IN THE DSW'S AS THE VARIOUS BSC CONTROL CHARACTERS ARE DECODED. THE /00 CHARACTER WHICH IS VARIED EACH TIME THE ROUTINE IS RE-RUN IS USED AS VARIABLE DATA BY THIS ROUTINE.

CA WRAPAROUND TEST

CA WRAPAROUND TEST

ROUTINE 12--TESTS DECODE OF CONTROL CHARACTERS IN TRANSPARENT MODE

THIS ROUTINE IS BYPASSED WHEN RUNNING IN USASCII MODE.

THE PROGRAM INITIALIZES THE CA TO A TRANSMIT TABLE CONTAINING A DLE CHARACTER FOLLOWED BY THE CHARACTER /00, AND RETRIEVES THE FIRST SIX CHARACTERS TRANSMITTED WHICH ARE THE PRE-SYN PADS, THE SYN-SYN SEQUENCE, AND THE DLE CHARACTER. THE CHARACTER /00 HAS BEEN FETCHED FROM CORE AND LOADED INTO SER/DES AT THIS TIME, BUT HAS NOT BEEN TRANSMITTED. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE SENSED DSW'S ARE THEN CHECKED (E001), THE RETRIEVED DATA IS CHECKED (E005), AND THE PROGRAM CHECKS TO MAKE SURE NO INTERRUPT OCCURRED (E003). THE CHARACTER /00 IS THEN INCREMENTED BY ONE, AND THE ROUTINE IS RE-RUN. THE ROUTINE IS LOOPED ON UNTIL ALL CHARACTERS (00-FF) HAVE BEEN TRIED. THE PROGRAM CHECKS FOR THE PROPER BITS TO COME ON IN THE DSW'S AS THE VARIOUS BSC CONTROL CHARACTERS ARE DECODED. THE CHARACTER /00 WHICH IS INCREMENTED EACH TIME THE ROUTINE IS RE-RUN IS USED AS VARIABLE DATA BY THIS ROUTINE.

ROUTINE 13--TESTS DECODE OF CONTROL CHARACTERS IN TRANSPARENT MODE

THIS ROUTINE IS BYPASSED WHEN RUNNING IN USASCII MODE.

THE PROGRAM INITIALIZES THE CA TO A TRANSMIT TABLE CONTAINING A DLE CHARACTER FOLLOWED BY THE CHARACTER /00, AND RETRIEVES THE FIRST SEVEN CHARACTERS TRANSMITTED WHICH ARE THE PRE-SYN PADS, THE SYN-SYN SEQUENCE, THE DLE CHARACTER, AND THE CHARACTER /00. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE SENSED DSW'S ARE THEN CHECKED (E001), THE RETRIEVED DATA IS CHECKED (E005), AND THE PROGRAM CHECKS TO MAKE SURE NO INTERRUPT OCCURRED (E003). THE CHARACTER /00 IS THEN INCREMENTED BY ONE AND THE ROUTINE IS RE-RUN. THE ROUTINE IS LOOPED ON UNTIL ALL CHARACTERS (00-FF) HAVE BEEN TRIED. THE PROGRAM CHECKS FOR THE PROPER BITS TO COME ON IN THE DSW'S AS THE VARIOUS BSC CONTROL CHARACTERS ARE DECODED. THE CHARACTER /00 WHICH IS INCREMENTED EACH TIME THE ROUTINE IS RE-RUN IS USED AS VARIABLE DATA BY THIS ROUTINE.

ROUTINE 14--TESTS FOR DLE INSERTION FOLLOWING TRANSMISSION OF DLE IN TRANSPARENT MODE

THIS ROUTINE IS BYPASSED WHEN RUNNING IN USASCII MODE.

THE PROGRAM INITIALIZES THE CA TO A TRANSMIT TABLE CONTAINING THE FOLLOWING CHARACTERS DLE STX /7F DLE /7F /7F, AND RETRIEVES THE TRANSMITTED DATA. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE RETRIEVED DATA IS THEN COMPARED (E005). THE FOLLOWING STRING OF CHARACTERS SHOULD HAVE BEEN RETRIEVED /55 /55 /55 SYN SYN DLE STX /7F DLE DLE /7F /7F. THE PROGRAM THEN CHECKS THE SENSED DSW'S (E001), AND CHECKS TO MAKE SURE NO INTERRUPT OCCURRED (E003).

ROUTINE 15--TESTS INCREMENTATION OF BYTE COUNTER

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE WITH A BYTE COUNT OF /1FF, AND RETRIEVES THE FIRST 512 CHARACTERS TRANSMITTED. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE SENSED DSW'S ARE THEN CHECKED TO MAKE SURE THE PROPER RESIDUAL BYTE COUNT IS IN THE BYTE COUNT DSW (E001). THE PROGRAM THEN CHECKS TO MAKE SURE NO INTERRUPT HAS OCCURRED (E003). THE TRANSMIT TABLE BYTE COUNT IS THEN INCREMENTED BY 512 AND THE ROUTINE IS RE-RUN. THE ROUTINE IS LOOPED ON, INCREMENTING THE BYTE COUNT BY 512 EACH TIME, UNTIL THE BYTE COUNT EXCEEDS /FFF, AT WHICH TIME THE PROGRAM PROCEEDS TO THE NEXT SEQUENTIAL ROUTINE. THE VALUE TO WHICH THE BYTE COUNT IS SET AT THE BEGINNING OF THE ROUTINE IS USED AS VARIABLE DATA BY THIS ROUTINE.

ROUTINE 16--TESTS ABILITY TO CHAIN FROM TRANSMIT TABLE TO TRANSMIT TABLE

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE CHAINED TO A SECOND TRANSMIT TABLE AND RETRIEVES THE FIRST ELEVEN CHARACTERS TRANSMITTED WHICH INCLUDE THE FIRST TRANSMIT TABLE AND TWO CHARACTERS FROM THE SECOND TRANSMIT TABLE. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE DATA IS THEN CHECKED TO MAKE SURE THE CHAINING TOOK PLACE (E005), THE PROGRAM CHECKS TO MAKE SURE NO INTERRUPT OCCURRED (E003), AND THE SENSED DSW'S ARE CHECKED (E001).

ROUTINE 17--TESTS TRANSMIT TIMEOUT

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE CHAINED TO A SECOND TRANSMIT TABLE CONTAINING TWO SYN CHARACTERS AND CHAINED BACK TO ITSELF. THE PROGRAM THEN WAITS FOR 2.5 SECONDS AND CHECKS TO MAKE SURE NO INTERRUPT HAS OCCURRED (E003). THE PROGRAM THEN WAITS FOR 0.7 SECONDS MORE, CLEARS THE CA, AND CHECKS FOR A TIMEOUT INTERRUPT (E002, E004).

ROUTINE 18--TESTS FOR HARDWARE INSERTION OF SYN-SYN SEQUENCE

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE WHICH IS CHAINED TO A SECOND TRANSMIT TABLE CONTAINING TWO /7F CHARACTERS AND CHAINED BACK TO ITSELF. THE PROGRAM THEN WAITS FOUR SECONDS, CLEARS THE CA, AND CHECKS TO MAKE SURE NO INTERRUPT HAS OCCURRED (E003). A TIMEOUT INTERRUPT INDICATES THE TIMER WAS NOT RESET BY HARDWARE INSERTION OF A SYN-SYN SEQUENCE.

ROUTINE 19--TESTS FOR DLE-SYN SEQUENCE INSERTIONS

THIS ROUTINE IS BYPASSED WHEN RUNNING IN USASCII MODE.

THE PROGRAM INITIALIZES THE CA TO THREE CHAINED TRANSMIT TABLES, AND MODIFIES THE CHAIN ADDRESSES TO CHAIN THE SECOND TABLE BACK ON ITSELF. THE FIRST TABLE CONTAINS A DLE-STX SEQUENCE, AND THE SECOND TABLE CONTAINS TWO /7F CHARACTERS. THE PROGRAM THEN WAITS FOUR SECONDS, CLEARS THE CA, AND CHECKS TO MAKE SURE THAT NO INTERRUPT HAS OCCURRED (E003). A TIMEOUT INTERRUPT INDICATES THAT THE TIMER WAS NOT RESET BY HARDWARE INSERTION OF A DLE-SYN SEQUENCE.

ROUTINE 1A--TESTS LONG END SEQUENCE, SHORT END SEQUENCE, AND
CALCULATION AND INSERTION OF BCC CHARACTERS IN NORMAL
MODE

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE CONTAINING THE FOLLOWING CHARACTERS STX /80 /01 /DF /7F ETB /FF /FF, AND RETRIEVES THE TRANSMITTED DATA. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE TRANSMITTED DATA IS THEN CHECKED (E005), INCLUDING BCC CHARACTERS, THE SENSED DSW'S ARE CHECKED (E001), AND THE PROGRAM CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004). THE PROGRAM THEN REPLACES THE ETB IN THE TRANSMIT TABLE WITH AN ETX AND RE-RUNS THE ROUTINE. THE ROUTINE IS RUN ONCE FOR EACH OF THE BSC END CONTROL CHARACTERS ETB, ETX, EOT, ENQ, NAK, AND ITB BEFORE CONTINUING ON TO THE NEXT SEQUENTIAL ROUTINE. THE BSC END CONTROL CHARACTERS ARE USED AS VARIABLE DATA BY THIS ROUTINE.

ROUTINE 1B--TESTS LONG END SEQUENCE, SHORT END SEQUENCE, AND
CALCULATION THE INSERTION OF BCC CHARACTERS IN
TRANSPARENT MODE

THIS ROUTINE IS BYPASSED WHEN RUNNING IN USASCII MODE.

THE PROGRAM INITIALIZES THE CA TO A TRANSMIT TABLE CONTAINING THE FOLLOWING CHARACTERS DLE STX /01 /80 DLE ETB /FF /FF, AND RETRIEVES THE TRANSMITTED DATA. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE TRANSMITTED DATA IS THEN CHECKED (E005), INCLUDING BCC CHARACTERS, THE SENSED DSW'S ARE CHECKED (E001), AND THE PROGRAM CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004). THE ETB IN THE TRANSMIT TABLE IS THEN REPLACED BY AN ETX, AND THE ROUTINE IS RE-RUN. THE ROUTINE IS RUN ONCE FOR EACH OF THE BSC END CONTROL CHARACTERS ETB, ETX, EOT, ENQ, NAK, AND ITB BEFORE CONTINUING ON TO THE NEXT SEQUENTIAL ROUTINE. THE BSC CONTROL END CHARACTERS ARE USED AS VARIABLE DATA BY THIS ROUTINE.

ROUTINE 1C--TESTS TRANSMISSION OF CONTROL CHARACTERS IN NORMAL TEXT

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE CONTAINING BSC CONTROL CHARACTERS, AND RETRIEVES THE TRANSMITTED DATA. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE PROGRAM THEN CHECKS THE TRANSMITTED DATA (E005), CHECKS THE SENSED DSW'S (E001), AND CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004).

ROUTINE 1D--TESTS TRANSMISSION OF CONTROL CHARACTERS IN TRANSPARENT
MODE

THIS ROUTINE IS BYPASSED WHEN RUNNING IN USASCII MODE.

THE PROGRAM INITIALIZES THE CA TO A TRANSPARENT MODE TRANSMIT TABLE CONTAINING BSC CONTROL CHARACTERS, AND RETRIEVES THE TRANSMITTED DATA. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE PROGRAM THEN CHECKS THE TRANSMITTED DATA (E005), CHECKS THE SENSED DSW'S (E001), AND CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004).

ROUTINE 1E--TESTS SYN-SYN SEQUENCE INSERTION IN NORMAL MODE

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE FIFTY CHARACTERS LONG, AND RETRIEVES THE TRANSMITTED DATA. THE CA IS THEN CLEARED, AND THE RETRIEVED DATA IS SCANNED FOR AN INSERTED SYN-SYN SEQUENCE. IF NONE IS FOUND, THE RETRIEVED DATA IS CHECKED (E005), THE LENGTH OF THE TABLE IS INCREMENTED BY ONE, AND THE ROUTINE IS RE-RUN. THE ROUTINE IS LOOPED ON, INCREASING THE LENGTH OF THE DATA TABLE BY ONE EACH TIME UNTIL A SYN-SYN SEQUENCE INSERTION OCCURS. THEN THE DATA IS AGAIN CHECKED (E005), A D001 MESSAGE IS PRINTED, GIVING THE LENGTH OF THE TABLE AT THE TIME THE INSERTION OCCURRED, AND THE PROGRAM PROCEEDS TO THE NEXT SEQUENTIAL ROUTINE. THE NUMBER OF CHARACTERS IN THE TRANSMIT TABLE IS USED AS VARIABLE DATA BY THIS ROUTINE.

ROUTINE 1F--TESTS DLE-SYN SEQUENCE INSERTION IN TRANSPARENT MODE

THIS ROUTINE IS BYPASSED WHEN RUNNING IN USASCII MODE.

THE PROGRAM INITIALIZES THE CA TO A TRANSPARENT MODE TRANSMIT TABLE FIFTY CHARACTERS LONG, AND RETRIEVES THE TRANSMITTED DATA. THE CA IS THEN CLEARED, AND THE RETRIEVED DATA SCANNED FOR AN INSERTED DLE-SYN SEQUENCE. IF NONE IS FOUND, THE RETRIEVED DATA IS CHECKED (E005), THE LENGTH OF THE TABLE IS INCREMENTED BY ONE, AND THE ROUTINE IS RE-RUN. THE ROUTINE IS LOOPED ON, INCREASING THE LENGTH OF THE DATA TABLE BY ONE EACH TIME UNTIL A DLE-SYN SEQUENCE INSERTION OCCURS. THEN THE DATA IS AGAIN CHECKED (E005), A D001 MESSAGE IS PRINTED, GIVING THE LENGTH OF THE TABLE AT THE TIME THE INSERTION OCCURRED, AND THE PROGRAM PROCEEDS TO THE NEXT SEQUENTIAL ROUTINE. THE NUMBER OF CHARACTERS IN THE TRANSMIT TABLE IS USED AS VARIABLE DATA BY THIS ROUTINE.

ROUTINE 20--TESTS ABILITY TO ESTABLISH CHARACTER PHASE IN RECEIVE
MODE

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE, PLACES TWO SYN CHARACTERS ON THE RECEIVE DATA LINE, SENSES AND SAVES THE THREE DSW'S AND CLEARS THE CA. THE DSW'S ARE CHECKED TO MAKE SURE THAT CHARACTER PHASE WAS ESTABLISHED (E001), AND THE PROGRAM CHECKS TO MAKE SURE THAT NO INTERRUPT OCCURRED (E003).

ROUTINE 21--TESTS ABILITY TO CHAIN FROM TRANSMIT TABLE TO RECEIVE
TABLE, AND INITIAL RESET

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE CHAINED TO A SECOND TRANSMIT TABLE CHAINED TO ITSELF. THE PROGRAM THEN WAITS FOR 0.8 SECONDS, THEN CHANGES THE SECOND TRANSMIT TABLE TO A RECEIVE TABLE. THE PROGRAM THEN WAITS 2.5 SECONDS MORE, AND CHECKS TO MAKE SURE NO INTERRUPT HAS OCCURRED (E003). THE PROGRAM THEN WAITS AN ADDITIONAL 0.5 SECONDS, CLEARS THE CA, AND CHECKS FOR A TIMEOUT INTERRUPT (E002, E004).

CA WRAPAROUND TEST

ROUTINE 22--TESTS RECEIVE MODE DATA TRANSFER AND TABLE COMPLETE INTERRUPT

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE, AND GENERATES A MESSAGE ON THE RECEIVE DATA LINE. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE SENSED DSW'S ARE THEN CHECKED (E001), THE RECEIVED DATA IS CHECKED (E005), AND THE PROGRAM CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004).

ROUTINE 23--TESTS HARDWARE DELETION OF SYN-SYN SEQUENCE

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE AND GENERATES A MESSAGE ON THE RECEIVE DATA LINE CONTAINING THE FOLLOWING CHARACTERS /7F /7F SYN SYN /7F /7F. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE SENSED DSW'S ARE THEN CHECKED (E001), THE RECEIVED DATA IS CHECKED TO MAKE SURE THE SYN CHARACTERS WERE DELETED (E005), AND THE PROGRAM CHECKS TO MAKE SURE NO INTERRUPT OCCURRED (E003).

ROUTINE 24--TESTS HARDWARE DELETION OF DLE AND DLE-SYN SEQUENCES IN TRANSPARENT MODE

THIS ROUTINE IS BYPASSED WHEN RUNNING IN USASCII MODE.

THE PROGRAM INITIALIZES THE CA TO A RECEIVE TABLE AND GENERATES A MESSAGE ON THE RECEIVE DATA LINE CONTAINING THE FOLLOWING CHARACTERS. DLE STX DLE DLE DLE SYN /7F /7F. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE SENSED DSW'S ARE THEN CHECKED (E001), THE RECEIVED DATA IS CHECKED TO ENSURE THAT THE DLE AND DLE-SYN SEQUENCE DELETIONS OCCURRED CORRECTLY (E005), AND THE PROGRAM CHECKS TO MAKE SURE NO INTERRUPT OCCURRED (E003).

ROUTINE 25--TESTS END CHARACTER DECODED INTERRUPT

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE AND GENERATES A MESSAGE ON THE RECEIVE DATA LINE ENDED BY AN ETB. THE CA IS THEN CLEARED, AND THE RECEIVED DATA IS CHECKED (E005). THE PROGRAM THEN CHECKS FOR AN END CHARACTER DECODED INTERRUPT (E002, E004). THE ETB IN THE MESSAGE IS THEN REPLACED BY AN ETX AND THE ROUTINE IS RE-RUN. THE ROUTINE IS RUN ONCE FOR EACH OF THE BSC END CONTROL CHARACTERS ETB, ETX, EOT, ENQ, NAK, AND ITB. WHEN CHECKING THE ITB, THE PROGRAM EXPECTS NO END CHARACTER DECODED INTERRUPT, AND THEREFORE, CHECKS TO MAKE SURE THAT NO INTERRUPT OCCURRED (E003), IN PLACE OF THE END CHARACTER DECODED INTERRUPT CHECK. THE BSC END CONTROL CHARACTERS ARE USED AS VARIABLE DATA BY THIS ROUTINE.

CA WRAPAROUND TEST

ROUTINE 26--TESTS DETECTION OF INCORRECT BCC

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE, AND GENERATES A MESSAGE ON THE RECEIVE DATA LINE. THE BCC IN THE GENERATED MESSAGE IS SET TO /04. IF RUNNING IN EBCDIC MODE, THE FIRST BCC CHARACTER FOLLOWING THE END CHARACTER IS SET TO /04. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE SENSED DSW'S ARE CHECKED (E001), THE RECEIVED DATA IS CHECKED, AND THE PROGRAM CHECKS FOR AN END CHARACTER DECODED INTERRUPT AND DATA BCC CHECK (E002, E004). THE /04 CHARACTER IS THEN INCREMENTED BY ONE AND THE ROUTINE IS RE-RUN. THE ROUTINE IS LOOPED ON UNTIL ALL CHARACTERS (04-FF) EXCEPT THE CORRECT BCC CHARACTER HAVE BEEN USED. THE INCORRECT BCC CHARACTER IS USED AS VARIABLE DATA BY THIS ROUTINE.

ROUTINE 27--TESTS STORAGE PROTECT VIOLATE INTERRUPT

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE, SETS THE STORAGE PROTECT BIT IN THE SECOND WORD OF THE DATA TABLE, AND GENERATES A MESSAGE ON THE RECEIVE DATA LINE. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE PROGRAM THEN CHECKS THE SENSED DSW'S (E001), CHECKS THE RETRIEVED DATA (E005), AND CHECKS FOR RECEIPT OF A STORAGE PROTECT VIOLATE INTERRUPT (E002, E004).

ROUTINE 28--TESTS TRANSMIT/RECEIVE DATA TRANSFER

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE CONTAINING ALL VALID BIT COMBINATIONS (00-FF) EXCEPT BSC CONTROL CHARACTERS, WHICH IS CHAINED TO A RECEIVE TABLE. THE TRANSMITTED DATA IS RETRIEVED, AND THE PROGRAM THEN CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004). THE RETRIEVED DATA IS THEN GENERATED ON THE RECEIVE DATA LINE BY THE PROGRAM AND TRANSFERRED VIA THE CA TO THE RECEIVE TABLE. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE PROGRAM THEN CHECKS THE DSW'S (E001), COMPARES THE RECEIVED DATA AGAINST THE DATA ORIGINALLY TRANSMITTED (E005), AND CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004).

ROUTINE 29--TESTS DIAGNOSTIC MODE

THIS ROUTINE INITIALIZES THE CA TO A DIAGNOSTIC MODE TRANSMIT TABLE CHAINED TO A DIAGNOSTIC MODE RECEIVE TABLE, AND RETRIEVES THE DATA TRANSMITTED. THE PROGRAM THEN CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004), AND GENERATES A MESSAGE ON THE RECEIVE DATA LINE. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE PROGRAM THEN CHECKS THE DSW'S (E001), CHECKS THE TRANSMIT AND RECEIVE TABLES (E005), AND CHECKS FOR RECEIPT OF A TABLE COMPLETE INTERRUPT (E002, E004).

ROUTINE 2A--CONTINUOUS CLOCK ADVANCE

THIS IS AN OPTIONAL ROUTINE AND MUST BE SELECTED IN ORDER TO BE RUN.

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE AND PLACES TRANSITIONS ON THE RECEIVE DATA LINE PRIOR TO THE RECEIVE DATA CLOCK REACHING A COUNT OF SIXTEEN. THIS CAUSES A CONTINUAL CLOCK ADVANCE. SEE 5.4 FOR HINTS ON USE OF AN OSCILLOSCOPE WHILE RUNNING THIS ROUTINE. THE PROGRAM WILL REMAIN IN THIS ROUTINE UNTIL IT IS DE-SELECTED. THIS ROUTINE IS ONLY APPLICABLE TO CA LINES USING INTERNAL CLOCKING.

ROUTINE 2B--CONTINUOUS CLOCK RETARD

THIS IS AN OPTIONAL ROUTINE AND MUST BE SELECTED IN ORDER TO BE RUN.

THIS ROUTINE INITIALIZES THE CA TO A RECEIVE TABLE AND PLACES TRANSITIONS ON THE RECEIVE DATA LINE EACH RECEIVE TIMING CYCLE AFTER THE RECEIVE CLOCK HAS REACHED A COUNT OF SIXTEEN. THIS CAUSES A CONTINUAL CLOCK RETARD. SEE 5.4 FOR HINTS ON USE OF OSCILLOSCOPE WHILE RUNNING THIS ROUTINE. THE PROGRAM WILL REMAIN IN THIS ROUTINE UNTIL IT IS DE-SELECTED. THIS ROUTINE IS APPLICABLE ONLY TO CA LINES WITH INTERNAL CLOCKING.

ROUTINE 2C--TESTS DATA TRANSFER THROUGH DATA SET

THIS IS AN OPTIONAL ROUTINE AND SHOULD BE RUN ONLY IF THE DATA SET HAS PROVISION TO WRAPAROUND INTERNALLY OR ON THE TELEPHONE LINE SIDE OF THE DATA SET. PROVISION HAS BEEN MADE TO ALLOW FOR ANY TIME DELAY THROUGH THE DATA SET. ONLY THE TRANSMIT PORTION OF THIS ROUTINE ACTUALLY WRAPS AROUND THROUGH THE DATA SET.

THIS ROUTINE INITIALIZES THE CA TO A TRANSMIT TABLE CONTAINING ALL CHARACTERS (00-FF) EXCEPT THE BSC CONTROL CHARACTERS, CHAINED TO A RECEIVE TABLE, AND RETRIEVES THE TRANSMITTED DATA. THE PROGRAM THEN CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004), AND GENERATES THE RETRIEVED DATA ON THE RECEIVE DATA LINE. THE THREE DSW'S ARE THEN SENSED AND SAVED, AND THE CA IS CLEARED. THE PROGRAM THEN CHECKS THE SENSED DSW'S (E001), COMPARES THE RECEIVED DATA AGAINST THE DATA ORIGINALLY TRANSMITTED (E005), AND CHECKS FOR A TABLE COMPLETE INTERRUPT (E002, E004).

5.3 SUPPORTING SUBROUTINES

THE FOLLOWING SUBROUTINES ARE LISTED BY THE LABELS BY WHICH THEY ARE IDENTIFIED IN THE PROGRAM LISTING.

XMRCV--THIS SUBROUTINE BUILDS A TRANSMIT OR RECEIVE TABLE, INITIALIZES THE CA TO IT, AND, IF NECESSARY, RETRIEVES DATA TRANSMITTED BACK INTO CORE STORAGE.

CALLING SEQUENCE
BSI L XMRCV
1) DC /XXXX
2) DC AAAA
3) DC CCCC

THE FIRST PARAMETER (1) IS THE BYTE COUNT WORD, AND IS PLACED IN THE DATA TABLE EXACTLY AS IT APPEARS IN THE DC STATEMENT.

THE SECOND PARAMETER (2) IS THE ADDRESS OF THE DATA TO BE PLACED IN THE TRANSMIT/RECEIVE TABLE AND IS ARRANGED EXACTLY AS IT WOULD APPEAR IN THE DATA TABLE IN NORMAL MODE. ALL DATA INCLUDING ENDING PADS, EXCEPT THE BYTE COUNT WORD SHOULD BE AT THIS ADDRESS. THE FIRST CHARACTER SHOULD BE LEFT-JUSTIFIED IN THE FIRST WORD REGARDLESS OF WHETHER THE BYTE COUNT IS ODD OR EVEN. FOR RECEIVE OPERATIONS, THIS PARAMETER IS SET TO ZERO AND PARAMETER THREE (3) IS OMITTED.

THE THIRD PARAMETER (3) CONTAINS THE NUMBER OF TRANSMITTED CHARACTERS TO BE RETRIEVED BACK INTO CORE DURING TRANSMIT OPERATIONS. IF THIS PARAMETER IS ZERO, THE PROGRAM WILL RETURN TO THE CALLING ROUTINE IMMEDIATELY AFTER ISSUING AN INITIALIZE INSTRUCTION TO THE TRANSMIT TABLE.

IF THE CHAINING BIT IS ON IN THE BYTE COUNT WORD (PARAMETER 1), PARAMETER 3 WILL CONTAIN EITHER THE BYTE COUNT WORD FOR THE SECOND DATA TABLE OR BE SET TO ZERO. A FOURTH AND FIFTH PARAMETER WILL BE ADDED. IF PARAMETER 3 CONTAINS THE BYTE COUNT WORD FOR THE SECOND TABLE, PARAMETER 4 WILL CONTAIN THE ADDRESS OF THE DATA FOR THE SECOND DATA TABLE. IF PARAMETER 3 CONTAINS ZERO, PARAMETER 4 WILL CONTAIN THE ADDRESS OF A WORD CONTAINING TWO CHARACTERS WHICH WILL BE USED TO BUILD A SECOND DATA TABLE WHICH IS CHAINED TO ITSELF. PARAMETER 5 WILL CONTAIN THE COUNT FOR THE NUMBER OF TRANSMITTED CHARACTERS TO BE RETRIEVED BACK INTO CORE. THE SECOND DATA TABLE MAY BE CHAINED TO A THIRD DATA TABLE BY THE CHAINING BIT BEING ON IN THE BYTE COUNT WORD FOR THE SECOND DATA TABLE IN A LIKE MANNER. IF THE SECOND DATA TABLE IS A RECEIVE TABLE, PARAMETER 4 SHOULD BE ZERO, AND PARAMETER 5 OMITTED.

CNTRL--THIS SUBROUTINE CONTROLS THE SEQUENCE OF EXECUTION OF THE TEST ROUTINES.

DELAY--THIS SUBROUTINE PROVIDES A PROGRAMMED TIME DELAY AND WILL DELAY BY MILLISECONDS ANYWHERE FROM APPROXIMATELY ONE MILLISECOND TO THIRTY-TWO SECONDS.

CALLING SEQUENCE
BSI L DELAY
DC NNNN

THE DC STATEMENT CONTAINS THE NUMBER OF MILLISECONDS OF DELAY DESIRED.

PRINT--THIS SUBROUTINE CALLS UPON THE MONITOR LOG ROUTINE IN ORDER TO PRINT MESSAGES. THE MESSAGE STRING ADDRESS IS IN INDEX REGISTER TWO WHEN THIS SUBROUTINE IS CALLED.

ERPRT--THIS SUBROUTINE CALLS UPON THE MONITOR ERROR PRINT ROUTINE TO PRINT ERROR MESSAGES. THE ERROR MESSAGE STRING ADDRESS IS IN INDEX REGISTER TWO WHEN THIS SUBROUTINE IS CALLED.

GEN----THIS SUBROUTINE GENERATES DATA ON THE RECEIVE DATA LINE VIA THE PROGRAMMED RECEIVE INPUT TRIGGER DURING RECEIVE OPERATIONS.

CALLING SEQUENCE
BSI L GEN
1) DC CCCC
2) DC AAAA

PARAMETER 1 IS THE NUMBER OF CHARACTERS (IN HEX) TO BE PLACED ON THE PROGRAMMED RECEIVE INPUT LINE. PARAMETER 2 IS THE ADDRESS OF THE DATA TO BE USED.

CKTIM--THIS SUBROUTINE CHECKS TO MAKE SURE TRANSITIONS ARE OCCURRING AT REASONABLE INTERVALS ON THE TRANSMIT TIMING LINE AS SENSED AT BIT ZERO OF THE DIAGNOSTIC DSW.

DCODE--THIS SUBROUTINE DECODES BSC CONTROL CHARACTERS AND BUILDS DECODE WORDS IN THE A AND Q REGISTERS. THE DECODE WORD FOR THE CHARACTER IN THE LEFT HALF OF THE WORD IN THE 'A' REGISTER WHEN THIS SUBROUTINE IS CALLED GOES INTO THE 'A' REGISTER. THE DECODE WORD FOR THE CHARACTER IN THE RIGHT HALF OF THE WORD IN THE 'A' REGISTER GOES INTO THE 'Q' REGISTER. THE DECODE WORDS ARE SET UP AS FOLLOWS

BSC CONTROL CHAR	BIT ON	BSC CONTROL CHAR	BIT ON
DLE	0	ENQ	6
SOH	1	NAK	7
STX	2	ITB	8
ETB	3	SYN	9
ETX	4	STICK	10
EOT	5	USASCII PARITY ERROR	11

CALBC--THIS SUBROUTINE CALCULATES BCC CHARACTERS AND PLACES THE CALCULATED BCC IN A WORD IN CORE LABELED BCCA. THE RESULT IS ALSO IN THE 'A' REGISTER AT THE RETURN FROM THIS SUBROUTINE. IN THE CASE OF USASCII MODE, THE BCC CHARACTER IS IN THE LEFT HALF OF THE WORD AND A HEX 7F IS IN THE RIGHT HALF.

SENSE--THIS SUBROUTINE SENSES AND STORES THE DIAGNOSTIC, BYTE COUNT, AND OPERATING DSW'S IN THAT ORDER AND IMMEDIATELY RETURNS TO THE CALLING ROUTINE.

CKDSW--THIS SUBROUTINE COMPARES THE DSW'S SENSED IN THE 'SENSE' SUBROUTINE TO 'SHOULD BE' DSW'S IN THE CALLING SEQUENCE. IF THE DSW'S DO NOT COMPARE EQUAL, A 'E001' MESSAGE IS PRINTED.

CALLING SEQUENCE
BSI L CKDSW
1) DC /XXXX
2) DC /MMMM
3) DC /XXXX
4) DC /MMMM
5) DC /XXXX
6) DC /MMMM

PARAMETERS 1, 3, AND 5 CONTAIN THE 'SHOULD BE' OPERATING, BYTE COUNT, AND DIAGNOSTIC DSW'S RESPECTIVELY. PARAMETERS 2, 4, AND 6 ARE THE MASKS FOR THE RESPECTIVE DSW'S. BITS ON IN THESE MASKS ARE IGNORED IN CHECKING THE DSW'S.

CKDAT--THIS SUBROUTINE COMPARES DATA TRANSMITTED OR RECEIVED AGAINST A TABLE CONTAINING DATA WHICH SHOULD HAVE BEEN TRANSMITTED OR RECEIVED AND PRINTS OUT A 'E005' MESSAGE IF THE DATA DOES NOT COMPARE.

CALLING SEQUENCE
BSI L CKDAT
1) DC AAAA
2) DC AAAA
3) DC CCCC

PARAMETER 1 IS THE ADDRESS OF THE RETRIEVED DATA. PARAMETER 2 IS THE ADDRESS OF THE EXPECTED DATA, AND PARAMETER 3 IS THE NUMBER OF CHARACTERS TO BE COMPARED.

CKINT--THIS SUBROUTINE CHECKS INTERRUPTS. IF AN UNEXPECTED INTERRUPT OCCURRED, AN 'E003' MESSAGE IS PRINTED OUT. IF AN EXPECTED INTERRUPT FAILED TO OCCUR, AN 'E004' MESSAGE IS PRINTED. IF AN INTERRUPT WAS EXPECTED AND ONE DID OCCUR, THE DSW'S SENSED DURING THE SERVICING OF THE INTERRUPT ARE COMPARED WITH 'SHOULD BE' DSW'S IN THE CALLING SEQUENCE AND AN 'E002' MESSAGE IS PRINTED OUT IF THE DSW'S DO NOT COMPARE EQUAL.

CALLING SEQUENCE
BSI L CKINT
1) DC /XXXX
2) DC /MMMM
3) DC /XXXX
4) DC /MMMM
5) DC /XXXX
6) DC /MMMM

PARAMETERS 1, 3, AND 5 ARE THE 'SHOULD BE' OPERATING, BYTE COUNT, AND DIAGNOSTIC DSW'S RESPECTIVELY. PARAMETERS 2, 4, AND 6 ARE THE MASKS FOR THE RESPECTIVE DSW'S. BITS ON IN THESE MASKS ARE IGNORED IN CHECKING THE DSW'S. IF NO INTERRUPT IS EXPECTED, PARAMETER 1 IS ZERO AND PARAMETERS 2 THROUGH 6 ARE OMITTED.

INT----THIS IS THE INTERRUPT SERVICE SUBROUTINE. THE DIAGNOSTIC, BYTE COUNT, AND OPERATING DSW'S ARE SENSED AND STORED IN THAT ORDER AND AN IMMEDIATE RETURN IS MADE TO THE MONITOR COMMON INTERRUPT SUBROUTINE. THE OPERATING DSW IS SENSED WITH RESET.

5.4 SERVICE HINTS

A) INSTALLATION OF SLT BOARD SLIP-ON TEST JUMPERS

THE FOLLOWING JUMPERS MUST BE INSTALLED ON THE 'X3' BOARD OF EACH CA LINE TO BE TESTED IN ORDER FOR THE 1800 CA WRAPAROUND TEST TO BE RUN. ALL REFERENCES TO THE 'X3' BOARD BELOW REFER TO THE 'X1' BOARD IN THE CASE OF ODD NUMBERED CA LINES.

JUMPER BYTE COUNT DSW BIT ZERO Z-X2C2G10 (MA371) - LINE 0
Z-X2C2J10 (MA371) - LINE 1
TO INT OR EXT CLOCK TIMING Z-X3F3D04 (MM998)
PRIOR TO EC 421344.
TO INT OR EXT CLOCK TIMING Z-X3D5D13 (MM998)
IF EC 421344 HAS BEEN INSTALLED.

JUMPER BYTE COUNT DSW BIT ONE Z-X2C2J04 (MA361) - LINE 0
Z-X2C2J07 (MA361) - LINE 1
TO -RECEIVE SPACE Z-X3L3D02 (MK041)

JUMPER RING INDICATOR Z-X3E7B04 (MM998)
TO -3 VOLTS Z-X3E7B06.

JUMPER CARRIER ON Z-X3C7B02 (MK041)
TO -3 VOLTS Z-X3C7B06.

THE FOLLOWING JUMPERS MUST BE INSTALLED ON LINES WIRED FOR DATA SET CLOCKING.

JUMPER -CHAR2 Z-X3H5D09 (MM998)
TO -CHAR2 FOR 3 LEADING 55'S Z-X3C6B12 (MM998)

JUMPER RECEIVE TIMING Z-X3E7B02 (MM998)
TO -3 VOLTS Z-X3F7B06.

JUMPER +EXT TRANSMIT CLOCK Z-X3G5D09 (MM998)
TO 1) 9.6KHZ TRIGGER Z-X2M6B12 (MB271) FOR 9600 BAUD
2) 4.8KHZ TRIGGER Z-X2M6B13 (MB271) FOR 4800 BAUD
3) 2.4KHZ TRIGGER Z-X2M6B10 (MB271) FOR 2400 BAUD
4) 1.2KHZ TRIGGER Z-X2M6B04 (MB271) FOR 1200 BAUD
5) 600HZ TRIGGER Z-X2M6B03 (MB281) FOR 600 BAUD

B) USE OF OSCILLOSCOPE IN RUNNING ADVANCE/RETARD TEST ROUTINES.

NOTE...THESE ROUTINES ARE APPLICABLE TO INTERNALLY CLOCKED CA LINES ONLY.

THE OSCILLOSCOPE SHOULD BE USED TO DISPLAY THE INTERNAL CLOCK TRIGGER 16 Z-X3F7B02 (ML221). THE CONTINUAL ADVANCE SHOULD CAUSE THE PATTERN TO BE SHORTENED BY 1/32ND OF A CYCLE, AND THE CONTINUAL RETARD ROUTINE SHOULD CAUSE THE PATTERN TO BE LENGTHENED BY 1/32ND OF A CYCLE. ALTERNATELY SELECTING EACH OF THESE ROUTINES SHOULD PROVIDE A GOOD MEANS FOR COMPARISON OF THE TWO PATTERNS.

C) USE OF BYTE COUNT DSW C.E. JUMPERABLE BITS

BIT 2 OF THE BYTE COUNT DSW AND BIT ZERO OF THE DIAGNOSTIC DSW ARE C.E. JUMPERABLE AND HAVE BEEN RESERVED FOR THE USE OF THE CE AS HE WISHES. THESE BITS ARE IGNORED DURING THE CHECKING OF THE DSW'S, BUT CAN BE CHECKED BY ALTERING THE MASKS IN THE CALLING SEQUENCE TO CHECK THE DSW'S (SEE 5.3--CKDSW).

6. APPENDIX

6.1 BSC LINE CONTROL CHARACTERS

FUNCTIONAL MNEMONIC	EBCDIC CODE IN HEXADECIMAL	USASCII CODE IN HEXADECIMAL	NAME OF FUNCTION
* DLE	* 10	* 10	* DATA LINK ESCAPE
* SOH	* 01	* 01	* START OF HEADING
* STX	* 02	* 02	* START OF TEXT
* ETB	* 26	* 97	* END OF TRANSMISSION BLOCK
* ETX	* 03	* 83	* END OF TEXT
* EOT	* 37	* 04	* END OF TRANSMISSION (SEE NOTE BELOW)
* ENQ	* 2D	* 85	* ENQUIRY
* NAK	* 3D	* 15	* NEGATIVE ACKNOWLEDGEMENT (SEE NOTE BELOW)
* ITB	* 1F	* 1F	* END OF INTERMEDIATE TRANSMISSION BLOCK
* SYN	* 32	* 16	* SYNCHRONOUS IDLE
* ACK	* 2E	* 86	* POSITIVE ACKNOWLEDGEMENT (SEE NOTE 2 BELOW)

NOTE 1....THE EOT AND NAK CHARACTERS ARE RECOGNIZED AS CONTROL CHARACTERS ONLY IF THE FIRST FOUR BITS OF THE TRAILING PAD (ALL ONES CHARACTER) ARE SUCCESSFULLY RECEIVED.

NOTE 2....ALTHOUGH THE ACK CHARACTER IS DEFINED AS A CONTROL CHARACTER, AND RESTRICTED FROM USE IN THOSE MESSAGES THAT TRANSMIT NORMAL TEXT, THE USE OF AN ACK AS A POSITIVE ACKNOWLEDGEMENT HAS BEEN REPLACED IN BSC PROCEDURES BY THE ACK0 AND ACK1 CONTROL SEQUENCES.

6.2 BSC LINE CONTROL SEQUENCES

FUNCTIONAL MNEMONIC	EBCDIC CODE IN HEXADECIMAL	USASCII CODE IN HEXADECIMAL	NAME OF FUNCTION
* ACKO	* 1070	* 10B0	* EVEN ACKNOWLEDGEMENT
* ACKI	* 1061	* 1031	* ODD ACKNOWLEDGEMENT
* WACK	* 106B	* 103B	* WAIT BEFORE TRANSMIT - POSITIVE ACKNOWLEDGEMENT
* DISC	* 1037	* 1004	* MANDATORY DISCONNECT
* RVI	* 107C	* 10BC	* REVERSE INTERRUPT
* XSTX	* 1002	* ----	* TRANSPARENT START OF TEXT
* XETB	* 1026	* ----	* TRANSPARENT END OF TRANSMISSION BLOCK
* XETX	* 1003	* ----	* TRANSPARENT END OF TEXT
* XENQ	* 102D	* ----	* TRANSPARENT BLOCK CANCEL
* XSYN	* 1032	* ----	* TRANSPARENT SYNCHRONOUS IDLE
* XITB	* 101F	* ----	* TRANSPARENT END OF INTERMEDIATE TRANSMISSION BLOCK
* XDLE	* 1010	* ----	* DATA DLE IN TRANSPARENT TEXT

6.3 CA OPERATING, BYTE COUNT, AND DIAGNOSTIC DSW FORMATS

BYTE COUNT DSW FORMAT

BIT 0.....C.E. JUMPERABLE BIT - JUMPERED TO +TRANSMIT TIMING.
 BIT 1.....C.E. JUMPERABLE BIT - JUMPERED TO RECEIVE DATA MARK.
 BIT 2.....C.E. JUMPERABLE BIT - READS AS ONE IF NOT JUMPERED.
 BIT 3.....TRANSMIT LATCH ON.
 BITS 4-15...BYTE COUNT IN ONES COMPLEMENT FORM.

OPERATING DSW FORMAT

BIT	MEANING WHEN ON	CAUSES INTERRUPT
0	CHANNEL STOP INDICATOR	YES
1	STORAGE PROTECT VIOLATION INDICATOR	YES
2	TIMED OUT INDICATOR	YES
3	END CHARACTER DECODED OR RINGING INDICATOR	YES
4	TABLE COMPLETE INDICATOR	YES
5	DATA PARITY CHECK INDICATOR	NO
6	DATA BCC CHECK INDICATOR	NO
7	DATA OVERRUN INDICATOR	NO
8	DATA SET READY CONDITION	NO
9	COMMAND REJECT INDICATOR	YES
10	CARRIER ON CONDITION	NO

DIAGNOSTIC DSW FORMAT

BIT	MEANING WHEN ON
0	C.E. JUMPERABLE BIT - READS AS ONE IF NOT JUMPERED.
1	CHARACTER PHASE ON
2	CHARACTER TRIGGER 1 ON
3	NOT CLEAR TO SEND
4	TRANSPARENT TRIGGER ON
5	TEXT TRIGGER ON
6	END TRIGGER ON
7	LINE TRIGGER ON
8	SER/DES BIT 0 ON
9	SER/DES BIT 1 ON
10	SER/DES BIT 2 ON
11	SER/DES BIT 3 ON
12	SER/DES BIT 4 ON
13	SER/DES BIT 5 ON
14	SER/DES BIT 6 ON
15	SER/DES BIT 7 ON

6.4 PROGRAM EDIT PROCEDURE

THE 1800 CA WRAPAROUND TEST REQUIRES THE USE OF ONE PROGRAM EDIT CARD AND AN END OF EDIT CARD.

THE FORMS ON THE FOLLOWING PAGES SHOULD BE USED TO PREPARE THE EDIT CARDS. FILL IN THE NECESSARY ENTRIES IN THE FORM BEFORE PUNCHING THE CARDS. FOR PAPER TAPE LOAD, THE FORM MAY BE USED TO MANUALLY ENTER THE EDIT INFORMATION (SEE DM USE PROCEDURE).

CA WRAPAROUND TEST

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*****
*****
**
**
** NN NN 0000000000 TTTTTTTTTT EEEEEEEEEEE **
** NNN NN 0000000000 TTTTTTTTTT EEEEEEEEEEE **
** NNNN NN 00 00 TT EE **
** NN NN NN 00 00 TT EE **
** NN NN NN 00 00 TT EEEEEEE **
** NN NN NN 00 00 TT EEEEEEE **
** NN NN NN 00 00 TT EE **
** NN NN NN 00 00 TT EE **
** NN NNNN 00 00 TT EE **
** NN NNN 0000000000 TT EEEEEEEEEEE **
** NN NN 0000000000 TT EEEEEEEEEEE **
**
**
** ***** 2 APPENDIX PAGES TO FOLLOW ***** **
**
*****
*****

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END OF EDIT CARD

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	26	31	36	41	46	51	56	61	66	71	
	E	0	E	0	0	/	F	F	F	F	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

DATE 14NOV69 30JAN70 16DEC70

EC NO. 431319 431319A 431323

PROG ID 080E-*

PAGE 16


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07FF          ORG      */07FF          80E00020
*****
*          MONITOR INTERFACE EQUATE TABLE          80E00030
*          80E00040
*          80E00050
*          80E00060
*****
*          80E00070
*          80E00080
012C 0      BEGIN EQU      /012C      MONITOR BEGIN RTN ADDR      80E00090
012D 0      START EQU      BEGIN+1    MONITOR POLLING RTN ADDR 80E00100
012E 0      END EQU        START+1    END PROGRAM RTN ADDR    80E00110
012F 0      LOG EQU        END+1      LOG ROUTINE ADDRESS      80E00120
0130 0      ERROR EQU      LOG+1      ERROR LOG ROUTINE ADDR 80E00130
0131 0      REQDV EQU      ERROR+1    REQUEST DEVICE RTN ADDR 80E00140
0132 0      RELDV EQU      REQDV+1    RELEASE DEVICE RTN ADDR 80E00150
0133 0      CRCK EQU       RELDV+1    INTERNAL INTRP EXPECT IND 80E00160
0134 0      MAT EQU        CRCK+1     MONITOR MAT TBL ADDR   80E00170
*          80E00180
*          80E00190
*****
*          PROGRAM STATUS TABLE          80E00200
*          80E00210
*          80E00220
*          80E00230
*****
*          80E00240
*          80E00250
07FF 0 0E00  PID DC      /0E00      PROGRAM ID          80E00260
0800 0 0000  RID DC      *--      ROUTINE ID          80E00270
0801 0 0000  RAD DC      *--      ROUTINE ADDRESS      80E00280
0802 0 0000  SW0 DC      *--      CONTROL OPTIONS      80E00290
0803 0 0000  SW1 DC      *--      ROUTINE SELECTION    80E00300
0804 0 0000  SW2 DC      *--      LINE SELECTION        80E00310
0805 0 0000  SW3 DC      *--      VARIABLE DATA SELECTION 80E00320
0806 1 083C  IPA DC      XEQ       INITIAL PROGRAM ADDR 80E00330
0807 1 0842  LPA DC      LXEQ      LOOP PROGRAM ADDR    80E00340
0808 1 0848  EPA DC      DXEQ      END PROGRAM ADDR     80E00350
0809 0 0000  MLSCF DC     *--      MAINLINE SEQUENCE    80E00360
080A 0 0000  DC          *--      CONTROL FIELD        80E00370
080B 0 FFFF  TERM DC     /FFFF      80E00380
*          80E00390
*          80E00400
080C 1 1FF0  DC          PEND      PROGRAM END ADDRESS 80E00410
*          80E00420
080D  0005  BSS         5          RESERVED          80E00430
*          80E00440
*          80E00450
*****
*          80E00460
*          80E00470
*          80E00480
*****
*          80E00490
*          80E00500
0812 0 0000  CORE DC      *--      CORE STORAGE SPEED 80E00510
*          80E00520
0813 0 0000  CODE DC      *--      LINE CODE          80E00530
*          80E00540
*          80E00550
0814 0 0000  LINE0 DC     *--      LINE 0 DDEF        80E00560
0815 0 0000  LINE1 DC     *--      LINE 1 DDEF        80E00570
0816 0 0000  LINE2 DC     *--      LINE 2 DDEF        80E00580
0817 0 0000  LINE3 DC     *--      LINE 3 DDEF        80E00590
0818 0 0000  LINE4 DC     *--      LINE 4 DDEF        80E00600
0819 0 0000  LINE5 DC     *--      LINE 5 DDEF        80E00610
081A 0 0000  LINE6 DC     *--      LINE 6 DDEF        80E00620
081B 0 0000  LINE7 DC     *--      LINE 7 DDEF        80E00630
081C 0 FFFF  DC          /FFFF      80E00640
*          80E00650
*          80E00660
*****
*          80E00670
*          80E00680
*          80E00690
*          PROGRAMMED TIME DELAY

```

```

*****
*          80E00700
*          80E00710
081D 0 0000  DELAY DC     *--      ENTRY          80E00720
*          80E00730
*          80E00740
081E 1 C480 081D LD I DELAY  FETCH DELAY MSEC COUNT 80E00750
0820 1 D400 1631 STO L TEMP1  AND SAVE          80E00760
*          80E00770
0822 1 7401 081D MDX L DELAY,1  SET UP RETURN ADDRESS 80E00780
*          80E00790
0824 0 C0DD LD SWO CHECK BYPASS DELAY 80E00800
0825 0 1805 SRA 5 OPTION 80E00810
0826 1 4C84 081D BSC I DELAY,E BR IF ON 80E00820
*          80E00830
0828 0 6200 LDX 2 0 80E00840
*          80E00850
0829 1 6E00 1632 DLAY1 STX L2 TEMP2 CHECK 80E00860
082B 0 7201 MDX 2 1 FOR 80E00870
082C 1 C400 1632 LD L TEMP2 END OF 80E00880
082E 1 F400 1631 EOR L TEMP1 DELAY 80E00890
0830 1 4C98 081D BSC I DELAY,+- RETURN IF END OF DELAY 80E00900
*          80E00910
0832 1 C400 15D7 LD L INT RETURN IF 80E00920
0834 1 4CA0 081D BSC I DELAY,Z INTERRUPT HAS OCCURRED 80E00930
*          80E00940
0836 0 6700 0000 TIME LDX L3 *-- XR3=DELAY CONSTANT 80E00950
*          80E00960
0838 0 7301 DLAY2 MDX 3 1 LOOP FOR 80E00970
0839 0 70FE MDX DELAY2 ONE MSEC 80E00980
*          80E00990
083A 1 4C00 0829 BSC L DLAY1 GO CHECK DELAY CNT AGAIN 80E01000
*          80E01010
*****
*          80E01020
*          80E01030
*          80E01040
*          80E01050
*****
*          80E01060
*          80E01070
*          80E01080
083C 0 0000 XEQ DC *-- INITIAL PROGRAM ENTRY 80E01090
*          80E01100
*          80E01110
083D 1 6700 0854 LDX L3 STRT SET INITIAL PROGRAM 80E01120
083F 0 6BC9 STX 3 MLSCF MLSCF ENTRY 80E01130
*          80E01140
*          80E01150
*          80E01160
*          80E01170
0842 0 0000 LXEQ DC *-- LOOP PROGRAM ENTRY 80E01180
*          80E01190
0843 1 6700 0873 LDX L3 STRT1 SET LOOP PROGRAM 80E01200
0845 0 6BC3 STX 3 MLSCF MLSCF ENTRY 80E01210
*          80E01220
*          80E01230
*          80E01240
*****
*          80E01250
*          80E01260
*          80E01270
*          80E01280
*****
*          80E01290
*          80E01300
*          80E01310
0848 0 0000 DXEQ DC *-- ENTRY 80E01320
*          80E01330
*          80E01340
0849 0 C006 LD DX1 80E01350
084A 1 4C98 0848 BSC I DXEQ,+ RETURN IF NO LINE ACTIVE 80E01360
*          80E01370
084C 1 0C00 1618 XID L CLEAR CLEAR CA

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JCA WRAP AROUND TEST

JCA WRAP AROUND TEST

```

084E 0 4480 0132      BSI I RELDV   RELEASE LINE      80E01380
0850 0 0000          DX1 DC  *-*      CURRENTLY        80E01390
0851 1 080B          DC   TERM      BEING TESTED    80E01400
*                                     *                *
0852 1 4C80 0848      BSC I DXEQ    RETURN          80E01410
*                                     *                *
*                                     *                *
*****
*                                     *                *
*          PROGRAM INITIALIZATION          *                *
*****
*                                     *                *
STRT LDX 3 0          DETERMINE NUMBER OF  80E01420
LD L3 LINE0+1        LINES SPECIFIED ON   80E01430
EOR TERM            EDIT CARD AND SET    80E01440
MDX 3 1             LINE COUNT IN XR3    80E01450
BSC L STRT+1,Z      LOOP UNTIL COUNT FOUND 80E01460
*                                     *                *
*                                     *                *
LD TERM            SET UP MASK           80E01470
SRA 3 0            FOR LINE              80E01480
EOR TERM            SELECTION            80E01490
STO L DDEFS        OPTION ENTRY          80E01500
*                                     *                *
*                                     *                *
MDX 3 2            SET MODIFIER COUNT     80E01510
STX L3 PASS-3      FOR SUMMARY PRINTOUT  80E01520
*                                     *                *
*                                     *                *
SLA 16             CLEAR SUMMARY         80E01530
STO L3 PASS-1      PRINTOUT              80E01540
MDX 3 -1           TABLE                80E01550
MDX *-4           *                     80E01560
*                                     *                *
*                                     *                *
LD SW2            FETCH FUNCTION 2 ENTRY  80E01570
AND L DDEFS      SET LINES SELECTED IND  80E01580
STO L LINES      *                     80E01590
*                                     *                *
*                                     *                *
LDX I1 CORE       SET UP                 80E01600
LD L1 TIME2-2     TIME DELAY             80E01610
STO L TIME+1      CONSTANT               80E01620
*                                     *                *
*                                     *                *
STRT1 LDX L1 T     XRI=CONSTANT TBL BASE ADDR 80E01630
*                                     *                *
*                                     *                *
SLA 16            RESET TO ZERO          80E01640
STO SW3           FUNCTION 3 ENTRY       80E01650
STO DX1           ACTIVE LINE INDICATOR  80E01660
STO 1 LINE-T     LINE NUMBER            80E01670
STO 1 LOCK-T     RTN LOCK INDICATOR     80E01680
STO 1 ERLOK-T    LOOP ON ERROR IND      80E01690
STO 1 LNRID-T    LINE/RTN SELECT IND    80E01700
*                                     *                *
*                                     *                *
LD SW1            FETCH RTN SELECTION AND  80E01710
AND 1 HOOFF-T    MASK OUT UNUSED BITS   80E01720
STRT2 STO SW1     *                     80E01730
BSC +            SKIP IF RTN SELECTED    80E01740
A 1 D1-T         SET UP STARTING        80E01750
STO L RID        ROUTINE NUMBER         80E01760
*                                     *                *
*                                     *                *
S L LRTN          BR IF VALID RTN NUMBER  80E01770
BSC L STRT3,+    *                     80E01780
*                                     *                *
*                                     *                *
SLA 16           INVALID RTN SELECTED,   80E01790
MDX STRT2        RESET SELECTION        80E01800
*                                     *                *
*                                     *                *
STRT3 LDX I3 RID   SET UP STARTING      80E01810
LD L3 RTTBL-1     ROUTINE               80E01820
STO L RAD         ADDRESS                80E01830
*                                     *                *
*                                     *                *

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```

088F 0 40B8
0890 1 C400 0804
0892 0 E1B2
0893 1 4C20 089B
0895 1 6600 1643
0897 1 4400 121B
0899 0 30CA
089A 0 70B9
089B 0 F1D7
089C 1 4C20 0854
089E 1 C400 0803
08A0 1 4C18 08B0
08A2 1 F400 0800
08A4 0 1008
08A5 1 4C20 0854
08A7 0 C1B4
08A8 1 4C20 08B0
08AA 1 C400 0805
08AC 1 4C10 08B0
08AE 0 D1B3
08AF 0 700A
08B0 0 C1B4
08B1 1 4C18 08B7
08B3 0 9117
08B4 0 4B28
08B5 0 D1B3
08B6 0 7005
08B7 0 C1B3
08B8 1 4C20 08BC
08BA 1 7401 1627
08BC 1 6780 1627
08BE 1 C700 0813
08C0 1 4C10 08DB
08C2 0 1010
08C3 0 D1B1
08C4 1 C400 0803
08C6 1 4C20 08BA
08C8 1 C400 0800
08CA 0 E104
08CB 1 9400 1612
08CD 1 4C28 08DB
08CF 1 7401 164C
08D1 0 1000
08D2 1 6600 1649

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```

***** 80E02060
* 80E02070
* PROGRAM CONTROL ROUTINE 80E02080
* 80E02090
***** 80E02100
* 80E02110
* 80E02120
CNTRL BSI DXEQ RELEASE ANY ACTIVE LINE 80E02130
* 80E02140
LD L SW2 CK LINE SELECTION 80E02150
AND 1 DDEFS-T 80E02160
BSC L CNTR1,Z BR IF VALID LINE SELECTED 80E02170
* 80E02180
LDX L2 COCA PRINT LINE SELECT REQUEST 80E02190
BSI L PRINT 80E02200
* 80E02210
WTCA WAIT /CA WAIT FOR LINE SELECTION 80E02220
* 80E02230
MDX STRT GO TO INITIALIZE AGAIN 80E02240
* 80E02250
CNTR1 EOR 1 LINES-T 80E02260
BSC L STRT,Z BR IF NEW LINE SELECTION 80E02270
* 80E02280
LD L SW1 80E02290
BSC L CNTR2,+ BR IF NO ROUTINE SELECTED 80E02300
* 80E02310
EOR L RID 80E02320
SLA 8 80E02330
BSC L STRT,Z BR IF NEW ROUTINE SELECTED 80E02340
* 80E02350
LD 1 ERLOK-T CK LOOP ON ERROR IND 80E02360
BSC L CNTR2,Z BR TO LOOP ON ERROR 80E02370
* 80E02380
LD L SW3 80E02390
BSC L CNTR2,- BR IF NO FUNCTION 3 ENTRY 80E02400
* 80E02410
STO 1 LOCK-T SET RTN DATA LOCK IND 80E02420
MDX CNTR5 GO TO SET UP TEST LINE 80E02430
* 80E02440
CNTR2 LD 1 ERLOK-T CK LOOP ON ERROR IND 80E02450
BSC L CNTR3,+ BR IF NO LOOP 80E02460
* 80E02470
S 1 D1-T RESTORE FAILING VARIABLE 80E02480
BSC Z+ SKIP IF NO VARIABLE USED 80E02490
STO 1 LOCK-T SET RTN LOCK IND 80E02500
MDX CNTR5+2 GO TO SET UP LINE 80E02510
* 80E02520
CNTR3 LD 1 LOCK-T 80E02530
BSC L CNTR5+2,Z BR IF RTN LOCK IS ON 80E02540
* 80E02550
CNTR5 MDX L LINE,1 INCREMENT LINE NUMBER BY 1 80E02560
LDX I3 LINE 80E02570
LD L3 LINE0-1 80E02580
BSC L CNTR6,- BR IF EDITED FOR THIS LINE 80E02590
* 80E02600
SLA 16 80E02610
STO 1 LINE-T RESET TO LINE 0 80E02620
LD L SW1 80E02630
BSC L CNTR5,Z BR IF ANY RTN IS SELECTED 80E02640
* 80E02650
LD L RID 80E02660
AND 1 HOOFF-T 80E02670
S L LNRTN CK FOR NORMAL END PROG 80E02680
BSC L CNTR4,Z+ BR IF NOT END YET 80E02690
* 80E02700
MDX L PASS,1 INCRE PASS COUNT BY 1 80E02710
NOP 80E02720
* 80E02730
LDX L2 DOCA PRINT SUMMARY 80E02730

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

08D4 1 4400 121B      BSI L PRINT
*
08D6 0 4C80 012E      BSC I END          END PROGRAM
*
08D8 1 7401 0800      CNTR4 MDX L RID,1  ADVANCE TO NEXT ROUTINE
08DA 0 70DF            MDX          CNTR5  GO TO SET UP LINE
*
08DB 1 C400 0804      CNTR6 LD L SW2     CHECK
08DD 0 1801            SRA 1             LINE
08DE 0 1300            SLA 3 0           SELECTION
08DF 1 4C10 08BA      BSC L CNTR5,-     BR IF LINE NOT SELECTED
*
08E1 1 7700 0813      MDX L3 LINE0-1    XR3=DDEF ADDRESS
08E3 0 1000            NOP
08E4 1 6F00 0850      STX L3 DX1        SET UP RELEASE CALL
08E6 0 6B10            STX 3 X1          SET UP REQUEST CALL
*
08E7 1 6500 08ED      CNTR7 LDX L1 CNTR8 SET MLSCF RETURN
08E9 1 6D00 0809      STX L1 MLSCF      TO REQUEST DEVICE CALL
*
08EB 0 4C80 012D      BSC I START       GO TO MONITOR
*
08ED 1 6500 1676      CNTR8 LDX L1 T     RESTORE XR1
*
08EF 0 6780 0134      LDX I3 MAT        CHECK MONITOR
08F1 0 C302            LD 3 2             LOG BUSY INDICATOR
08F2 1 4C20 08E7      BSC L CNTR7,Z     BR IF LOG BUSY
*
08F4 0 4480 0131      BSI I REQDV       REQUEST
08F6 1 08E7            DC CNTR7          CA LINE
08F7 0 0000            X1 DC *-*         TO BE
08F8 1 1506            DC INT-1          TESTED
08F9 1 0808            DC TERM
*
08FA 0 63EE            CNTR9 LDX 3 IOCC5-ASCII INSERT AREA
08FB 1 C700 1627      LD L3 ASCII+1     CODE AND
08FD 0 E105            AND 1 H07BF-T     LINE SELECT
08FE 1 EC00 15D6      OR L INT-1        BIT IN ALL
0900 1 D700 1627      STO L3 ASCII+1    CA IOCC'S
0902 0 7302            MDX 3 2
0903 0 70F7            MDX CNTR9+1
*
0904 1 6780 1627      LDX I3 LINE       DETERMINE
0906 1 7780 1627      MDX I3 LINE       CODE USED
0908 0 73FF            MDX 3 -1          ON LINE
0909 1 C400 0813      LD L CODE         BEING TESTED
090B 0 1300            SLA 3 0
090C 1 4C10 0912      BSC L CNTR,-     BR IF EBCDIC CODE
*
090E 0 D1B0            STO 1 ASCII-T     SET USASCII CODE IND
*
090F 1 6700 1803      LDX L3 XMRCT      POINT TO USASCII CODE TBL
0911 0 7004            MDX CNTRB+2      GO TO MOVE CODE TABLE
*
0912 0 1010            CNTRA SLA 16
0913 0 D1B0            STO 1 ASCII-T     RESET USASCII CODE IND
*
0914 1 6700 1A19      CNTRB LDX L3 ASCCT POINT TO EBCDIC CODE TBL
0916 0 6B03            STX 3 CNTRC+1
*
0917 0 6700 FF16      LDX L3 DLE-TTBL1 MOVE PROPER
0919 0 C700 0000      LD L3 *-*         CODE TABLE
091B 1 D700 1784      STO L3 TTBL1      TO COMMON
091D 0 7301            MDX 3 1           TABLE AREA
091E 0 70FA            MDX CNTRC
*
091F 0 C12D            LD 1 SYN-T
0920 1 D400 17CB      STO L VTBL+2
    
```

```

80E02740
80E02750
80E02760
80E02770
80E02780
80E02790
80E02800
80E02810
80E02820
80E02830
80E02840
80E02850
80E02860
80E02870
80E02880
80E02890
80E02900
80E02910
80E02920
80E02930
80E02940
80E02950
80E02960
80E02970
80E02980
80E02990
80E03000
80E03010
80E03020
80E03030
80E03040
80E03050
80E03060
80E03070
80E03080
80E03090
80E03100
80E03110
80E03120
80E03130
80E03140
80E03150
80E03160
80E03170
80E03180
80E03190
80E03200
80E03210
80E03220
80E03230
80E03240
80E03250
80E03260
80E03270
80E03280
80E03290
80E03300
80E03310
80E03320
80E03330
80E03340
80E03350
80E03360
80E03370
80E03380
80E03390
80E03400
80E03410
    
```

```

0922 1 C400 0800
0924 0 E104
0925 1 D400 0800
*
0927 1 6780 0800
0929 1 C700 15E5
092B 1 D400 0801
*
092D 0 C1B1
092E 0 9117
092F 0 100C
0930 1 EC00 0800
0932 1 D400 0800
*
0934 0 F1B5
0935 1 4C20 093A
*
0937 1 7400 1629
0939 0 7009
*
093A 1 C400 0802
093C 0 100B
093D 1 4C28 0943
*
093F 1 6600 1646
0941 1 4400 121B
*
0943 1 C400 0800
0945 0 D1B5
*
0946 0 C1B3
0947 0 1890
*
0948 0 1010
0949 1 D400 15D7
094B 0 D1B3
094C 0 D1B4
094D 0 D1CA
*
094E 1 2C40 1804
*
0950 0 18D0
0951 1 4C98 0801
*
0953 1 7401 0801
0955 0 E109
0956 1 4C80 0801
*
0958 0 1000
*
0959 1 4400 1274
095B 0 2006
095C 1 16A7
095D 0 0000
*
095E 0 09A2
*
095F 1 4400 14B0
*
0961 1 4400 14CC
    
```

```

* LD L RID          DELETE
AND 1 H00FF-T      LINE NUMBER
STO L RID          FROM RID
*
* LDX I3 RID        SET UP TEST
LD L3 RTTBL-1     ROUTINE
STO L RAD          ADDRESS
*
LD 1 LINE-T        INSERT
S 1 D1-T           NEW LINE
SLA 12             NUMBER
OR L RID           IN RID
STO L RID
*
EOR 1 LNRID-T
BSC L CNTRD,Z     BR IF NEW LINE OR RTN
*
MDX L LOCK         BR IF RTN LOCK IND ON
MDX CNTRC
*
CNTRD LD L SWO     CK OPERATING OPTIONS
SLA 11
BSC L CNTRC,Z+    BR IF BYPASS START RTN MSG
*
LDX L2 AOCA
BSI L PRINT       PRINT RTN START MESSAGE
*
CNTRC LD L RID     SAVE NEW LINE
STO 1 LNRID-T    NUMBER AND RID
*
LD 1 LOCK-T       SAVE ROUTINE
SRT 16           LOCK IND IN Q
*
SLA 16           CLEAR INDICATORS
STO L INT        INTERRUPT OCCURRED IND
STO 1 LOCK-T     RTN LOCK IND
STO 1 ERLOK-T    LOOP ON ERROR IND
STO 1 DIAGS-T    DIAGNOSTIC MODE IND
*
STS L XMRCT+1,/40 CLEAR STG PROT BIT
*
RTE 16           GET RTN LOCK DATA
BSC I RAD,+      GO TO RTN IF NO LOCK
*
MDX L RAD,1      INCRE RTN ADDR BY 1
AND 1 H00FF-T    DELETE FLAG BIT
BSC I RAD        GO TO TEST ROUTINE
*
*
*
*****
*
* TEST ROUTINE 01
*
*****
*
RTN01 NOP
*
BSI L XMRCV      INITIALIZE CA
DC /2006         TO TRANSMIT
DC TBL2         TABLE
DC 0
*
XIO 1 CLEAR-T    CLEAR CA
*
BSI L SENSE      SENSE DSWS
*
BSI L CKDSW      CHECK DSWS
    
```

```

80E03420
80E03430
80E03440
80E03450
80E03460
80E03470
80E03480
80E03490
80E03500
80E03510
80E03520
80E03530
80E03540
80E03550
80E03560
80E03570
80E03580
80E03590
80E03600
80E03610
80E03620
80E03630
80E03640
80E03650
80E03660
80E03670
80E03680
80E03690
80E03700
80E03710
80E03720
80E03730
80E03740
80E03750
80E03760
80E03770
80E03780
80E03790
80E03800
80E03810
80E03820
80E03830
80E03840
80E03850
80E03860
80E03870
80E03880
80E03890
80E03900
80E03910
80E03920
80E03930
80E03940
80E03950
80E03960
80E03970
80E03980
80E03990
80E04000
80E04010
80E04020
80E04030
80E04040
80E04050
80E04060
80E04070
80E04080
80E04090
    
```

ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

0963 0 0000      DC      /0000      80E04100
0964 0 0080      DC      /0080      80E04110
0965 0 0000      DC      /0000      80E04120
0966 0 E000      DC      /E000      80E04130
0967 0 0155      DC      /0155      80E04140
0968 0 9000      DC      /9000      80E04150
*
0969 1 4400 081D BSI L DELAY   WAIT 4 SECONDS 80E04160
096B 0 0FA0      DC      4000      80E04170
*
096C 1 4400 15A0 BSI L CKINT   CHECK FOR      80E04180
096E 0 0000      DC      0          UNEXPECTED INTERRUPT 80E04190
*
096F 1 4C00 088F BSC L CNTRL   EXIT ROUTINE 80E04200
*
*****
*
*          TEST ROUTINE 02
*
*****
*
RTN02 NOP
*
0971 0 1000
*
0972 1 4400 1274 BSI L XMRCV   INITIALIZE CA
0974 0 2006      DC      /2006   TO TRANSMIT
0975 1 16A7      DC      TBL2   TABLE
0976 0 0000      DC      0
*
0977 1 4400 14BD BSI L SENSE   SENSE DSWS
*
0979 0 09A2      XIO  1 CLEAR-T CLEAR CA
*
097A 1 4400 14CC BSI L CKDSW   CHECK DSWS
097C 0 0080      DC      /0080
097D 0 0000      DC      /0000
097E 0 1FF9      DC      /1FF9
097F 0 E000      DC      /E000
0980 0 2155      DC      /2155
0981 0 8000      DC      /8000
*
0982 1 4400 081D BSI L DELAY   WAIT 4 SECONDS 80E04510
0984 0 0FA0      DC      4000      80E04520
*
0985 1 4400 15A0 BSI L CKINT   CHECK FOR      80E04530
0987 0 0000      DC      0          UNEXPECTED INTERRUPT 80E04540
*
0988 1 4C00 088F BSC L CNTRL   EXIT ROUTINE 80E04550
*
*****
*
*          TEST ROUTINE 03
*
*****
*
RTN03 NOP
*
098A 0 1000
*
098B 1 4400 1274 BSI L XMRCV   INITIALIZE CA
098D 0 0004      DC      /0004   TO RECEIVE
098E 0 0000      DC      0          TABLE
*
098F 0 09A2      XIO  1 CLEAR-T CLEAR CA
*
0990 1 4400 14BD BSI L SENSE   SENSE DSWS
*
0992 1 4400 14CC BSI L CKDSW   CHECK DSWS
0994 0 0000      DC      /0000
80E04600
80E04610
80E04620
80E04630
80E04640
80E04650
80E04660
80E04670
80E04680
80E04690
80E04700
80E04710
80E04720
80E04730
80E04740
80E04750
80E04760
80E04770

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0995 0 0080      DC      /0080      80E04780
0996 0 0000      DC      /0000      80E04790
0997 0 E000      DC      /E000      80E04800
0998 0 0100      DC      /0100      80E04810
0999 0 90FF      DC      /90FF      80E04820
*
099A 1 4400 081D BSI L DELAY   WAIT 4 SECONDS 80E04830
099C 0 0FA0      DC      4000      80E04840
*
099D 1 4400 15A0 BSI L CKINT   CHECK FOR      80E04850
099F 0 0000      DC      0          UNEXPECTED INTERRUPT 80E04860
*
09A0 1 4C00 088F BSC L CNTRL   EXIT ROUTINE 80E04870
*
*****
*
*          TEST ROUTINE 04
*
*****
*
RTN04 NOP
*
09A2 0 1000
*
09A3 1 4400 1274 BSI L XMRCV   INITIALIZE CA
09A5 0 0004      DC      /0004   TO RECEIVE
09A6 0 0000      DC      0          TABLE
*
09A7 1 4400 14BD BSI L SENSE   SENSE DSWS
*
09A9 0 09A2      XIO  1 CLEAR-T CLEAR CA
*
09AA 1 4400 14CC BSI L CKDSW   CHECK DSWS
09AC 0 0080      DC      /0080
09AD 0 0000      DC      /0000
09AE 0 0FFB      DC      /0FFB
09AF 0 E000      DC      /E000
09B0 0 0100      DC      /0100
09B1 0 90FF      DC      /90FF
*
09B2 1 4400 081D BSI L DELAY   WAIT 4 SECONDS 80E04920
09B4 0 0FA0      DC      4000      80E04930
*
09B5 1 4400 15A0 BSI L CKINT   CHECK FOR      80E04940
09B7 0 0000      DC      0          UNEXPECTED INTERRUPT 80E04950
*
09B8 1 4C00 088F BSC L CNTRL   EXIT ROUTINE 80E04960
*
*****
*
*          TEST ROUTINE 05
*
*****
*
RTN05 NOP
*
09BA 0 1000
*
09BB 1 4400 1274 BSI L XMRCV   INITIALIZE CA
09BD 0 2006      DC      /2006   TO TRANSMIT
09BE 1 16A7      DC      TBL2   TABLE
09BF 0 0000      DC      0
*
09C0 0 09A4      XIO  1 INITL-T INITIALIZE AGAIN 80E04970
*
09C1 0 1000      NOP          COMMAND REJECT INTERRUPT 80E04980
09C2 0 1000      NOP          SHOULD OCCUR HERE 80E04990
*
09C3 1 4400 14BD BSI L SENSE   SENSE DSWS
*
80E04990
80E04990
80E05000
80E05010
80E05020
80E05030
80E05040
80E05050
80E05060
80E05070
80E05080
80E05090
80E05100
80E05110
80E05120
80E05130
80E05140
80E05150
80E05160
80E05170
80E05180
80E05190
80E05200
80E05210
80E05220
80E05230
80E05240
80E05250
80E05260
80E05270
80E05280
80E05290
80E05300
80E05310
80E05320
80E05330
80E05340
80E05350
80E05360
80E05370
80E05380
80E05390
80E05400
80E05410
80E05420
80E05430
80E05440
80E05450

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ICA WRAP AROUND TEST

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0A2C 1 4400 15A0      BSI L CKINT   CHECK FOR
0A2E 0 2000           DC /2000     TIMEOUT INTERRUPT
0A2F 0 0080           DC /0080
0A30 0 0000           DC /0000
0A31 0 F000           DC /F000
0A32 0 0100           DC /0100
0A33 0 90FF           DC /90FF
*
0A34 1 4C00 088F      BSC L CNTRL   EXIT ROUTINE
*
*****
TEST ROUTINE O9
*****
RTN09 NOP
*
0A36 0 1000
*
0A37 1 4400 1274      BSI L XMRCV   INITIALIZE CA
0A39 0 0004           DC /0004     TO RECEIVE TABLE
0A3A 0 0000           DC 0
*
0A3B 1 4400 081D      BSI L DELAY   WAIT 2.5 SECONDS
0A3D 0 09C4           DC 2500
*
0A3E 1 4400 15A0      BSI L CKINT   CHECK FOR
0A40 0 0000           DC 0         UNEXPECTED INTERRUPT
*
0A41 1 4400 081D      BSI L DELAY   WAIT .7 SECONDS
0A43 0 02BC           DC 700
*
0A44 0 09A2           XIO 1 CLEAR-T CLEAR CA
*
0A45 1 4400 15A0      BSI L CKINT   CHECK FOR
0A47 0 2080           DC /2080     TIMEOUT INTERRUPT
0A48 0 0000           DC /0000
0A49 0 0FFB           DC /OFFB
0A4A 0 F000           DC /F000
0A4B 0 0100           DC /0100
0A4C 0 90FF           DC /90FF
*
0A4D 1 4C00 088F      BSC L CNTRL   EXIT ROUTINE
*
*****
TEST ROUTINE OA
*****
RTNOA NOP
*
0A50 1 4400 1274      BSI L XMRCV   INITIALIZE CA
0A52 0 1004           DC /1004     TO RECEIVE TABLE WITH
0A53 0 0000           DC 0         TIMEOUT SUPPRESSED
*
0A54 1 4400 081D      BSI L DELAY   WAIT 4 SECONDS
0A56 0 0FA0           DC 4000
*
0A57 0 09A2           XIO 1 CLEAR-T CLEAR CA
*
0A58 1 4400 15A0      BSI L CKINT   CHECK FOR
0A5A 0 0000           DC 0         UNEXPECTED INTERRUPT
*
0A5B 1 4C00 088F      BSC L CNTRL   EXIT ROUTINE
*
80E06820
80E06830
80E06840
80E06850
80E06860
80E06870
80E06880
80E06890
80E06900
80E06910
80E06920
80E06930
80E06940
80E06950
80E06960
80E06970
80E06980
80E06990
80E07000
80E07010
80E07020
80E07030
80E07040
80E07050
80E07060
80E07070
80E07080
80E07090
80E07100
80E07110
80E07120
80E07130
80E07140
80E07150
80E07160
80E07170
80E07180
80E07190
80E07200
80E07210
80E07220
80E07230
80E07240
80E07250
80E07260
80E07270
80E07280
80E07290
80E07300
80E07310
80E07320
80E07330
80E07340
80E07350
80E07360
80E07370
80E07380
80E07390
80E07400
80E07410
80E07420
80E07430
80E07440
80E07450
80E07460
80E07470
80E07480
80E07490

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ICA WRAP AROUND TEST

```

*
*****
TEST ROUTINE OB
*****
RTNOB NOP
*
0A5D 0 1000
*
0A5E 1 4400 1274      BSI L XMRCV   INITIALIZE CA TO TRANSMIT
0A60 0 2006           DC /2006     TABLE AND RETRIEVE 1ST
0A61 1 16A7           DC TBL2     CHARACTER TRANSMITTED
0A62 0 0001           DC 1
*
0A63 1 4400 14BD      BSI L SENSE   SENSE DSWS
*
0A65 0 09A2           XIO 1 CLEAR-T CLEAR CA
*
0A66 1 4400 14CC      BSI L CKDSW   CHECK DSWS
0A68 0 0080           DC /0080
0A69 0 0000           DC /0000
0A6A 0 0FF9           DC /OFF9
0A6B 0 F000           DC /F000
0A6C 0 0000           DC /0000
0A6D 0 81FF           DC /81FF
*
0A6E 1 4400 150C      BSI L CKDAT   CHECK TRANSMITTED
0A70 1 1C93           DC SRCTB    DATA
0A71 1 16A4           DC TBL1
0A72 0 0002           DC 2
*
0A73 1 4400 15A0      BSI L CKINT   CHECK FOR
0A75 0 0000           DC 0         UNEXPECTED INTERRUPT
*
0A76 1 4C00 088F      BSC L CNTRL   EXIT ROUTINE
*
*****
TEST ROUTINE OC
*****
RTNOC NOP
*
0A78 0 1000
*
0A79 1 4400 1274      BSI L XMRCV   INITIALIZE CA TO TRANSMIT
0A7B 0 2006           DC /2006     TABLE AND RETRIEVE FIRST
0A7C 1 16A7           DC TBL2     5 CHARS TRANSMITTED
0A7D 0 0005           DC 5
*
0A7E 1 4400 14BD      BSI L SENSE   SENSE DSWS
*
0A80 0 09A2           XIO 1 CLEAR-T CLEAR CA
*
0A81 1 4400 14CC      BSI L CKDSW   CHECK THE DSWS
0A83 0 0080           DC /0080
0A84 0 0000           DC /0000
0A85 0 0FFA           DC /OFFA
0A86 0 F000           DC /F000
0A87 0 4000           DC /4000
0A88 0 80FF           DC /80FF
*
0A89 1 4400 150C      BSI L CKDAT   CHECK RETRIEVED DATA
0A8B 1 1C93           DC SRCTB
0A8C 1 16A4           DC TBL1
0A8D 0 0006           DC 6
*
0A8E 1 4400 15A0      BSI L CKINT   CHECK FOR
*
80E07500
80E07510
80E07520
80E07530
80E07540
80E07550
80E07560
80E07570
80E07580
80E07590
80E07600
80E07610
80E07620
80E07630
80E07640
80E07650
80E07660
80E07670
80E07680
80E07690
80E07700
80E07710
80E07720
80E07730
80E07740
80E07750
80E07760
80E07770
80E07780
80E07790
80E07800
80E07810
80E07820
80E07830
80E07840
80E07850
80E07860
80E07870
80E07880
80E07890
80E07900
80E07910
80E07920
80E07930
80E07940
80E07950
80E07960
80E07970
80E07980
80E07990
80E08000
80E08010
80E08020
80E08030
80E08040
80E08050
80E08060
80E08070
80E08080
80E08090
80E08100
80E08110
80E08120
80E08130
80E08140
80E08150
80E08160
80E08170

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

0A90 0 0000          DC      0          UNEXPECTED INTERRUPT 80E08180
*
0A91 1 4C00 088F    BSC L CNTRL  EXIT ROUTINE 80E08190
*
*****
*
*          TEST ROUTINE OD
*
*****
RTNOD NOP
*
0A94 1 4400 1274    BSI L XMRCV  INITIALIZE CA TO TRANSMIT 80E08200
0A96 0 2006          DC      /2006  TABLE AND RETRIEVE 11 80E08210
0A97 1 16A7          DC      TBL2   CHARS FROM RECEIVE 80E08220
0A98 0 000B          DC      11      DATA LINE 80E08230
*
0A99 0 09A2          XIO 1 CLEAR-T CLEAR CA 80E08240
*
0A9A 1 4400 150C    BSI L CKDAT  CHECK RETRIEVED 80E08250
0A9C 1 1C93          DC      SRCTB  DATA 80E08260
0A9D 1 16A4          DC      TBL1   80E08270
0A9E 0 000A          DC      10      80E08280
*
0A9F 1 4400 15A0    BSI L CKINT  CHECK FOR 80E08290
0AA1 0 0880          DC      /0880  TABLE COMPLETE INTRPT 80E08300
0AA2 0 0000          DC      /0000  80E08310
0AA3 0 0FFF          DC      /0FFF  80E08320
0AA4 0 F000          DC      /F000  80E08330
0AA5 0 407F          DC      /407F  80E08340
0AA6 0 9000          DC      /9000  80E08350
*
0AA7 1 4C00 088F    BSC L CNTRL  EXIT ROUTINE 80E08360
*
*****
*
*          TEST ROUTINE OE
*
*****
RTNOE NOP
*
0AA9 0 1000
*
0AAA 1 4400 1274    BSI L XMRCV  INITIALIZE CA TO TRANSMIT 80E08370
0AAC 0 2005          DC      /2005  TABLE WITH ODD BYTE COUNT 80E08380
0AAD 1 16A7          DC      TBL2   AND RETRIEVE 9 CHARS 80E08390
0AAE 0 0009          DC      9      FROM RECEIVE DATA LINE 80E08400
*
0AAF 0 09A2          XIO 1 CLEAR-T CLEAR CA 80E08410
*
0AB0 1 4400 150C    BSI L CKDAT  CHECK RETRIEVED 80E08420
0AB2 1 1C93          DC      SRCTB  DATA 80E08430
0AB3 1 16A4          DC      TBL1   80E08440
0AB4 0 0009          DC      9      80E08450
*
0AB5 1 4400 15A0    BSI L CKINT  CHECK FOR 80E08460
0AB7 0 0880          DC      /0880  TABLE COMPLETE INTRPT 80E08470
0AB8 0 0000          DC      /0000  80E08480
0AB9 0 0FFF          DC      /0FFF  80E08490
0ABA 0 F000          DC      /F000  80E08500
0ABB 0 407F          DC      /407F  80E08510
0ABC 0 9000          DC      /9000  80E08520
*
0ABD 1 4C00 088F    BSC L CNTRL  EXIT ROUTINE 80E08530
*
*****
*

```

```

*          TEST ROUTINE OF
*
*****
RTNOF NOP
*
0ABF 0 1000
*
0AC0 1 4400 1274    BSI L XMRCV  INITIALIZE TO TRANSMIT 80E08860
0AC2 0 6006          DC      /6006  TABLE WITH TABLE COMPLETE 80E08870
0AC3 1 16A7          DC      TBL2   INTERRUPT SUPPRESSED 80E08880
0AC4 0 0000          DC      0      80E08890
*
0AC5 1 4400 081D    BSI L DELAY  WAIT FOR 80E08900
0AC7 0 09C4          DC      2500  2.5 SECONDS 80E08910
*
0AC8 1 4400 15A0    BSI L CKINT  CHECK FOR 80E08920
0ACA 0 0000          DC      0      UNEXPECTED INTERRUPT 80E08930
*
0ACB 1 4400 081D    BSI L DELAY  WAIT FOR 80E08940
0ACD 0 02BC          DC      700   .7 SECONDS 80E08950
*
0ACE 0 09A2          XIO 1 CLEAR-T CLEAR CA 80E08960
*
0ACF 1 4400 15A0    BSI L CKINT  CHECK FOR 80E08970
0AD1 0 2080          DC      /2080  TIMEOUT INTERRUPT 80E08980
0AD2 0 0000          DC      /0000  80E08990
0AD3 0 0FFF          DC      /0FFF  80E09000
0AD4 0 F000          DC      /F000  80E09010
0AD5 0 4000          DC      /4000  80E09020
0AD6 0 91FF          DC      /91FF  80E09030
*
0AD7 1 4C00 088F    BSC L CNTRL  EXIT ROUTINE 80E09040
*
*****
*
*          TEST ROUTINE IO
*
*****
RTNIO SLA 16 INITIALIZE WITH CHAR /00 80E09050
NOP
*
0ADB 0 E104          AND 1 H00FF-T 80E09060
0ADC 0 D1B3          STO 1 LOCK-T  SAVE VARIABLE DATA 80E09070
*
0ADD 1 4400 141A    BSI L DCODE  DECODE CONTROL CHARACTER 80E09080
*
0ADF 0 1089          SLT 9 80E09090
0AE0 0 100A          SLA 10 DEVELOPE 80E09100
0AE1 0 4820          BSC Z DIAGNOSTIC 80E09110
0AE2 0 C10C          LD 1 H8000-T DSW SHOULD 80E09120
0AE3 0 1805          SRA 5 BE WORD 80E09130
0AE4 0 E90C          OR 1 H8000-T 80E09140
0AE5 0 1801          SRA 1 80E09150
0AE6 0 D01C          STO RT10B 80E09160
*
0AE7 0 C1B3          LD 1 LOCK-T 80E09170
0AE8 0 1008          SLA 8 80E09180
0AE9 0 E90A          OR 1 H007F-T SET DATA CHAR 80E09190
0AEA 1 D400 16AE    STO L TBL4 IN XMIT TABLE 80E09200
*
0AEC 0 1082          SLT 2 80E09210
0AED 0 1010          SLA 16 DEVELOPE 80E09220
0AEE 0 1081          SLT 1 OPERATING 80E09230
0AEF 0 1003          SLA 3 DSW SHOULD 80E09240
0AF0 0 E917          OR 1 D1-T BE WORD 80E09250
0AF1 0 1007          SLA 7 80E09260
0AF2 0 D00C          STO RT10A 80E09270

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

*
OAF3 1 7401 1629      *   MDX L LOCK,1   INCR VARIABLE DATA      80E09540
*
OAF5 1 4400 1274      *   BSI L XMRCV   INITIALIZE CA TO          80E09550
OAF7 0 2006           DC /2006        TRANSMIT TABLE AND      80E09560
OAF8 1 16AE           DC TBL4         RETRIEVE FIRST 5        80E09570
OAF9 0 0005           DC 5            CHARACTERS TRANSMITTED 80E09580
*
OAF1 1 4400 14BD      *   BSI L SENSE   SENSE DSW'S             80E09590
*
OAF2 0 09A2           *   XIO 1 CLEAR-T CLEAR CA                80E09600
*
OAF3 1 4400 14CC      *   BSI L CKDSW   CHECK DSW'S             80E09610
OAF4 0 0000           DC **          *
OAF5 0 0000           DC /0000       *
OAF6 0 0000           DC /OFFA       *
OAF7 0 0000           DC /F000       *
OAF8 0 0000           DC **          *
OAF9 0 81FF           DC /81FF       *
*
OAF1 1 4400 150C      *   BSI L CKDAT   CHECK                80E09620
OAF2 1 1C93           DC SRCTB       RETRIEVED DATA         80E09630
OAF3 1 16AB           DC TBL3        *
OAF4 0 0006           DC 6           *
*
OAF5 1 4400 15A0      *   BSI L CKINT   CHECK FOR                80E09640
OAF6 0 0000           DC 0           UNEXPECTED INTERRUPT   80E09650
*
OAF7 0 C1B3           *   LD 1 LOCK-T   CHECK IF                80E09660
OAF8 0 1008           SLA 8          END OF                  80E09670
OAF9 0 4818           BSC +-        ROUTINE                80E09680
OAF10 0 D1B3          STO 1 LOCK-T   CLEAR RTN LOCK IF END 80E09690
OAF11 1 4C00 088F     BSC L CNTRL   RETURN TO CONTROL       80E09700
*
*
*****
*
TEST ROUTINE 11
*****
*
OAF13 0 1010          RTN11 SLA 16   INITIALIZE WITH CHAR /00 80E09710
OAF14 0 1000          NOP
*
OAF15 0 E104          AND 1 HOOFF-T  SAVE VARIABLE DATA     80E09720
OAF16 0 D1B3          STO 1 LOCK-T
*
OAF17 1 4400 141A      *   BSI L DCODE   DECODE CONTROL CHARACTERS 80E09730
*
OAF19 0 6600 OFFB     *   LDX L2 /OFFB  SET UP BYTE COUNT AND   80E10010
OAF20 0 6700 4000     LDX L3 /4000   DIAG DSW FOR ND CONT CHAR 80E10020
*
OAF21 0 1089          *   SLT 9        CK DECODE BITS           80E10030
OAF22 0 1008          SLA 8          *
OAF23 1 4C18 0B31      *   BSC L RT11D,+ BR IF NOT CONTROL CHAR 80E10040
*
OAF24 0 1002          *   SLA 2        BR IF SOH OR STX          80E10050
OAF25 1 4C18 0B2B      *   BSC L RT11B,+
*
OAF26 0 1002          *   SLA 2        *
OAF27 0 180D          SRA 13        *
OAF28 1 4C08 0B2E      *   BSC L RT11C,+ BR IF LONG END CHAR   80E10060
*
OAF29 0 6700 4000     *   LDX L3 /4000 SET DIAG DSW FOR SHORT END 80E10070
OAF30 0 7006          MDX RT11D     BRANCH                80E10080
*
OAF31 0 6700 4400     *   RT11B LDX L3 /4400 SET DIAG DSW FOR TEXT 80E10090
OAF32 0 7003          MDX RT11D     BRANCH                80E10100

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*
OAF2E 0 6700 6200     *   RT11C LDX L3 /6200 SET DIAG DSW FOR LONG END 80E10220
OAF2F 0 72FF          MDX 2 -1      SET LONG END BYTE COUNT 80E10230
*
OAF31 0 6A1B          *   RT11D STX 2 RT11F STORE EXPECTED BYTE CNT 80E10240
OAF32 0 6B1C          STX 3 RT11G   STORE EXPECTED DIAG DSW 80E10250
*
OAF33 0 C1B3          *   LD 1 LOCK-T   SET VARIABLE            80E10260
OAF34 0 1008          SLA 8          DATA CHARACTER         80E10270
OAF35 0 E90A          OR 1 H007F-T   IN XMIT TABLE         80E10280
OAF36 1 D400 16AE     *   STO L TBL4
*
OAF38 0 10B2          *   SLT 2        *
OAF39 0 1C10          SLA 16        *
OAF40 0 10B1          *   SLT 1        *
OAF41 0 1003          *   SLA 3        DEVELOPE                80E10330
OAF42 0 E917          OR 1 D1-T     OPERATING DSW           80E10340
OAF43 0 1007          *   SLA 7        SHOULD BE              80E10350
OAF44 0 D00C          *   STO RT11E   WORD                80E10360
*
OAF45 1 7401 1629     *   MDX L LOCK,1 INCR VARIABLE DATA 80E10370
*
OAF46 1 4400 1274     *   BSI L XMRCV   INITIALIZE CA TO          80E10380
OAF47 0 2006           DC /2006        TRANSMIT TABLE AND      80E10390
OAF48 1 16AE           DC TBL4         RETRIEVE FIRST 6        80E10400
OAF49 0 0006           DC 6            CHARACTERS TRANSMITTED 80E10410
*
OAF50 1 4400 14BD     *   BSI L SENSE   SENSE DSW'S             80E10420
*
OAF51 0 09A2          *   XIO 1 CLEAR-T CLEAR CA                80E10430
*
OAF52 1 4400 14CC     *   BSI L CKDSW   CHECK DSW'S             80E10440
OAF53 0 0000           DC **          *
OAF54 0 0000           DC /0000       *
OAF55 0 F000           DC /F000       *
OAF56 0 0000           DC **          *
OAF57 0 81FF           DC /81FF       *
*
OAF58 1 4400 150C     *   BSI L CKDAT   CHECK                80E10480
OAF59 1 1C93           DC SRCTB       RETRIEVED DATA         80E10490
OAF60 1 16AB           DC TBL3        *
OAF61 0 0006           DC 6           UNEXPECTED INTERRUPT   80E10500
*
OAF62 1 4400 15A0     *   BSI L CKINT   CHECK FOR                80E10510
OAF63 0 0000           DC 0           *
*
OAF64 0 C1B3          *   LD 1 LOCK-T   CHECK IF                80E10520
OAF65 0 1008          SLA 8          END OF                  80E10530
OAF66 0 4818          BSC +-        ROUTINE                80E10540
OAF67 0 D1B3          STO 1 LOCK-T   CLEAR RTN LOCK IND IF END 80E10550
OAF68 1 4C00 088F     BSC L CNTRL   RETURN TO CONTROL       80E10560
*
*
*****
*
TEST ROUTINE 12
*****
*
OAF69 0 1810          RTN12 SRA 16   INITIALIZE WITH CHAR /00 80E10600
OAF70 0 1000          NOP
*
OAF71 0 E104          *   AND 1 HOOFF-T SAVE VARIABLE DATA     80E10610
OAF72 0 D1B3          STO 1 LOCK-T
*
OAF73 1 4400 141A     *   BSI L DCODE   DECODE CONTROL CHARACTERS 80E10620
*

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

OB65 1 7400 1626      MDX L ASCII CHECK ASCII CODE IND 80E10900
OB67 0 7033          MDX      RN12D BR IF USASCII CODE 80E10910
*
OB68 0 1083          SLT      3 80E10920
OB69 0 100F          SLA     15 80E10930
OB6A 0 1804          SRA      4 80E10940
OB6B 0 D01F          STO     RN12B 80E10950
OB6C 0 1087          SLT      7 80E10960
OB6D 0 1801          SRA      1 80E10970
OB6E 0 1081          SLT      1 80E10980
OB6F 0 4820          BSC      Z 80E10990
OB70 0 C10C          LD       1 H8000-T DEVELOP 80E11000
OB71 0 1805          SRA      5 DSW SHOULD 80E11010
OB72 0 E90C          OR       1 H8000-T BE WORD 80E11020
OB73 0 1801          SRA      1 80E11030
OB74 0 E816          OR       RN12B 80E11040
OB75 0 D015          STO     RN12B 80E11050
*
OB76 0 C10C          LD       1 H8000-T SET DATA 80E11060
OB77 0 1803          SRA      3 CHARACTER 80E11070
OB78 0 E9B3          OR       1 LOCK-T IN TRANSMIT 80E11080
OB79 1 D400 16AE     STO L TBL4 TABLE 80E11090
*
OB7B 1 7401 1629     MDX L LOCK,1 INCRE VARIABLE DATA 80E11100
*
OB7D 1 4400 1274     BSI L XMRCV INITIALIZE CA TO TRANSMIT 80E11110
OB7F 0 2006          DC       /2006 TABLE AND RETRIEVE FIRST 80E11120
OB80 1 16AE          DC       TBL4 6 CHARACTERS FROM 80E11130
OB81 0 0006          DC       6 RECEIVE DATA LINE 80E11140
*
OB82 1 4400 148D     BSI L SENSE SENSE DSWS 80E11150
*
OB84 0 09A2          XIO     1 CLEAR-T CLEAR CA 80E11160
*
OB85 1 4400 14CC     BSI L CKDSW CHECK DSWS 80E11170
OB87 0 0080          DC       /0080 80E11180
OB88 0 0000          DC       /0000 80E11190
OB89 0 0FFB          DC       /OFFB 80E12000
OB8A 0 F000          DC       /F000 80E12010
OB8B 0 0000          RN12B DC *-* 80E12020
OB8C 0 81FF          DC       /81FF 80E12030
*
OB8D 1 4400 150C     BSI L CKDAT CHECK 80E12040
OB8F 1 1C93          DC       SRCTB RETRIEVED DATA 80E12050
OB90 1 16AB          DC       TBL3 80E12060
OB91 0 0006          DC       6 80E12070
*
OB92 1 4400 15A0     BSI L CKINT CHECK FOR 80E12080
OB94 0 0000          DC       0 UNEXPECTED INTRPT 80E12090
*
OB95 0 C1B3          LD       1 LOCK-T CHECK FOR 80E12100
OB96 0 1008          SLA      8 END OF 80E12110
OB97 0 4818          BSC     +- ROUTINE 80E12120
OB98 0 D1B3          RN12C STO 1 LOCK-T CLEAR RTN LOCK IF END 80E12130
OB99 1 4C00 088F     BSC L CNTRL RETURN TO CONTROL SUBRTN 80E12140
*
OB9B 0 1010          RN12D SLA 16 80E12150
OB9C 1 D400 0803     STO L SW1 RESET ROUTINE SELECTION 80E12160
OB9E 0 70F9          MDX     RN12C 80E12170
*
*****
* TEST ROUTINE 13
*****
OB9F 0 1010          RTN13 SLA 16 INITIALIZE WITH CHAR /00 80E12180

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```

OBA0 0 1000          NOP 80E11580
*
OBA1 0 E104          AND     1 H00FF-T 80E11590
OBA2 0 D1B3          STO     1 LOCK-T SAVE VARIABLE DATA 80E11600
*
OBA3 1 4400 141A     BSI L DCODE DECODE CONTROL CHARACTERS 80E11610
*
OBA5 1 7400 1626     MDX L ASCII CHECK ASCII CODE IND 80E11620
OBA7 0 7047          MDX     RN13H BR IF USASCII CODE 80E11630
*
OBA8 0 6600 0FFC     LDX     L2 /OFFC SET UP BYTE COUNT AND 80E11640
OBA9 0 6700 4000     LDX     L3 /4000 DIAG DSW FOR NON-CONTROL 80E11650
*
OBAE 1 4C28 0BBF     BSI L RN13A,Z+ BRANCH IF SOH 80E11660
*
OBB0 1 4C20 0BC2     BSC L RN13B,Z BRANCH IF STX 80E11670
*
OBB2 0 1C87          SLT      7 80E11680
OBB3 0 1801          SRA      1 80E11690
OBB4 0 1081          SLT      1 80E11700
OBB5 1 4C18 0BC8     BSC L RN13D,+ BR IF NOT CONTROL CHAR 80E11710
*
OBB7 0 1881          SRT      1 80E11720
OBB8 0 1801          SRA      1 80E11730
OBB9 0 108D          SLT     13 80E11740
OBBA 1 4C18 0BC5     BSC L RN13C,+ BRANCH IF LONG END 80E11750
*
OBBE 0 7009          LDX     L3 /4000 SET DIAG DSW FOR SHORT 80E11760
OBBF 0 6700 4400     MDX     RN13D END CHAR AND BRANCH 80E11770
*
OBC1 0 7006          RN13A LDX L3 /4400 SET DIAG DSW FOR SOH 80E11780
OBC2 0 6700 4C00     MDX     RN13D CHAR AND BRANCH 80E11790
*
OBC4 0 7003          RN13B LDX L3 /4C00 SET DIAG DSW FOR STX 80E11800
OBC5 0 6700 6200     MDX     RN13D CHAR AND BRANCH 80E11810
*
OBC7 0 72FF          RN13C LDX L3 /6200 SET UP DIAG AND BYTE 80E11820
OBC8 0 6A14          MDX     2 -1 COUNT DSW FOR LONG END 80E11830
OBC9 0 6B15          RN13D STX 2 RN13E STO EXPECTED BYTE COUNT 80E11840
OBCA 0 C10C          STX     3 RN13F AND DIAG DSW'S 80E11850
*
OBCB 0 1803          LD       1 H8000-T SET VARIABLE 80E11860
OBCD 0 E9B3          SRA      3 DATA CHARACTER 80E11870
OBCD 1 D400 16AE     OR       1 LOCK-T IN TRANSMIT 80E11880
*
OBCF 1 7401 1629     STO L TBL4 TABLE 80E11890
*
OBD1 1 4400 1274     MDX L LOCK,1 INCRE VARIABLE DATA 80E11900
*
OBD3 0 2006          BSI L XMRCV INITIALIZE CA TO TRANSMIT 80E11910
OBD4 1 16AE          DC       /2006 TABLE AND RETRIEVE FIRST 80E11920
OBD5 0 0007          DC       TBL4 7 CHARACTERS FROM 80E11930
*
OBD6 1 4400 148D     DC       7 RECEIVE DATA LINE 80E11940
*
OBD8 0 09A2          BSI L SENSE SENSE DSWS 80E11950
*
OBD9 1 4400 14CC     XIO     1 CLEAR-T CLEAR CA 80E11960
*
OBD8 0 09A2          BSI L CKDSW CHECK DSWS 80E11970
*
OBD8 0 09A2          DC       /0080 80E11980
OBD8 0 0000          DC       /0000 80E11990
OBD8 0 0000          RN13E DC *-* 80E12000
OBD8 0 0000          DC       /F000 80E12010
OBD8 0 0000          RN13F DC *-* 80E12020
OBD8 0 81FF          DC       /81FF 80E12030
*
OBE0 0 81FF          DC       /81FF 80E12040

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

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OBE1 1 4400 150C      BSI L CKDAT   CHECK      80E12260
OBE3 1 1C93           DC   SRCTB   RETRIEVED DATA 80E12270
OBE4 1 16AB           DC   TBL3    80E12280
OBE5 0 0008           DC   8        80E12290
OBE6 1 4400 15A0      BSI L CKINT   CHECK FOR      80E12300
OBE8 0 0000           DC   0        UNEXPECTED INTRPT 80E12310
*
OBE9 0 C1B3           LD   1 LOCK-T CHECK FOR      80E12320
OBEA 0 1008           SLA  8        END OF          80E12330
OBEB 0 4818           BSC  +-       ROUTINE        80E12340
OBE C 0 D1B3          RN13G STO 1 LOCK-T CLEAR RTN LOCK IND IF END 80E12350
OBE D 1 4C00 088F     BSC  L CNTRL  RETURN TO CONTROL SUBRTN 80E12360
*
OBE F 0 1010          RN13H SLA  16   RESET ROUTINE SELECTION 80E12370
OBF0 1 D400 0803      STO  L SW1    80E12380
OBF2 0 70F9           MDX  RN13G    80E12390
*
*****
*
*          TEST ROUTINE 14
*
*****
OBF3 0 1000          RTN14 NOP      80E12400
*
OBF4 1 7400 1626      MDX  L ASCII  BR IF USASCII CODE 80E12410
OBF6 0 701A           MDX  RN14A    80E12420
*
OBF7 1 4400 1274      BSI L XMRCV   INITIALIZE CA TO TRANSMIT 80E12430
OBF9 0 2008           DC   /2008    TABLE AND RETRIEVE FIRST 80E12440
OBF A 1 1784          DC   TTBL1    11 CHARACTERS        80E12450
OBF B 0 0008          DC   11       TRANSMITTED          80E12460
*
OBF C 1 4400 148D      BSI L SENSE   80E12470
*
OBF E 0 09A2          XIO  1 CLEAR-T 80E12480
*
OBF F 1 4400 150C      BSI L CKDAT   COMPARE DATA      80E12490
OC01 1 1C93           DC   SRCTB   FDR INSERTED       80E12500
OC02 1 1788           DC   TTBL2   DLE CHARACTER     80E12510
OC03 0 000C           DC   12      80E12520
*
OC04 1 4400 14CC      BSI L CKDSW   CHECK DSW'S        80E12530
OC06 0 0080           DC   /0080   80E12540
OC07 0 0000           DC   /0000   80E12550
OC08 0 0FFD           DC   /OFFD   80E12560
OC09 0 F000           DC   /F000   80E12570
OC0A 0 4C00           DC   /4C00   80E12580
OC0B 0 81FF           DC   /81FF   80E12590
*
OC0C 1 4400 15A0      BSI L CKINT   CHECK FOR          80E12600
OC0E 0 0000           DC   0        UNEXPECTED INTERRUPT 80E12610
*
OC0F 1 4C00 088F      BSC  L CNTRL  RETURN TO CONTROL  80E12620
*
OC11 0 1010          RN14A SLA  16   80E12630
OC12 1 D400 0803      STO  L SW1    RESET INVALID RTN SELECT 80E12640
*
OC14 1 4C00 088F      BSC  L CNTRL  EXIT ROUTINE       80E12650
*
*****
*
*          TEST ROUTINE 15
*
*****

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OC16 0 C107          RTN15 LD  1 HO1FF-T  FETCH INITIAL BYTE COUNT 80E12940
OC17 0 1000          NOP                                         80E12950
*
OC18 0 E109          AND  1 HOFFF-T  80E12960
OC19 0 D1B3          STO  1 LOCK-T   SAVE CURRENT BYTE COUNT 80E12970
*
OC1A 0 E906          OR   1 H2000-T  SET XMIT BIT          80E12980
OC1B 1 D400 1B03     STO  L XMRCT   STORE XMIT BYTE COUNT 80E12990
*
OC1D 0 C1B3          LD   1 LOCK-T   CHECK FOR OPERATOR    80E13000
OC1E 0 9107          S   1 HO1FF-T  SELECTION OF INVALID CNT 80E13010
OC1F 1 4C10 0C27     BSC  L RT15A,- BR IF COUNT OK       80E13020
*
OC21 0 1010          SLA  16        80E13030
OC22 0 D1B3          STO  1 LOCK-T  CLEAR VARIABLE DATA IND 80E13040
OC23 1 D400 0805     STO  L SW3     CLEAR FUNCTION 3      80E13050
OC25 1 4C00 088F     BSC  L CNTRL  RETURN TO CONTROL     80E13060
*
OC27 0 8119          RT15A A  1 D3-T  SET UP .              80E13070
OC28 0 F109          EOR  1 HOFFF-T  BYTE COUNT THAT      80E13080
OC29 0 D01B          STO  RT15A    SHOULD BE SENSED 80E13090
*
OC2A 1 7401 1629      MDX  L LOCK,1  INCRE VARIABLE DATA IND 80E13100
*
OC2C 0 6700 FED4     LDX  L3 -300   SET UP                80E13110
OC2E 1 C400 16AF     LD   L TBL4+1  TRANSMIT              80E13120
OC30 1 D700 1C31     STO  L3 XMRCT+302 DATA      80E13130
OC32 0 C12D          LD   1 SYN-T   80E13140
OC33 1 D700 1C30     STO  L3 XMRCT+301 80E13150
OC35 0 7302          MDX  3 2      80E13160
OC36 0 70F7          MDX  RT15B    80E13170
*
OC37 1 6700 0C3D     LDX  L3 RT15C  SET UP                80E13180
OC39 1 6F00 1274     STX  L3 XMRCV  TRANSMIT              80E13190
OC3B 1 4C00 134F     BSC  L CAID    DATA      80E13200
*
OC3D 0 0200          RT15C DC  /0200 80E13210
*
OC3E 1 4400 148D      BSI  L SENSE   SENSE DSW'S         80E13220
*
OC40 0 09A2          XIO  1 CLEAR-T  CLEAR CA             80E13230
*
OC41 1 4400 14CC      BSI  L CKDSW   CHECK DSW'S         80E13240
OC43 0 0080          DC   /0080    80E13250
OC44 0 0000          DC   /0000    80E13260
OC45 0 0000          DC   /*-      80E13270
RT15D DC  /*-      80E13280
OC46 0 F000          DC   /F000   80E13290
OC47 0 4000          DC   /4000   80E13300
OC48 0 81FF          DC   /81FF   80E13310
*
OC49 1 4400 15A0      BSI  L CKINT   CHECK FOR          80E13320
OC4B 0 0000          DC   0        UNEXPECTED INTERRUPT 80E13330
*
OC4C 0 C1B3          LD   1 LOCK-T  CHECK FOR          80E13340
OC4D 0 1004          SLA  4        END OF ROUTINE     80E13350
OC4E 0 4818          BSC  +-       80E13360
OC4F 0 D1B3          STO  1 LOCK-T  CLEAR VARIABLE IF RTN END 80E13370
OC50 1 4C18 088F     BSC  L CNTRL,+ GO TO CONTROL IF END RTN 80E13380
*
OC52 0 1804          SRA  4        INCREMENT          80E13390
OC53 0 8107          A   1 HO1FF-T  VARIABLE XMIT       80E13400
OC54 0 D1B3          STO  1 LOCK-T  BYTE COUNT BY 511   80E13410
OC55 1 4C00 088F     BSC  L CNTRL  GO TO CONTROL      80E13420
*
*
*          TEST ROUTINE 16
*

```

```

*
*****
*
RTN16 NOP
*
OC57 0 1000
OC58 1 4400 1274      BSI L XMRCV  INITIALIZE CA TO
OC5A 0 E004           DC /E004      TRANSMIT TABLE
OC5B 1 16C3           DC TBL7+3     CHAINED TO SECOND
OC5C 0 2008           DC /2008      TRANSMIT TABLE
OC5D 1 16C5           DC TBL7+5
OC5E 0 000B           DC 11
*
OC5F 1 4400 148D      BSI L SENSE   SENSE DSW'S
*
OC61 0 09A2           XIO 1 CLEAR-T CLEAR CA
*
OC62 1 4400 150C      BSI L CKDAT   CHECK
OC64 1 1C93           DC SRCTB      RETRIEVED
OC65 1 16C0           DC TBL7        XMIT DATA
OC66 0 000C           DC 12
*
OC67 1 4400 15A0      BSI L CKINT   CHECK FOR
OC69 0 0000           DC 0           UNEXPECTED INTERRUPT
*
OC6A 1 4400 14CC      BSI L CKDSW   CHECK DSW'S
OC6C 0 0080           DC /0080
OC6D 0 0000           DC /0000
OC6E 0 0FFA           DC /OFFA
OC6F 0 F000           DC /F000
OC70 0 4000           DC /4000
OC71 0 81FF           DC /81FF
*
OC72 1 4C00 088F      BSC L CNTRL
*
*****
*
TEST ROUTINE 17
*
*****
*
RTN17 NOP
*
OC74 0 1000
OC75 1 4400 1274      BSI L XMRCV  INITIALIZE CA TO XMIT TBL
OC77 0 E004           DC /E004      AND CHAIN TO 2ND TBL
OC78 1 16A7           DC TBL2        WHICH CONTAINS TWO
OC79 0 0000           DC 0           SYN CHARACTERS AND
OC7A 1 16A3           DC SYN         IS CHAINED BACK
OC7B 0 0000           DC 0           TO ITSELF
*
OC7C 1 4400 081D      BSI L DELAY   DELAY 2.5 SECONDS
OC7E 0 09C4           DC 2500
*
OC7F 1 4400 15A0      BSI L CKINT   CHECK FOR
OC81 0 0000           DC 0           UNEXPECTED INTERRUPT
*
OC82 1 4400 081D      BSI L DELAY   DELAY .7 SECONDS
OC84 0 02BC           DC 700
*
OC85 0 09A2           XIO 1 CLEAR-T CLEAR CA
*
OC86 1 4400 15A0      BSI L CKINT   CHECK FOR
OC88 0 2080           DC /2080      TIMEOUT
OC89 0 0000           DC /0000      INTERRUPT
OC8A 0 0000           DC /0000
OC8B 0 FFFF           DC /FFFF
OC8C 0 4000           DC /4000
OC8D 0 A1FF           DC /A1FF

```

```

80E13620
80E13630
80E13640
80E13650
80E13660
80E13670
80E13680
80E13690
80E13700
80E13710
80E13720
80E13730
80E13740
80E13750
80E13760
80E13770
80E13780
80E13790
80E13800
80E13810
80E13820
80E13830
80E13840
80E13850
80E13860
80E13870
80E13880
80E13890
80E13900
80E13910
80E13920
80E13930
80E13940
80E13950
80E13960
80E13970
80E13980
80E13990
80E14000
80E14010
80E14020
80E14030
80E14040
80E14050
80E14060
80E14070
80E14080
80E14090
80E14100
80E14110
80E14120
80E14130
80E14140
80E14150
80E14160
80E14170
80E14180
80E14190
80E14200
80E14210
80E14220
80E14230
80E14240
80E14250
80E14260
80E14270
80E14280
80E14290

```

```

OC8E 1 4C00 088F
*
OC90 0 1000
OC91 1 4400 1274
OC93 0 E004
OC94 1 16A7
OC95 0 0000
OC96 1 16AF
OC97 0 0000
OC98 1 4400 081D
*
OC9A 0 0FA0
OC9B 0 09A2
OC9C 1 4400 15A0
OC9E 0 0000
OC9F 1 4C00 088F
*
OCA1 0 1000
OCA2 1 7400 1626
OCA4 0 7018
OCA5 1 4400 1274
OCA7 0 E006
OCA8 1 1797
OCA9 0 E008
OCAA 1 1798
OCAB 0 0000
OCAC 1 16AF
OCAD 0 0000
OCAE 1 6700 1807
OCB0 1 6F00 180E
OCB2 1 6F00 180C
OCB4 1 4400 081D
OCB6 0 0FA0
OCB7 0 09A2
OCB8 1 4400 15A0
OCBA 0 0000
OCBB 1 4C00 088F
OCBD 0 1010
OCBE 1 D400 0803
OCC0 1 4C00 088F

```

```

*
BSC L CNTRL  GO TO CONTROL
*
*****
*
TEST ROUTINE 18
*
*****
*
RTN18 NOP
*
BSI L XMRCV  INITIALIZE CA TO XMIT TBL
DC /E004     AND CHAIN TO 2ND TBL
DC TBL2      WHICH CONTAINS TWO
DC 0         /7F CHARACTERS AND
DC TBL4+1    IS CHAINED BACK
DC 0         TO ITSELF
BSI L DELAY  DELAY 4 SECONDS
*
DC 4000
*
XIO 1 CLEAR-T CLEAR CA
*
BSI L CKINT   CHECK FOR
DC 0         UNEXPECTED INTERRUPT
*
BSC L CNTRL  GO TO CONTROL
*
*****
*
TEST ROUTINE 19
*
*****
*
RTN19 NOP
*
MDX L ASCII  BR IF USASCII CODE
MDX RN19A
*
BSI L XMRCV  INITIALIZE CA TO
DC /E006     THREE CHAINED
DC TTBL5     TRANSMIT TABLES
DC /E008
DC TTBL5+1
DC 0
DC TBL4+1
DC 0
*
LDX L3 XMRCT+4  MODIFY CHAIN ADDRESSES
STX L3 XMRCT+11 TO LOOP 2ND TBL BACK
STX L3 XMRCT+9  TO ITSELF
*
BSI L DELAY  DELAY 4 SECONDS
DC 4000
*
XIO 1 CLEAR-T CLEAR CA
*
BSI L CKINT   CHECK FOR
DC 0         UNEXPECTED INTERRUPT
*
BSC L CNTRL  RETURN TO CONTROL
*
RN19A SLA 16
STO L SW1    RESET INVALID RTN SELECT
BSC L CNTRL  RETURN TO CONTROL
*

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```

80E14300
80E14310
80E14320
80E14330
80E14340
80E14350
80E14360
80E14370
80E14380
80E14390
80E14400
80E14410
80E14420
80E14430
80E14440
80E14450
80E14460
80E14470
80E14480
80E14490
80E14500
80E14510
80E14520
80E14530
80E14540
80E14550
80E14560
80E14570
80E14580
80E14590
80E14600
80E14610
80E14620
80E14630
80E14640
80E14650
80E14660
80E14670
80E14680
80E14690
80E14700
80E14710
80E14720
80E14730
80E14740
80E14750
80E14760
80E14770
80E14780
80E14790
80E14800
80E14810
80E14820
80E14830
80E14840
80E14850
80E14860
80E14870
80E14880
80E14890
80E14900
80E14910
80E14920
80E14930
80E14940
80E14950
80E14960
80E14970

```

ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

*
*****
*
*          TEST ROUTINE 1A
*
*****
OCC2 0 C127      RTN1A LD 1 ETB-T      LOAD 1ST END CHAR
OCC3 0 1000      NOP
*
OCC4 0 1888      SRT 8          STORE
OCC5 0 C10A      LD 1 H007F-T      CHARACTER
OCC6 0 1088      SLT 8          IN TABLE
OCC7 1 D400 16CE STO L TBL8+5
*
OCC9 1 4400 141A BSI L DCODE
OCCB 0 1089      SLT 9
OCCC 0 100A      SLA 10
OCCD 1 4C18 0D14 BSC L RN1A5,+-- BR IF NOT END CHAR
*
OCCF 1 C400 16CE LD L TBL8+5
OCD1 0 E104      AND 1 H00FF-T
OCD2 0 8117      A 1 D1-T          SET VARIABLE
OCD3 0 D1B3      STO 1 LOCK-T        DATA IND
*
OCD4 1 4400 1274 BSI L XMRCV        INITIALIZE CA TO TRANSMIT
OCD6 0 2008      DC /2008          TABLE AND RETREIVE
OCD7 1 16CC      DC TBL8+3        TRANSMITTED DATA
OCD8 0 000F      DC 15
*
OCD9 1 4400 148D BSI L SENSE        SENSE DSWS
*
OCCB 0 09A2      XIO 1 CLEAR-T      CLEAR CA
*
OCCD 1 C400 16CE LD L TBL8+5        PICK UP
OCDE 1 4400 141A BSI L DCODE        CONTROL CHARACTER
OCE0 0 1088      SLT 8
OCE1 0 100D      SLA 13
*
OCE2 1 7400 1626 MDX L ASCII
OCE4 0 7032      MDX RN1A6        BR IF USASCII CODE
*
OCE5 1 4C20 0CED BSC L RN1A1,Z      BR IF SHORT END
*
OCE7 1 4400 1458 BSI L CALBC        CALCULATE
OCE9 1 16CC      DC TBL8+3        BCC
OCEA 0 0005      DC 5          SHOULD BE
*
OCEB 1 D400 16CF STO L TBL8+6        STORE IN DATA TABLE
*
OCED 1 4400 150C RN1A1 BSI L CKDAT        COMPARE DATA
OCEF 1 1C93      DC SRCTB
OCF0 1 16C9      DC TBL8
OCF1 0 000E      DC 14
*
OCF2 1 4400 14CC BSI L CKDSW        CHECK DSW'S
OCF4 0 0080      DC /0080
OCF5 0 0000      DC /0000
OCF6 0 0FFF      DC /0FFF
OCF7 0 F000      DC /F000
OCF8 0 4400      DC /4400
OCF9 0 91FF      DC /91FF
*
OCFA 1 4400 15A0 BSI L CKINT        CHECK FOR
OCFC 0 0880      DC /0880        TABLE COMPLETE
OCFD 0 0400      DC /0400        INTERRUPT
OCFE 0 0FFF      DC /0FFF
OCFF 0 F000      DC /F000

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```

0D00 0 4400      DC /4400
0D01 0 91FF      DC /91FF
*
0D02 1 C400 16CE LD L TBL8+5      FETCH LAST END CHAR USED
0D04 1 4400 141A BSI L DCODE      BUILD CONT CHAR DECODE WD
*
0D06 0 1092      SLT 18
0D07 0 63FB      LDX 3 -5
*
0D08 0 1001      RN1A2 SLA 1          CK DECODE BIT
0D09 1 4C10 0D0E BSC L RN1A3,-    BR IF BIT NOT YET FOUND
*
0D0B 1 C700 16A3 LD L3 ITB+1      FETCH NEXT END CHAR
0D0D 0 7003      MDX RN1A4        GO TO SAVE CHARACTER
*
0D0E 0 7301      RN1A3 MDX 3 1      POINT TO NEXT END CHAR
0D0F 0 70FB      MDX RN1A2        GO TO CK NEXT DECODE BIT
*
0D10 0 1010      SLA 16          RESET VAR IND IF RTN END
0D11 0 D1B3      STO 1 LOCK-T      SET/RESET VARIABLE IND
0D12 1 4C00 088F BSC L CNTRL        GO TO CONTROL
*
0D14 1 D400 0805 RN1A5 STO L SW3      RESET INVALID SW3
0D16 0 70FA      MDX RN1A4        GO TO CONTROL
*
0D17 1 4C18 0D1E RN1A6 BSC L RN1A7,+-- BR IF LONG END
*
0D19 0 C108      LD 1 H0F00-T
0D1A 1 EC00 1C99 OR L SRCTB+6      STORE PADS IN
0D1C 0 D159      STO 1 TBL8+6-T    EXPECTED DATA TABLE
0D1D 0 70CF      MDX RN1A1        BRANCH
*
0D1E 0 1081      RN1A7 SLT 1          SET UP
0D1F 1 C400 1C99 LD L SRCTB+6
0D21 0 E104      AND 1 H00FF-T
0D22 0 D159      STO 1 TBL8+6-T
*
0D23 1 4400 1458 BSI L CALBC        CALCULATE BCC
0D25 1 16CC      DC TBL8+3
0D26 0 0005      DC 5
*
0D27 0 E114      AND 1 HFF00-T
0D28 0 E959      OR 1 TBL8+6-T      COMBINE BCC WITH PAD
0D29 0 70C1      MDX RN1A1-2    BRANCH
*
*****
*
*          TEST ROUTINE 1B
*
*****
0D2A 0 C127      RTN1B LD 1 ETB-T      LOAD 1ST END CHAR
0D2B 0 1000      NOP
*
0D2C 0 1888      SRT 8          STORE
0D2D 0 C124      LD 1 DLE-T        CHARACTER
0D2E 0 1088      SLT 8          IN TABLE
0D2F 1 D400 17A1 STO L TTBL6+5
*
0D31 1 4400 141A BSI L DCODE
0D33 0 1089      SLT 9
0D34 0 100A      SLA 10
0D35 1 4C18 0D80 BSC L RN1B5,+-- BR IF NOT END CHAR
*
0D37 1 7400 1626 MDX L ASCII
0D39 0 7049      MDX RN1B6        BR IF USASCII CODE

```

ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

OD3A 1 C400 17A1      LD L TTBL6+5      80E16340
OD3C 0 E104          AND 1 H00FF-T     80E16350
OD3D 0 8117          A 1 D1-T         80E16360
OD3E 0 D1B3          STO 1 LOCK-T     80E16370
*                   *
OD3F 1 C400 17A3      LD L TTBL6+7      80E16380
OD41 1 D400 17A2      STO L TTBL6+6     80E16390
*                   *
OD43 1 4400 1274      BSI L XMRCV      80E16420
OD45 0 2008          DC /2008         80E16430
OD46 1 179F          DC TTBL6+3      80E16440
OD47 0 000F          DC 15           80E16450
*                   *
OD48 1 4400 148D      BSI L SENSE      80E16460
*                   *
OD4A 0 09A2          XIO 1 CLEAR-T    80E16470
*                   *
OD4B 1 C400 17A1      LD L TTBL6+5      80E16480
OD4D 1 4400 141A      BSI L DCODE      80E16490
OD4F 0 1088          SLT 8           80E16500
OD50 0 100D          SLA 13          80E16510
OD51 1 4C20 0D59      BSC L RN1B1,Z    80E16520
*                   *
OD53 1 4400 1458      BSI L CALBC      80E16530
OD55 1 179F          DC TTBL6+3      80E16540
OD56 0 0002          DC 2            80E16550
*                   *
OD57 1 D400 17A2      STO L TTBL6+6     80E16560
*                   *
OD59 1 4400 150C      RN1B1 BSI L CKDAT 80E16570
OD5B 1 1C93          DC SRCTB        80E16580
OD5C 1 179C          DC TTBL6        80E16590
OD5D 0 0010          DC 16           80E16600
*                   *
OD5E 1 4400 14CC      BSI L CKDSW      80E16610
OD60 0 0080          DC /0080        80E16620
OD61 0 0000          DC /0000        80E16630
OD62 0 0FFF          DC /0FFF        80E16640
OD63 0 F000          DC /F000        80E16650
OD64 0 45FF          DC /45FF        80E16660
OD65 0 9800          DC /9800        80E16670
*                   *
OD66 1 4400 15A0      BSI L CKINT      80E16680
OD68 0 0880          DC /0880        80E16690
OD69 0 0000          DC /0000        80E16700
OD6A 0 0FFF          DC /0FFF        80E16710
OD6B 0 F000          DC /F000        80E16720
OD6C 0 45FF          DC /45FF        80E16730
OD6D 0 9800          DC /9800        80E16740
*                   *
OD6E 1 C400 17A1      LD L TTBL6+5      80E16750
OD70 1 4400 141A      BSI L DCODE      80E16760
*                   *
OD72 0 1092          SLT 18          80E16770
OD73 0 63FB          LDX 3 -5        80E16780
*                   *
OD74 0 1001          RN1B2 SLA 1      80E16790
OD75 1 4C10 0D7A      BSC L RN1B3,-    80E16800
*                   *
OD77 1 C700 16A3      LD L3 ITB+1      80E16810
OD79 0 7003          MDX RN1B4       80E16820
*                   *
OD7A 0 7301          RN1B3 MDX 3 1    80E16830
OD7B 0 70F8          MDX RN1B2       80E16840
*                   *
OD7C 0 1010          RN1B4 SLA 16     80E16850
OD7D 0 D1B3          STO 1 LOCK-T     80E16860
OD7E 1 4C00 088F      BSC L CNTRL      80E16870

```

```

80E16340
80E16350
80E16360
80E16370
80E16380
80E16390
80E16400
80E16410
80E16420
80E16430
80E16440
80E16450
80E16460
80E16470
80E16480
80E16490
80E16500
80E16510
80E16520
80E16530
80E16540
80E16550
80E16560
80E16570
80E16580
80E16590
80E16600
80E16610
80E16620
80E16630
80E16640
80E16650
80E16660
80E16670
80E16680
80E16690
80E16700
80E16710
80E16720
80E16730
80E16740
80E16750
80E16760
80E16770
80E16780
80E16790
80E16800
80E16810
80E16820
80E16830
80E16840
80E16850
80E16860
80E16870
80E16880
80E16890
80E16900
80E16910
80E16920
80E16930
80E16940
80E16950
80E16960
80E16970
80E16980
80E16990
80E17000
80E17010

```

```

OD80 1 D400 0805
OD82 0 70FA
*
OD83 0 1010
OD84 1 D400 0803
OD86 0 70F6
*
OD87 0 1000
*
OD88 1 4400 1274
OD8A 0 200A
OD8B 1 16B1
OD8C 0 0013
*
OD8D 1 4400 148D
*
OD8F 0 09A2
*
OD90 1 4400 1458
OD92 1 16B1
OD93 0 0003
*
OD94 1 7400 1626
OD96 0 700C
*
OD97 1 D400 1688
*
OD99 1 4400 1458
OD9B 1 16B3
OD9C 0 0003
*
OD9D 1 7400 1626
OD9F 0 7007
*
ODAA 1 D400 168E
ODAA 0 7009
*
ODAA 0 1898
ODAA 0 C12D
ODAA 0 18C8
ODAA 0 70F0
*
ODAA 0 1890
ODAA 0 C128
ODAA 0 1088
ODAA 1 D400 168D
*
ODAC 1 4400 150C
ODAE 1 1C93
ODAF 1 16B6
ODB0 0 0014
*
ODB1 1 4400 14CC
ODB3 0 0080
ODB4 0 0000
ODB5 0 0FFF
ODB6 0 F000
ODB7 0 45FF
ODB8 0 9000

```

```

*
RN1B5 STO L SW3      RESET INVALID SW3
      MDX RN1B4      GO TO CONTROL
*
RN1B6 SLA 16
      STO L SW1      RESET INVALID RTN SELECT
      MDX RN1B4      GO TO CONTROL
*
*****
TEST ROUTINE IC
*****
RTNIC NOP
*
      BSI L XMRCV      INITIALIZE CA TO
      DC /200A         XMIT TABLE AND
      DC TBL5          RETRIEVE XMITTED
      DC 19            DATA FROM LINE
*
      BSI L SENSE      SENSE DSW'S
*
      XIO 1 CLEAR-T    CLEAR CA
*
      BSI L CALBC      CALCULATE
      DC TBL5          FIRST BCC
      DC 3
*
      MDX L ASCII      BR IF USASCII CODE
      MDX RTIC2
*
RTIC1 STO L TBL6+5   STORE BCC IN TABLE
*
      BSI L CALBC      CALCULATE
      DC TBL5+2        SECOND BCC
      DC 3
*
      MDX L ASCII      BR IF USASCII CODE
      MDX RTIC3
*
      STO L TBL6+8     STOER BCC IN TABLE
      MDX RTIC4        BRANCH
*
RTIC2 SRT 24         INSERT
      LD 1 SYN-T        FIRST
      RTE 8             BCC IN
      MDX RTIC1         TABLE
*
RTIC3 SRT 16         INSERT
      LD 1 ETX-T        SECOND
      SLT 8             BCC IN
      STO L TBL6+7     TABLE
*
RTIC4 BSI L CKDAT     CHECK RETRIVED
      DC SRCTB         TRANSMIT DATA
      DC TBL6
      DC 20
*
      BSI L CKDSW      CHECK DSW'S
      DC /0080
      DC /0000
      DC /0FFF
      DC /F000
      DC /45FF
      DC /9000

```

```

80E17020
80E17030
80E17040
80E17050
80E17060
80E17070
80E17080
80E17090
80E17100
80E17110
80E17120
80E17130
80E17140
80E17150
80E17160
80E17170
80E17180
80E17190
80E17200
80E17210
80E17220
80E17230
80E17240
80E17250
80E17260
80E17270
80E17280
80E17290
80E17300
80E17310
80E17320
80E17330
80E17340
80E17350
80E17360
80E17370
80E17380
80E17390
80E17400
80E17410
80E17420
80E17430
80E17440
80E17450
80E17460
80E17470
80E17480
80E17490
80E17500
80E17510
80E17520
80E17530
80E17540
80E17550
80E17560
80E17570
80E17580
80E17590
80E17600
80E17610
80E17620
80E17630
80E17640
80E17650
80E17660
80E17670
80E17680
80E17690

```

ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

ODB9 1 4400 15A0      BSI L CKINT      CHECK FOR
ODBB 0 0880           DC /0880         TABLE COMPLETE
ODBC 0 0000           DC /0000         INTERRUPT
ODBD 0 0FFF           DC /0FFF
ODBE 0 F000           DC /F000
ODBF 0 45FF           DC /45FF
ODC0 0 9000           DC /9000
*
ODC1 1 4C00 088F      BSC L CNTRL      RETURN TO CONTROL
*
*****
*
*          TEST ROUTINE 1D
*
*****
RTN1D NOP
*
ODC4 1 7400 1626      MDX L ASCII
ODC6 0 7024           MDX RT1D1        BR IF USASCII CODE
*
ODC7 1 4400 1274      BSI L XMRCV      INITIALIZE CA TO
ODC9 0 201C           DC /201C         XMIT TABLE AND
ODCA 1 17A4           DC TTBL7         RETRIEVE XMITTED
ODCB 0 002D           DC 45            DATA FROM LINE
*
ODCC 1 4400 148D      BSI L SENSE      SENSE DSM'S
*
ODCE 0 09A2           XIO 1 CLEAR-T    CLEAR CA
*
ODCF 1 4400 1458      BSI L CALBC      CALCULATE
ODD1 1 17A4           DC TTBL7         BCC CHARACTERS
ODD2 0 0016           DC 22
*
ODD3 1 D400 17C7      STO L TTBL8+21   STORE BCC IN TABLE
*
ODD5 1 4400 150C      BSI L CKDAT      CHECK RETRIEVED
ODD7 1 1C93           DC SRCTB         TRANSMIT DATA
ODD8 1 17B2           DC TTBL8
ODD9 0 002E           DC 46
*
ODDA 1 4400 14CC      BSI L CKDSW      CHECK DSM'S
ODDC 0 0080           DC /0080
ODDD 0 0000           DC /0000
ODDE 0 0FFF           DC /0FFF
ODDF 0 F000           DC /F000
ODE0 0 45FF           DC /45FF
ODE1 0 9000           DC /9000
*
ODE2 1 4400 15A0      BSI L CKINT      CHECK FOR
ODE4 0 0880           DC /0880         TABLE COMPLETE
ODE5 0 0000           DC /0000         INTERRUPT
ODE6 0 0FFF           DC /0FFF
ODE7 0 F000           DC /F000
ODE8 0 45FF           DC /45FF
ODE9 0 9000           DC /9000
*
ODEA 0 7003           MDX RT1D1+3      RETURN TO CONTROL
*
ODEB 0 1010           RT1D1 SLA 16
ODEC 1 D400 0803      STO L SW1        RESET INVALID RTN SELECT
ODEE 1 4C00 088F      BSC L CNTRL      RETURN TO CONTROL
*
*****
*
*          TEST ROUTINE 1E
*

```

```

80E17700
80E17710
80E17720
80E17730
80E17740
80E17750
80E17760
80E17770
80E17780
80E17790
80E17800
80E17810
80E17820
80E17830
80E17840
80E17850
80E17860
80E17870
80E17880
80E17890
80E17900
80E17910
80E17920
80E17930
80E17940
80E17950
80E17960
80E17970
80E17980
80E17990
80E18000
80E18010
80E18020
80E18030
80E18040
80E18050
80E18060
80E18070
80E18080
80E18090
80E18100
80E18110
80E18120
80E18130
80E18140
80E18150
80E18160
80E18170
80E18180
80E18190
80E18200
80E18210
80E18220
80E18230
80E18240
80E18250
80E18260
80E18270
80E18280
80E18290
80E18300
80E18310
80E18320
80E18330
80E18340
80E18350
80E18360
80E18370

```

```

ODF0 0 C11E
ODF1 0 1000
*
ODF2 0 D1B3
*
ODF3 0 911F
ODF4 1 4C08 0DFC
*
ODF6 0 1010
ODF7 0 D1B3
ODF8 1 D400 0805
ODFA 1 4C00 088F
*
ODFC 1 7401 1629
*
ODFE 0 6700 FE9D
OE00 1 C400 16AF
*
OE02 1 D700 192F
OE04 0 7301
OE05 0 70FC
*
OE06 0 1890
OE07 0 C126
OE08 0 1088
OE09 1 D400 17CC
*
OE0B 0 C1B3
OE0C 0 D025
*
OE0D 0 8119
OE0E 0 E906
OE0F 0 D01B
*
OE10 0 C1B3
OE11 0 811C
OE12 1 D400 OE9B
*
OE14 0 8118
OE15 0 D017
*
OE16 0 C1B3
OE17 0 1881
OE18 0 D001
OE19 0 6700 0000
*
OE1B 0 C128
OE1C 0 18D0
OE1D 1 4C10 OE24
*
OE1F 1 C700 17CC
OE21 0 1808
OE22 0 1088
OE23 0 7003
*
OE24 1 C700 17CC
OE26 0 18C8
*
OE27 1 D700 17CC
*
OE29 1 4400 1274
OE2B 0 0000
OE2C 1 17CC
OE2D 0 0000

```

```

*****
*
RTN1E LD 1 D50-T INITIAL COUNT=50
NOP
*
STO 1 LOCK-T SET VARIABLE DATA IND
*
S 1 D700-T CHECK FOR VALID COUNT.
BSC L RT1EA,+ BR IF COUNT OK
*
SLA 16
STO 1 LOCK-T RESET VARIABLE DATA IND
STO L SW3 RESET INVALID SW3
BSC L CNTRL RETURN TO CONTROL
*
RT1EA MDX L LOCK,1 INCRE VARIABLE DATA IND
*
LDX L3 -355
LD L TBL4+1
*
RT1EB STO L3 VTBL+358 FILL XMIT
MDX 3 1 TABLE WITH
MDX RT1EB /7F CHARACTERS
*
SRT 16
LD 1 STX-T
SLT 8 PUT STX IN
STO L VTBL+3 TRANSMIT TABLE
*
LD 1 LOCK-T STORE BCC CALCULATION
STO RT1EG CHARACTER COUNT
*
A 1 D3-T SET UP
OR 1 H2000-T TRANSMIT
STO RT1EF BYTE COUNT
*
LD 1 LOCK-T
A 1 D11-T STORE DATA
STO L RT1ES COMPARE CHARACTER COUNT
*
A 1 D2-T STORE DATA RETRIEVE
STO RT1EF+2 CHARACTER COUNT
*
LD 1 LOCK-T
SRT 1
STO *+1
LDX L3 *-+ XR3=XMIT TABLE LENGTH
*
LD 1 ETX-T
RTE 16
BSC L RT1ED,- BR IF XMIT CHAR CNT EVEN
*
LD L3 VTBL+3 BUILD
SRA 8 XMIT TABLE
SLT 8 END WORD
MDX RT1EE BRANCH
*
RT1ED LD L3 VTBL+3 BUILD XMIT TABLE
RTE 8 END WORD
*
RT1EE STO L3 VTBL+3 STORE ETX IN XMIT TBL
*
BSI L XMRCV TRANSMIT AND
RT1EF DC *-+ RETRIEVE TRANSMITTED
DC VTBL+3 CHARACTERS
DC *-+

```

```

80E18380
80E18390
80E18400
80E18410
80E18420
80E18430
80E18440
80E18450
80E18460
80E18470
80E18480
80E18490
80E18500
80E18510
80E18520
80E18530
80E18540
80E18550
80E18560
80E18570
80E18580
80E18590
80E18600
80E18610
80E18620
80E18630
80E18640
80E18650
80E18660
80E18670
80E18680
80E18690
80E18700
80E18710
80E18720
80E18730
80E18740
80E18750
80E18760
80E18770
80E18780
80E18790
80E18800
80E18810
80E18820
80E18830
80E18840
80E18850
80E18860
80E18870
80E18880
80E18890
80E18900
80E18910
80E18920
80E18930
80E18940
80E18950
80E18960
80E18970
80E18980
80E18990
80E19000
80E19010
80E19020
80E19030
80E19040
80E19050

```

ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

OE2E 0 09A2          XIO  1 CLEAR-T   CLEAR CA
*
OE2F 1 4400 1458    BSI  L CALBC   CALCULATE
OE31 1 17CC         DC    VTBL+3   BCC
OE32 0 0000        RTIEG DC    **-*
*
OE33 1 7400 1626    MDX  L ASCII  ASCII
OE35 0 E904        OR    1 HOOFF-T
*
OE36 0 D1BB        STO  1 TEMPI-T  SAVE BCC
*
OE37 0 1010        SLA   16
OE38 0 D1CB        STO  1 INSRT-T  RESET SYN INSERTION IND
*
OE39 1 6500 1C96    LDX  L1 SRCTB+3  XR1=RETRIEVED DATA ADDR
OE3B 1 6600 17CC    LDX  L2 VTBL+3   XR2=EXPECTED DATA ADDR
OE3D 1 6780 1629    LDX  L3 LOCK     XR3=XMIT CHARACTER COUNT
*
OE3F 0 C100        RTIEI LD  1 0     CHECK
OE40 0 F200        EOR  2 0     FOR INSERTION CHAR
OE41 0 1008        SLA   8     IN DATA TABLE
OE42 1 D400 1641    STO  L INSRT    SET/RESET SYN INSERTION
OE44 1 4C20 OE59    BSC  L RTIEK,Z  BR IF INSERTION OCCURRED
*
OE46 0 73FF        MDX  3 -1     DECRE CHAR COUNT
OE47 0 7001        MDX  RTIEJ    BR IF MORE TEXT
OE48 0 702C        MDX  RTIEP    BR IF END OF TEXT
*
OE49 0 7101        RTIEJ MDX  1 1     INCRE RETRIEVED DATA ADDR
OE4A 0 7201        MDX  2 1     INCRE EXPECTED DATA ADDR
*
OE4B 0 C100        LD    1 0     CHECK FOR
OE4C 0 F200        EOR  2 0     INSERTION CHAR
OE4D 0 1808        SRA   8     IN DATA TABLE
OE4E 1 D400 1641    STO  L INSRT    SET/RESET INSERTION IND
OE50 1 4C18 OE56    BSC  L RTIEH,+  BR IF NO INSERTION
*
OE52 1 C400 16A3    LD    L SYN     STORE TWO SYN'S
OE54 0 D200        STO  2 0     IN EXPECTED DATA TABLE
OE55 0 7017        MDX  RTIEN    BRANCH
*
OE56 0 73FF        RTIEH MDX  3 -1     DECRE CHAR COUNT
OE57 0 70E7        MDX  RTIEI    BR IF MORE TEXT
OE58 0 702A        MDX  RTIEQ    BR IF END OF TEXT
*
OE59 1 C400 16A3    RTIEK LD  L SYN     STORE
OE5B 0 1890        SRT  16     TWO SYN'S
OE5C 0 C200        LD  2 0     IN EXPECTED
OE5D 0 1808        SRA  8     DATA
OE5E 0 1088        SLT  8     TABLE
OE5F 0 D200        STO  2 0
*
OE60 0 7201        MDX  2 1     INCRE EXPECTED DATA ADDR
OE61 0 1090        SLT  16
OE62 0 D200        STO  2 0
*
OE63 0 73FF        RTIEL MDX  3 -1
OE64 0 7001        MDX  RTIEM
OE65 0 700F        MDX  RTIEP
*
OE66 1 C400 16AF    RTIEM LD  L TBL4+1  FILL
OE68 0 1890        SRT  16     REMAINDER
OE69 0 C200        LD  2 0     OF EXPECTED
OE6A 0 1808        SRA  8     DATA TABLE
OE6B 0 1088        SLT  8     WITH /7F
OE6C 0 D200        STO  2 0     CHARACTERS
*
OE6D 0 7201        RTIEM MDX  2 1

```

```

80E19060
80E19070
80E19080
80E19090
80E19100
80E19110
80E19120
80E19130
80E19140
80E19150
80E19160
80E19170
80E19180
80E19190
80E19200
80E19210
80E19220
80E19230
80E19240
80E19250
80E19260
80E19270
80E19280
80E19290
80E19300
80E19310
80E19320
80E19330
80E19340
80E19350
80E19360
80E19370
80E19380
80E19390
80E19400
80E19410
80E19420
80E19430
80E19440
80E19450
80E19460
80E19470
80E19480
80E19490
80E19500
80E19510
80E19520
80E19530
80E19540
80E19550
80E19560
80E19570
80E19580
80E19590
80E19600
80E19610
80E19620
80E19630
80E19640
80E19650
80E19660
80E19670
80E19680
80E19690
80E19700
80E19710
80E19720
80E19730

```

```

OE6E 0 73FF        MDX  3 -1
OE6F 0 7001        MDX  RTIEO
OE70 0 7012        MDX  RTIEQ
*
OE71 1 C400 16AF    RTIED LD  L TBL4+1
OE73 0 D200        STO  2 0
OE74 0 70EE        MDX  RTIEL
*
OE75 1 C400 169E    RTIEP LD  L ETX     STORE
OE77 0 1888        SRT  8     ETX CHARACTER
OE78 0 C200        LD  2 0     IN EXPECTED
OE79 0 1808        SRA  8     DATA TABLE
OE7A 0 1088        SLT  8
OE7B 0 D200        STO  2 0
*
OE7C 1 C400 1631    LD  L TEMPI    STORE BCC IN
OE7E 0 D201        STO  2 1     EXPECTED DATA TABLE
*
OE7F 1 C400 168C    LD  L HFFFF    STORE
OE81 0 D202        STO  2 2     DATA TABLE
*
OE82 0 700D        MDX  RTIER
*
OE83 1 C400 1631    RTIEQ LD  L TEMPI    STORE
OE85 0 1890        SRT  16     ETX AND FIRST BCC
OE86 1 C400 169E    LD  L ETX     IN EXPECTED
OE88 0 1088        SLT  8     DATA TABLE
OE89 0 D200        STO  2 0
*
OE8A 0 1888        SRT  8     STORE
OE8B 1 C400 168C    LD  L HFFFF    ENDING PADS
OE8D 0 D202        STO  2 2     IN EXPECTED DATA TBL
*
OE8E 0 18C8        RTE  8     IN EXPECTED
OE8F 0 D201        STO  2 1     DATA TABLE
*
OE90 1 6500 1676    RTIER LDX  L1 T     RESTORE XRI
*
OE92 0 C008        LD  RTIES
OE93 1 7400 1641    MDX  L INSRT    SKIP IF NO INSERTION
OE95 0 8118        A    1 D2-T
OE96 0 D004        STO  RTIES    SET DATA COMPARE CHAR CNT
*
OE97 1 4400 150C    BSI  L CKDAT    CHECK
OE99 1 1C93        DC   SRCTB     RETRIEVED
OE9A 1 17C9        DC   VTBL     TRANSMIT
OE9B 0 0000        RTIES DC    **-*  DATA
*
OE9C 1 7400 1641    MDX  L INSRT    BR IF INSERTION OCCURRED
OE9E 0 700C        MDX  RTIET
*
OE9F 0 C1B3        LD  1 LOCK-T
OEA0 0 911F        S    1 D700-T
OEA1 1 4C08 088F    BSC  L CNTRL,+  BR IF NOT RTN END YET
*
OEA3 0 1010        SLA   16
OEA4 0 D1B3        STO  1 LOCK-T  RESET VARIABLE DATA IND
*
OEA5 1 6600 1660    LDX  L2 E008    PRINT ERROR MESSAGE
OEA7 1 4400 122E    BSI  L ERPRT    SYN INSERTION FAILURE
*
OEA9 1 4C00 088F    BSC  L CNTRL    RETURN TO CONTROL
*
OEAB 0 C1B3        RTIET LD  1 LOCK-T  STORE INSERTION
OEAC 0 9117        S    1 D1-T
OEAD 0 D1E3        STO  1 D001+3-T  RATE IN D001 PRINTOUT
*
OEAE 0 1010        SLA   16

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```

80E19740
80E19750
80E19760
80E19770
80E19780
80E19790
80E19800
80E19810
80E19820
80E19830
80E19840
80E19850
80E19860
80E19870
80E19880
80E19890
80E19900
80E19910
80E19920
80E19930
80E19940
80E19950
80E19960
80E19970
80E19980
80E19990
80E20000
80E20010
80E20020
80E20030
80E20040
80E20050
80E20060
80E20070
80E20080
80E20090
80E20100
80E20110
80E20120
80E20130
80E20140
80E20150
80E20160
80E20170
80E20180
80E20190
80E20200
80E20210
80E20220
80E20230
80E20240
80E20250
80E20260
80E20270
80E20280
80E20290
80E20300
80E20310
80E20320
80E20330
80E20340
80E20350
80E20360
80E20370
80E20380
80E20390
80E20400
80E20410

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

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0EAF 0 D1B3          *   STO  1 LOCK-T   RESET VARIABLE DATA IND  80E20420
*                   *   LDX  L2 D001   80E20430
0EB0 1 6600 1656    *   LDX  L2 D001   80E20440
0EB2 1 4400 121B    *   BSI  L PRINT   PRINT INSERTION RATE  80E20450
*                   *                   80E20460
0EB4 1 4C00 088F    *   BSC  L CNTRL  RETURN TO CONTROL  80E20470
*                   *                   80E20480
*                   *                   80E20490
*                   *                   80E20500
*****
*                   *                   80E20510
*                   *   TEST ROUTINE 1F  80E20520
*                   *                   80E20530
*****
*                   *                   80E20540
*                   *                   80E20550
0EB6 0 C11E        RTN1F LD  1 D50-T   INITIAL COUNT=50  80E20560
0EB7 0 1000        *   NOP  80E20570
*                   *                   80E20580
0EB8 0 D1B3        *   STO  1 LOCK-T   SET VARIABLE DATA IND  80E20590
*                   *                   80E20600
0EB9 0 911F        *   S  1 D700-T   CHECK FOR VALID COUNT.  80E20610
0EBA 1 4C08 0EC2  *   BSC  L RT1FB,+ BR IF COUNT OK  80E20620
*                   *                   80E20630
0EBC 0 1010        RT1FA SLA  16  80E20640
0EBD 0 D1B3        *   STO  1 LOCK-T   RESET VARIABLE DATA IND  80E20650
0EBE 1 D400 0805  *   STO  L SW3    RESET INVALID SW3 ENTRY  80E20660
0ECO 1 4C00 088F  *   BSC  L CNTRL  RETURN TO CONTROL  80E20670
*                   *                   80E20680
0EC2 0 C1B0        *   RT1FB LD  1 ASCII-T  80E20690
0EC3 1 4C18 0EC9  *   BSC  L RT1FC,+ BR IF EBCDIC CODE  80E20700
*                   *                   80E20710
0EC5 0 1010        *   SLA  16  80E20720
0EC6 1 D400 0803  *   STO  L SW1    RESET INVALID RTN SELECT  80E20730
0EC8 0 70F3        *   MDX  RT1FA  BRANCH  80E20740
*                   *                   80E20750
0EC9 1 7401 1629  *   RT1FC MDX  L LOCK,1  INCR VARIABLE DATA IND  80E20760
*                   *                   80E20770
0ECB 0 6700 FE9D  *   LDX  L3 -355  80E20780
0ECD 1 C400 16AF  *   LD  L TBL4+1  80E20790
*                   *                   80E20800
0ECF 1 D700 192F  *   RT1FD STO L3 VTBL+358  FILL XMIT  80E20810
0ED1 0 7301        *   MDX  3 1  TABLE WITH  80E20820
0ED2 0 70FC        *   MDX  RT1FD  17F CHARACTERS  80E20830
*                   *                   80E20840
0ED3 0 C120        *   LD  1 DLSTX-T  PUT DLE STX  80E20850
0ED4 1 D400 17CC  *   STO  L VTBL+3  IN XMIT TABLE  80E20860
*                   *                   80E20870
0ED6 0 C1B3        *   LD  1 LOCK-T   SET UP  80E20880
0ED7 0 D02F        *   STO  RT1FH  CHARACTER COUNT  80E20890
*                   *                   80E20900
0ED8 0 811B        *   A  1 D6-T  SET UP  80E20910
0ED9 0 E906        *   OR  1 H2000-T  TRANSMIT  80E20920
0EDA 0 D025        *   STO  RT1FG  BYTE COUNT  80E20930
*                   *                   80E20940
0EDB 0 C1B3        *   LD  1 LOCK-T   SET UP  80E20950
0EDC 0 811D        *   A  1 D15-T  DATA COMPARE  80E20960
0EDD 1 D400 0F9C  *   STO  L RT1FW  CHARACTER COUNT  80E20970
*                   *                   80E20980
0EDF 0 8118        *   A  1 D2-T  SET UP RETRIEVE XMIT  80E20990
0EE0 0 D021        *   STO  RT1FG+2  DATA CHARACTER COUNT  80E21000
*                   *                   80E21010
0EE1 0 C1B3        *   LD  1 LOCK-T   80E21020
0EE2 0 9117        *   S  1 D1-T  80E21030
0EE3 0 1881        *   SRT  1  80E21040
0EE4 0 D001        *   STO  *+1  80E21050
0EE5 0 6700 0000  *   LDX  L3 *-+  XR3=XMIT TABLE LENGTH  80E21060
*                   *                   80E21070
0EE7 0 C124        *   LD  1 DLE-T  FETCH DLE CHARACTERS  80E21080
0EE8 0 18D0        *   RTE  16  80E21090

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0EE9 1 4C10 0EF4  *   BSC  L RT1FE,- BR IF XMIT CHAR CNT EVEN  80E21100
*                   *                   80E21110
0EEB 1 C700 17CD  *   LD  L3 VTBL+4  BUILD  80E21120
0EED 0 1088        *   SLT  8  XMIT  80E21130
0EEE 1 D700 17CD  *   STO  L3 VTBL+4  TABLE  80E21140
0EFO 0 1888        *   SRT  8  END  80E21150
0EF1 0 C128        *   LD  1 ETX-T  SEQUENCE  80E21160
0EF2 0 18C8        *   RTE  8  80E21170
0EF3 0 7C08        *   MDX  RT1FF  BRANCH  80E21180
*                   *                   80E21190
0EF4 0 18D0        *   RT1FE RTE  16  BUILD  80E21200
0EF5 1 D700 17CD  *   STO  L3 VTBL+4  XMIT  80E21210
0EF7 1 C700 17CE  *   LD  L3 VTBL+5  TABLE  80E21220
0EF9 0 1888        *   SRT  8  EMD  80E21230
0EFA 0 C128        *   LD  1 ETX-T  SEQUENCE  80E21240
0EFB 0 1088        *   SLT  8  80E21250
*                   *                   80E21260
0EFC 1 D700 17CE  *   RT1FF STO L3 VTBL+5  STO END CHAR IN EMIT TBL  80E21270
*                   *                   80E21280
0EFE 1 4400 1274  *   BSI  L XMRCV  TRANSMIT AND  80E21290
0F00 0 0000        *   RT1FG DC *-+  RETRIEVE TRANSMITTED  80E21300
0F01 1 17CC        *   DC  VTBL+3  CHARACTERS  80E21310
0F02 0 0000        *   DC  *-+  80E21320
*                   *                   80E21330
0F03 0 09A2        *   XIO  1 CLEAR-T  CLEAR CA  80E21340
*                   *                   80E21350
0F04 1 4400 1458  *   BSI  L CALBC  CALCULATE  80E21360
0F06 1 17CC        *   DC  VTBL+3  BCC  80E21370
0F07 0 0000        *   RT1FH DC  *-+  80E21380
*                   *                   80E21390
0F08 0 D1B8        *   STO  1 TEMP1-T  SAVE BCC  80E21400
*                   *                   80E21410
0F09 0 1010        *   SLA  16  80E21420
0FOA 0 D1CB        *   STO  1 INSRT-T  RESET SYN INSERTION IND  80E21430
*                   *                   80E21440
0F0B 1 6600 1C97  *   LDX  L2 SRCTB+4  80E21450
0F0D 1 6E00 1632  *   STX  L2 TEMP2  POINT TO RETRIEVED DATA  80E21460
*                   *                   80E21470
0F0F 1 6600 17CD  *   LDX  L2 VTBL+4  XR2=EXPECTED DATA ADDR  80E21480
0F11 1 6780 1629  *   LDX  I3 LOCK  XR3=CHARACTER COUNT  80E21490
*                   *                   80E21500
0F13 0 73FF        *   RT1FI MDX  3 -1  DECRE CHAR COUNT  80E21510
0F14 0 7012        *   MDX  RT1FJ  BR IF NOT YET END OF TEXT  80E21520
*                   *                   80E21530
0F15 1 C480 1632  *   LD  I TEMP2  CK FOR SYN INSERTION  80E21540
0F17 0 F124        *   EOR  1 DLE-T  AHEAD OF DLE CHARACTERS  80E21550
0F18 1 4C20 0F50  *   BSC  L RT1FL,Z  BR IF INSERTION OCCURRED  80E21560
*                   *                   80E21570
0F1A 1 7401 1632  *   MDX  L TEMP2,1  80E21580
0F1C 0 7201        *   MDX  2 1  CK FOR SYM  80E21590
0F1D 1 C480 1632  *   LD  I TEMP2  INSERTION  80E21600
0F1F 0 F121        *   EOR  1 DLETX-T  FOLLOWING DLE CHARACTER  80E21610
0F20 1 4C18 0F7D  *   BSC  L RT1FT,+ BR IF NO INSERTION  80E21620
*                   *                   80E21630
0F22 0 C122        *   LD  1 DLSYN-T  STORE  80E21640
0F23 0 D200        *   STO  2 0  DLE SYN  80E21650
0F24 0 7201        *   MDX  2 1  IN EXPECTED DATA TBL  80E21660
0F25 0 D1CB        *   STO  1 INSRT-T  SET INSERTION IND  80E21670
0F26 0 7056        *   MDX  RT1FT  BRANCH  80E21680
*                   *                   80E21690
0F27 1 C480 1632  *   RT1FJ LD  I TEMP2  CHECK  80E21700
0F29 0 F139        *   EOR  1 TBL4+1-T  FOR  80E21710
0F2A 0 1808        *   SRA  8  INSERTION  80E21720
0F2B 1 4C20 0F50  *   BSC  L RT1FL,Z  BR IF INSERTION OCCURRED  80E21730
*                   *                   80E21740
0F2D 0 73FF        *   MDX  3 -1  DECRE CHAR COUNT  80E21750
0F2E 0 7017        *   MDX  RT1FK  BR IF NOT END TEXT YET  80E21760
*                   *                   80E21770

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

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OF2F 1 7401 1632 MDX L TEMP2,1 CHECK FOR 80E21780
OF31 1 C480 1632 LD I TEMP2 SYN INSERTION 80E21790
OF33 0 F124 EOR 1 DLE-T AHEAD OF DLE CHARACTERS 80E21800
OF34 1 4C20 0F55 BSC L RT1FM,Z BR IF INSERTION OCCURRED 80E21810
* 80E21820
OF36 1 7401 1632 MDX L TEMP2,1 CHECK FOR 80E21830
OF38 0 7201 MDX 2 1 SYN INSERTION 80E21840
OF39 1 C480 1632 LD I TEMP2 FOLLOWING 80E21850
OF3B 0 F128 EOR 1 ETX-T DLE CHARACTERS 80E21860
OF3C 0 1808 SRA 8 80E21870
OF3D 1 4C18 0F84 BSC L RT1FU,+ BR IF NO INSERTION 80E21880
* 80E21890
OF3F 0 7201 MDX 2 1 STORE 80E21900
OF40 0 C12D LD 1 SYN-T DLE SYN 80E21910
OF41 0 D200 STO 2 0 SEQUENCE IN 80E21920
OF42 0 D1CB STO 1 INSRT-T EXPECTED DATA TABLE 80E21930
OF43 0 C124 LD 1 DLE-T 80E21940
OF44 0 D2FF STO 2 -1 80E21950
OF45 0 703E MDX RT1FU BRANCH 80E21960
* 80E21970
OF46 1 C480 1632 RT1FK LD I TEMP2 CHECK 80E21980
OF48 0 F139 EOR 1 TBL4+1-T FOR 80E21990
OF49 0 1008 SLA 8 INSERTION 80E22000
OF4A 1 4C20 0F55 BSC L RT1FM,Z BR IF INSERTION OCCURRED 80E22010
* 80E22020
OF4C 1 7401 1632 MDX L TEMP2,1 UPDATE DATA 80E22030
OF4E 0 7201 MDX 2 1 TABLE POINTERS 80E22040
OF4F 0 70C3 MDX RT1FI BRANCH 80E22050
* 80E22060
OF50 0 7301 RT1FL MDX 3 1 80E22070
OF51 0 C122 LD 1 DLSYN-T STORE 80E22080
OF52 0 D1CB STO 1 INSRT-T DLE SYN SEQUENCE 80E22090
OF53 0 D200 STO 2 0 IN EXPECTED DATA TABLE 80E22100
OF54 0 7014 MDX RT1FP BRANCH 80E22110
* 80E22120
* 80E22130
OF55 0 7301 RT1FM MDX 3 1 80E22140
OF56 0 C122 LD 1 DLSYN-T STORE 80E22150
OF57 0 D1CB STO 1 INSRT-T DLE SYN 80E22160
OF58 0 1890 SRT 16 SEQUENCE 80E22170
OF59 0 C200 LD 2 0 IN EXPECTED 80E22180
OF5A 0 1808 SRA 8 DATA TABLE 80E22190
OF5B 0 1088 SLT 8 80E22200
OF5C 0 D200 STO 2 0 80E22210
* 80E22220
OF5D 0 7201 MDX 2 1 80E22230
OF5E 0 1090 SLT 16 80E22240
OF5F 0 D200 STO 2 0 80E22250
* 80E22260
OF60 0 73FF RT1FN MDX 3 -1 80E22270
OF61 0 7001 MDX RT1FO 80E22280
OF62 0 700D MDX RT1FR 80E22290
* 80E22300
OF63 0 C139 RT1FO LD 1 TBL4+1-T FILL 80E22310
OF64 0 1888 SRT 8 REMAINDER OF 80E22320
OF65 0 C200 LD 2 0 EXPECTED DATA 80E22330
OF66 0 1808 SRA 8 TABLE WITH 80E22340
OF67 0 1088 SLT 8 17F CHARACTERS 80E22350
OF68 0 D200 STO 2 0 80E22360
* 80E22370
OF69 0 7201 RT1FP MDX 2 1 80E22380
OF6A 0 73FF MDX 3 -1 80E22390
OF6B 0 7001 MDX RT1FQ 80E22400
OF6C 0 700D MDX RT1FS 80E22410
* 80E22420
OF6D 0 C139 RT1FQ LD 1 TBL4+1-T 80E22430
OF6E 0 D200 STO 2 0 80E22440
OF6F 0 70F0 MDX RT1FN 80E22450

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OF70 0 C124 * RT1FR LD 1 DLE-T STORE 80E22460
OF71 0 1890 SRT 16 DLE DLE 80E22470
OF72 0 C200 LD 2 0 SEQUENCE 80E22480
OF73 0 1808 SRA 8 IN EXPECTED 80E22490
OF74 0 1088 SLT 8 DATA 80E22500
OF75 0 D200 STO 2 0 TABLE 80E22510
* 80E22520
OF76 0 7201 MDX 2 1 80E22530
OF77 0 1090 SLT 16 80E22540
OF78 0 D200 STO 2 0 80E22550
OF79 0 700A MDX RT1FU BRANCH 80E22560
* 80E22570
OF7A 0 C124 RT1FS LD 1 DLE-T STORE DLE DLE SEQUENCE 80E22580
OF7B 0 D200 STO 2 0 IN EXPECTED DATA TABLE 80E22590
OF7C 0 7201 MDX 2 1 80E22600
* 80E22610
OF7D 0 C121 RT1FT LD 1 DLETX-T STORE DLE ETX IN 80E22620
OF7E 0 D200 STO 2 0 EXPECTED DATA TABLE 80E22630
* 80E22640
OF7F 0 C18B LD 1 TEMPI-T STORE BCC IN 80E22650
OF80 0 D201 STO 2 1 EXPECTED TABLE 80E22660
* 80E22670
OF81 0 C116 LD 1 HFFFF-T STORE ENDING PADS IN 80E22680
OF82 0 D202 STO 2 2 EXPECTED DATA TABLE 80E22690
* 80E22700
OF83 0 700F MDX RT1FV BRANCH 80E22710
* 80E22720
OF84 0 C116 RT1FU LD 1 HFFFF-T STORE ENDING PADS IN 80E22730
OF85 0 D203 STO 2 3 EXPECTED DATA TABLE 80E22740
* 80E22750
OF86 0 1890 SRT 16 2ND BCC 80E22760
OF87 0 C18B LD 1 TEMPI-T IN EXPECTED 80E22770
OF88 0 1808 RTE 24 DATA TABLE 80E22780
OF89 0 D202 STO 2 2 80E22790
* 80E22800
OF8A 0 1088 SLT 8 STORE 80E22810
OF8B 0 C121 LD 1 DLETX-T 1ST BCC 80E22820
OF8C 0 1808 RTE 24 AND 80E22830
OF8D 0 D201 STO 2 1 DLE ETX 80E22840
* 80E22850
OF8E 0 1088 SLT 8 SEQUENCE 80E22860
OF8F 0 C200 LD 2 0 IN EXPECTED 80E22870
OF90 0 1808 SRA 8 DATA TABLE 80E22880
OF91 0 1088 SLT 8 80E22890
OF92 0 D200 STO 2 0 80E22900
* 80E22910
OF93 0 C008 RT1FV LD RT1FW SET UP 80E22920
OF94 1 7400 1641 MDX L INSRT DATA COMPARE 80E22930
OF96 0 8118 A 1 D2-T BYTE COUNT 80E22940
OF97 0 D004 STO RT1FW 80E22950
* 80E22960
OF98 1 4400 150C BSI L CKDAT CHECK 80E22970
OF9A 1 1C93 DC SRCTB RETRIEVED 80E22980
OF9B 1 17C9 DC VTBL DATA 80E22990
OF9C 0 0000 RT1FW DC *-* 80E23000
* 80E23010
OF9D 1 7400 1641 MDX L INSRT 80E23020
OF9F 0 700C MDX RT1FX BR IF SYN INSERTION 80E23030
* 80E23040
OFA0 0 C1B3 LD 1 LOCK-T 80E23050
OFA1 0 911F S 1 D700-T 80E23060
OFA2 1 4C08 088F BSC L CNTRL,+ BR IF NOT YET RTN END 80E23070
* 80E23080
OFA4 0 1010 SLA 16 80E23090
OFA5 0 D1B3 STO 1 LOCK-T RESET VARIABLE DATA IND 80E23100
* 80E23110
OFA6 1 6600 1660 LD L2 E008 PRINT ERROR MSG 80E23120
80E23130

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

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OFA8 1 4400 122E      BSI L ERPRT      INSERTION FAILURE      80E23140
*                      *                      *                      *
OFAA 1 4C00 088F      BSC L CNTRL      RETURN TO CONTROL      80E23150
*                      *                      *                      *
OFAC 0 C1B3          RT1FX LD 1 LOCK-T  STORE INSERTION RATE  80E23160
OFAD 0 9117          S 1 D1-T          *                      *
OFAE 0 DIE3          STO 1 D001+3-T    IN D001 MESSAGE      80E23170
*                      *                      *                      *
OFAF 0 1010          SLA 16           *                      *
OFBO 0 D1B3          STO 1 LOCK-T      RESET VARIABLE DATA IND 80E23180
*                      *                      *                      *
OFB1 1 6600 1656     LDX L2 D001      *                      *
OFB3 1 4400 121B     BSI L PRINT      PRINT INSERTION RATE  80E23190
*                      *                      *                      *
OFB5 1 4C00 088F     BSC L CNTRL      RETURN TO CONTROL      80E23200
*                      *                      *                      *
*                      *                      *                      *
*****
*                      *                      *                      *
TEST ROUTINE 20
*                      *                      *                      *
*****
OFB7 0 1000          RTN20 NOP        *                      *
*                      *                      *                      *
OFB8 1 4400 1274     BSI L XMRCV      INITIALIZE CA          80E23210
OFBA 0 0006          DC /0006         TO RECEIVE             80E23220
OFBB 0 0000          DC 0             TABLE                80E23230
*                      *                      *                      *
OFBC 1 4400 13CB     BSI L GEN        PLACE                 80E23240
OFBE 0 0004          DC 4             SYN CHARS ON           80E23250
OFBF 1 16A6          DC TBL1+2       RECEIVE DATA LINE    80E23260
*                      *                      *                      *
OFC0 1 4400 14BD     BSI L SENSE      SENSE DSWS            80E23270
*                      *                      *                      *
OFC2 0 09A2          XIO 1 CLEAR-T    CLEAR CA               80E23280
*                      *                      *                      *
OFC3 1 4400 14CC     BSI L CKDSW      CHECK DSWS             80E23290
OFC5 0 0080          DC /0080         *                      *
OFC6 0 0000          DC /0000         *                      *
OFC7 0 0FFB          DC /OFFB         *                      *
OFC8 0 F000          DC /F000         *                      *
OFC9 0 4000          DC /4000         *                      *
OFCA 0 91FF          DC /91FF         *                      *
*                      *                      *                      *
OFCB 1 4400 15A0     BSI L CKINT      CHECK FOR              80E23300
OFCD 0 0000          DC 0             UNEXPECTED INTERRUPT  80E23310
*                      *                      *                      *
OFCE 1 4C00 088F     BSC L CNTRL      EXIT ROUTINE          80E23320
*                      *                      *                      *
*                      *                      *                      *
*****
*                      *                      *                      *
TEST ROUTINE 21
*                      *                      *                      *
*****
OFD0 0 1000          RTN21 NOP        *                      *
*                      *                      *                      *
OFD1 1 4400 1274     BSI L XMRCV      INITIALIZE TO TRANSMIT 80E23330
OFD3 0 E004          DC /E004         TABLE CHAINED TO 2ND 80E23340
OFD4 1 16A7          DC TBL2          TRANSMIT TABLE CHAINED 80E23350
OFD5 0 0000          DC 0             ON ITSELF              80E23360
OFD6 1 16A7          DC TBL2          *                      *
OFD7 0 0000          DC 0             *                      *
*                      *                      *                      *
OFD8 1 4400 081D     BSI L DELAY      WAIT .8                80E23370
OFDA 0 0320          DC 800          SECOND                 80E23380

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OFDB 0 C11A          *                      *
OFDC 1 D480 1642     *                      *
*                      *                      *
OFDE 1 4400 081D     BSI L DELAY      WAIT 2.5              80E23820
OFEO 0 09C4          DC 2500          SECONDS                80E23830
*                      *                      *                      *
OFE1 1 4400 15A0     BSI L CKINT      CHECK FOR              80E23840
OFE3 0 0000          DC 0             UNEXPECTED INTRPT    80E23850
*                      *                      *                      *
OFE4 1 4400 081D     BSI L DELAY      WAIT .5                80E23860
OFE6 0 01F4          DC 500           SECOND                 80E23870
*                      *                      *                      *
OFE7 0 09A2          XIO 1 CLEAR-T    CLEAR CA               80E23880
*                      *                      *                      *
OFE8 1 4400 15A0     BSI L CKINT      CHECK FOR              80E23890
OFEA 0 2080          DC /2080         TIMEOUT INTERRUPT    80E23900
OFEB 0 0000          DC /0000         *                      *
OFEC 0 0FFB          DC /OFFB         *                      *
OFED 0 F000          DC /F000         *                      *
OFEE 0 0000          DC /0000         *                      *
OFEF 0 91FF          DC /91FF         *                      *
*                      *                      *                      *
OFF0 1 4C00 088F     BSC L CNTRL      EXIT ROUTINE          80E23910
*                      *                      *                      *
*                      *                      *                      *
*****
*                      *                      *                      *
TEST ROUTINE 22
*                      *                      *                      *
*****
OFF2 0 1000          RTN22 NOP        *                      *
*                      *                      *                      *
OFF3 1 4400 1274     BSI L XMRCV      INITIALIZE TO RECEIVE 80E23920
OFF5 0 0006          DC /0006         TABLE                80E23930
OFF6 0 0000          DC 0             *                      *
*                      *                      *                      *
OFF7 1 4400 13CB     BSI L GEN        GENERATE PROGRAMMED   80E23940
OFF9 0 0008          DC 8             RECEIVE DATA         80E23950
OFFA 1 16A6          DC TBL1+2       *                      *
*                      *                      *                      *
OFFB 1 4400 14BD     BSI L SENSE      SENSE DSW'S          80E23960
*                      *                      *                      *
OFFD 0 09A2          XIO 1 CLEAR-T    *                      *
*                      *                      *                      *
OFFE 1 4400 14CC     BSI L CKDSW      CHECK DSW'S           80E23970
1000 0 0080          DC /0080         *                      *
1001 0 0000          DC /0000         *                      *
1002 0 0FFF          DC /OFFF         *                      *
1003 0 F000          DC /F000         *                      *
1004 0 4000          DC /4000         *                      *
1005 0 91FF          DC /91FF         *                      *
*                      *                      *                      *
1006 1 4400 150C     BSI L CKDAT      CHECK DATA            80E23980
1008 1 1B04          DC XMRC+1        RECEIVED              80E23990
1009 1 16A7          DC TBL2          *                      *
100A 0 0008          DC 8             *                      *
*                      *                      *                      *
100B 1 4400 15A0     BSI L CKINT      CHECK FOR              80E24000
100D 0 0880          DC /0880         TABLE COMPLETE      80E24010
100E 0 0000          DC /0000         INTERRUPT             80E24020
100F 0 0FFF          DC /OFFF         *                      *
1010 0 F000          DC /F000         *                      *
1011 0 4000          DC /4000         *                      *
1012 0 91FF          DC /91FF         *                      *
*                      *                      *                      *
1013 1 4C00 088F     BSC L CNTRL      EXIT ROUTINE          80E24030

```

CA WRAP AROUND TEST

```

*
*
*****
*
*           TEST ROUTINE 23
*****
*
RTN23 NOP
*
1015 0 1000
1016 1 4400 1274      BSI L XMRCV INITIALIZE CA TO
1018 0 0006          DC /0006 RECEIVE TABLE
1019 0 0000          DC 0
*
101A 1 4400 13CB      BSI L GEN GENERATE PROGRAMMED
101C 0 0008          DC 8 RECEIVE MESSAGE ON
101D 1 16D1          DC TBL9 RECEIVE DATA LINE
*
101E 1 4400 14BD      BSI L SENSE SENSE DSW'S
*
1020 0 09A2          XIO 1 CLEAR-T CLEAR CA
*
1021 1 4400 14CC      BSI L CKDSW CHECK DSW'S
1023 0 0080          DC /0080
1024 0 0000          DC /0000
1025 0 0FFD          DC /OFFD
1026 0 F000          DC /F000
1027 0 4000          DC /4000
1028 0 91FF          DC /91FF
*
1029 1 4400 150C      BSI L CKDAT CHECK DATA
102B 1 1B04          DC XMRCT+1
102C 1 16AF          DC TBL4+1
102D 0 0004          DC 4
*
102E 1 4400 15A0      BSI L CKINT CHECK FOR
1030 0 0000          DC 0 UNEXPECTED INTERRUPT
*
1031 1 4C00 088F      BSC L CNTRL EXIT ROUTINE
*
*
*****
*
*           TEST ROUTINE 24
*****
*
RTN24 NOP
*
1033 0 1000
1034 1 7400 1626      MDX L ASCII BR IF USASCII CODE
1036 0 701D          MDX RT24A
*
1037 1 4400 1274      BSI L XMRCV INITIALIZE CA
1039 0 0008          DC /0008 TO RECEIVE TABLE
103A 0 0000          DC 0
*
103B 1 4400 13CB      BSI L GEN PLACE 12 CHARS
103D 0 000C          DC 12 ON RECEIVE
103E 1 178E          DC TTBL3 DATA LINE
*
103F 1 4400 14BD      BSI L SENSE SENSE DSW'S
*
1041 0 09A2          XIO 1 CLEAR-T CLEAR CA
*
1042 1 4400 14CC      BSI L CKDSW CHECK DSW'S
1044 0 0080          DC /0080
1045 0 0000          DC /0000

```

CA WRAP AROUND TEST

```

1046 0 OFFE          DC /OFFE
1047 0 F000          DC /F000
1048 0 4C00          DC /4C00
1049 0 91FF          DC /91FF
*
104A 1 4400 150C      BSI L CKDAT CHECK DATA
104C 1 1B04          DC XMRCT+1
104D 1 1794          DC TTBL4
104E 0 0006          DC 6
*
104F 1 4400 15A0      BSI L CKINT CHECK FOR
1051 0 0000          DC 0 UNEXPECTED INTRPT
*
1052 1 4C00 088F      BSC L CNTRL EXIT ROUTINE
*
RT24A SLA 16
1054 0 1010          STO L SW1 RESET ROUTINE SELECTION
1055 1 D400 0803      BSC L CNTRL RETURN TO CONTROL
1057 1 4C00 088F
*
*
*****
*
*           TEST ROUTINE 25
*****
*
RTN25 LD 1 ETB-T LOAD 1ST END CHAR
NOP
*
1058 0 E104          AND 1 H00FF-T
105C 0 D1B3          STO 1 LOCK-T SET VARIABLE DATA IND
*
105D 1 7401 1629      MDX L LOCK,1 ADVANCE VARIABLE
*
105F 0 E90C          OR 1 H8000-T STORE END CHAR
1060 1 D400 1780      STO L TBL11+2 IN DATA TABLE
*
1062 1 4400 141A      BSI L DCODE DECODE CONTROL CHAR
*
1064 0 1089          SLT 9
1065 0 100A          SLA 10
1066 1 4C18 10AD      BSC L RT25F,+ BR IF INVALID CHAR
*
1068 0 1002          SLA 2
1069 0 180D          SRA 13
106A 1 4C20 1077      BSC L RT25A,Z BR IF SHORT END CHAR
*
106C 0 C139          LD 1 TBL4+1-T STORE
106D 0 1888          SRT 8 STX CHARACTER
106E 0 C126          LD 1 STX-T IN DATA
106F 0 1088          SLT 8 TABLE
1070 1 D400 177F      STO L TBL11+1
*
1072 1 4400 1458      BSI L CALBC CALCULATE
1074 1 177F          DC TBL11+1 BCC
1075 0 C003          DC 3
*
1076 0 7004          MDX RT25B+1 BRANCH
*
RT25A LD 1 TBL4+1-T STORE /7F7F
STO L TBL11+1 STARTING CHARACTERS
*
RT25B LD 1 HFFFF-T STORE PADS OR
STO L TBL11+3 BCC IN DATA TABLE
*
107D 1 4400 1274      BSI L XMRCV INITIALIZE CA
107F 0 000A          DC /000A TO RECEIVE TABLE
1080 0 0000          DC 0

```

CA WRAP AROUND TEST

```

*
1081 1 4400 13CB      *   BSI L GEN      GENERATE 10
1083 0 000A          DC      10      CHARACTERS
1084 1 177E          DC      TBL11   ON RECEIVE LINE
*
1085 0 09A2          *   XIO  1 CLEAR-T  CLEAR CA
*
1086 1 4400 150C      *   BSI L CKDAT    CHECK
1088 1 1804          DC      XMRCT+1  RECEIVED
1089 1 177F          DC      TBL11+1  DATA
108A 0 0004          DC      4
*
108B 1 C400 1780      *   LD  L TBL11+2  FETCH END CHAR
108D 1 4400 141A      *   BSI L DCODE    DECODE CONTROL CHAR
*
108F 0 1092          *   SLT  18
1090 0 63FB          LDX  3 -5
*
1091 0 1001          *   RT25C SLA  1
1092 1 4C28 109D      *   BSC L RT25E,Z+ BR WHEN DECODE BIT FOUND
*
1094 0 7301          *   MDX  3 1
1095 0 70FB          MDX  RT25C
*
1096 1 4400 15A0      *   BSI L CKINT    CHECK FOR
1098 0 0000          DC      0      UNEXPECTED INTERRUPT
*
1099 0 1010          *   RT25D SLA  16
109A 0 D1B3          STO  1 LOCK-T  RESET VARIABLE DATA IND
109B 1 4C00 088F      *   BSC L CNTRL    RETURN TO CONTROL
*
109D 0 6B09          *   RT25E STX  3 RT25G+1 SAVE XR3
*
109E 1 4400 15A0      *   BSI L CKINT    CHECK FOR
10A0 0 1080          DC      /1080  END CHARACTER
10A1 0 0000          DC      /0000  DECODED INTERRUPT
10A2 0 00FF          DC      /OFFA
10A3 0 F000          DC      /F000
10A4 0 0000          DC      /0000
10A5 0 FFFF          DC      /FFFF
*
10A6 0 6700 0000      *   RT25G LDX  L3 *-*  RESTORE XR3
10A8 1 C700 16A3      LD  L3 ITB+1
10AA 0 D1B3          STO  1 LOCK-T  SET NEXT END CHARACTER
*
10AB 1 4C00 088F      *   BSC L CNTRL    RETURN TO CONTROL
*
10AD 1 D400 0805      *   RT25F STO  L SW3  RESET INVALID VARIABLE
10AF 0 70E9          MDX  RT25D  RETURN TO CONTROL
*
*****
*
*           TEST ROUTINE 26
*
*****
10B0 0 C11A          *   RTN26 LD  1 D4-T  LOAD INCORRECT BCC
10B1 0 1000          NOP
*
10B2 0 1008          *   SLA  8
10B3 1 D400 16DC      STO  L TBLC+1  PLACE IN
*                                     DATA TABLE
*
10B5 0 1808          *   SRA  8
10B6 0 8117          A  1 D1-T  SET VARIABLE
10B7 0 D1B3          STO  1 LOCK-T  DATA IND
*
10B8 1 4400 1458      *   BSI L CALBC    CALCULATE

```

CA WRAP AROUND TEST

```

10BA 1 16DB          DC      TBLC      BCC CHARS
10BB 0 0001          DC      1
*
10BC 0 E104          *   AND  1 HOOFF-T  PLACE BCC
10BD 1 EC00 16DC      OR  L TBLC+1  IN TABLE
10BF 1 D400 16DC      STO  L TBLC+1
*
10C1 0 F1BF          *   EOR  1 BCCA-T  CMPR WITH CALCULATED BCC
10C2 0 4818          BSC  +-      SET TO ZERO
10C3 0 D166          STO  1 TBLC+1-T IF EQUAL
*
10C4 1 4400 1274      *   BSI L XMRCV    INITIALIZE CA TO
10C6 0 0008          DC      /0008  RECEIVE TABLE
10C7 0 C000          DC      0
*
10C8 1 4400 13CB      *   BSI L GEN      GENERATE MESSAGE ON
10CA 0 0008          DC      8      RECEIVE DATA LINE
10CB 1 16DA          DC      TBLC-1
*
10CC 1 4400 148D      *   BSI L SENSE    SENSE DSW'S
*
10CE 0 09A2          *   XIO  1 CLEAR-T  CLEAR CA
*
10CF 1 4400 14CC      *   BSI L CKDSW    CHECK DSW'S
10D1 0 0080          DC      /0080
10D2 0 0000          DC      /0000
10D3 0 00FF          DC      /OFFA
10D4 0 F000          DC      /F000
10D5 0 0400          DC      /0400
10D6 0 91FF          DC      /91FF
*
10D7 1 4400 150C      *   BSI L CKDAT    CHECK DATA
10D9 1 1804          DC      XMRCT+1
10DA 1 16DB          DC      TBLC
10DB 0 0002          DC      2
*
10DC 1 4400 15A0      *   BSI L CKINT    CHECK FOR
10DE 0 1280          DC      /1280  END CHAR DECODED
10DF 0 0000          DC      /0000  INTERRUPT
10E0 0 00FF          DC      /OFFA
10E1 0 F000          DC      /F000
10E2 0 0400          DC      /0400
10E3 0 91FF          DC      /91FF
*
10E4 0 C1B3          *   LD  1 LOCK-T  CHECK VARIABLE
10E5 0 1008          SLA  8      DATA
10E6 0 4818          BSC  +-
10E7 0 D1B3          STO  1 LOCK-T
10E8 1 4C00 088F      *   BSC L CNTRL    RETURN TO CONTROL SUBRTN
*
*****
*
*           TEST ROUTINE 27
*
*****
10EA 0 1000          *   RTN27 NOP
*
10EB 1 4400 1274      *   BSI L XMRCV    INITIALIZE CA TO
10ED 0 0006          DC      /0006  RECEIVE TABLE
10EE 0 0000          DC      0
*
10EF 1 2C41 1804      *   STS L XMRCT+1, /41 SET STORAGE PROTECT BIT
*
10F1 1 4400 13CB      *   BSI L GEN      GENERATE MSG ON
10F3 0 0006          DC      6      RECEIVE DATA LINE
10F4 1 16A6          DC      TBL2-1

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ICA WRAP AROUND TEST

```

*
10F5 1 4400 14BD      *   BSI  L  SENSE      SENSE DSW'S      80E27220
*
10F7 0 09A2          *   XIO  1  CLEAR-T    CLEAR CA          80E27230
*
10F8 1 4400 14CC      *   BSI  L  CKDSW      CHECK DSW'S      80E27240
10FA 0 0080          DC    /0080        80E27250
10FB 0 0400          DC    /0400        80E27260
10FC 0 0FFD          DC    /0FFD        80E27270
10FD 0 F000          DC    /F000        80E27280
10FE 0 4000          DC    /4000        80E27290
10FF 0 91FF          DC    /91FF        80E27300
*
1100 1 4400 150C      *   BSI  L  CKDAT      CHECK DATA      80E27310
1102 1 1B04          DC    XMRCT+1      80E27320
1103 1 1B07          DC    XMRCT+4      80E27330
1104 0 0002          DC    2             80E27340
*
1105 1 4400 15A0      *   BSI  L  CKINT      CHECK FOR        80E27350
1107 0 C080          DC    /C080        STORAGE PROTECT 80E27360
1108 0 0000          DC    /0000        VIOLATE          80E27370
1109 0 0FFB          DC    /0FFB        INTERRUPT        80E27380
110A 0 F000          DC    /F000        80E27390
110B 0 4000          DC    /4000        80E27400
110C 0 91FF          DC    /91FF        80E27410
*
110D 1 4C00 088F      *   BSC  L  CNTRL      EXIT ROUTINE     80E27420
*
*****
*
TEST ROUTINE 28
*****
*
RTN28 NOP
*
110F 0 1000
*
1110 1 4400 1274      *   BSI  L  XMRCV      INITIALIZE CA TO 80E27430
1112 0 A0F8          DC    /A0F8        TABLE CHAINED  80E27440
1113 1 16DE          DC    TBLD         RECEIVE TABLE  80E27450
1114 0 00F6          DC    /00F6        AND              80E27460
1115 0 C109          DC    265         RETRIEVE DATA  80E27470
*
1116 1 4400 15A0      *   BSI  L  CKINT      CHECK FOR        80E27480
1118 0 0880          DC    /0880        TABLE COMPLETE 80E27490
1119 0 0000          DC    /0000        INTERRUPT        80E27500
111A 0 0F09          DC    /0F09        80E27510
111B 0 F000          DC    /F000        80E27520
111C 0 0000          DC    /0000        80E27530
111D 0 91FF          DC    /91FF        80E27540
*
111E 0 1810          *   SRA  16          CLEAR INTRPT     80E27550
111F 1 D400 15D7      *   STO  L  INT        ENTRY POINT      80E27560
*
1121 1 4400 13CB      *   BSI  L  GEN        GENERATE PROGRAMMED 80E27570
1123 0 0109          DC    265         RECEIVE MESSAGE  80E27580
1124 1 1C93          DC    SRCTB        RECEIVE DATA    80E27590
*
1125 1 4400 14BD      *   BSI  L  SENSE      SENSE DSW'S      80E27600
*
1127 0 09A2          *   XIO  1  CLEAR-T    CLEAR CA          80E27610
*
1128 1 4400 14CC      *   BSI  L  CKDSW      CHECK DSW'S      80E27620
112A 0 0080          DC    /0080        80E27630
112B 0 0000          DC    /0000        80E27640
112C 0 0FFF          DC    /0FFF        80E27650
112D 0 F000          DC    /F000        80E27660
112E 0 4000          DC    /4000        80E27670

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ICA WRAP AROUND TEST

```

112F 0 91FF          *   DC    /91FF      80E27900
*
1130 1 6780 1642      *   LDX  I3  XRTB2    GET RECEIVE TABLE ADDR 80E27910
1132 0 7301          MDX  3  1          80E27920
1133 0 6802          STX  3  *+2        SAVE ADDR FOR DATA COMPARE 80E27930
*
1134 1 4400 150C      *   BSI  L  CKDAT      CHECK DATA      80E27940
1136 0 0000          DC    *-*          80E27950
1137 1 16DE          DC    TBLD         80E27960
1138 0 00F6          DC    246         80E27970
*
1139 1 4400 15A0      *   BSI  L  CKINT      CHECK FOR        80E27980
1138 0 0880          DC    /0880        END OF TABLE    80E27990
113C 0 0000          DC    /0000        INTRPT           80E28000
113D 0 0FFF          DC    /0FFF        80E28010
113E 0 F000          DC    /F000        80E28020
113F 0 4000          DC    /4000        80E28030
1140 0 91FF          DC    /91FF        80E28040
*
1141 1 4C00 088F      *   BSC  L  CNTRL      EXIT ROUTINE     80E28050
*
*****
*
TEST ROUTINE 29
*****
*
RTN29 NOP
*
1143 0 1000
*
1144 1 6C00 1640      *   STX  L  DIAGS      INDICATE DIAGNOSTIC MODE 80E28060
*
1146 1 4400 1274      *   BSI  L  XMRCV      INITIALIZE CA TO TRANSMIT 80E28070
1148 0 A008          DC    /A008        TABLE CHAINED  80E28080
1149 1 175A          DC    TBLD         RECEIVE MESSAGE  80E28090
114A 0 0004          DC    /0004        TABLE IN DIAGNOSTIC MODE 80E28100
114B 0 0C11          DC    17          AND RETRIEVE     80E28110
*
114C 1 4400 15A0      *   BSI  L  CKINT      CHECK FOR        80E28120
114E 0 0880          DC    /0880        TABLE COMPLETE 80E28130
114F 0 0000          DC    /0000        INTERRUPT        80E28140
1150 0 0FFB          DC    /0FFB        80E28150
1151 0 F000          DC    /F000        80E28160
1152 0 0000          DC    /0000        80E28170
1153 0 91FF          DC    /91FF        80E28180
*
1154 0 1810          *   SRA  16          CLEAR INTERRUPT  80E28190
1155 1 D400 15D7      *   STO  L  INT        ENTRY POINT      80E28200
*
1157 1 4400 13CB      *   BSI  L  GEN        GENERATE PROGRAMMED 80E28210
1159 0 0006          DC    6           RECEIVE MESSAGE  80E28220
115A 1 175E          DC    TBLF        RECEIVE LINE     80E28230
*
115B 1 4400 14BD      *   BSI  L  SENSE      SENSE DSW'S      80E28240
*
115D 0 09A2          *   XIO  1  CLEAR-T    CLEAR CA          80E28250
*
115E 1 6780 1642      *   LDX  I3  XRTB2    GET RECEIVE TABLE ADDR 80E28260
1160 0 6203          LDX  2  3          80E28270
1161 0 C302          LD   3  2          SAVE ADDR FOR DATA COMPARE 80E28280
1162 0 E115          AND  1  HEFFF-T    80E28290
1163 0 D302          STO  3  2          80E28300
1164 0 7302          MDX  3  2          80E28310
1165 0 72FF          MDX  2  -1        80E28320
1166 0 70FA          MDX  *-6         80E28330
*

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

1167 1 4400 14CC      BSI L CKDSW  CHECK DSW'S      80E28580
1169 0 0080          DC   /0080      80E28590
116A 0 0000          DC   /0000      80E28600
116B 0 0FFF          DC   /0FFF      80E28610
116C 0 F000          DC   /F000      80E28620
116D 0 4400          DC   /4400      80E28630
116E 0 91FF          DC   /91FF      80E28640
                        *      80E28650
116F 1 4400 150C      BSI L CKDAT  CHECK DATA      80E28660
1171 1 1803          DC   XMRCV      80E28670
1172 1 1761          DC   TBL10      80E28680
1173 0 003A          DC   58          80E28690
                        *      80E28700
1174 1 4400 15A0      BSI L CKINT  CHECK FOR          80E28710
1176 0 0880          DC   /0880      TABLE COMPLETE INTRPT 80E28720
1177 0 0000          DC   /0000      80E28730
1178 0 0FFF          DC   /0FFF      80E28740
1179 0 F000          DC   /F000      80E28750
117A 0 4400          DC   /4400      80E28760
117B 0 91FF          DC   /91FF      80E28770
                        *      80E28780
117C 1 4C00 088F      BSC L CNTRL  EXIT ROUTINE      80E28790
                        *      80E28800
                        *      80E28810
                        *      80E28820
                        *      80E28830
                        *      80E28840
*****
*      TEST ROUTINE 2A
*****
*      RTN2A NOP
117E 0 1000
*
117F 1 4400 13FE      BSI L CKTIM  CHECK TRANSMIT TIMING 80E28920
                        *      80E28930
1181 0 C118          LD   1 D2-T    INITIALIZE DELAY      80E28940
1182 0 D1B6          STO  1 DLYCT-T  COUNT                80E28950
                        *      80E28960
1183 1 6680 162C      RN2AA LDX   I2 DLYCT  LOAD DELAY COUNT      80E28970
                        *      80E28980
1185 1 0C00 1620      XIO L SNSBC  WAIT FOR POSITIVE STATE 80E28990
1187 1 4C10 1185      BSC L RN2AA+2,- OF TRANSMIT TIMING 80E29000
                        *      80E29010
1189 1 0C00 1620      RN2AB XIO L SNSBC  WAIT FOR NEGATIVE SHIFT 80E29020
1188 1 4C28 1189      BSC L RN2AB,Z+  OF TRANSMIT TIMING 80E29030
                        *      80E29040
118D 0 72FF          MDX  2 -1     DELAY-DECRE          80E29050
118E 0 70FE          MDX  *-2     XR2 TO ZERO        80E29060
                        *      80E29070
118F 1 7401 162C      MDX L DLYCT,1  INCRE DELAY COUNT    80E29080
                        *      80E29090
1191 1 0C00 1620      XIO L SNSBC  BR IF XMIT TIMING      80E29100
1193 1 4C10 1183      BSC L RN2AA,-  STILL NEGATIVE    80E29110
                        *      80E29120
1195 0 C1B6          LD   1 DLYCT-T  DIVIDE DELAY          80E29130
1196 0 1801          SRA  1         COUNT BY              80E29140
1197 0 D1B6          STO  1 DLYCT-T  TWO                80E29150
                        *      80E29160
1198 1 4400 1274      BSI L XMRCV  INITIALIZE CA          80E29170
119A 0 0006          DC   /0006    TO RECEIVE TABLE    80E29180
119B 0 0000          DC   0        80E29190
                        *      80E29200
119C 1 6680 162C      RN2AC LDX   I2 DLYCT  LOAD DELAY COUNT      80E29210
                        *      80E29220
119E 1 0C00 1620      XIO L SNSBC  WAIT FOR POSITIVE STATE 80E29230
11A0 1 4C10 119E      BSC L RN2AC+2,- OF XMIT TIMING 80E29240
                        *      80E29250

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11A2 1 0C00 1620      RN2AD XIO L SNSBC  WAIT FOR NEGATIVE SHIFT 80E29260
11A4 1 4C28 11A2      BSC L RN2AD,Z+  OF XMIT TIMING      80E29270
                        *      80E29280
11A6 0 72FF          MDX  2 -1     DELAY-DECRE          80E29290
11A7 0 70FE          MDX  *-2     XR2 TO ZERO        80E29300
                        *      80E29310
11A8 1 0C00 1624      XIO L SETRC   CHANGE RECEIVE LINE STATUS 80E29320
                        *      80E29330
11AA 0 6780 0134      LD   I3 MAT   CHECK CONSOLE INTERRUPT 80E29340
11AC 0 C305          LD   3 5     ROUTINE BUSY INDICATOR 80E29350
11AD 1 4C18 119C      BSC L RN2AC,+  BR IF NOT ON          80E29360
                        *      80E29370
11AF 0 09A2          XIO  1 CLEAR-T  CLEAR CA              80E29380
                        *      80E29390
11B0 1 4C00 088F      BSC L CNTRL  EXIT ROUTINE          80E29400
                        *      80E29410
                        *      80E29420
*****
*      TEST ROUTINE 2B
*****
*      RTN2B NOP
11B2 0 1000
*
11B3 1 4400 13FE      BSI L CKTIM  CHECK TRANSMIT TIMING 80E29510
                        *      80E29520
11B5 0 C118          LD   1 D2-T    INITIALIZE DELAY      80E29530
11B6 0 D1B6          STO  1 DLYCT-T  COUNT                80E29540
                        *      80E29550
11B7 1 6680 162C      RN2BA LDX   I2 DLYCT  LOAD DELAY COUNT      80E29560
                        *      80E29570
11B9 1 0C00 1620      XIO L SNSBC  WAIT FOR POSITIVE STATE 80E29580
11BB 1 4C10 11B9      BSC L RN2BA+2,- OF TRANSMIT TIMING 80E29590
                        *      80E29600
11BD 1 0C00 1620      RN2BB XIO L SNSBC  WAIT FOR NEGATIVE SHIFT 80E29610
11BF 1 4C28 11BD      BSC L RN2BB,Z+  OF TRANSMIT TIMING 80E29620
                        *      80E29630
11C1 0 72FF          MDX  2 -1     DELAY-DECRE          80E29640
11C2 0 70FE          MDX  *-2     XR2 TO ZERO        80E29650
                        *      80E29660
11C3 1 7401 162C      MDX L DLYCT,1  INCRE DELAY COUNT    80E29670
                        *      80E29680
11C5 1 0C00 1620      XIO L SNSBC  BR IF XMIT TIMING      80E29690
11C7 1 4C10 11B7      BSC L RN2BA,-  STILL NEGATIVE    80E29700
                        *      80E29710
11C9 0 C1B6          LD   1 DLYCT-T  INCREASE              80E29720
11CA 0 1801          SRA  1         DELAY                  80E29730
11CB 0 81B6          A    1 DLYCT-T  COUNT                80E29740
11CC 0 D1B6          STO  1 DLYCT-T  BY HALF              80E29750
                        *      80E29760
11CD 1 4400 1274      BSI L XMRCV  INITIALIZE CA          80E29770
11CF 0 0006          DC   /0006    TO RECEIVE TABLE    80E29780
11D0 0 0000          DC   0        80E29790
                        *      80E29800
11D1 1 6680 162C      RN2BC LDX   I2 DLYCT  LOAD DELAY COUNT      80E29810
                        *      80E29820
11D3 1 0C00 1620      XIO L SNSBC  WAIT FOR POSITIVE STATE 80E29830
11D5 1 4C10 11D3      BSC L RN2BC+2,- OF XMIT TIMING 80E29840
                        *      80E29850
11D7 1 0C00 1620      RN2BD XIO L SNSBC  WAIT FOR NEGATIVE SHIFT 80E29860
11D9 1 4C28 11D7      BSC L RN2BD,Z+  OF XMIT TIMING 80E29870
                        *      80E29880
11D8 0 72FF          MDX  2 -1     DELAY-DECRE          80E29890
11DC 0 70FE          MDX  *-2     XR2 TO ZERO        80E29900
                        *      80E29910
11DD 1 0C00 1624      XIO L SETRC   CHANGE RECEIVE LINE STATUS 80E29920
                        *      80E29930

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I CA WRAP AROUND TEST

I CA WRAP AROUND TEST

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1252 1 C400 0800 LD L RID FORCE ROUTINE 80E31300
1254 1 D400 0803 STO L SW1 SELECTION 80E31310
*
1256 1 6780 1627 LDX I3 LINE FORCE 80E31320
1258 0 C10C LD 1 H8000-T DE-SELECTION 80E31330
1259 0 1800 SRA 3 0 OF ALL LINES 80E31340
125A 0 1001 SLA 1 EXCEPT LINE 80E31350
125B 1 D400 0804 STO L SW2 CAUSING 80E31360
125D 0 D1D7 STO 1 LINES-T ERROR 80E31370
*
125E 1 C400 0805 LD L SW3 CK VARIABLE DATA 80E31380
1260 1 4C28 1267 BSC L ERPR3,Z+ BR IF VARIABLE SELECTED 80E31390
*
1262 0 C1B3 LD 1 LOCK-T FORCE 80E31400
1263 0 9117 S 1 D1-T SELECTION 80E31410
1264 0 E90C DR 1 H8000-T OF VARIABLE 80E31420
1265 1 D400 0805 STO L SW3 DATA 80E31430
*
1267 1 C400 0802 ERPR3 LD L SW0 CK CONTROL OPTIONS 80E31440
1269 0 100E SLA 14 80E31450
126A 1 4C90 122E BSC I ERPR2,- BR IF NOT ERR TERMINATE 80E31460
*
126C 0 1010 SLA 16 80E31470
126D 0 D1B3 STO 1 LOCK-T RESET RTN LOCK IND 80E31480
126E 1 4C00 088F BSC L CNTRL RETURN TO CONTROL 80E31490
*
1270 0 C1B3 ERPR4 LD 1 LOCK-T 80E31500
1271 0 E90C DR 1 H8000-T 80E31510
1272 0 D1B4 STO 1 ERLOK-T SET LOOP ON ERROR IND 80E31520
1273 0 70C9 MDX ERPR2 GO TO CK OPTION SELECTION 80E31530
*
*****
BUILD XMIT/RCV TABLES AND INITIALIZE
*****
1274 0 0000 XMRCV DC *-+ ENTRY 80E31540
*
1275 0 C1A5 LD 1 INITL+1-T SET UP 80E31550
1276 0 E903 DR 1 H0080-T INITIALIZE IOCC 80E31560
1277 0 F103 EOR 1 H0080-T FOR NORMAL MODE 80E31570
1278 1 7400 1640 MDX L DIAGS IF DIAG MODE IND 80E31580
127A 0 F103 EOR 1 H0080-T IS ON, CHANGE INITIALIZE 80E31590
127B 0 D1A5 STO 1 INITL+1-T IOCC TO DIAGNOSTIC MODE 80E31600
*
127C 0 1010 SLA 16 CLEAR 80E31610
127D 0 6700 FCE0 LDX L3 XMRC2-BGIN TABLE 80E31620
127F 1 D700 1E23 XMRC1 STO L3 BGIN BUILD 80E31630
1281 0 7301 MDX 3 1 AREAS 80E31640
1282 0 70FC MDX XMRC1 80E31650
*
1283 1 6600 1803 LDX L2 XMRC2 XR2=XMIT/RCV TBL ADDR 80E31660
*
1285 1 6E00 1642 XMRC2 STX L2 XRTB2 SAVE TABLE ADDRESS 80E31670
1287 1 C480 1274 LD I XMRCV FETCH BYTE COUNT FROM CALL 80E31680
1289 1 7401 1274 MDX L XMRCV,1 POINT TO NEXT PARAMETER 80E31690
*
128B 0 D200 STO 2 0 80E31700
128C 0 188D SRT 13 80E31710
128D 1 4C04 12AA BSC L XMRC3,E BRANCH IF XMIT TABLE 80E31720
*
*****
BUILD RECEIVE TABLE
*****
128F 0 108D SLT 13 80E31730
1290 1 4C10 134F BSC L CA10,- BRANCH IF NO CHAIN 80E31740
80E31750
80E31760
80E31770
80E31780
80E31790
80E31800
80E31810
80E31820
80E31830
80E31840
80E31850
80E31860
80E31870
80E31880
80E31890
80E31900
80E31910
80E31920
80E31930
80E31940
80E31950
80E31960
80E31970

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1292 0 8117 * A 1 D1-T CALCULATE 80E31980
1293 0 1004 SLA 4 LENGTH 80E31990
1294 0 1805 SRA 5 OF RECEIVE 80E32000
1295 0 D001 STO *-+ TABLE 80E32010
1296 0 7600 0000 MDX L2 *-+ XR2=ADDR OF NEXT TABLE 80E32020
1298 0 7202 MDX 2 2 80E32030
*
1299 0 80EA A XMRC2-1 CALCULATE 80E32040
129A 0 8117 A 1 D1-T CHAIN ADDRESS 80E32050
129B 0 D2FF STO 2 -1 STO CHAIN ADDR IN TABLE 80E32060
*
129C 1 C480 1274 LD I XMRCV FETCH NEXT BYTE COUNT 80E32070
129E 1 4C20 1285 BSC L XMRC2,Z BR IF NOT ZERO 80E32080
*
12A0 0 C10F LD 1 HC002-T SET UP 80E32090
12A1 0 D200 STO 2 0 2ND RECEIVE 80E32100
12A2 0 C2FF LD 2 -1 TABLE WITH 80E32110
12A3 0 D202 STO 2 2 A BYTE COUNT OF /CO02 80E32120
12A4 1 6E00 1642 STX L2 XRTB2 AND CHAINED TO ITSELF 80E32130
*
12A6 1 7401 1803 MDX L XMRC2,1 POINT TO NEXT PARAMETER 80E32140
12A8 1 4C00 134F BSC L CA10 GO TO INITIALIZE 80E32150
*
-----
BUILD XMIT TABLE - NORMAL MODE
*
12AA 0 108D XMRC3 SLT 13 80E32160
12AB 0 D1B8 STO 1 BCSAV-T SAVE BYTE COUNT WORD 80E32170
*
12AC 0 1004 SLA 4 80E32180
12AD 0 1804 SRA 4 80E32190
12AE 0 D1B9 STO 1 CRCNT-T SAVE CHARACTER COUNT 80E32200
*
12AF 1 C480 1274 LD I XMRCV FETCH DATA ADDRESS 80E32210
12B1 1 7401 1274 MDX L XMRCV,1 POINT TO NEXT PARAMETER 80E32220
12B3 0 D1BA STO 1 CRADR-T SAVE DATA ADDRESS 80E32230
*
12B4 0 C1A5 LD 1 INITL+1-T 80E32240
12B5 0 1008 SLA 8 80E32250
12B6 1 4C28 12E9 BSC L XMRC4,Z+ BR IF DIAGNOSTIC MODE 80E32260
*
12B8 0 10A0 SLT 32 80E32270
*
12B9 0 C1B9 XMRC4 LD 1 CRCNT-T FETCH CHARACTER COUNT 80E32280
12BA 1 4C04 12C0 BSC L XMRC5,E BR IF COUNT ODD 80E32290
*
12BC 1 C480 1630 LD I CRADR GET TWO CHARACTERS 80E32300
12BE 0 D201 STO 2 1 STORE IN TRANSMIT TABLE 80E32310
12BF 0 7005 MDX XMRC6 BRANCH 80E32320
*
12C0 1 C480 1630 XMRC5 LD I CRADR GET TWO CHARACTERS 80E32330
12C2 0 18C8 RTE 8 80E32340
12C3 0 D201 STO 2 1 STORE IN TRANSMIT TABLE 80E32350
12C4 0 18C8 RTE 8 80E32360
*
12C5 0 7201 XMRC6 MDX 2 1 POINT TO NEXT XMIT TBL WD 80E32370
12C6 1 7401 1630 MDX L CRADR,1 POINT TO NEXT TWO CHARS 80E32380
12C8 1 74FE 162F MDX L CRCNT,-2 DECRE CHAR CNT BY TWO 80E32390
12CA 0 70EE MDX XMRC4 BR IF MORE CHARACTERS 80E32400
*
12CB 0 7202 MDX 2 2 POINT TO NEXT TBL ADDR 80E32410
*
12CC 0 C1B8 LD 1 BCSAV-T FETCH XMIT TBL BYTE COUNT 80E32420
12CD 1 4C10 134F BSC L CA10,- BR IF NO CHAIN 80E32430
*
12CF 1 6E00 1642 STX L2 XRTB2 SAVE NEXT TBL ADDR 80E32440
12D1 0 C1CC LD 1 XRTB2-T CALCULATE CHAIN 80E32450

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

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1202 0 9117      S      1 D1-T      ADDRESS AND
1203 0 02FF      STO     2 -1      STORE IN TABLE      80E32660
*
1204 1 C480 1274 LD      I  XMRCV     FETCH NEXT CALL PARAMETER 80E32680
1206 1 4C20 1285 BSC     L  XMRC2,Z   BR IF NOT ZERO          80E32690
*
1208 1 7401 1274 MDX     L  XMRCV,1   POINT TO 2ND TBL DATA 80E32700
120A 1 C480 1274 LD      I  XMRCV     GET DATA ADDR        80E32710
120C 0 0001      STO     **1          80E32720
120D 0 C400 0000 LD      L  *-+      80E32730
120F 0 0201      STO     2 1          AND PUT IN XMIT TBL    80E32740
*
12E0 0 C111      LD      1 HE002-T   STORE 2ND XMIT          80E32750
12E1 0 0200      STO     2 0          TABLE BYTE COUNT = /E002 80E32760
*
12E2 0 C1CC      LD      1 XRTB2-T   SET UP 2ND TABLE TO   80E32770
12E3 0 9117      S      1 D1-T      CHAIN BACK              80E32800
12E4 0 0202      STO     2 2          TO ITSELF                80E32810
*
12E5 1 7401 1274 MDX     L  XMRCV,1   POINT TO NEXT PARAMETER 80E32820
12E7 1 4C00 134F BSC     L  CA10     GO TO INITIALIZE       80E32830
*
-----
*          BUILD XMIT TABLE - DIAGNOSTIC MODE 80E32840
*
12E9 1 C480 1630 XMRCA  LD      I  CRADR  FETCH TWO CHARACTERS 80E32850
12EB 1 4400 141A BSI     L  DCODE     BUILD DECODE WORDS   80E32860
12ED 0 180F      SRA     15          80E32870
12EE 0 0187      STO     1 TMODE-T   SET IND IF 1ST CHAR DLE 80E32880
*
12EF 0 0101      SLA     16          80E32890
12F0 0 01C6      STO     1 WSW-T     CLEAR LEFT/RIGHT BYTE IND 80E32900
*
12F1 1 74FE 162F MDX     L  CRCNT,-2  ADJUST CHAR CNT TO END 80E32910
*
12F3 1 C480 1630 LD      I  CRADR  FETCH TWO CHARACTERS 80E32920
12F5 0 1808      SRA     8          80E32930
12F6 0 E914      OR      1 HFF00-T   80E32940
12F7 0 0201      STO     2 1          PUT LEFT BYTE IN TABLE 80E32950
12F8 1 74FF 162F MDX     L  CRCNT,-1  DECRE CHAR CNT BY ONE 80E32960
12FA 0 7001      MDX     XMRCF      BR IF MORE CHARACTERS 80E32970
12FB 0 7034      MDX     XMRCCL     BR IF END OF XMIT DATA 80E32980
*
12FC 0 7202      XMRCF MDX     2 2    UPDATE XMIT TBL ADDR 80E32990
*
12FD 0 C1C6      LD      1 WSW-T     CHECK                    80E33000
12FE 0 F10C      EOR     1 H8000-T   LEFT/RIGHT              80E33010
12FF 0 01C6      STO     1 WSW-T     BYTE INDICATOR        80E33020
1300 1 4C10 1307 BSC     L  XMRCG,-  BR IF RT BYTE NEXT     80E33030
*
1302 1 C480 1630 LD      I  CRADR  FETCH TWO CHARACTERS 80E33040
1304 1 7401 1630 MDX     L  CRADR,1  INCRE DATA ADDR      80E33050
1306 0 7003      MDX     XMRCG+3    GO TO STORE LEFT BYTE 80E33060
*
1307 1 C480 1630 XMRCG  LD      I  CRADR  FETCH TWO CHARACTERS 80E33070
1309 0 1808      SRA     8          PREPARE TO STORE RT BYTE 80E33080
130A 0 E914      OR      1 HFF00-T   SET DATA FLAG BITS    80E33090
130B 0 0201      STO     2 1          STO CHAR IN XMIT TABLE 80E33100
130C 1 4400 141A BSI     L  DCODE     BUILD CONT CHAR DECODE 80E33110
*
130E 1 74FF 162F MDX     L  CRCNT,-1  DECRE CHAR CNT BY ONE 80E33120
1310 0 700C      MDX     XMRCJ      BR IF MORE DATA       80E33130
*
1311 0 1085      SLT     5          CHECK END                80E33140
1312 0 100E      SLA     14         CHARACTER                80E33150
1313 1 4C20 1318 BSC     L  XMRC1,Z  BR IF ETB OR ETX      80E33160
*
1315 0 1093      SLT     19         80E33170

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1316 1 4C10 1330 BSC     L  XMRC1,-  BR IF NOT ITB END      80E33340
*
1318 0 7201      XMRCI MDX     2 1    SAVE SPACE FOR ONE BCC 80E33350
1319 0 C180      LD      1 ASCII-T  CHECK EDIT              80E33360
131A 0 4818      BSC     +-        SKIP IF USASCII CODE   80E33370
131B 0 7201      MDX     2 1        SAVE SPACE FOR 2ND BCC 80E33380
131C 0 7013      MDX     XMRCCL     BRANCH                          80E33390
*
131D 0 C187      XMR CJ LD      1 TMODE-T 80E33400
131E 1 4C18 1328 BSC     L  XMRCJ,+  BR IF NORMAL TEXT     80E33410
*
1320 0 1090      SLT     16         CK IF DLE CHAR DECODE 80E33420
1321 1 4C10 12FC BSC     L  XMRCF,-  BR IF NOT DLE         80E33430
*
1323 0 C189      LD      1 CRCNT-T  CK IF DLE IS           80E33440
1324 0 1801      SRA     1          PART OF END SEQUENCE 80E33450
1325 0 4820      BSC     Z          SKIP IF DLE END       80E33460
1326 0 7201      MDX     2 1        SAVE SPACE FOR DLE DIAG WD 80E33470
1327 0 70D4      MDX     XMRCF      GO TO PROCESS NEXT CHAR 80E33480
*
1328 0 1098      XMRJ1 SLT     24        CK FOR ITB DECODE      80E33490
1329 1 4C10 12FC BSC     L  XMRCF,-  BR IF NOT ITB        80E33500
*
132B 0 7201      MDX     2 1        SAVE SPACE FOR ONE BCC 80E33510
132C 0 C180      LD      1 ASCII-T  CK EDIT                  80E33520
132D 0 4818      BSC     +-        SKIP IF USASCII CODE   80E33530
132E 0 7201      MDX     2 1        SAVE SPACE FOR 2ND BCC 80E33540
132F 0 70CC      MDX     XMRCF      GO TO PROCESS NEXT CHAR 80E33550
*
1330 0 C1C6      XMRCL LD      1 WSW-T  CK LEFT/RIGHT BYTE IND 80E33560
1331 1 4C28 133C BSC     L  XMRL1,Z+ BR IF RT BYTE WAS LAST 80E33570
*
1333 1 C480 1630 LD      I  CRADR  GET NEXT                    80E33580
1335 0 1890      SRT     16         TWO DATA                      80E33590
1336 1 7401 1630 MDX     L  CRADR,1  CHARACTERS                    80E33600
1338 1 C480 1630 LD      I  CRADR  IN ACCUMULATOR             80E33610
133A 0 18C8      RTE     8          BRANCH                          80E33620
133B 0 7002      MDX     XMRL1+2  80E33630
*
133C 1 C480 1630 XMR L1 LD      I  CRADR  FETCH TWO DATA CHARACTERS 80E33640
133E 0 1888      SRT     8          SAVE RIGHT CHAR IN Q    80E33650
133F 0 E914      OR      1 HFF00-T  SET FLAG BITS            80E33660
1340 0 0203      STO     2 3        STO CHAR IN XMIT TABLE 80E33670
*
1341 0 1088      SLT     8          BRING IN RIGHT CHAR     80E33680
1342 0 E914      OR      1 HFF00-T  SET DATA FLAG BITS     80E33690
1343 0 0205      STO     2 5        STO CHAR IN XMIT TABLE 80E33700
*
1344 0 7207      MDX     2 7        POINT TO NEXT TABLE 80E33710
*
1345 0 C1B8      LD      1 BCSAV-T  CK BYTE COUNT           80E33720
1346 1 4C10 134F BSC     L  CA10,-  BR IF NO CHAIN         80E33730
*
1348 1 6E00 1642 STX     L2 XRTB2   SAVE ADDR OF 2ND TABLE 80E33740
134A 0 C1CC      LD      1 XRTB2-T  CALCULATE                80E33750
134B 0 9117      S      1 D1-T      CHAIN ADDRESS AND     80E33760
134C 0 02FF      STO     2 -1      STORE IN TABLE        80E33770
*
134D 1 4C00 1285 BSC     L  XMRC2    GO TO PROCESS NEXT TABLE 80E33780
*
-----
*          START CA I/O OPERATION              80E33790
*
134F 1 C480 1274 CAIO  LD      I  XMRCV  FETCH NEXT CALL PARAMETER 80E33800
1351 1 7401 1274 MDX     L  XMRCV,1  80E33810
1353 0 000F      STO     CAIO1+1  80E33820
*
1354 1 6600 1C93 LDX     L2 SRCTB   XR2=XMIT SAMPLE TBL ADDR 80E33830

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JCA WRAP AROUND TEST

JCA WRAP AROUND TEST

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*
1356 0 C114      * LD 1 HFF00-T INITIALIZE XMIT      80E34020
1357 0 D200      * STO 2 0 SAMPLE DATA TABLE      80E34030
*
1358 0 C108      * LD 1 H8040-T SET UP BIT COUNT      80E34040
1359 0 1890      * SRT 16 FLAG FOR XMIT SAMPLE RTN 80E34050
*
135A 1 4400 13FE * BSI L CKTIM CHECK TRANSMIT TIMING 80E34060
*
135C 0 09AA      * XIO 1 SNSBC-T LOOP UNTIL XMIT TIMING 80E34070
135D 1 4C28 135C * BSC L *-3,Z+ BIT GOES OFF IN DIAG DSW 80E34080
*
135F 0 09AA      * XIO 1 SNSBC-T SENSE BC DSW      80E34090
1360 1 4C10 135F * BSC L *-3,- 80E34100
*
1362 0 6700 0000 * CAIO1 LDX L3 *-* XR3=CHARACTER COUNT 80E34110
*
1364 0 09A2      * XIO 1 CLEAR-T CLEAR CA          80E34120
1365 0 09A6      * XIO 1 ENABL-T ENABLE CA         80E34130
1366 0 09A4      * XIO 1 INITL-T INITIALIZE CA     80E34140
*
1367 0 60FB      * LD CAIO1+1 FETCH CHAR COUNT WORD 80E34150
1368 1 4C88 1274 * BSC I XMRCV,+ RETURN IF ZERO    80E34160
*
*
*****
* RETRIEVE DATA FROM RECEIVE DATA LINE
* DURING TRANSMIT OPERATION
*****
*
136A 0 6500 08B8 * SNSRC LDX L1 3000 SET TIMER COUNT 80E34170
*
136C 1 0C00 1620 * XIO L SNSBC SENSE BC DSW      80E34180
136E 0 1001      * SLA 1 80E34190
136F 1 4C10 137D * BSC L SRC01,- BR IF RCV DATA = SPACE 80E34200
*
1371 0 71FF      * MDX 1 -1 DECREMENT TIMER      80E34210
1372 0 70F9      * MDX SNSRC+2 BR IF TIMER NOT YET ZERO 80E34220
*
1373 1 6500 1676 * LDX L1 T RESTART XRI          80E34230
*
1375 1 6600 165D * LDX L2 E007 PRINT ERROR MESSAGE 80E34240
1377 1 4400 122E * BSI L ERPRT NO WRAPAROUND PATH 80E34250
*
1379 0 1010      * SLA 16 80E34260
137A 0 D1B3      * STO 1 LOCK-T RESET VARIABLE DATA IND 80E34270
137B 1 4C00 088F * BSC L CNTRL RETURN TO CONTROL 80E34280
*
137D 1 6500 1676 * SRC01 LDX L1 T RESTORE XRI     80E34290
*
137F 1 0C00 1620 * XIO L SNSBC CHECK XMIT TIMING STATE 80E34300
1381 1 4C10 13A7 * BSC L SRC04,- BR IF XMIT TIMING BIT OFF 80E34310
*
1383 0 09AA      * SRC02 XIO 1 SNSBC-T LOOP UNTIL XMIT TIMING 80E34320
1384 1 4C10 1383 * BSC L *-3,- BIT COMES ON IN DIAG DSW 80E34330
*
1386 0 09AA      * XIO 1 SNSBC-T LOOP UNTIL XMIT TIMING 80E34340
1387 1 4C28 1386 * BSC L *-3,Z+ BIT GOES OFF IN DIAG DSW 80E34350
*
1389 0 180E      * SRA 14 SHIFT SAMPLED XMIT      80E34360
138A 0 18C1      * RTE 1 DATA BIT TO Q          80E34370
138B 1 4C10 1383 * BSC L SRC02,- BR IF NO END CHAR FLAG YET 80E34380
*
138D 0 18D8      * RTE 24 COMBINE LAST           80E34390
138E 0 E104      * AND 1 H00FF-T TWO CHARACTERS 80E34400
138F 0 EA00      * OR 2 0 RETRIEVED AND          80E34410

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XRI=16 EG
17 SA

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1390 0 D200      * STO 2 0 STORE IN DATA TABLE 80E34700
1391 0 7201      * MDX 2 1 INCRE DATA TABLE ADDR 80E34710
1392 0 73FF      * MDX 3 -1 DECRE CHAR COUNT      80E34720
1393 0 7002      * MDX SRC03 BR IF MORE CHARACTERS 80E34730
*
1394 1 4C80 1274 * BSC I XMRCV RETURN TO CALLING RTN 80E34740
*
1396 0 09AA      * SRC03 XIO 1 SNSBC-T LOOP UNTIL XMIT TIMING 80E34750
1397 1 4C10 1396 * BSC L *-3,- BIT COMES ON IN DIAG DSW 80E34760
*
1399 0 09AA      * XIO 1 SNSBC-T LOOP UNTIL XMIT TIMING 80E34770
139A 1 4C28 1399 * BSC L *-3,Z+ BIT GOES OFF IN DIAG DSW 80E34780
*
139C 0 180E      * SRA 14 SHIFT SAMPLED XMIT      80E34790
139D 0 18C1      * RTE 1 DATA BIT TO Q          80E34800
139E 1 4C10 1396 * BSC L SRC03,- BR IF NO END CHAR FLAG YET 80E34810
*
13A0 0 18D0      * RTE 16 ROTATE FULL CHAR TO A    80E34820
13A1 0 D200      * STO 2 0 STORE IN DATA TABLE 80E34830
*
13A2 0 1888      * SRT 8 RESTORE BIT COUNT FLAG   80E34840
*
13A3 0 73FF      * MDX 3 -1 DECREMENT CHAR COUNT 80E34850
13A4 0 70DE      * MDX SRC02 BR IF MORE CHARACTERS 80E34860
*
13A5 1 4C80 1274 * BSC I XMRCV RETURN TO CALLING RTN 80E34870
*
13A7 0 09AA      * SRC04 XIO 1 SNSBC-T LOOP UNTIL XMIT TIMING 80E34880
13A8 1 4C28 13A7 * BSC L *-3,Z+ BIT GOES OFF IN DIAG DSW 80E34890
*
13AA 0 09AA      * XIO 1 SNSBC-T LOOP UNTIL XMIT TIMING 80E34900
13AB 1 4C10 13AA * BSC L *-3,- BIT COMES ON IN DIAG DSW 80E34910
*
13AD 0 180E      * SRA 14 SHIFT SAMPLED XMIT      80E34920
13AE 0 18C1      * RTE 1 DATA BIT TO Q          80E34930
13AF 1 4C10 13A7 * BSC L SRC04,- BR IF NO END CHAR FLAG YET 80E34940
*
13B1 0 18D8      * RTE 24 COMBINE LAST           80E34950
13B2 0 E104      * AND 1 H00FF-T TWO CHARACTERS 80E34960
13B3 0 EA00      * OR 2 0 RETRIEVED AND          80E34970
13B4 0 D200      * STO 2 0 STORE IN DATA TABLE 80E34980
*
13B5 0 7201      * MDX 2 1 INCRE DATA TABLE ADDR 80E34990
13B6 0 73FF      * MDX 3 -1 DECRE CHAR COUNT      80E35000
13B7 0 7002      * MDX SRC05 BR IF MORE CHARACTERS 80E35010
*
13B8 1 4C80 1274 * BSC I XMRCV RETURN TO CALLING RTN 80E35020
*
13BA 0 09AA      * SRC05 XIO 1 SNSBC-T LOOP UNTIL XMIT TIMING 80E35030
13BB 1 4C28 13BA * BSC L *-3,Z+ BIT GOES OFF IN DIAG DSW 80E35040
*
13BD 0 09AA      * XIO 1 SNSBC-T LOOP UNTIL XMIT TIMING 80E35050
13BE 1 4C10 13BD * BSC L *-3,- BIT COMES ON IN DIAG DSW 80E35060
*
13C0 0 180E      * SRA 14 SHIFT SAMPLED XMIT      80E35070
13C1 0 18C1      * RTE 1 DATA BIT TO Q          80E35080
13C2 1 4C10 13BA * BSC L SRC05,- BR IF NO END CHAR FLAG YET 80E35090
*
13C4 0 18D0      * RTE 16 ROTATE FULL CHAR TO A    80E35100
13C5 0 D200      * STO 2 0 STORE IN DATA TABLE 80E35110
*
13C6 0 1888      * SRT 8 RESTORE BIT COUNT FLAG   80E35120
*
13C7 0 73FF      * MDX 3 -1 DECREMENT CHAR COUNT 80E35130
13C8 0 70DE      * MDX SRC04 BR IF MORE CHARACTERS 80E35140
*
13C9 1 4C80 1274 * BSC I XMRCV RETURN TO CALLING RTN 80E35150

```

1000
11/16/76
11/10

I/O WRAP AROUND TEST

I/O WRAP AROUND TEST

```

*
*****
*
* PLACE PROGRAMMED RECEIVE INPUT ON RECEIVE
* DATA LINE DURING RECEIVE OPERATION
*****
*
13CB 0 0000 GEN DC *-* ENTRY
*
13CC 1 4400 13FE BSI L CKTIM CHECK TRANSMIT TIMING
13CE 1 6780 13CB LDX I3 GEN
*
13D0 0 C300 LD 3 0 FETCH CHARACTER COUNT
13D1 0 D005 STO GEN0+1 AND SAVE FOR XR3
13D2 0 C301 LD 3 1 FETCH RECEIVE DATA ADDR
13D3 0 D005 STO GEN0+3 AND SAVE FOR XR2
*
13D4 0 7302 MDX 3 2 SET UP RETURN
13D5 0 68F5 STX 3 GEN TO CALLING ROUTINE
*
13D6 0 6700 0000 GEN0 LDX L3 *-* XR3=CHARACTER COUNT
13D8 0 6600 0000 LDX L2 *-* XR2=RECEIVE DATA ADDR
*
13DA 0 C10C LD 1 H8000-T SET PREVIOUS
13DB 0 D1BE STO 1 RSTAT-T STATUS TO 1 STATE
*
13DC 0 6110 GEN1 LDX 1 16 SET BIT COUNT TO 16
*
13DD 0 C200 LD 2 0
13DE 0 18D0 RTE 16 MOVE TWO
13DF 0 C200 LD 2 0 CHARACTERS
13E0 0 18C8 RTE 8 TO BUFFER
*
13E1 1 0C00 1620 GEN2 XIO L SNSBC WAIT FOR NEGATIVE SHIFT
13E3 1 4C28 13E1 BSC L GEN2,Z+ OF TRANSMIT TIMING
*
13E5 1 0C00 1620 GEN3 XIO L SNSBC WAIT FOR POSITIVE SHIFT
13E7 1 4C10 13E5 BSC L GEN3,- OF TRANSMIT TIMING
*
13E9 0 18C1 RTE 1
13EA 1 F400 1634 EOR L RSTAT CK PREVIOUS LINE STATUS
13EC 1 4C10 13F4 BSC L GEN4,- BR IF NO CHANGE IN LEVEL
*
13EE 1 F400 1634 EOR L RSTAT
13FO 1 D400 1634 STO L RSTAT STORE STATUS
*
13F2 1 0C00 1624 XIO L SETRC CHANGE RECEIVE LINE STATUS
*
13F4 0 71FF GEN4 MDX 1 -1 DECREMENT BIT COUNT
13F5 0 70EB MDX GEN2
*
13F6 0 7201 MDX 2 1 INCRE RECEIVE TBL ADDR
*
13F7 0 73FE MDX 3 -2 DECREMENT CHAR COUNT
13F8 0 70E3 MDX GEN1 BR IF NOT ZERO
*
13F9 1 6500 1676 LDX L1 T RESTORE XR1
13FB 0 4002 BSI CKTIM CHECK TRANSMIT TIMING
*
13FC 1 4C80 13CB BSC I GEN RETURN TO CALLING RTN
*
*****
*
* CHECK TRANSMIT TIMING
*
*****
80E35380
80E35390
80E35400
80E35410
80E35420
80E35430
80E35440
80E35450
80E35460
80E35470
80E35480
80E35490
80E35500
80E35510
80E35520
80E35530
80E35540
80E35550
80E35560
80E35570
80E35580
80E35590
80E35600
80E35610
80E35620
80E35630
80E35640
80E35650
80E35660
80E35670
80E35680
80E35690
80E35700
80E35710
80E35720
80E35730
80E35740
80E35750
80E35760
80E35770
80E35780
80E35790
80E35800
80E35810
80E35820
80E35830
80E35840
80E35850
80E35860
80E35870
80E35880
80E35890
80E35900
80E35910
80E35920
80E35930
80E35940
80E35950
80E35960
80E35970
80E35980
80E35990
80E36000
80E36010
80E36020
80E36030
80E36040
80E36050

```

```

13FE 0 0000
13FF 0 6364
1400 0 09AA
1401 0 D1BB
1402 0 09AA
1403 0 F1BB
1404 1 4C28 1409
1406 0 73FF
1407 0 70FA
1408 0 7009
1409 0 6364
140A 0 09AA
140B 0 D1BB
140C 0 09AA
140D 0 F1BB
140E 1 4CA8 13FE
1410 0 73FF
1411 0 70FA
1412 1 6600 165A
1414 1 4400 122E
1416 0 1010
1417 0 D1B3
1418 1 4C00 088F
141A 0 0000
141B 0 D1BB
141C 0 1808
141D 0 400A
141E 0 C1BB
141F 0 18D0
1420 0 D1BB
1421 0 1088
1422 0 1010
1423 0 1088
1424 0 4003
1425 0 C1BB
1426 1 4C80 141A
1428 0 0000
1429 0 D1BC

```

```

*
* CKTIM DC *-* ENTRY
*
* LDX 3 100 SET TIME DELAY
*
* XIO 1 SNSBC-T SENSE BC DSW
* STO 1 TEMP1-T SAVE DIAG DSW
*
* CKTM1 XIO 1 SNSBC-T SENSE BC DSW
* EOR 1 TEMP1-T BR IF BIT 0 CHANGED STATE
* BSC L CKTM2,Z+
*
* MDX 3 -1 DECREMENT TIMER
* MDX CKTM1 BR IF NOT ZERO
* MDX CKTM4 BR IF ZERO
*
* CKTM2 LDX 3 100 SET TIME DELAY
*
* XIO 1 SNSBC-T SENSE BC DSW
* STO 1 TEMP1-T SAVE DIAG DSW
*
* CKTM3 XIO 1 SNSBC-T SENSE BC DSW
* EOR 1 TEMP1-T BR IF BIT 0 CHANGED STATE
* BSC I CKTIM,Z+
*
* MDX 3 -1 DECREMENT TIMER
* MDX CKTM3 BR-9F& NOT ZERO
*
* CKTM4 LDX L2 E006 PRINT ERROR MESSAGE
* BSI L ERPRT TRANSMIT TIMING FAILURE
*
* SLA 16
* STO 1 LOCK-T CLEAR VARIABLE DATA IND
*
* BSC L CNTRL RETURN TO CONTROL
*
*****
*
* CONTROL CHARACTER DECODE
*****
*
* DCODE DC *-* ENTRY
*
* STO 1 TEMP1-T SAVE TWO CHARACTERS
* SRA 8
* BSI SCAN DECODE LEFT CHARACTER
*
* LD 1 TEMP1-T FETCH TWO CHARACTERS
* RTE 16
* STO 1 TEMP1-T SAVE LEFT CHAR DECODE
*
* SLT 8
* SLA 16
* SLT 8
* BSI SCAN DECODE RIGHT CHARACTER
*
* LD 1 TEMP1-T COMBINE DECODES IN A & Q
*
* BSC I DCODE RETURN
*
*-----
*
* POSITION DECODE BIT IN Q
*
* SCAN DC *-* ENTER
*
* STO 1 TEMP2-T SAVE CHAR TO DECODE

```

```

80E36060
80E36070
80E36080
80E36090
80E36100
80E36110
80E36120
80E36130
80E36140
80E36150
80E36160
80E36170
80E36180
80E36190
80E36200
80E36210
80E36220
80E36230
80E36240
80E36250
80E36260
80E36270
80E36280
80E36290
80E36300
80E36310
80E36320
80E36330
80E36340
80E36350
80E36360
80E36370
80E36380
80E36390
80E36400
80E36410
80E36420
80E36430
80E36440
80E36450
80E36460
80E36470
80E36480
80E36490
80E36500
80E36510
80E36520
80E36530
80E36540
80E36550
80E36560
80E36570
80E36580
80E36590
80E36600
80E36610
80E36620
80E36630
80E36640
80E36650
80E36660
80E36670
80E36680
80E36690
80E36700
80E36710
80E36720
80E36730

```

ICA WRAP AROUND TEST

```

142A 0 630A          LDX 3 10          80E36740
142B 0 C1BC          * SCAN1 LD 1 TEMP2-T SEARCH 80E36750
142C 1 F700 1699    EOR L3 DLE-1 CONTROL 80E36760
142E 0 E104          AND 1 H00FF-T CHARA TER TABLE 80E36770
142F 1 4C18 1453    BSC L SCAN6,+ BR IF CONT CHAR FOUND 80E36780
1431 0 73FF          * MDX 3 -1 80E36790
1432 0 70F8          MDX SCAN1 80E36800
1433 0 C1BC          * LD 1 TEMP2-T FETCH CHARACTER 80E36810
1434 0 4804          SCAN2 BSC E COUNT NUMBER 80E36820
1435 0 7301          MDX 3 1 OF BITS 80E36830
1436 0 1801          SRA 1 IN CHARACTER 80E36840
1437 1 4C20 1434    BSC L SCAN2,Z LOOP UNTIL ALL COUNTED 80E36850
1439 1 6F00 1633    * STX L3 TEMP3 80E36860
143B 0 C18D          LD 1 TEMP3-T GET BIT COUNT IN ACC 80E36870
143C 1 4C04 1443    BSC L SCAN4,E BR IF ODD PARITY CHAR 80E36880
143E 0 6311          * LDX 3 17 80E36890
143F 1 7400 1626    * MDX L ASCII SKIP IF ASCII CODE 80E36900
1441 0 73FB          MDX 3 -5 SET UP FOR PARITY ERR CODE 80E36910
1442 0 7010          MDX SCAN6 BRANCH 80E36920
1443 0 630B          * SCAN4 LDX 3 11 SET UP FOR STICK CODE 80E36930
1444 0 C1BC          LD 1 TEMP2-T FETCH CHARACTER 80E36940
1445 0 1008          SLA 8 80E36950
1446 1 7400 1626    * MDX L ASCII SKIP IF ASCII CODE 80E36960
1448 0 1001          SLA 1 DROP PARITY BIT 80E36970
1449 0 180D          * SRA 13 80E36980
144A 0 F119          EOR 1 D3-T 80E36990
144B 1 4C20 1452    BSC L SCAN6-1,Z BR IF NOT STICK CHAR 80E37000
144D 0 C1BC          * LD 1 TEMP2-T 80E37010
144E 0 100C          SLA 12 80E37020
144F 0 F113          EOR 1 HF000-T 80E37030
1450 1 4C20 1453    BSC L SCAN6,Z BR IF STICK CHARACTER 80E37040
1452 0 6311          * LDX 3 17 NOT CONTROL CHARACTER 80E37050
1453 0 10A0          * SCAN6 SLT 32 80E37060
1454 0 C117          LD 1 D1-T POSITION DECODE 80E37070
1455 0 1880          SRT 3 0 BIT IN Q REG 80E37080
1456 1 4C80 1428    BSC I SCAN RETURN 80E37090
1458 0 0000          * CALBC DC *- 80E37100
1459 1 6680 1458    * LDX I2 CALBC PICK UP CALL SEQ ADDR 80E37110
145B 0 6A05          * STX 2 LDRGS+1 80E37120
145C 0 7201          MDX 2 1 80E37130
145D 0 6A05          STX 2 LDRGS+3 80E37140
145E 0 7201          MDX 2 1 SET UP 80E37150
145F 0 6AF8          STX 2 CALBC RETURN ADDRESS 80E37160
1460 0 6680 0000    * LDRGS LDX I2 *- XR2=DATA ADDR 80E37170
1462 0 6780 0000    LDX I3 *- XR3=CHARACTER COUNT 80E37180

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1464 0 1810          * SRA 16 ZERO BCC 80E37420
1465 0 D1BF          STO 1 BCCA-T ACCUMULATION 80E37430
1466 0 D1C0          STO 1 BCCSW-T SET SW FOR RIGHT BYTE 80E37440
1467 1 7400 1626    * MDX L ASCII 80E37450
1469 0 7039          MDX ASCIM BR IF ASCII MODE 80E37460
146A 0 C200          * LD 2 0 80E37470
146B 0 F120          EOR 1 DLSTX-T 80E37480
146C 0 D1B7          STO 1 TMODE-T SET/RESET MODE IND 80E37490
146D 1 4C20 1471    BSC L CAL01,Z BR IF NOT TRANSPARENT MODE 80E37500
146F 0 7201          * MDX 2 1 INCRE DATA ADDRESS 80E37510
1470 0 7003          MDX CAL02 BRANCH 80E37520
1471 0 C1C0          * CAL01 LD 1 BCCSW-T ALTERNATE 80E37530
1472 0 F117          EOR 1 D1-T LEFT/RIGHT 80E37540
1473 0 D1C0          STO 1 BCCSW-T BYTE IND 80E37550
1474 0 C200          * CAL02 LD 2 0 FETCH TWO CHARACTERS 80E37560
1475 1 7400 1636    MDX L BCCSW SKIP IF LEFT BYTE 80E37570
1477 0 1008          SLA 8 DROP LEFT BYTE 80E37580
1478 0 1808          SRA 8 DROP RIGHT BYTE 80E37590
1479 0 D18B          STO 1 TEMP1-T SAVE CHARACTER 80E37600
147A 0 F12D          * EOR 1 SYN-T CK IF SYN CHAR 80E37610
147B 0 1008          SLA 8 80E37620
147C 1 4C20 1481    BSC L CAL03,Z BR IF NOT SYN 80E37630
147E 1 7400 162D    * MDX L TMODE 80E37640
1480 0 700F          MDX CAL04 BR IF NOT TRANSPARENT TEXT 80E37650
1481 0 C18B          * CAL03 LD 1 TEMP1-T ADD CHARACTER TO 80E37660
1482 0 F1BF          EOR 1 BCCA-T BCC ACCUMULATION 80E37670
1483 0 6108          * LDX 1 8 SET BIT COUNT TO 8 80E37680
1484 1 4C04 1488    * TSTBT BSC L BITON,E BR IF LOW-ORDER BIT ON 80E37690
1486 0 1801          * SRA 1 SHIFT RIGHT 80E37700
1487 0 7003          MDX DECSH 80E37710
1488 0 1801          * BITON SRA 1 SHIFT RIGHT 80E37720
1489 1 F400 1699    EOR L POLYN ADD POLYNOMIAL 80E37730
148B 0 71FF          * DECSH MDX 1 -1 DECRE SHIFT COUNT 80E37740
148C 0 70F7          MDX TSTBT BR IF NOT ZERO 80E37750
148D 1 6500 1676    * LDX L1 T RESTORE XRI 80E37760
148F 0 D1BF          * STO 1 BCCA-T SAVE BCC ACCUMULATION 80E37770
1490 0 73FF          * CAL04 MDX 3 -1 DECRE CHAR COUNT 80E37780
1491 0 7007          MDX CAL05 BR IF MORE CHARACTERS 80E37790
1492 0 7300          * MDX 3 0 80E37800
1493 0 7009          MDX CAL06 BR IF CHAR COUNT MINUS 80E37810
1494 1 7400 162D    * MDX L TMODE 80E37820
1496 0 7006          MDX CAL06 BR IF NOT TRANSPARENT TEXT 80E37830
1497 0 7201          * MDX 2 1 INCRE DATA ADDRESS 80E37840
1498 0 70DB          MDX CAL02 GO TO ADD ETX TO BCC 80E37850
1499 1 7400 1636    * CAL05 MDX L BCCSW SKIP IF LEFT BYTE WAS LAST 80E37860
149B 0 7201          MDX 2 1 INCRE DATA ADDRESS 80E37870
149C 0 70D4          MDX CAL01 GO TO PROCESS NEXT CHAR 80E37880

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ICA WRAP AROUND TEST

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*
149D 0 1890      * CAL06 SRT 16 REVERSE 80E38100
149E 0 C1BF      * LD 1 BCCA-T ORDER OF 80E38110
149F 0 1088      * SLT 8 BCC CHARS 80E38120
14A0 0 D1BF      * STO 1 BCCA-T 80E38130
14A1 1 4C80 1458 * BSC I CALBC RETURN TO MAIN LINE 80E38140
* 80E38150
* 80E38160
* 80E38170
14A3 0 1810      * ASCIM SRA 16 TURN SWITCH OFF 80E38180
14A4 0 D1C0      * STO 1 BCCSW-T 80E38190
* 80E38200
* 80E38210
14A5 0 C200      * LD 2 0 GET 2ND HALF 80E38220
14A6 0 E104      * AND 1 H00FF-T OF WORD 80E38230
* 80E38240
14A7 0 F1BF      * STBCC EOR 1 BCCA-T STORE BCC 80E38250
14A8 0 D1BF      * STO 1 BCCA-T ACCUMULATION 80E38260
* 80E38270
14A9 0 73FF      * MDX 3 -1 DECRE CHARACTER COUNT 80E38280
14AA 0 7009      * MDX CKSW2 BR IF NOT ZERO 80E38290
* 80E38300
14AB 1 4400 141A * BSI L DCODE SET PARITY BIT 80E38310
14AD 0 1093      * SLT 19 IN BCC CHAR 80E38320
14AE 0 F1BF      * EOR 1 BCCA-T 80E38330
* 80E38340
14AF 0 1008      * SLA 8 INSERT /7F IN 80E38350
14B0 0 E90A      * OR 1 H007F-T 2ND HALF 80E38360
14B1 0 D1BF      * STO 1 BCCA-T OF WORD 80E38370
* 80E38380
14B2 1 4C80 1458 * BSC I CALBC 80E38390
* 80E38400
14B4 1 7400 1636 * CKSW2 MDX L BCCSW CHECK SW 80E38410
14B6 0 70EC      * MDX ASCIM BR IF ON 80E38420
* 80E38430
14B7 1 6C00 1636 * STX L BCCSW TURN SWITCH ON 80E38440
* 80E38450
14B9 0 7201      * MDX 2 1 INCRE DATA TABLE ADDR 80E38460
* 80E38470
14BA 0 C200      * LD 2 0 GET 1ST 80E38480
14BB 0 1808      * SRA 8 HALF OF WORD 80E38490
* 80E38500
14BC 0 70EA      * MDX STBCC 80E38510
* 80E38520
* 80E38530
***** 80E38540
* 80E38550
* 80E38560
* SUBROUTINE TO SENSE OPERATING, BYTE COUNT, 80E38570
* AND DIAGNOSTIC DSW 80E38580
***** 80E38590
* 80E38600
* 80E38610
14BD 0 0000      * SENSE DC *-- 80E38620
* 80E38630
14BE 1 0C00 1622 * XIO L SNSDGS SENSE AND STORE 80E38630
14C0 1 D400 163B * STO L DDSW DIAGNOSTIC DSW 80E38640
* 80E38650
14C2 1 0C00 1620 * XIO L SNSBC SENSE AND STORE 80E38660
14C4 1 D400 163A * STO L BCDSW BYTE COUNT DSW 80E38670
* 80E38680
14C6 1 0C00 1614 * XIO L SNSOP SENSE AND STORE 80E38690
14C8 1 D400 1639 * STO L OPDSW OPERATING DSW 80E38700
* 80E38710
14CA 1 4C80 148D * BSC I SENSE RETURN 80E38720
* 80E38730
* 80E38740
***** 80E38750
* 80E38760
* SUBROUTINE TO CHECK OPERATING, BYTE COUNT, 80E38770

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ICA WRAP AROUND TEST

```

* AND DIAGNOSTIC DSWs 80E38780
* 80E38790
* CALLING SEQUENCE-- 80E38800
* 80E38810
* 80E38820
* BSI L CKDSW 80E38830
* DC /XXXX OPER. DSW S/B 80E38840
* DC /XXXX OPER. DSW MASK 80E38850
* DC /XXXX BYTE CNT. DSW S/B 80E38860
* DC /XXXX BYTE CNT. DSW MASK 80E38870
* DC /XXXX DIAG. DSW S/B 80E38880
* DC /XXXX DIAG. DSW MASK 80E38890
* BITS ON IN DSW MASKS ARE IGNORED IN 80E38900
* COMPARING THE DSWs 80E38910
* 80E38920
***** 80E38930
* 80E38940
14CC 0 0000      * CKDSW DC *-- ENTRY 80E38950
* 80E38960
14CD 1 6680 14CC * LD X2 CKDSW PICK UP CALL SEQ ADDR 80E38970
14CF 1 6700 1639 * LD X3 OPDSW POINT TO DSW'S SENSED 80E38980
* 80E38990
14D1 0 C110      * LD 1 HE001-T INITIALIZE 80E39000
14D2 0 D1EF      * STO 1 ERRM+2-T ERROR MESSAGE ID 80E39010
14D3 0 D1F7      * STO 1 ERM2+2-T 80E39020
* 80E39030
* 80E39040
* DSW CHECK SUBROUTINE 80E39050
* 80E39060
14D4 0 C1B3      * DSWCK LD 1 LOCK-T 80E39070
14D5 1 4C18 14DB * BSC L NVAR,+- BR IF NO VARIABLE DATA 80E39080
* 80E39090
14D7 0 9117      * S 1 D1-T 80E39100
14D8 0 D1F3      * STO 1 ERRM+6-T STO VARIABLE DATA IN MSG 80E39110
* 80E39120
14D9 0 C11A      * LD 1 D4-T SET MODIFIER COUNT TO 4 80E39130
14DA 0 7001      * MDX NVAR+1 80E39140
* 80E39150
14DB 0 C119      * NVAR LD 1 D3-T SET MODIFIER COUNT TO 3 80E39160
14DC 0 D1ED      * STO 1 ERRM-T 80E39170
* 80E39180
14DD 0 C201      * LD 2 1 CHECK 80E39190
14DE 0 F116      * EOR 1 HFFFF-T OPERATING 80E39200
14DF 0 E300      * AND 3 0 DSW 80E39210
14E0 0 F200      * EOR 2 0 80E39220
14E1 0 D1F8      * STO 1 ERM2+3-T STORE BITS IN ERROR 80E39230
* 80E39240
14E2 0 C203      * LD 2 3 CHECK 80E39250
14E3 0 F116      * EOR 1 HFFFF-T BYTE 80E39260
14E4 0 E301      * AND 3 1 COUNT 80E39270
14E5 0 F202      * EOR 2 2 DSW 80E39280
14E6 0 D1F9      * STO 1 ERM2+4-T STORE BITS IN ERROR 80E39290
* 80E39300
14E7 0 C205      * LD 2 5 CHECK 80E39310
14E8 0 F116      * EOR 1 HFFFF-T DIAGNOSTIC 80E39320
14E9 0 E302      * AND 3 2 DSW 80E39330
14EA 0 F204      * EOR 2 4 80E39340
14EB 0 D1FA      * STO 1 ERM2+5-T STORE BITS IN ERROR 80E39350
* 80E39360
14EC 0 C1F8      * LD 1 ERM2+3-T BR IF ANY 80E39370
14ED 1 4C20 14F7 * BSC L DSWER,Z BITS IN ERROR 80E39380
14EF 0 C1F9      * LD 1 ERM2+4-T 80E39390
14F0 1 4C20 14F7 * BSC L DSWER,Z 80E39400
14F2 0 C1FA      * LD 1 ERM2+5-T 80E39410
14F3 1 4C20 14F7 * BSC L DSWER,Z 80E39420
* 80E39430
14F5 0 4E00 0006 * BSC L2 6 RETURN TO CALLING RTN 80E39440
* 80E39450

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

*
14F7 0 C300      * DSWER LD 3 0      STORE OPERATING DSW SENSED 80E39460
14F8 0 D1F0      *   STO 1 ERRM+3-T  IN PRINTOUT      80E39470
*
14F9 0 C301      *   LD 3 1      STORE BYTE COUNT DSW 80E39480
14FA 0 D1F1      *   STO 1 ERRM+4-T  SENSED IN PRINTOUT 80E39490
*
14FB 0 C302      *   LD 3 2      STORE DIAGNOSTIC DSW 80E39500
14FC 0 D1F2      *   STO 1 ERRM+5-T  SENSED IN PRINTOUT 80E39510
*
14FD 0 C10D      *   LD 1 H8003-T   SET CONTINUATION 80E39520
14FE 0 D1F5      *   STO 1 ERM2-T   LINE MODIFIER COUNT 80E39530
*
14FF 0 6A09      *   STX 2 RTURN+1  80E39540
1500 1 6600 1663 *   LDX L2 ERRM    XR2=MSG STRING ADDR 80E39550
*
1502 1 4400 122E *   BSI L ERPRT    PRINT 1ST LINE      80E39560
*
1504 1 6600 166B *   LDX L2 ERM2    80E39570
1506 1 4400 122E *   BSI L ERPRT    PRINT CONTINUATION LINE 80E39580
*
1508 0 6600 0000 * RTURN LDX L2 *-- 80E39590
150A 0 4E00 0006 *   BSC L2 6      RETURN TO CALLING RTN 80E39600
*
*****
*   SUBROUTINE TO COMPARE DATA RETRIEVED 80E39610
*   DURING TRANSMIT AND RECEIVE OPERATIONS 80E39620
*
*   CALLING SEQUENCE- 80E39630
*
*   BSI L CKDAT    80E39640
*   DC ADDR ADDR OF RETRIEVED DATA 80E39650
*   DC ADDR ADDR OF S/B DATA 80E39660
*   DC COUNT NO. OF CHARACTERS 80E39670
*
*****
150C 0 0000      * CKDAT DC *--    80E39680
*
150D 1 6680 150C *   LDX I2 CKDAT   PICK UP CALL SEQ ADDR 80E39690
*
150F 0 1810      *   SRA 16        SET SWITCH FOR 1ST 80E39700
1510 0 D1C6      *   STO 1 WSW-T   HALF OF WORD 80E39710
1511 0 C200      *   LD 2 0        PICK UP ADDR OF 80E39720
1512 0 D00D      *   STO CK1+1     RETRIEVED DATA 80E39730
1513 0 D01A      *   STO CK3+1     80E39740
*
1514 0 C201      *   LD 2 1        PICK UP ADDR OF 80E39750
1515 0 D00E      *   STO CK2+1     S/B DATA 80E39760
1516 0 D01C      *   STO CK4+1     80E39770
*
1517 0 C202      *   LD 2 2        80E39780
1518 0 D001      *   STO *+1      80E39790
1519 0 6700 0000 * CK LDX L3 *--   XR3=CHARACTER COUNT 80E39800
*
151B 0 6200      *   LDX 2 0      XR2=ZERO 80E39810
*
151C 1 7400 163C * CKSW MDX L WSW  BR IF 2ND HALF 80E39820
151E 0 700E      * MDX CK3        OF WORD 80E39830
*
151F 0 C600 0000 * CK1 LD L2 *--   MOVE 1ST HALF OF WORD 80E39840
1521 0 1808      * SRA 8          OF RETRIEVED 80E39850
1522 0 D1C1      * STO 1 BFFR-T   DATA TO BUFFER 80E39860
*
1523 0 C600 0000 * CK2 LD L2 *--   MOVE 1ST HALF OF 80E39870
1525 0 1808      * SRA 8          WORD OF S/B DATA 80E39880

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1526 0 D1C2      *   STO 1 BFFR2-T  TO BUFFER 80E40140
*
1527 0 F1C1      *   EOR 1 BFFR-T   BR IF DATA 80E40150
1528 1 4C20 1542 *   BSC L NCMPR,Z  DOES NOT COMPARE 80E40160
*
152A 1 6C00 163C *   STX L WSW      SET SWITCH FOR 2ND 80E40170
*   MDX DCCNT      HALF OF WORD 80E40180
*
152C 0 700F      *   MDX DCCNT      80E40190
*
152D 0 C600 0000 * CK3 LD L2 *--   MOVE 2ND HALF OF WORD 80E40200
152F 0 1008      *   SLA 8          OF RETRIEVED DATA 80E40210
1530 0 1808      *   SRA 8          TO BUFFER 80E40220
1531 0 D1C1      *   STO 1 BFFR-T   80E40230
*
1532 0 C600 0000 * CK4 LD L2 *--   MOVE 2ND HALF OF 80E40240
1534 0 1008      *   SLA 8          WORD OF S/B DATA 80E40250
1535 0 1808      *   SRA 8          TO BUFFER 80E40260
1536 0 D1C2      *   STO 1 BFFR2-T  80E40270
*
1537 0 F1C1      *   EOR 1 BFFR-T   BR IF DATA 80E40280
1538 1 4C20 1542 *   BSC L NCMPR,Z  DOES NOT COMPARE 80E40290
*
153A 0 D1C6      *   STO 1 WSW-T   SET SWITCH FOR 1ST 80E40300
*   MDX 2 1        HALF OF WORD 80E40310
*
153B 0 7201      *   MDX 2 1        INCR XR2 80E40320
*
153C 0 73FF      *   DCCNT MDX 3 -1  DECR CHARACTER COUNT 80E40330
153D 0 70DE      *   MDX CKSW      BR IF NOT ZERO 80E40340
*
153E 1 6680 150C * RETRN LDX I2 CKDAT 80E40350
1540 0 4E00 0003 *   BSC L2 3      RETURN TO MAIN LINE 80E40360
*
1542 0 C0DD      *   NCMPR LD CK1+1  PLACE WORD 80E40370
1543 0 D001      *   STO *+1      OF RETRIEVED 80E40380
1544 0 C600 0000 *   LD L2 *--    DATA IN 80E40390
1546 0 D1F1      *   STO 1 ERRM+4-T PRINTOUT 80E40400
*
1547 0 C0DC      *   LD CK2+1     PLACE WORD 80E40410
1548 0 D001      *   STO *+1     OF SHOULD BE 80E40420
1549 0 C600 0000 *   LD L2 *--    DATA IN 80E40430
154B 0 D1F2      *   STO 1 ERRM+5-T PRINTOUT 80E40440
*
154C 0 C112      *   LD 1 HE004-T  BUILD MID 80E40450
154D 0 8117      *   A 1 D1-T     80E40460
154E 0 D1EF      *   STO 1 ERRM+2-T 80E40470
*
154F 0 C1B3      *   LD 1 LOCK-T   80E40480
1550 1 4C18 1556 *   BSC L *+4,+-- BR IF NO VARIABLE 80E40490
*
1552 0 9117      *   S 1 D1-T     80E40500
1553 0 D1F3      *   STO 1 ERRM+6-T STD VARIABLE IN MSG 80E40510
*
1554 0 C11A      *   LD 1 D4-T     SET MODIFIER COUNT TO 4 80E40520
1555 0 7001      *   MDX *+1     BRANCH 80E40530
1556 0 C119      *   LD 1 D3-T     SET UP 80E40540
1557 1 D400 1663 *   STO L ERRM    MODIFIER COUNT 80E40550
*
1559 1 6680 150C *   LDX I2 CKDAT  PICK UP CALL SEQ ADDR 80E40560
*
155B 0 73FF      *   MDX 3 -1     CALCULATE CHARACTER 80E40570
155C 0 1000      *   NOP          DISPLACEMENT AND 80E40580
155D 1 6F00 1637 *   STX L3 BFFR  PLACE IN ERROR MSG 80E40590
155F 0 C202      *   LD 2 2       80E40600
1560 0 91C1      *   S 1 BFFR-T   80E40610
1561 1 D400 1666 *   STO L ERRM+3  BR IF NO VARIABLE 80E40620
*
1563 1 6600 1663 *   LDX L2 ERRM  80E40630

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ICA WRAP AROUND TEST

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1565 1 4400 122E      *      BSI  L  ERPRT   BR TO PRINT MSG          80E40820
*                               *                               *                               *
1567 1 6680 1520      *      LDX  I2 CK1+1  XR2=RETRIEVED DATA ADDR 80E40830
1569 1 C400 0802      *      LD   L  SWO     GET CONTROL OPTIONS    80E40840
156B 0 100C           *      SLA   I2          80E40850
156C 1 4410 1576      *      BSI  L  DUMP,-  DUMP RETRIEVED DATA 80E40860
*                               *                               *                               *
156E 1 6680 1524      *      LDX  I2 CK2+1  XR2=EXPECTED DATA ADDR 80E40870
1570 1 C400 0802      *      LD   L  SWO     GET CONTROL OPTIONS    80E40880
1572 0 100D           *      SLA   I3          80E40890
1573 1 4410 1576      *      BSI  L  DUMP,-  DUMP EXPECTED DATA 80E40900
*                               *                               *                               *
1575 0 70C8           *      MDX   RETRN    RETURN TO CALLING RTN 80E40910
*                               *                               *                               *
*-----*-----*-----*-----*-----*-----*-----*-----*-----*
*                               *                               *                               *
*      TABLE DUMP SUB-ROUTINE 80E40920
*                               *                               *                               *
1576 0 0000           *      DUMP DC  *--* 80E40930
*                               *                               *                               *
1577 0 6A0C           *      STX   2 MVTBL+4  SAVE TABLE ADDR 80E40940
*                               *                               *                               *
1578 0 C10C           *      LD   1 H8000-T  SET UP TO PRINT 80E40950
1579 0 D1ED           *      STO   1 ERRM-T   BLANK LINE 80E40960
*                               *                               *                               *
157A 1 6600 1663      *      LDX  L2 ERRM   PRINT 80E40970
157C 1 4400 122E      *      BSI  L  ERPRT   BLANK LINE 80E40980
*                               *                               *                               *
157E 1 6780 151A      *      LDX  I3 CK+1   XR3=CHARACTER COUNT 80E40990
*                               *                               *                               *
1580 1 7408 1584      *      MVTBL MDX L *+2,8 80E41000
1582 0 62F8           *      LDX  2 -8      80E41010
1583 0 C600 0000      *      LD   L2 *-*    MOVE DATA TABLE 80E41020
1585 1 D600 1676      *      STO  L2 ERM2+11  TO PRINT 80E41030
1587 0 73FE           *      MDX   3 -2      80E41040
1588 0 4838           *      BSC   Z+-      80E41050
1589 0 700C           *      MDX   LLINE    80E41060
158A 0 7201           *      MDX   2 1      80E41070
158B 0 70F7           *      MDX   MVTBL+3  80E41080
*                               *                               *                               *
158C 0 C10E           *      LD   1 H8008-T  SET UP MODIFIER 80E41090
158D 0 D1F5           *      STO   1 ERM2-T  COUNT 80E41100
*                               *                               *                               *
158E 0 6805           *      STX   3 MVTBL+1  SAVE REMAINING COUNT 80E41110
*                               *                               *                               *
158F 1 6600 166B      *      LDX  L2 ERM2   PRINT LINE 80E41120
1591 1 4400 122E      *      BSI  L  ERPRT   OF DATA 80E41130
*                               *                               *                               *
1593 0 6700 0000      *      MVTBL LDX L3 *-*  PICK UP REMAINING COUNT 80E41140
1595 0 70EA           *      MDX   MVTBL    GO SET UP NEXT LINE 80E41150
*                               *                               *                               *
1596 0 7600 8009      *      LLINE MDX L2 -32759  CALCULATE MODIFIER 80E41160
1598 1 6E00 166B      *      STX  L2 ERM2   COUNT 80E41170
*                               *                               *                               *
159A 1 6600 166B      *      LDX  L2 ERM2   PRINT LAST 80E41180
159C 1 4400 122E      *      BSI  L  ERPRT   LINE 80E41190
*                               *                               *                               *
159E 1 4C80 1576      *      BSC  I  DUMP    RETURN TO CALLING RTN 80E41200
*                               *                               *                               *
*                               *                               *                               *
*      SUBROUTINE TO CHECK FOR UNEXPECTED OR 80E41210
*      INCORRECT INTERRUPT 80E41220
*      CALLING SEQUENCE- 80E41230
*                               *                               *                               *
*      BSI  L  CKINT  80E41240
*      DC   /XXXX  OPER. DSW S/B 80E41250

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ICA WRAP AROUND TEST

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*      DC   /XXXX  OPER. DSW MASK 80E41500
*      DC   /XXXX  BYTE CNT. DSW S/B 80E41510
*      DC   /XXXX  BYTE CNT. DSW MASK 80E41520
*      DC   /XXXX  DIAG. DSW S/B 80E41530
*      DC   /XXXX  DIAG. DSW MASK 80E41540
*                               *                               *
*      BITS ON IN DSW MASKS ARE IGNORED IN 80E41550
*      COMPARING THE DSWs. 80E41560
*      IF THE OPER. DSW S/B PARAMETER IS ZEROES, 80E41570
*      THE SUBROUTINE ASSUMES NO INTERRUPT SHOULD 80E41580
*      HAVE OCCURRED. 80E41590
*                               *                               *
*      ***** 80E41600
*      ***** 80E41610
*      ***** 80E41620
*      ***** 80E41630
*      ***** 80E41640
*      ***** 80E41650
*      ***** 80E41660
*      ***** 80E41670
*      ***** 80E41680
*      ***** 80E41690
*      ***** 80E41700
*      ***** 80E41710
*      ***** 80E41720
*      ***** 80E41730
*      ***** 80E41740
*      ***** 80E41750
*      ***** 80E41760
*      ***** 80E41770
*      ***** 80E41780
*      ***** 80E41790
*      ***** 80E41800
*      ***** 80E41810
*      ***** 80E41820
*      ***** 80E41830
*      ***** 80E41840
*      ***** 80E41850
*      ***** 80E41860
*      ***** 80E41870
*      ***** 80E41880
*      ***** 80E41890
*      ***** 80E41900
*      ***** 80E41910
*      ***** 80E41920
*      ***** 80E41930
*      ***** 80E41940
*      ***** 80E41950
*      ***** 80E41960
*      ***** 80E41970
*      ***** 80E41980
*      ***** 80E41990
*      ***** 80E42000
*      ***** 80E42010
*      ***** 80E42020
*      ***** 80E42030
*      ***** 80E42040
*      ***** 80E42050
*      ***** 80E42060
*      ***** 80E42070
*      ***** 80E42080
*      ***** 80E42090
*      ***** 80E42100
*      ***** 80E42110
*      ***** 80E42120
*      ***** 80E42130
*      ***** 80E42140
*      ***** 80E42150
*      ***** 80E42160
*      ***** 80E42170

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

15D2 1 6680 15A0      LDX  I2 CKINT      80E42180
15D4 0 4E00 0001      BSC  L2 1      RETURN TO CALLING RTN 80E42190
*
*
*****
*
*          CA INTERRUPT HANDLING SUBROUTINE
*****
*
15D6 0 0000          DC  *--  DVA      80E42240
*
15D7 0 0000          INT DC  *--          80E42250
*
15D8 1 0C00 1622      XIO  L  SNSDQ      SENSE AND STORE      80E42260
15DA 1 0400 163F      STO  L  IDIAG      DIAGNOSTIC DSW      80E42270
*
15DC 1 0C00 1620      XIO  L  SNSBC      SENSE AND STORE      80E42280
15DE 1 0400 163E      STO  L  INTBC      BYTE COUNT DSW      80E42290
*
15E0 1 0C00 1616      XIO  L  SNSRS      SENSE-RESET          80E42300
15E2 1 0400 163D      STO  L  IOPER      STORE OPERATING DSW 80E42310
*
15E4 1 4C80 15D7      BSC  I  INT      RETURN                80E42320
*
*
*****
*
*          ROUTINE ADDRESS TABLE
*****
*
*          NORMAL ROUTINES
*****
15E6 1 0958          RTTBL DC  RTN01      80E42330
15E7 1 0971          DC  RTN02      80E42340
15E8 1 098A          DC  RTN03      80E42350
15E9 1 09A2          DC  RTN04      80E42360
15EA 1 098A          DC  RTN05      80E42370
15EB 1 09D8          DC  RTN06      80E42380
15EC 1 09FB          DC  RTN07      80E42390
15ED 1 0A20          DC  RTN08      80E42400
15EE 1 0A36          DC  RTN09      80E42410
15EF 1 0A4F          DC  RTN0A      80E42420
15F0 1 0A5D          DC  RTN0B      80E42430
15F1 1 0A78          DC  RTN0C      80E42440
15F2 1 0A93          DC  RTN0D      80E42450
15F3 1 0AA9          DC  RTN0E      80E42460
15F4 1 0ABF          DC  RTN0F      80E42470
15F5 1 0AD9          DC  RTN10      80E42480
15F6 1 0B13          DC  RTN11      80E42490
15F7 1 0B5F          DC  RTN12      80E42500
15F8 1 0B9F          DC  RTN13      80E42510
15F9 1 0BF3          DC  RTN14      80E42520
15FA 1 0C16          DC  RTN15      80E42530
15FB 1 0C57          DC  RTN16      80E42540
15FC 1 0C74          DC  RTN17      80E42550
15FD 1 0C90          DC  RTN18      80E42560
15FE 1 0CA1          DC  RTN19      80E42570
15FF 1 0CC2          DC  RTN1A      80E42580
1600 1 0D2A          DC  RTN1B      80E42590
1601 1 0D87          DC  RTN1C      80E42600
1602 1 0DC3          DC  RTN1D      80E42610
1603 1 0DF0          DC  RTN1E      80E42620
1604 1 0EB6          DC  RTN1F      80E42630
1605 1 0FB7          DC  RTN20      80E42640
1606 1 0FD0          DC  RTN21      80E42650
1607 1 0FF2          DC  RTN22      80E42660
1608 1 1015          DC  RTN23      80E42670

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1609 1 1033          DC  RTN24      80E42860
160A 1 1059          DC  RTN25      80E42870
160B 1 1080          DC  RTN26      80E42880
160C 1 10EA          DC  RTN27      80E42890
160D 1 110F          DC  RTN28      80E42900
160E 1 1143          DC  RTN29      80E42910
*
*
*****
*
*          OPTIONAL ROUTINES
*****
160F 1 117E          RTTBL DC  RTN2A      80E42920
1610 1 1182          DC  RTN2B      80E42930
1611 1 11E7          DC  RTN2C      80E42940
*
1612 0 0029          LNRN DC  RTTBL-RTTBL LAST NORMAL RTN NUMBER 80E42950
1613 0 002C          LRTN DC  LNRN-RTTBL LAST OPTIONAL RTN NO. 80E42960
*
*
*****
*
*          INDICATORS, CONSTANTS, IOCC'S
*****
1614 0000          IOCCS BSS E 0      IOCC'S      80E42970
*
1614 0 0000          SNSOP DC  0      SENSE OPERATING DSW 80E42980
1615 0 0700          DC  /0700      IOCC      80E42990
*
1616 0 0000          SNSRS DC  0      SENSE OP DSW WITH RESET 80E43000
1617 0 0701          DC  /0701      IOCC      80E43010
*
1618 0 0000          CLEAR DC  0      CLEAR CA      80E43020
1619 0 0709          DC  /0709      IOCC      80E43030
*
161A 1 1B03          INITL DC  XMRCT      INITIALIZE CA      80E43040
161B 0 0500          DC  /0500      IOCC      80E43050
*
161C 0 0000          ENABL DC  0      ENABLE CA      80E43060
161D 0 0710          DC  /0710      IOCC      80E43070
*
161E 0 0000          TIMER DC  0      START CONTINUE TIMER 80E43080
161F 0 0720          DC  /0720      IOCC      80E43090
*
1620 0 0000          SNSBC DC  0      SENSE BYTE COUNT DSW 80E43100
1621 0 0704          DC  /0704      IOCC      80E43110
*
1622 0 0000          SNSDG DC  0      SENSE DIAGNOSTIC DSW 80E43120
1623 0 0702          DC  /0702      IOCC      80E43130
*
1624 0 0000          SETRC DC  0      SET/RESET PROG RECIEVE 80E43140
1625 0 0782          DC  /0782      IOCC      80E43150
*
*
*****
*
*          PROGRAM INDICATORS
*****
1626 0 0000          ASCII DC  *--  USASCII CODE INDICATOR 80E43160
1627 0 0000          LINE DC  *--  LINE NUMBER      80E43170
1628 0 0000          DDEFS DC  *--  LINE SELECT MASK 80E43180
1629 0 0000          LOCK DC  *--  ROUTINE LOCK INDICATOR 80E43190
162A 0 0000          ERLOK DC  *--  LOOP ON ERROR INDICATOR 80E43200
162B 0 0000          LNRID DC  *--  80E43210
162C 0 0000          DLYCT DC  *--  80E43220
162D 0 0000          TMODE DC  *--  80E43230
162E 0 0000          BCSAV DC  *--  80E43240
162F 0 0000          CRCNT DC  *--  80E43250
1630 0 0000          CRADR DC  *--  80E43260
1631 0 0000          TEMP1 DC  *--  80E43270
1632 0 0000          TEMP2 DC  *--  80E43280

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

1633 0 0000	TEMP3 DC	*--		80E43540
1634 0 0000	RSTAT DC	*--		80E43550
1635 0 0000	BCCA DC	*--		80E43560
1636 0 0000	BCCSW DC	*--		80E43570
1637 0 0000	BFFR DC	*--	WORD BUFFER	80E43580
1638 0 0000	BFFR2 DC	*--	WORD BUFFER 2	80E43590
1639 0 0000	OPDSW DC	*--		80E43600
163A 0 0000	BCDSW DC	*--		80E43610
163B 0 0000	DDSW DC	*--		80E43620
163C 0 0000	WSW DC	*--		80E43630
163D 0 0000	IOPER DC	*--		80E43640
163E 0 0000	INTBC DC	*--		80E43650
163F 0 0000	IDIAG DC	*--		80E43660
1640 0 0000	DIAGS DC	*--	DIAGNOSTIC MODE IND	80E43670
1641 0 0000	INSRT DC	*--	SYN INSERTION IND	80E43680
1642 0 0000	XRTB2 DC	*--	2ND XMIT/RCV TBL ADDR	80E43690

* PRINTOUTS				

1643 0 0000	COCA DC	0		80E43710
1644 0 0000	DC	0		80E43720
1645 0 COCA	DC	/COCA		80E43730

1646 0 0000	AOCA DC	0		80E43740
1647 0 0000	DC	0		80E43750
1648 0 AOCA	DC	/AOCA		80E43760

1649 0 0000	DOCA DC	*--	LOG STRING FOR SUMMARY	80E43770
164A 0 0000	DC	0		80E43780
164B 0 DOCA	DC	/DOCA		80E43790

164C 0 0000	PASS DC	*--	PASS COUNTER	80E43800
164D 0 0000	LINES DC	*--	LINE SELECT INDICATOR	80E43810
164E 0 0000	ERCT DC	*--	ERROR COUNT - LINE 0	80E43820
164F 0 0000	DC	*--	ERROR COUNT - LINE 1	80E43830
1650 0 0000	DC	*--	ERROR COUNT - LINE 2	80E43840
1651 0 0000	DC	*--	ERROR COUNT - LINE 3	80E43850
1652 0 0000	DC	*--	ERROR COUNT - LINE 4	80E43860
1653 0 0000	DC	*--	ERROR COUNT - LINE 5	80E43870
1654 0 0000	DC	*--	ERROR COUNT - LINE 6	80E43880
1655 0 0000	DC	*--	ERROR COUNT - LINE 7	80E43890

1656 0 0001	D001 DC	1		80E43900
1657 0 0000	DC	0		80E43910
1658 0 D001	DC	/D001		80E43920
1659 0 0000	DC	*--		80E43930

165A 0 0000	E006 DC	0		80E43940
165B 0 0000	DC	0		80E43950
165C 0 E006	DC	/E006		80E43960

165D 0 0000	E007 DC	0		80E43970
165E 0 0000	DC	0		80E43980
165F 0 E007	DC	/E007		80E43990

1660 0 0000	E008 DC	0		80E44000
1661 0 0000	DC	0		80E44010
1662 0 E008	DC	/E008		80E44020

1663 0 0000	ERRM DC	*--	ERROR MESSAGE STRING	80E44030
1664 0 0000	DC	*--		80E44040
1665 0 0000	DC	*--		80E44050
1666 0 0000	DC	*--		80E44060
1667 0 0000	DC	*--		80E44070
1668 0 0000	DC	*--		80E44080
1669 0 0000	DC	*--		80E44090
166A 0 0000	DC	*--		80E44100

166B 0 8003				80E44110
166C 0 0000				80E44120
166D 0 0000				80E44130
166E 0 0000				80E44140
166F 0 0000				80E44150
1670 0 0000				80E44160
1671 0 0000				80E44170
1672 0 0000				80E44180
1673 0 0000				80E44190
1674 0 0000				80E44200
1675 0 0000				80E44210

1676 0000				80E44220

1676 0 7F52				80E44230
1677 0 7F61				80E44240
1678 0 7FAC				80E44250
1679 0 0080				80E44260
167A 0 00FF				80E44270
167B 0 07BF				80E44280
167C 0 2000				80E44290
167D 0 01FF				80E44300
167E 0 0F00				80E44310
167F 0 0FFF				80E44320
1680 0 007F				80E44330
1681 0 8040				80E44340
1682 0 8000				80E44350
1683 0 8003				80E44360
1684 0 8008				80E44370
1685 0 C002				80E44380
1686 0 E001				80E44390
1687 0 E002				80E44400
1688 0 E004				80E44410
1689 0 F000				80E44420
168A 0 FF00				80E44430
168B 0 EFFF				80E44440
168C 0 FFFF				80E44450
168D 0 0001				80E44460
168E 0 0002				80E44470
168F 0 0003				80E44480
1690 0 0004				80E44490
1691 0 0006				80E44500
1692 0 000B				80E44510
1693 0 000F				80E44520
1694 0 0032				80E44530
1695 0 02BC				80E44540
1696 0 1002				80E44550
1697 0 1003				80E44560
1698 0 1032				80E44570
1699 0 A001				80E44580

ERM2 DC	/8003	ERROR MESSAGE	80E44220
DC	0	CONTINUATION LINE	80E44230
DC	0		80E44240
DC	*--		80E44250
DC	*--		80E44260
DC	*--		80E44270
DC	*--		80E44280
DC	*--		80E44290
DC	*--		80E44300
DC	*--		80E44310
DC	*--		80E44320

T BSS	0	CONSTANT TABLE BASE ADDR	80E44330

* PROGRAM CONSTANTS			

TIME2 DC	/7F52		80E44380
TIME3 DC	/7F61		80E44390
TIME4 DC	/7FAC		80E44400
H0080 DC	/0080		80E44410
H00FF DC	/00FF		80E44420
H07BF DC	/07BF		80E44430
H2000 DC	/2000		80E44440
H01FF DC	/01FF		80E44450
H0F00 DC	/0F00		80E44460
H0FFF DC	/0FFF		80E44470
H007F DC	/007F		80E44480
H8040 DC	/8040		80E44490
H8000 DC	/8000		80E44500
H8003 DC	/8003		80E44510
H8008 DC	/8008		80E44520
HC002 DC	/C002		80E44530
HE001 DC	/E001		80E44540
HE002 DC	/E002		80E44550
HE004 DC	/E004		80E44560
HF000 DC	/F000		80E44570
HFF00 DC	/FF00		80E44580
HEFFF DC	/EFFF		80E44590
HFFFF DC	/FFFF		80E44600
D1 DC	1		80E44610
D2 DC	2		80E44620
D3 DC	3		80E44630
D4 DC	4		80E44640
D6 DC	6		80E44650
D11 DC	11		80E44660
D15 DC	15		80E44670
D50 DC	50		80E44680
D700 DC	700		80E44690
DLSTX DC	/1002		80E44700
DLETX DC	/1003		80E44710
DLSYN DC	/1032		80E44720
POLYN DC	/A001		80E44730

* LINE CONTROL CHARACTERS			

DLE DC	*--	DATA LINK ESCAPE	80E44800
SOH DC	*--	START OF HEADING	80E44810
STX DC	*--	START OF TEXT	80E44820
ETB DC	*--	END OF BLOCK	80E44830
ETX DC	*--	END OF TEXT	80E44840
EOT DC	*--	END OF TRANSMISSION	80E44850
ENQ DC	*--	ENQUIRY	80E44860
NAK DC	*--	NEGATIVE ACKNOWLEDGEMENT	80E44870
ITB DC	*--	END OF INTERMEDIATE BLOCK	80E44880
SYN DC	*--	SYNCHRONOUS IDLE	80E44890

ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

```

*
*
*****
*
*          TEST MESSAGE TABLES
*****
*          EBCDIC      USASCII
*
16A4 0 FF55      TBL1 DC /FF55      /FF55
16A5 0 5555      DC /5555      /5555
16A6 0 3232      DC /3232      /1616
*
16A7 0 807F      TBL2 DC /807F      /807F
16A8 0 807F      DC /807F      /807F
16A9 0 7F7F      DC /7F7F      /7F7F
16AA 0 0000      DC /0000      /0000
*
16AB 0 FF55      TBL3 DC /FF55      /FF55
16AC 0 5555      DC /5555      /5555
16AD 0 3232      DC /3232      /1616
*
16AE 0 0000      TBL4 DC *-*      *-*
16AF 0 7F7F      DC /7F7F      /7F7F
16B0 0 7F7F      DC /7F7F      /7F7F
*
16B1 0 0132      TBL5 DC /0132      /0116
16B2 0 321F      DC /321F      /161F
16B3 0 3202      DC /3202      /1602
16B4 0 7F03      DC /7F03      /7F83
16B5 0 FFFF      DC /FFFF      /FFFF
*
16B6 0 FF55      TBL6 DC /FF55      /FF55
16B7 0 5555      DC /5555      /5555
16B8 0 3232      DC /3232      /1616
16B9 0 0132      DC /0132      /0116
16BA 0 321F      DC /321F      /161F
16BB 0 0000      DC *-*      *-*
16BC 0 3202      DC /3202      /0216
16BD 0 7F03      DC /7F03      *-*
16BE 0 0000      DC *-*      /FFFF
16BF 0 FFFF      DC /FFFF      /FFFF
*
16C0 0 FF55      TBL7 DC /FF55      /FF55
16C1 0 5555      DC /5555      /5555
16C2 0 3232      DC /3232      /1616
16C3 0 7F7F      DC /7F7F      /7F7F
16C4 0 7F7F      DC /7F7F      /7F7F
16C5 0 8080      DC /8080      /8080
16C6 0 8080      DC /8080      /8080
16C7 0 8080      DC /8080      /8080
16C8 0 7F7F      DC /7F7F      /7F7F
*
16C9 0 FF55      TBL8 DC /FF55      /FF55
16CA 0 5555      DC /5555      /5555
16CB 0 3232      DC /3232      /1616
16CC 0 0280      DC /0280      /0280
16CD 0 01DF      DC /01DF      /01DF
16CE 0 0000      DC *-*      *-*
16CF 0 FFFF      DC /FFFF      /FFFF
16D0 0 FFFF      DC /FFFF      /FFFF
*
16D1 0 3232      TBL9 DC /3232      /1616
16D2 0 7F7F      DC /7F7F      /7F7F
16D3 0 3232      DC /3232      /1616
16D4 0 7F7F      DC /7F7F      /7F7F
*
16D5 0 FF55      DC /FF55      /FF55

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```

16D6 0 5555      DC /5555      /5555
16D7 0 3232      DC /3232      /1616
16D8 0 021F      DC /021F      /021F
16D9 0 3232      DC /3232      /1616
16DA 0 3232      DC /3232      /1616
*
16DB 0 0203      TBLC DC /0203      /0283
16DC 0 7F7F      DC /7F7F      /7F7F
16DD 0 7F7F      DC /7F7F      /7F7F
*
16DE 0 0004      TBLD DC /0004      /0708
16DF 0 0506      DC /0506      /080D
16E0 0 0708      DC /0708      /0E13
16E1 0 090A      DC /090A      /191A
16E2 0 080C      DC /080C      /1C20
16E3 0 0D0E      DC /0D0E      /2325
16E4 0 0F11      DC /0F11      /2629
16E5 0 1213      DC /1213      /2A2C
16E6 0 1415      DC /1415      /2F31
16E7 0 1617      DC /1617      /3234
16E8 0 1819      DC /1819      /3738
16E9 0 1A1B      DC /1A1B      /3B3D
16EA 0 1C1D      DC /1C1D      /3E40
16EB 0 1E20      DC /1E20      /4345
16EC 0 2122      DC /2122      /4649
16ED 0 2324      DC /2324      /4A4C
16EE 0 2527      DC /2527      /4F51
16EF 0 2829      DC /2829      /5254
16F0 0 2A2B      DC /2A2B      /5758
16F1 0 2C2E      DC /2C2E      /5B5D
16F2 0 2F30      DC /2F30      /5E61
16F3 0 3133      DC /3133      /6264
16F4 0 3435      DC /3435      /6768
16F5 0 3638      DC /3638      /6B6D
16F6 0 393A      DC /393A      /6E70
16F7 0 3B3C      DC /3B3C      /7375
16F8 0 3E3F      DC /3E3F      /7679
16F9 0 4041      DC /4041      /7A7C
16FA 0 4243      DC /4243      /7F80
16FB 0 4445      DC /4445      /8689
16FC 0 4647      DC /4647      /8A8C
16FD 0 4849      DC /4849      /8F91
16FE 0 4A4B      DC /4A4B      /9294
16FF 0 4C4D      DC /4C4D      /989B
1700 0 4E4F      DC /4E4F      /9D9E
1701 0 5051      DC /5051      /A1A2
1702 0 5253      DC /5253      /A4A7
1703 0 5455      DC /5455      /A8AB
1704 0 5657      DC /5657      /ADAE
1705 0 5859      DC /5859      /B0B3
1706 0 5A5B      DC /5A5B      /B5B6
1707 0 5C5D      DC /5C5D      /B9BA
1708 0 5E5F      DC /5E5F      /BCBF
1709 0 6061      DC /6061      /C1C2
170A 0 6263      DC /6263      /C4C7
170B 0 6465      DC /6465      /C8CB
170C 0 6667      DC /6667      /CDCE
170D 0 6869      DC /6869      /D0D3
170E 0 6A6B      DC /6A6B      /D5D6
170F 0 6C6D      DC /6C6D      /D9DA
1710 0 6E6F      DC /6E6F      /DCDF
1711 0 7071      DC /7071      /E0E3
1712 0 7273      DC /7273      /E5E6
1713 0 7475      DC /7475      /E9EA
1714 0 7677      DC /7677      /ECEA
1715 0 7879      DC /7879      /F1F2
1716 0 7A7B      DC /7A7B      /F4F7
1717 0 7C7D      DC /7C7D      /F8FB

```

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80E44900
80E44910
80E44920
80E44930
80E44940
80E44950
80E44960
80E44970
80E44980
80E44990
80E45000
80E45010
80E45020
80E45030
80E45040
80E45050
80E45060
80E45070
80E45080
80E45090
80E45100
80E45110
80E45120
80E45130
80E45140
80E45150
80E45160
80E45170
80E45180
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80E45200
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80E45220
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80E45400
80E45410
80E45420
80E45430
80E45440
80E45450
80E45460
80E45470
80E45480
80E45490
80E45500
80E45510
80E45520
80E45530
80E45540
80E45550
80E45560
80E45570

```


(CA WRAP AROUND TEST

(CA WRAP AROUND TEST

```

1797 0 1002    TTBL5 DC    /1002
1798 0 7F7F    DC      /7F7F
1799 0 7F7F    DC      /7F7F
179A 0 7F7F    DC      /7F7F
179B 0 7F7F    DC      /7F7F
*
179C 0 FF55    TTBL6 DC    /FF55
179D 0 5555    DC      /5555
179E 0 3232    DC      /3232
179F 0 1002    DC      /1002
17A0 0 0180    DC      /0180
17A1 0 0000    DC      *-*
17A2 0 0000    DC      *-*
17A3 0 FFFF    DC      /FFFF
*
17A4 0 1002    TTBL7 DC    /1002
17A5 0 1010    DC      /1010
17A6 0 1032    DC      /1032
17A7 0 101F    DC      /101F
17A8 0 1026    DC      /1026
17A9 0 1003    DC      /1003
17AA 0 102D    DC      /102D
17AB 0 103D    DC      /103D
17AC 0 FFFF    DC      /FFFF
17AD 0 1037    DC      /1037
17AE 0 FFFF    DC      /FFFF
17AF 0 1070    DC      /1070
17B0 0 1003    DC      /1003
17B1 0 FFFF    DC      /FFFF
*
17B2 0 FF55    TTBL8 DC    /FF55
17B3 0 5555    DC      /5555
17B4 0 3232    DC      /3232
17B5 0 1002    DC      /1002
17B6 0 1010    DC      /1010
17B7 0 1010    DC      /1010
17B8 0 1010    DC      /1010
17B9 0 3210    DC      /3210
17BA 0 101F    DC      /101F
17BB 0 1010    DC      /1010
17BC 0 2610    DC      /2610
17BD 0 1003    DC      /1003
17BE 0 1010    DC      /1010
17BF 0 2010    DC      /2010
17C0 0 103D    DC      /103D
17C1 0 FFFF    DC      /FFFF
17C2 0 1010    DC      /1010
17C3 0 37FF    DC      /37FF
17C4 0 FF10    DC      /FF10
17C5 0 1070    DC      /1070
17C6 0 1003    DC      /1003
17C7 0 0000    DC      *-*
17C8 0 FFFF    DC      /FFFF
*
17C9 0 FF55    VTBL  DC    /FF55    /FF55
17CA 0 5555    DC      /5555
17CB 0 3232    DC      /3232    /1616
17CC 0 0163    BSS    355
*
*****
*
*          EBCDIC CODE TABLES
*
*****
*
192F 0 1010    EBCCT DC    /1010
1930 0 0101    DC      /0101

```

```

80E47620
80E47630
80E47640
80E47650
80E47660
80E47670
80E47680
80E47690
80E47700
80E47710
80E47720
80E47730
80E47740
80E47750
80E47760
80E47770
80E47780
80E47790
80E47800
80E47810
80E47820
80E47830
80E47840
80E47850
80E47860
80E47870
80E47880
80E47890
80E47900
80E47910
80E47920
80E47930
80E47940
80E47950
80E47960
80E47970
80E47980
80E47990
80E48000
80E48010
80E48020
80E48030
80E48040
80E48050
80E48060
80E48070
80E48080
80E48090
80E48100
80E48110
80E48120
80E48130
80E48140
80E48150
80E48160
80E48170
80E48180
80E48190
80E48200
80E48210
80E48220
80E48230
80E48240
80E48250
80E48260
80E48270
80E48280
80E48290

```

```

1931 0 0202    DC      /0202
1932 0 2626    DC      /2626
1933 0 0303    DC      /0303
1934 0 3737    DC      /3737
1935 0 202D    DC      /202D
1936 0 3D3D    DC      /3D3D
1937 0 1F1F    DC      /1F1F
1938 0 3232    DC      /3232
*
1939 0 FF55    DC      /FF55
193A 0 5555    DC      /5555
193B 0 3232    DC      /3232
*
193C 0 807F    DC      /807F
193D 0 807F    DC      /807F
193E 0 7F7F    DC      /7F7F
193F 0 0000    DC      /0000
*
1940 0 FF55    DC      /FF55
1941 0 5555    DC      /5555
1942 0 3232    DC      /3232
*
1943 0 0000    DC      *-*
1944 0 7F7F    DC      /7F7F
1945 0 7F7F    DC      /7F7F
*
1946 0 0132    DC      /0132
1947 0 321F    DC      /321F
1948 0 3202    DC      /3202
1949 0 7F03    DC      /7F03
194A 0 FFFF    DC      /FFFF
*
194B 0 FF55    DC      /FF55
194C 0 5555    DC      /5555
194D 0 3232    DC      /3232
194E 0 0132    DC      /0132
194F 0 321F    DC      /321F
1950 0 0000    DC      *-*
1951 0 3202    DC      /3202
1952 0 7F03    DC      /7F03
1953 0 0000    DC      *-*
1954 0 FFFF    DC      /FFFF
*
1955 0 FF55    DC      /FF55
1956 0 5555    DC      /5555
1957 0 3232    DC      /3232
1958 0 7F7F    DC      /7F7F
1959 0 7F7F    DC      /7F7F
195A 0 8080    DC      /8080
195B 0 8080    DC      /8080
195C 0 8080    DC      /8080
195D 0 7F7F    DC      /7F7F
*
195E 0 FF55    DC      /FF55
195F 0 5555    DC      /5555
1960 0 3232    DC      /3232
1961 0 0280    DC      /0280
1962 0 01DF    DC      /01DF
1963 0 0000    DC      *-*
1964 0 FFFF    DC      /FFFF
1965 0 FFFF    DC      /FFFF
*
1966 0 3232    DC      /3232
1967 0 7F7F    DC      /7F7F
1968 0 3232    DC      /3232
1969 0 7F7F    DC      /7F7F
*
196A 0 FF55    DC      /FF55

```

```

/0202
/2626
/0303
/3737
/202D
/3D3D
/1F1F
/3232
/FF55
/5555
/3232
/807F
/807F
/7F7F
/0000
/FF55
/5555
/3232
*-*
/7F7F
/7F7F
/0132
/321F
/3202
/7F03
/FFFF
/FF55
/5555
/3232
/0132
/321F
*-*
/3202
/7F03
*-*
/FFFF
/FF55
/5555
/3232
/7F7F
/7F7F
/8080
/8080
/8080
/7F7F
/FF55
/5555
/3232
/0280
/01DF
*-*
/FFFF
/FFFF
/3232
/7F7F
/3232
/7F7F
/FF55

```

```

80E48300
80E48310
80E48320
80E48330
80E48340
80E48350
80E48360
80E48370
80E48380
80E48390
80E48400
80E48410
80E48420
80E48430
80E48440
80E48450
80E48460
80E48470
80E48480
80E48490
80E48500
80E48510
80E48520
80E48530
80E48540
80E48550
80E48560
80E48570
80E48580
80E48590
80E48600
80E48610
80E48620
80E48630
80E48640
80E48650
80E48660
80E48670
80E48680
80E48690
80E48700
80E48710
80E48720
80E48730
80E48740
80E48750
80E48760
80E48770
80E48780
80E48790
80E48800
80E48810
80E48820
80E48830
80E48840
80E48850
80E48860
80E48870
80E48880
80E48890
80E48900
80E48910
80E48920
80E48930
80E48940
80E48950
80E48960
80E48970

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PAGE 37

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

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ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

196B 0 5555	DC	/5555
196C 0 3232	DC	/3232
196D 0 021F	DC	/021F
196E 0 3232	DC	/3232
196F 0 3232	DC	/3232
*		
1970 0 0203	DC	/0203
1971 0 7F7F	DC	/7F7F
1972 0 7F7F	DC	/7F7F
*		
1973 0 0004	DC	/0004
1974 0 0506	DC	/0506
1975 0 0708	DC	/0708
1976 0 090A	DC	/090A
1977 0 080C	DC	/080C
1978 0 0D0E	DC	/0D0E
1979 0 0F11	DC	/0F11
197A 0 1213	DC	/1213
197B 0 1415	DC	/1415
197C 0 1617	DC	/1617
197D 0 1819	DC	/1819
197E 0 1A1B	DC	/1A1B
197F 0 1C1D	DC	/1C1D
1980 0 1E20	DC	/1E20
1981 0 2122	DC	/2122
1982 0 2324	DC	/2324
1983 0 2527	DC	/2527
1984 0 2829	DC	/2829
1985 0 2A2B	DC	/2A2B
1986 0 2C2E	DC	/2C2E
1987 0 2F30	DC	/2F30
1988 0 3133	DC	/3133
1989 0 3435	DC	/3435
198A 0 3638	DC	/3638
198B 0 393A	DC	/393A
198C 0 3B3C	DC	/3B3C
198D 0 3E3F	DC	/3E3F
198E 0 4041	DC	/4041
198F 0 4243	DC	/4243
1990 0 4445	DC	/4445
1991 0 4647	DC	/4647
1992 0 4849	DC	/4849
1993 0 4A4B	DC	/4A4B
1994 0 4C4D	DC	/4C4D
1995 0 4E4F	DC	/4E4F
1996 0 5051	DC	/5051
1997 0 5253	DC	/5253
1998 0 5455	DC	/5455
1999 0 5657	DC	/5657
199A 0 5859	DC	/5859
199B 0 5A5B	DC	/5A5B
199C 0 5C5D	DC	/5C5D
199D 0 5E5F	DC	/5E5F
199E 0 6061	DC	/6061
199F 0 6263	DC	/6263
19A0 0 6465	DC	/6465
19A1 0 6667	DC	/6667
19A2 0 6869	DC	/6869
19A3 0 6A6B	DC	/6A6B
19A4 0 6C6D	DC	/6C6D
19A5 0 6E6F	DC	/6E6F
19A6 0 7071	DC	/7071
19A7 0 7273	DC	/7273
19A8 0 7475	DC	/7475
19A9 0 7677	DC	/7677
19AA 0 7879	DC	/7879
19AB 0 7A7B	DC	/7A7B
19AC 0 7C7D	DC	/7C7D

80E48980
80E48990
80E49000
80E49010
80E49020
80E49030
80E49040
80E49050
80E49060
80E49070
80E49080
80E49090
80E49100
80E49110
80E49120
80E49130
80E49140
80E49150
80E49160
80E49170
80E49180
80E49190
80E49200
80E49210
80E49220
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80E49360
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80E49380
80E49390
80E49400
80E49410
80E49420
80E49430
80E49440
80E49450
80E49460
80E49470
80E49480
80E49490
80E49500
80E49510
80E49520
80E49530
80E49540
80E49550
80E49560
80E49570
80E49580
80E49590
80E49600
80E49610
80E49620
80E49630
80E49640
80E49650

19AD 0 7E7F
19AE 0 8081
19AF 0 8283
19B0 0 8485
19B1 0 8687
19B2 0 8889
19B3 0 8A8B
19B4 0 8C8D
19B5 0 8E8F
19B6 0 9091
19B7 0 9293
19B8 0 9495
19B9 0 9697
19BA 0 9899
19BB 0 9A9B
19BC 0 9C9D
19BD 0 9E9F
19BE 0 A0A1
19BF 0 A2A3
19C0 0 A4A5
19C1 0 A6A7
19C2 0 A8A9
19C3 0 AAAB
19C4 0 ACAD
19C5 0 AEAFA
19C6 0 B0B1
19C7 0 B2B3
19C8 0 B4B5
19C9 0 B6B7
19CA 0 B8B9
19CB 0 BABB
19CC 0 BCBD
19CD 0 BEBF
19CE 0 C0C1
19CF 0 C2C3
19D0 0 C4C5
19D1 0 C6C7
19D2 0 C8C9
19D3 0 CACB
19D4 0 CCCC
19D5 0 CECF
19D6 0 D0D1
19D7 0 D2D3
19D8 0 D4D5
19D9 0 D6D7
19DA 0 D8D9
19DB 0 DADB
19DC 0 DCDD
19DD 0 DEDF
19DE 0 E0E1
19DF 0 E2E3
19E0 0 E4E5
19E1 0 E6E7
19E2 0 E8E9
19E3 0 EAEB
19E4 0 ECED
19E5 0 EEEF
19E6 0 F0F1
19E7 0 F2F3
19E8 0 F4F5
19E9 0 F6F7
19EA 0 F8F9
19EB 0 FAFB
19EC 0 FCFD
19ED 0 FEFF
19EE 0 FFFF
19EF 0 027F

DC /7E7F
DC /8081
DC /8283
DC /8485
DC /8687
DC /8889
DC /8A8B
DC /8C8D
DC /8E8F
DC /9091
DC /9293
DC /9495
DC /9697
DC /9899
DC /9A9B
DC /9C9D
DC /9E9F
DC /A0A1
DC /A2A3
DC /A4A5
DC /A6A7
DC /A8A9
DC /AAAB
DC /ACAD
DC /AEAFA
DC /B0B1
DC /B2B3
DC /B4B5
DC /B6B7
DC /B8B9
DC /BABB
DC /BCBD
DC /BEBF
DC /C0C1
DC /C2C3
DC /C4C5
DC /C6C7
DC /C8C9
DC /CACB
DC /CCCC
DC /CECF
DC /D0D1
DC /D2D3
DC /D4D5
DC /D6D7
DC /D8D9
DC /DADB
DC /DCDD
DC /DEDF
DC /E0E1
DC /E2E3
DC /E4E5
DC /E6E7
DC /E8E9
DC /EAEB
DC /ECED
DC /EEEF
DC /F0F1
DC /F2F3
DC /F4F5
DC /F6F7
DC /F8F9
DC /FAFB
DC /FCFD
DC /FEFF
DC /FFFF
DC /027F

80E49660
80E49670
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80E50240
80E50250
80E50260
80E50270
80E50280
80E50290
80E50300
80E50310
80E50320
80E50330

FCA WRAP AROUND TEST

FCA WRAP AROUND TEST

1A60 0 191A	DC	/191A
1A61 0 1C20	DC	/1C20
1A62 0 2325	DC	/2325
1A63 0 2629	DC	/2629
1A64 0 2A2C	DC	/2A2C
1A65 0 2F31	DC	/2F31
1A66 0 3234	DC	/3234
1A67 0 3738	DC	/3738
1A68 0 3B3D	DC	/3B3D
1A69 0 3E40	DC	/3E40
1A6A 0 4345	DC	/4345
1A6B 0 4649	DC	/4649
1A6C 0 4A4C	DC	/4A4C
1A6D 0 4F51	DC	/4F51
1A6E 0 5254	DC	/5254
1A6F 0 5758	DC	/5758
1A70 0 5B5D	DC	/5B5D
1A71 0 5E61	DC	/5E61
1A72 0 6264	DC	/6264
1A73 0 6768	DC	/6768
1A74 0 6B6D	DC	/6B6D
1A75 0 6E70	DC	/6E70
1A76 0 7375	DC	/7375
1A77 0 7679	DC	/7679
1A78 0 7A7C	DC	/7A7C
1A79 0 7F80	DC	/7F80
1A7A 0 8689	DC	/8689
1A7B 0 8A8C	DC	/8A8C
1A7C 0 8F91	DC	/8F91
1A7D 0 9294	DC	/9294
1A7E 0 989B	DC	/989B
1A7F 0 9D9E	DC	/9D9E
1A80 0 A1A2	DC	/A1A2
1A81 0 A4A7	DC	/A4A7
1A82 0 A8AB	DC	/A8AB
1A83 0 ADAE	DC	/ADAE
1A84 0 B0B3	DC	/B0B3
1A85 0 B5B6	DC	/B5B6
1A86 0 B9BA	DC	/B9BA
1A87 0 BCBF	DC	/BCBF
1A88 0 C1C2	DC	/C1C2
1A89 0 C4C7	DC	/C4C7
1A8A 0 C8CB	DC	/C8CB
1A8B 0 CDCE	DC	/CDCE
1A8C 0 D0D3	DC	/D0D3
1A8D 0 D5D6	DC	/D5D6
1A8E 0 D9DA	DC	/D9DA
1A8F 0 DCDF	DC	/DCDF
1A90 0 E0E3	DC	/E0E3
1A91 0 E5E6	DC	/E5E6
1A92 0 E9EA	DC	/E9EA
1A93 0 ECEF	DC	/ECEF
1A94 0 F1F2	DC	/F1F2
1A95 0 F4F7	DC	/F4F7
1A96 0 F8FB	DC	/F8FB
1A97 0 FDFE	DC	/FDFE
1A98 0 0708	DC	/0708
1A99 0 0B0D	DC	/0B0D
1A9A 0 0E13	DC	/0E13
1A9B 0 191A	DC	/191A
1A9C 0 1C20	DC	/1C20
1A9D 0 2325	DC	/2325
1A9E 0 2629	DC	/2629
1A9F 0 2A2C	DC	/2A2C
1AA0 0 2F31	DC	/2F31
1AA1 0 3234	DC	/3234
1AA2 0 3738	DC	/3738
1AA3 0 3B3D	DC	/3B3D

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80E52330
80E52340
80E52350
80E52360
80E52370

1AA4 0 3E40
1AA5 0 4345
1AA6 0 4649
1AA7 0 4A4C
1AA8 0 4F51
1AA9 0 5254
1AAA 0 5758
1AAB 0 5B5D
1AAC 0 5E61
1AAD 0 6264
1AAE 0 6768
1AAF 0 6B6D
1AB0 0 6E70
1AB1 0 7375
1AB2 0 7679
1AB3 0 7A7C
1AB4 0 7F80
1AB5 0 8689
1AB6 0 8A8C
1AB7 0 8F91
1AB8 0 9294
1AB9 0 989B
1ABA 0 9D9E
1ABB 0 A1A2
1ABC 0 A4A7
1ABD 0 A8AB
1ABE 0 ADAE
1ABF 0 B0B3
1AC0 0 B5B6
1AC1 0 B9BA
1AC2 0 BCBF
1AC3 0 C1C2
1AC4 0 C4C7
1AC5 0 C8CB
1AC6 0 CDCE
1AC7 0 D0D3
1AC8 0 D5D6
1AC9 0 D9DA
1ACA 0 DCDF
1ACB 0 E0E3
1ACC 0 E5E6
1ACD 0 E9EA
1ACE 0 ECEF
1ACF 0 F1F2
1AD0 0 F4F7
1AD1 0 F8FB
1AD2 0 FDFE
1AD3 0 0708
1AD4 0 0B0D
1AD5 0 0E13
1AD6 0 191A
1AD7 0 1C20
1AD8 0 7F7F
1AD9 0 027F
1ADA 0 1F7F
1ADB 0 7F83
1ADC 0 7F7F
1ADD 0 1616
1ADE 0 027F
1ADF 0 7F7F
1AE0 0 A008
1AE1 0 FF02
1AE2 0 C004
1AE3 0 FF7F
1AE4 0 C4FE

DC	/3E40
DC	/4345
DC	/4649
DC	/4A4C
DC	/4F51
DC	/5254
DC	/5758
DC	/5B5D
DC	/5E61
DC	/6264
DC	/6768
DC	/6B6D
DC	/6E70
DC	/7375
DC	/7679
DC	/7A7C
DC	/7F80
DC	/8689
DC	/8A8C
DC	/8F91
DC	/9294
DC	/989B
DC	/9D9E
DC	/A1A2
DC	/A4A7
DC	/A8AB
DC	/ADAE
DC	/B0B3
DC	/B5B6
DC	/B9BA
DC	/BCBF
DC	/C1C2
DC	/C4C7
DC	/C8CB
DC	/CDCE
DC	/D0D3
DC	/D5D6
DC	/D9DA
DC	/DCDF
DC	/E0E3
DC	/E5E6
DC	/E9EA
DC	/ECEF
DC	/F1F2
DC	/F4F7
DC	/F8FB
DC	/FDFE
DC	/0708
DC	/0B0D
DC	/0E13
DC	/191A
DC	/1C20
DC	/7F7F
DC	/027F
DC	/1F7F
DC	/7F83
DC	/7F7F
DC	/1616
DC	/027F
DC	/7F7F
DC	/A008
DC	/FF02
DC	/C004
DC	/FF7F
DC	/C4FE

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80E53050

FCA WRAP AROUND TEST

FCA WRAP AROUND TEST

CNTR9 08FA 0903
 CODE 0813 0909
 CORE 0812 086D
 CRADR 1630 12B3 12BC 12C0 12C6 12E9 12F3 1302 1304 1307 1333 1336 1338 133C
 CRCNT 162F 12AE 12B9 12C8 12F1 12F8 130E 1323
 COCA 1643 0895
 DCCNT 153C 152C
 DCODE 141A 0ADD 0B17 0B63 0BA3 0CC9 0CDE 0D04 0D31 0D4D 0D70 1062 108D 12EB
 130C 1426 14AB
 DDEFS 1628 085E 0869 0892
 DDSW 163B 14C0
 DECSH 148B 1487
 DELAY 081D 081E 0822 0826 0830 0834 0969 0982 099A 09B2 09DD 09EB 0A22 0A28
 0A3B 0A41 0A54 0AC5 0ACB 0C7C 0C82 0C98 0CB4 0FD8 0FDE 0FE4
 DIAGS 1640 094D 1144 1278
 DLAY1 0829 083A
 DLAY2 0838 0839
 DLE 169A 0917 0D2D 0EE7 0F17 0F33 0F43 0F70 0F7A 142C
 DLETX 1697 0F1F 0F7D 0F8B
 DLSTX 1696 0ED3 146B
 DLSYN 1698 0F22 0F51 0F56
 DLYCT 162C 1182 1183 118F 1195 1197 119C 1186 1187 11C3 11C9 11CB 11CC 11D1
 DSWCK 14D4 15BE
 DSWER 14F7 14ED 14F0 14F3
 DUMP 1576 156C 1573 159E
 DXEQ 0848 0808 084A 0852 088F
 DX1 0850 0849 0877 08E4
 DOCA 1649 08D2
 D001 1656 0EAD 0E80 0FAE 0FB1
 D1 168D 0880 08B3 092E 09FB 0A01 0A0B 0AF0 0B3C 0CD2 0D3D 0EAC 0EE2 0FAD
 1086 1245 1263 1292 129A 12D2 12E3 134B 1454 1472 14D7 154D 1552
 15A8
 D11 1692 0E11
 D15 1693 0EDC
 D2 168E 0E14 0E95 0EDF 0F96 1181 1185
 D3 168F 0C27 0E0D 144A 14DB 1556 15AC
 D4 1690 0A17 0FDB 1080 14D9 1554 15AA
 D50 1694 0DF0 0EB6
 D6 1691 0ED8
 D700 1695 0DF3 0EA0 0EB9 0FA1
 EBCCT 192F
 ENABL 161C 1365
 END 012E 08D6
 ENQ 16A0
 EOT 169F
 EPA 0808
 ERCT 164E 1243 1246
 ERL0K 162A 087A 08A7 0880 094C 1272
 ERM2 166B 14D3 14E1 14E6 14EB 14EC 14EF 14F2 14FE 1504 1585 158D 158F 1598
 159A 1580
 ERPR1 122E 0EA7 0FA8 123B 126A 1377 1414 1502 1506 1565 157C 1591 159C 15D0
 ERPR2 1236 122F 1230 123D
 ERPR3 123D 1273
 ERPR4 1267 1248 1260
 ERPR5 1270 123C
 ERPR5 1248 123F
 ERRM 1663 14D2 14D8 14DC 14F8 14FA 14FC 1500 1546 1548 154E 1553 1557 1561
 1563 1579 157A 15A9 15AD 15AF 15B4 15C0 15C9 15CB 15CD 15CE
 ERROR 0130 1238
 ETB 169D 0CC2 0D2A 1059
 ETX 169E 0DA8 0E1B 0E75 0E86 0EF1 0EFA 0F3B
 E006 165A 1412
 E007 165D 1375
 E008 1660 0EA5 0FA6
 GEN 13CB 0FBC 0FF7 101A 103B 1081 10C8 10F1 1121 1157 11F9 13CE 13D5 13FC
 GEN0 13D6 13D1 13D3
 GEN1 13DC 13F8
 GEN2 13E1 13E3 13F5

GEN3 13E5 13E7
 GEN4 13F4 13EC
 HCO02 1685 12A0
 HEFFF 168B 1162
 HE001 1686 14D1
 HE002 1687 12E0 15AE
 HE004 1688 154C
 HFFFF 168C 0E7F 0E8B 0F81 0F84 107A 14DE 14E3 14E8
 HFF00 168A 0D27 12F6 130A 133F 1342 1356
 HF000 1689 144F
 HOFFF 167F 0955 09FD 0A0C 0C18 0C28
 HOF00 167E 0D19
 HOOFF 167A 087D 08CA 0924 0ADB 0815 0861 0BA1 0CD1 0D21 0D3C 0E35 105B 10BC
 138E 13B2 142E 14A6
 H007F 1680 0AE9 0835 0CC5 1480
 H0080 1679 1276 1277 127A
 H01FF 167D 0C16 0C1E 0C53
 H07BF 167B 08FD
 H2000 167C 0C1A 0E0E 0ED9
 H8000 1682 0AE2 0AE4 0B70 0872 0876 08CA 105F 1258 1264 1271 12FE 13DA 1578
 H8003 1683 14FD
 H8008 1684 158C
 H8040 1681 1358
 IDIAG 163F 15DA
 INEXP 158C 1582
 INITL 161A 09C0 1275 127B 1284 1366
 INSRT 1641 0E38 0E42 0E4E 0E93 0E9C 0FOA 0F25 0F42 0F52 0F57 0F94 0F9D
 INT 15D7 0832 08F8 08FE 0949 111F 1155 11F7 1586 158C 15E4
 INTBC 163E 15DE
 INTER 15C8 1588
 IOCCS 1614 08FA
 IOPER 163D 15A3 15E2
 IPA 0806
 ITB 16A2 0D0B 0D77 10A8
 LDRGS 1460 145B 145D
 LINE 1627 0878 08BA 08BC 08C3 0904 0906 092D 1241 1256
 LINES 164D 086B 089B 125D
 LINE0 0814 0855 08BE 08E1
 LINE1 0815
 LINE2 0816
 LINE3 0817
 LINE4 0818
 LINE5 0819
 LINE6 081A
 LINE7 081B
 LLINE 1596 1589
 LNRID 162B 087B 0934 0945
 LNRTN 1612 08CB 1613
 LOCK 1629 0879 08AE 08B5 08B7 0937 0946 094B 0A02 0A0A 0A16 0A18 0A1D 0ADC
 0AE7 0AF3 0B0D 0B10 0B16 0B33 0B3F 0B59 0B5C 0B62 0B78 0B7B 0B95
 0B98 0BA2 0BCC 0BCF 0BE9 0BEC 0C19 0C1D 0C22 0C2A 0C4C 0C4F 0C54
 0CD3 0D11 0D3E 0D7D 0DF2 0DF7 0DFC 0E0B 0E10 0E16 0E3D 0E9F 0EA4
 0EAB 0EAF 0EB8 0EBD 0EC9 0ED6 0EDB 0EE1 0F11 0FA0 0FA5 0FAC 0F80
 105C 105D 109A 10AA 10B7 10E4 10E7 1262 126D 1270 137A 1417 14D4
 154F 15A5
 LOG 012F 1227
 LPA 0807
 LRTN 1613 0883
 LXEQ 0842 0807 0846
 MAT 0134 08EF 11AA 11DF
 MLSCF 0809 083F 0845 08E9 1221 1232
 MVTBL 1580 1577 1588 1595
 MVTB1 1593 158E
 NAK 16A1
 NCMPR 1542 1528 1538
 NVAR 14DB 14D5 14DA
 NVAR1 15AC 15A6 15AB
 OPDSW 1639 14C8 14CF 15C4

ICA WRAP AROUND TEST

ICA WRAP AROUND TEST

PASS 164C 0861 0864 08CF
 PEND 1FF0 080C 1FF0
 PID 07FF 1E25
 POLYN 1699 1489
 PRINT 121B 0897 08D4 0941 0EB2 0FB3 121D
 PRNT0 121F 122A
 PRNT1 1225 121F
 PRNT2 1229 121C
 PRNT3 122B 121E
 RAD 0801 088D 092B 0951 0953 0956
 RELOV 0132 084E
 REQDV 0131 08F4
 RETRN 153E 1575
 RID 0800 0881 0889 08A2 08C8 08D8 0922 0925 0927 0930 0932 0943 1252
 RN07B 0A05 09FE
 RN07C 0A12 0A0D
 RN1A1 0CED 0CE5 0D1D 0D29
 RN1A2 0D08 0D0F
 RN1A3 0D0E 0D09
 RN1A4 0D11 0D0D 0D16
 RN1A5 0D14 0CCD
 RN1A6 0D17 0CE4
 RN1A7 0D1E 0D17
 RN1B1 0D59 0D51
 RN1B2 0D74 0D7B
 RN1B3 0D7A 0D75
 RN1B4 0D7D 0D79 0D82 0D86
 RN1B5 0D80 0D35
 RN1B6 0D83 0D39
 RN12B 088B 086B 0874 0875
 RN12C 0B98 0B9E
 RN12D 0B9B 0B67
 RN13A 0BBF 0BAE
 RN13B 0BC2 0BB0
 RN13C 0BC5 0BBA
 RN13D 0BC8 0BB5 0BBE 0BC1 0BC4
 RN13E 0BDD 0BC8
 RN13F 0BDF 0BC9
 RN13G 0BEC 0BF2
 RN13H 0BEF 0BA7
 RN14A 0C11 0BF6
 RN19A 0CBD 0CA4
 RN2AA 1183 1187 1193
 RN2AB 1189 118B
 RN2AC 119C 11A0 11AD
 RN2AD 11A2 11A4
 RN2BA 11B7 118B 11C7
 RN2BB 11BD 11BF
 RN2BC 11D1 1105 11E2
 RN2BD 11D7 11D9
 RSTAT 1634 13DB 13EA 13EE 13FO
 RTNOA 0A4F 15EF
 RTNOB 0A5D 15F0
 RTNOC 0A78 15F1
 RTNOD 0A93 15F2
 RTNOE 0AA9 15F3
 RTNOF 0ABF 15F4
 RTN01 0958 15E6
 RTN02 0971 15E7
 RTN03 098A 15E8
 RTN04 09A2 15E9
 RTN05 09BA 15EA
 RTN06 09D8 15EB
 RTN07 09FB 09FF 15EC
 RTN08 0A20 15ED
 RTN09 0A36 15EE
 RTN1A 0CC2 15FF
 RTN1B 0D2A 1600

RTN1C 0D87 1601
 RTN1D 0DC3 1602
 RTN1E 0DF0 1603
 RTN1F 0EB6 1604
 RTN10 0AD9 15F5
 RTN11 0B13 15F6
 RTN12 0B5F 15F7
 RTN13 0B9F 15F8
 RTN14 0BF3 15F9
 RTN15 0C16 15FA
 RTN16 0C57 15FB
 RTN17 0C74 15FC
 RTN18 0C90 15FD
 RTN19 0CA1 15FE
 RTN2A 117E 160F
 RTN2B 11B2 1610
 RTN2C 11E7 1611
 RTN20 0FB7 1605
 RTN21 0FD0 1606
 RTN22 0FF2 1607
 RTN23 1015 1608
 RTN24 1033 1609
 RTN25 1059 160A
 RTN26 10B0 160B
 RTN27 10EA 160C
 RTN28 110F 160D
 RTN29 1143 160E
 RTTBL 15E6 088B 0929 1612 1613
 RTTB1 160F 1612
 RTURN 1508 14FF
 RT1C1 0D97 0DA6
 RT1C2 0DA3 0D96
 RT1C3 0DA7 0D9F
 RT1C4 0DAC 0DA2
 RT1D1 0DEB 0DC6 0DEA
 RT1EA 0DFC 0DF4
 RT1EB 0E02 0E05
 RT1ED 0E24 0E1D
 RT1EE 0E27 0E23
 RT1EF 0E2B 0E0F 0E15
 RT1EG 0E32 0E0C
 RT1EH 0E56 0E50
 RT1EI 0E3F 0E57
 RT1EJ 0E49 0E47
 RT1EK 0E59 0E44
 RT1EL 0E63 0E74
 RT1EM 0E66 0E64
 RT1EN 0E6D 0E55
 RT1EO 0E71 0E6F
 RT1EP 0E75 0E48 0E65
 RT1EQ 0E83 0E58 0E70
 RT1ER 0E90 0E82
 RT1ES 0E9B 0E12 0E92 0E96
 RT1ET 0EAB 0E9E
 RT1FA 0EBC 0EC8
 RT1FB 0EC2 0EBA
 RT1FC 0EC9 0EC3
 RT1FD 0ECF 0ED2
 RT1FE 0EF4 0EE9
 RT1FF 0EFC 0EF3
 RT1FG 0F00 0EDA 0EE0
 RT1FH 0F07 0ED7
 RT1FI 0F13 0F4F
 RT1FJ 0F27 0F14
 RT1FK 0F46 0F2E
 RT1FL 0F50 0F18 0F2B
 RT1FM 0F55 0F34 0F4A
 RT1FN 0F60 0F6F

JCA WRAP AROUND TEST

RT1FO 0F63 0F61
RT1FP 0F69 0F54
RT1FQ 0F6D 0F6B
RT1FR 0F70 0F62
RT1FS 0F7A 0F6C
RT1FT 0F7D 0F20 0F26
RT1FU 0F84 0F3D 0F45 0F79
RT1FV 0F93 0F83
RT1FW 0F9C 0EDD 0F93 0F97
RT1FX 0FAC 0F9F
RT1OA 0AFF 0AF2
RT1OB 0B03 0AE6
RT1IB 0B2B 0B22
RT1IC 0B2E 0B26
RT1ID 0B31 0B1F 0B2A 0B2D
RT1IE 0B4B 0B3E
RT1IF 0B4D 0B31
RT1IG 0B4F 0B32
RT15A 0C27 0C1F
RT15B 0C2E 0C36
RT15C 0C3D 0C37
RT15D 0C45 0C29
RT24A 1054 1036
RT25A 1077 106A
RT25B 107A 1076
RT25C 1091 1095
RT25D 1099 10AF
RT25E 109D 1092
RT25F 10AD 1066
RT25G 10A6 109D
SCAN 1428 141D 1424 1456
SCAN1 142B 1432
SCAN2 1434 1437
SCAN4 1443 143C
SCAN6 1453 142F 1442 144B 1450
SENSE 148D 095F 0977 0990 09A7 09C3 09E0 09EE 0A07 0A63 0A7E 0AFA 0B46 0B82
0B06 0BFC 0C3E 0C5F 0CD9 0D48 0D8D 0DCC 0FC0 0FFB 101E 103F 10CC
10F5 1125 115B 11FD 14CA 15C2
SETRC 1624 09EA 11A8 11DD 13F2
SNSBC 1620 1185 1189 1191 119E 11A2 11B9 11BD 11C5 11D3 11D7 135C 135F 136C
137F 1383 1386 1396 1399 13A7 13AA 13BA 13BD 13E1 13E5 1400 1402
140A 140C 14C2 15DC
SNSDG 1622 14BE 15D8
SNSOP 1614 14C6
SNSRC 136A 1372
SNSRS 1616 15E0
SOH 169B
SRCTB 1C93 0A70 0A8B 0A9C 0AB2 0B07 0B53 0B8F 0BE3 0C01 0C64 0CEF 0D1A 0D1F
0D5B 0DAE 0DD7 0E39 0E99 0F0B 0F9A 1124 11FC 1354
SRC01 137D 136F
SRC02 1383 138B 13A4
SRC03 1396 1393 139E
SRC04 13A7 1381 13AF 13C8
SRC05 13BA 13B7 13C2
START 012D 08EB 1223 122C 1234
STBCC 14A7 14BC
STRT 0854 083D 0859 089A 089C 08A5
STRT1 0873 0843
STRT2 087E 0888
STRT3 0889 0885
STX 169C 0E07 106E
SW0 0802 0824 093A 1248 1267 1569 1570
SW1 0803 087C 087E 089E 08C4 089C 0BF0 0C12 0CBE 0D84 0DEC 0EC6 1055 124D
1254
SW2 0804 0868 0890 08DB 125B
SW3 0805 0876 08AA 0C23 0D14 0D80 0DF8 0EBE 10AD 125E 1265
SYN 16A3 091F 0C32 0C7A 0DA4 0E52 0E59 0F40 147A
T 1676 0873 0878 0879 087A 087B 087D 0880 0892 089B 08A7 08AE 08B0 08B3

JCA WRAP AROUND TEST

08B5 0887 08C3 08CA 08ED 08FD 090E 0913 091F 0924 092D 092E 0934
0945 0946 094B 094C 094D 0955 095E 0979 098F 09A9 09C0 09C5 09EA
09F0 09FB 09FD 0A01 0A02 0A09 0A0A 0A0B 0A0C 0A16 0A17 0A18 0A1D
0A21 0A2B 0A44 0A57 0A65 0A80 0A99 0AAF 0ACE 0ADB 0ADC 0AE2 0AE4
0AE7 0AE9 0AF0 0AFC 0B0D 0B10 0B15 0B16 0B33 0B35 0B3C 0B48 0B59
0B5C 0B61 0B62 0B70 0B72 0B76 0B78 0B84 0B95 0B98 0BA1 0BA2 0BCA
0BCC 0BDB 0BE9 0BEC 0BFE 0C16 0C18 0C19 0C1A 0C1D 0C1E 0C22 0C27
0C28 0C32 0C40 0C4C 0C4F 0C53 0C54 0C61 0C85 0C9B 0CB7 0CC2 0CC5
0CD1 0CD2 0CD3 0CDB 0D11 0D19 0D1C 0D21 0D22 0D27 0D28 0D2A 0D2D
0D3C 0D3D 0D3E 0D4A 0D7D 0D8F 0DA4 0DA8 0DCE 0DF0 0DF2 0DF3 0DF7
0E07 0E0B 0E0D 0E0E 0E10 0E11 0E14 0E16 0E1B 0E2E 0E35 0E36 0E38
0E90 0E95 0E9F 0EA0 0EA4 0EAB 0EAC 0EAD 0EAF 0EB6 0EB8 0EB9 0EBD
0EC2 0ED3 0ED6 0ED8 0ED9 0EDB 0EDC 0EDF 0EE1 0EE2 0EE7 0EF1 0EFA
0F03 0F08 0F0A 0F17 0F1F 0F22 0F25 0F29 0F33 0F3B 0F40 0F42 0F43
0F48 0F51 0F52 0F56 0F57 0F63 0F6D 0F70 0F7A 0F7D 0F7F 0F81 0F84
0F87 0F8B 0F96 0FA0 0FA1 0FA5 0FAC 0FAD 0FAE 0F80 0FC2 0FDB 0FE7
OFFD 1020 1041 1059 105B 105C 105F 106C 106E 1077 107A 1085 109A
10AA 10B0 10B6 10B7 10BC 10C1 10C3 10CE 10E4 10E7 10F7 1127 115D
1162 1181 1182 1195 1197 11AF 11B5 11B6 11C9 11CB 11CC 11E4 11FF
1225 1236 1245 1258 125D 1262 1263 1264 126D 1270 1271 1272 1275
1276 1277 127A 127B 1292 129A 12A0 12AB 12AE 12B3 12B4 12B9 12CC
12D1 12D2 12E0 12E2 12E3 12EE 12F0 12F6 12FD 12FE 12FF 130A 1319
131D 1323 132C 1330 133F 1342 1345 134A 134B 1356 1358 135C 135F
1364 1365 1366 1373 137A 137D 1383 1386 138E 1396 1399 13A7 13AA
13B2 13BA 13BD 13DA 13DB 13F9 1400 1401 1402 1403 140A 140B 140C
140D 1417 141B 141E 1420 1425 1429 142B 142E 1433 143B 1444 144A
144D 144F 1454 1465 1466 146B 146C 1471 1472 1473 1479 147A 1481
1482 148D 148F 149E 14A0 14A4 14A6 14A7 14A8 14AE 14B0 14B1 14D1
14D2 14D3 14D4 14D7 14D8 14D9 14DB 14DC 14DE 14E1 14E3 14E6 14E8
14EB 14EC 14EF 14F2 14F8 14FA 14FC 14FD 14FE 1510 1522 1526 1527
1531 1536 1537 153A 1546 154B 154C 154D 154E 154F 1552 1553 1554
1556 1560 1578 1579 158C 158D 15A5 15A8 15A9 15AA 15AC 15AD 15AE
15AF 15B0 15C9 15CB 15CD
TBLC 16DB 10B3 10BA 10BD 10BF 10C3 10CB 10DA
TBLD 16DE 1113 1137 11EB 120F
TBLE 175A 1149
TBLF 175E 115A
TBL1 16A4 0A71 0A8C 0A9D 0AB3 0BFB 0FFA
TBL10 1761 1172
TBL11 177E 1060 1070 1074 1078 107B 1084 1089 108B
TBL2 16A7 095C 0975 09BE 0A61 0A7C 0A97 0AAD 0AC3 0C78 0C94 0FD4 0FD6 1009
10F4
TBL3 16AB 0B08 0B54 0B90 0BE4
TBL4 16AE 0AEA 0AF8 0B36 0B44 0B79 0B80 0BCD 0BD4 0C2E 0C96 0CAC 0E00 0E66
0E71 0ECD 0F29 0F48 0F63 0F6D 102C 106C 1077
TBL5 16B1 0D8B 0D92 0D9B
TBL6 16B6 0D97 0DA0 0DAA 0DAF
TBL7 16C0 0C5B 0C5D 0C65
TBL8 16C9 0CC7 0CCF 0CD7 0C0C 0CE9 0CEB 0CF0 0D02 0D1C 0D22 0D25 0D28
TBL9 16D1 101D
TEMP1 1631 0820 082E 0E36 0E7C 0E83 0F08 0F7F 0F87 1401 1403 140B 140D 141B
141E 1420 1425 1479 1481
TEMP2 1632 0829 082C 0F0D 0F15 0F1A 0F1D 0F27 0F2F 0F31 0F36 0F39 0F46 0F4C
1429 142B 1433 1444 144D
TEMP3 1633 1439 143B
TERM 080B 0851 0857 085B 085D 08F9
TIME 0836 0871
TIMER 161E 0A21
TIME2 1676 086F
TIME3 1677
TIME4 1678
TMODE 162D 12EE 131D 146C 147E 1494
TSTBT 1484 148C
TTBL1 1784 0917 091B 0BFA
TTBL2 1788 0C02
TTBL3 178E 103E
TTBL4 1794 104D
TTBL5 1797 0CA8 0CAA

TTBL6 179C 0D2F 0D3A 0D3F 0D41 0D46 0D48 0D55 0D57 0D5C 0D6E
TTBL7 17A4 0DCA 0DD1
TTBL8 17B2 0DD3 0DD8
VTBL 17C9 0920 0E02 0E09 0E1F 0E24 0E27 0E2C 0E31 0E3B 0E9A 0ECF 0ED4 0EEB
 0EEE 0EF5 0EF7 0EFC 0F01 0F06 0F0F 0F9B
WSW 163C 12F0 12FD 12FF 1330 1510 151C 152A 153A
WTCA 0899
XEQ 083C 0806 0840
XMRCA 12E9 1286
XMRCF 12FC 12FA 1321 1327 1329 132F
XMRCG 1307 1300 1306
XMRCI 1318 1313
XMR CJ 131D 1310
XMRCL 1330 12FB 1316 131C
XMRCT 1803 090F 094E 0C1B 0C30 0C33 0CAE 0C80 0CB2 1008 102B 104C 1088 10D9
 10EF 1102 1103 1171 127D 1283 12A6 161A 1775 1A0A 1AF2
XMR CV 1274 0959 0972 098B 09A3 09BB 09D9 0A03 0A37 0A50 0A5E 0A79 0A94 0AAA
 0ACO 0AF5 0B41 0B7D 0BD1 0BF7 0C39 0C58 0C75 0C91 0CA5 0CD4 0D43
 0D88 0DC7 0E29 0EFE 0F88 0FD1 0FF3 1016 1037 107D 10C4 10EB 1110
 1146 1198 11CD 11E8 1287 1289 129C 12AF 12B1 12D4 12D8 12DA 12E5
 134F 1351 1368 1394 13A5 1388 13C9
XMR C1 127F 1282
XMR C2 1285 1299 129E 12D6 134D
XMR C3 12AA 128D
XMR C4 12B9 12CA
XMR C5 12C0 128A
XMR C6 12C5 12BF
XMR J1 1328 131E
XMR L1 133C 1331 133B
XRT B2 1642 0FDC 1130 115E 1208 1285 12A4 12CF 12D1 12E2 1348 134A
X1 08F7 08E6
END OF ASSEMBLY

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1. PURPOSE

THIS PROGRAM CHECKS THE 1442 CARD READ/PUNCH FOR CORRECT OPERATION.

2. PREREQUISITES

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR PROGRAM USES 2,047 STORAGE WORDS, AND THIS PROGRAM USES 1,024 STORAGE WORDS.

3. USE PROCEDURE

3.1 PROGRAM LOADING

STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.

3.2 PROGRAM OPERATION

STANDARD MONITOR OPERATING PROCEDURES APPLY.

THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR DETAILS.

1. CLEAR STORAGE
2. LOAD DIAGNOSTIC MONITOR
3. SELECT MODE OF EXECUTION
4. SELECT MONITOR CONTROL OPTIONS
5. SELECT PROGRAM OPTIONS FROM,

TABLE 0 PROGRAM CONTROL FUNCTION
 TABLE 1 ROUTINE SELECT FUNCTION
 TABLE 2 DEVICE SELECTION

6. INSTRUCT MONITOR TO EXECUTE

TABLE 0 CONTROL FUNCTION

```

*****
* SENSE/PROGRAM * 1. SET FUNCTION 00 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* 0 1 2 3 4 5 6 7 * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 0 0 0 1 1 1 1 * 3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15.
* 0 0 0 0 1 1 1 1 * 4. PRESS CONSOLE INTERRUPT.
*****
* DATA ENTRY SWITCHES * DESCRIPTION *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* . . . . . 1..... BYPASS LOG PRINTOUT *
* . . . . . 1..... TYPE ALL ERRORS FOR EACH CARD READ *
* . . . . . 1..... START PROGRAM (SEE NOTES BELOW) *
* 1..... USE DELAY BETWEEN I/O COMMANDS *
*****

```

NOTES

DATA ENTRY SWITCH 8 MUST BE SET ON WITH OTHER DESIRED OPTIONS IN FUNCTION 00. BIT 8 BEING SET ON IS AN INDICATION THAT THE PUNCH HAS BEEN CLEARED OF OTHER DIAGNOSTICS THAT MIGHT FOLLOW THE 1442 DIAGNOSTIC. SWITCH 8 NEED BE SET ONLY DURING INITIAL EXECUTION. PLACE SOME BLANKS IN HOPPER AND MAKE RDY.

IF A ROUTINE IS NOT SELECTED, ROUTINES 1 THRU 7 WILL EXECUTE SEQUENTIALLY AND THE PROGRAM WILL BE TERMINATED AFTER ROUTINE 7 IS COMPLETED.

IF A PARTICULAR ROUTINE HAS BEEN SELECTED FOR OPERATION, THE PROGRAM WILL CHECK STORAGE PROTECT FEATURE IN ROUTINE 1. AFTER THAT IT WILL IMMEDIATELY BRANCH TO THE SELECTED ROUTINE AFTER STARTING. AFTER THE SELECTED ROUTINE IS FINISHED, THE PROGRAM WILL LOOP UNTIL ANOTHER ROUTINE HAS BEEN SELECTED AND WILL EXECUTE THE SELECTED ROUTINE.

WHEN LAST CARD SEQUENCE IS INDICATED THE PROGRAM WILL FINISH THAT ROUTINE. IT WILL THEN GO TO THE NEXT ROUTINE. IT IS NOT NECESSARY TO PRESS NPRO.

VARIOUS PRINTOUTS WILL OCCUR WHILE THE PROGRAM IS OPERATING. REFER TO PARAGRAPH 4, PRINTOUTS, FOR DETAILED INFORMATION.

TABLE 1 ROUTINE SELECT FUNCTION

```
***** 1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SET IN DESIRED ROUTINE IN DATA ENTRY SWITCHES 12-15.
* * 4. PRESS CONSOLE INTERRUPT.
* 0 1 0 0 1 1 1 1 *
* *
*****
* DATA ENTRY SWITCHES * DESCRIPTION *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* 0 0 0.. RUN ALL ROUTINES SEQUENTIALLY *
* 0 0 1.. ROUTINE 1- CHECK STATUS *
* 0 1 0.. ROUTINE 2-FEED AND PUNCH CARDS *
* 0 1 1.. ROUTINE 3-READ 8-8 AND CHECK (PACKED)*
* 1 0 0.. ROUTINE 4-READ 12 BITS PER COLUMN *
* 1 0 1.. ROUTINE 5-PUNCH 40 COLUMNS *
* 1 1 0.. ROUTINE 6-READ 40 COLUMNS AND PUNCH *
* 1 1 1.. ROUTINE 7-PUNCH SUPPLIED DATA *
*****
```

TABLE 2 DEVICE SELECTION

```
***** 1. SET FUNCTION 10 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SET MODE OF OPERATION IN DATA ENTRY SWITCHES 6-15.
* * 4. PRESS CONSOLE INTERRUPT.
* 1 0 0 0 1 1 1 1 *
* *
*****
* DATA ENTRY SWITCHES * DESCRIPTION *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* 1..... SELECT SECOND DEVICE *
*****
```

3.3 PROGRAM TERMINATION

THE PROGRAM WILL TERMINATE AUTOMATICALLY AFTER ROUTINE 7 IS COMPLETED OR IT MAY BE TERMINATED BY DESELECTING IT.

4. PRINTOUTS

THIS PROGRAM FOLLOWS THE PRINTOUT FORMAT ESTABLISHED BY THE 1800 DIAGNOSTIC MONITOR. REFER TO SECTION 4. PRINTOUTS, OF THE DIAGNOSTIC MONITOR DOCUMENTATION.

4.1 STATUS MESSAGES

PID MID RID RAD MOD1

0F00 A001 000R XXXX DEAD

THIS PRINTOUT INDICATES THAT THE LAST CARD INDICATOR WAS ON WHEN THE 1442'S DSW WAS SENSED. THE PROGRAM WILL FINISH THAT ROUTINE AND GO TO THE NEXT ROUTINE OR LOOP IF THAT ONE HAS BEEN SELECTED.

4.2 COMMAND MESSAGES

PID MID RID RAD MOD1

0F00 C001 0001 XXXX A0A0

THIS PRINTOUT INSTRUCTS THE OPERATOR TO SET DATA ENTRY SWITCH 8 ON AND ANY OTHER DESIRED OPTIONS TO BE SELECTED AT THIS TIME UNDER FUNCTION 00 AFTER HE HAS VERIFIED THAT THE PUNCH IS CLEAR. THIS IS A SAFETY CHECK TO PREVENT THE ACCIDENTAL PUNCHING OF PROGRAMS THAT MAY FOLLOW THE 1442 FUNCTION TEST. AFTER THE 1442 IS CLEAR OF DIAGNOSTICS PLACE SOME BLANKS IN THE HOPPER AND MAKE READY.

0F00 C002 000R XXXX FEED

WHEN THIS PRINTOUT OCCURS PROCEED AS FOLLOWS. PLACE BLANK CARDS IN THE HOPPER AND MAKE READY.

0F00 C003 000R XXXX AIDE

THIS PRINTOUT INDICATES THE 1442 IS NOT READY.

0F00 C004 0007 XXXX ABCD

THIS PRINTOUT REQUESTS OPERATOR TO PLACE IN 1442 HOPPER A CARD PUNCHED WITH WHATEVER PATTERN THE OPERATOR DESIRES, FOLLOWED BY A DECK OF BLANK CARDS, AND TO MAKE THE 1442 READY.

0F00 C005 000R XXXX FED2

THIS PRINTOUT INDICATES THAT THE PUNCHED CARDS ARE TO BE TAKEN OUT OF STACKER AND PLACED IN THE HOPPER. THEN MAKE THE 1442 READY. IGNORE ANY BLANK CARDS IN THE STACKER.

4.3 ERROR MESSAGES

PID MID RID RAD MOD1 MOD2 MOD3 MOD4 MOD5 MOD6 MOD7

0F00 E001 000R XXXX 1CED

THIS ERROR PRINTOUT INDICATES THAT NO INTERRUPT WAS RECEIVED AFTER A READ, FEED, OR PUNCH COMMAND WAS INITIATED. THE PROGRAM WILL CONTINUE TO OPERATE AFTER THE PRINTOUT OCCURS.

0F00 E002 000R XXXX AD00

THIS ERROR PRINTOUT INDICATES THE 1442 WAS BUSY WHEN ITS DSW WAS SENSED.

0F00 E003 000R XXXX B1EE ZZZZ 0000

THIS ERROR PRINTOUT INDICATES A DSW ERROR OCCURRED. B1EE STANDS FOR 'BITS IN ERROR', ZZZZ IS THE ERROR DSW, AND LAST WORD IS THE EXPECTED DSW.

0F00 E004 000R XXXX CDEE ZZZZ YYYY CCXX

THIS ERROR PRINTOUT INDICATES AN ERROR WHEN COMPARING DATA READ WITH DATA PREVIOUSLY PUNCHED. CDEE STANDS FOR CARD IN ERROR. ZZZZ REPRESENTS THE DATA READ. YYYY REPRESENTS THE CORRECT DATA. CCXX REPRESENTS THE CARD COLUMN WHERE THE ERROR OCCURRED. IN THE CASE OF ROUTINE 3, THE ERROR MAY BE IN THE COLUMN BEFORE, BECAUSE OF READING IN PACKED MODE.

0F00 E005 000R XXXX A1EE

THIS PRINTOUT INDICATES A PARITY ERROR IN THE BIT CONFIGURATION ON THE BUS.

0F00 E006 0001 XXXX CODE

THIS PRINTOUT INDICATES THAT THE STORAGE PROTECT BIT IN THE DSW FAILED AFTER A READ OPERATION.

0F00 E007 000R XXXX BADO

THIS PRINTOUT WILL INDICATE THAT THE DEVICE WAS RELEASED WHEN IT HAD BEEN PREVIOUSLY RELEASED. THE PROGRAM WILL CONTINUE TO RUN.

0F00 E008 000R XXXX FDCC

THIS PRINTOUT INDICATES A FEED CHECK AT THE READ STATION. NPRO AND RELOAD CARDS TO SEE IF IT IS FALSE OR VALID.

5. COMMENTS

NORMAL PROGRAM OPERATION-

IF A ROUTINE IS NOT SELECTED IN TABLE 1, ROUTINES 1-7 WILL EXECUTE SEQUENTIALLY. AT THE END OF EACH ROUTINE, THE CUSTOMER ENGINEER HAS AN OPTION TO EITHER CONTINUE TO RUN IN THAT ROUTINE OR PROCEED TO THE NEXT ROUTINE. AT THE END OF EACH ROUTINE, THE PROGRAM WILL PRINT OUT A MESSAGE (1442 NOT READY). IF THE HOPPER IS LEFT EMPTY AND THE 1442 START KEY IS PRESSED, THE PROGRAM WILL PROCEED TO THE NEXT ROUTINE. IF CARDS ARE PLACED IN THE HOPPER AND THE 1442 START KEY IS PRESSED, THE PROGRAM WILL CONTINUE TO RUN IN THAT SAME ROUTINE.

IF A DELAY BETWEEN I/O COMMANDS IS DESIRED SET BIT 0 ON OF CONTROL FUNCTION AND THIS WILL ALLOW THE CLUTCH TO LATCH UP. WITH THE CARD STARTING AND STOPPING IT WILL SHOW UP PROBLEMS OF WEAK OR WORN BELTS, LOOSE SET SCREWS, AND OTHER LINKAGE ASSOCIATED WITH THE CARD TRANSPORT.

5.1 ROUTINE 1

ROUTINE 1 CHECKS DIFFERENT FEATURES THAT ARE NOT CHECKED ELSEWHERE IN THE PROGRAM. AT THE BEGINNING, BIT 8 OF FUNCTION 00 MUST BE SET TO INDICATE THE PUNCH IS CLEAR OF OTHER DIAGNOSTICS AND READY TO BEGIN THE TEST. A STORAGE PROTECT BIT IS SET AND A CARD IS READ TO CHECK THE STORAGE PROTECT FEATURE FOR CORRECT OPERATION. AFTER THIS IS COMPLETED THE PROGRAM WILL PROCEED.

5.2 ROUTINE 2

ROUTINE 2 CHECKS FEEDING, PUNCHING, AND STACKING. THE CARDS ARE PUNCHED FROM A PATTERN STORED IN CORE STORAGE. ONLY THE CARDS PUNCHED ARE PLACED IN STACKER NO. 2.

5.3 ROUTINE 3

ROUTINE 3 READS, IN PACKED MODE (8-8), THE CARDS THAT WERE PUNCHED BY ROUTINE 2. TWO CARD COLUMNS ARE STORED IN ONE STORAGE LOCATION. THE ODD NUMBERED COLUMN (DIGITS 12 THROUGH 5) IS PLACED IN BIT POSITIONS 8 THROUGH 15 OF A STORAGE LOCATION, AND THE EVEN NUMBERED COLUMN (DIGITS 12 THROUGH 5) IS PLACED IN BIT POSITIONS 0 THROUGH 7. ALL DATA ARE CHECKED AGAINST THE DATA FROM WHICH THEY WERE PUNCHED. IF AN ERROR IS FOUND, A PRINTOUT OCCURS AND THE CARD IS SELECTED INTO STACKER NO.2. THE ERROR PRINTOUT CONTAINS THE PID, MESSAGE ID NUMBER, ROUTINE ID NUMBER, ROUTINE ADDRESS, BITS IN ERROR, THE CORRECT BITS, AND THE CARD COLUMN IN WHICH THE ERROR OCCURRED. IN THE CASE OF 8-8 FORMAT THE COLUMN PRINTOUT IS EVEN, WHICH WOULD INDICATE THAT THE ODD COLUMN BEFORE IT OR THAT EVEN COLUMN WAS IN ERROR.

5.4 ROUTINE 4

ROUTINE 4 READS IN STANDARD MODE (I E., ONE COLUMN PER WORD). DIGITS 12 THROUGH 9 OF THE CARD ARE PLACED IN BITS 0 THROUGH 11. BITS 12 THROUGH 15 ARE LEFT BLANK. THE DATA READ ARE CHECKED AGAINST THE DATA FROM WHICH THEY WERE PUNCHED. (AS IN ROUTINE 3).

5.5 ROUTINE 5

ROUTINE 5 PUNCHES THE FIRST 40 COLUMNS OF A CARD. THE CARDS PUNCHED BY ROUTINE 5 ARE USED BY ROUTINE 6 FOR A READ AND PUNCH TEST.

5.6 ROUTINE 6

ROUTINE 6 READS THE CARDS THAT WERE PUNCHED BY ROUTINE 5 AND CHECKS THE DATA READ AGAINST WHAT SHOULD HAVE BEEN PUNCHED. IF AN ERROR IS DETECTED, THE ERROR CARD WILL BE SELECTED IN STACKER 2 AND AN E004 PRINTOUT WILL OCCUR. AFTER THE DATA IS CHECKED, THE FIELD IS REVERSED (I.E., COLUMN 1 IS PLACED IN COLUMN 80, COLUMN 2 IS PLACED IN COLUMN 79, ETC). AFTER THE FIELD-REVERSING OPERATION AND AFTER THE READ AREA HAS BEEN CLEARED, A PUNCH COMMAND IS INITIATED THAT CAUSES THE LAST 40 COLUMNS TO BE PUNCHED. THIS ROUTINE DOES NOT AUTOMATICALLY CHECK THE PUNCHING OPERATION. HOWEVER, BY FOLDING EACH CARD PUNCHED BY THIS ROUTINE IN HALF (FOLDED BETWEEN COLUMNS 40 AND 41), THE PUNCHES MAY BE ALIGNED. EXCEPT FOR THE LAST CARD, EACH CARD SHOULD BE PUNCHED THE SAME.

5.7 ROUTINE 7

ROUTINE 7 READS A CARD THAT HAS BEEN PUNCHED WITH SOME PATTERN THAT HAS FAILED OR CAUSED PUNCH CHECKS. THIS DATA IS THEN PUNCHED INTO BLANK CARDS THAT FOLLOW. IF THIS ROUTINE IS LOOPED, A NEW PATTERN MAY BE USED AFTER THE LAST CARD INDICATOR HAS COME ON. THE PUNCHING IS NOT CHECKED BY THE PROGRAM, BUT MAY BE CHECKED VISUALLY BY THE OPERATOR.

6 APPENDIX

6.1 EDIT PROCEDURE

THE FOLLOWING EDIT PROCEDURE IS FOR CARD INPUT. THE EDIT PROCEDURE FOR PAPER TAPE INPUT IS LOCATED IN THE PAPER TAPE EDIT UTILITY PROGRAM DOCUMENTATION. THE PROPER EDIT CARDS MUST BE THE LAST CARDS IN THIS PROGRAM DECK. THE FOLLOWING FORMS ARE PROVIDED TO AID IN MANUALLY PREPARING THESE EDIT CARDS OR UPDATING EXISTING EDIT CARDS. IF IT IS NECESSARY TO PREPARE OR MODIFY EDIT CARDS, FILL IN THE NECESSARY DATA IN THE FORMS PRIOR TO PUNCHING THE CARDS. CARD COLUMNS THAT ARE SHADED SHOULD BE LEFT BLANK.

- DDEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:
1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
 2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (UES HEX NOTATION, 0-F).
 3. THE CHANNEL ASSIGNED TO THIS DEVICE (0-8). IF THIS IS A DPC DEVICE, PUNCH AN "F" IN THE CARD COLUMN.
- THE LAST EDIT CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES:
1. AN "E" IN COLUMN 1.
 2. THE PID FOR THIS PROGRAM (COL. 2-3).
 3. A TERMINATOR WORD OF "FFFF" (COL. 7-10).

COLUMN	PROGRAM I.D.					CARD SEQUENCE NUMBER					NUMBER OF EDIT ENTRIES ENTER EITHER A "1" OR A "2"					1442-1 DDEF ENTRY 1			1442-2 DDEF ENTRY 2																																																												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
CARD 0	E	0	F	0	0	/	E	D	0	0	/	0	0	0	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/																			
END	E	0	F	0	0	/	F	F	F	F	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/																			
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CARD 0 CONTAINS THE DDEF'S FOR THE 1442'S. IF THIS SYSTEM HAS ONLY ONE 1442, THEN ONLY ONE DDEF ENTRY IS REQUIRED IN THIS CARD.
CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.



```

0000      ORG      *E2047
012C      BEGIN EQU 300
012D      START EQU BEGIN&1
012E      END EQU  START&1
012F      LOG EQU  END&1
0130      ERROR EQU LOG&1
0131      REQDV EQU ERROR&1
0132      RELDV EQU REQDV&1
0133      CRCK EQU  RELDV&1
*
*****
*
***** PST      PROGRAM STATUS TABLE *****
*
07FF 0 0F00      PID DC /0F00      PID
0800 0 0000      RID DC /0000      ROUTINE NUMBER
0801 0 0000      RAD DC /0000      ROUTINE ADDR
0802 0 0000      SW0 DC /0000      BIT SW FUNC 0
0803 0 0000      SW1 DC /0000      1
0804 0 0000      SW2 DC /0000      2
0805 0 0000      SW3 DC /0000      3
0806 1 0829      ILP DC RTO      INITIALIZATION ADDR
0807 1 0829      LPA DC RTO      LOOP PROGRAM ADDR
0808 1 09D1      EPA DC RTEND     END PROG ADDR
0809 0 0000      MLSCF DC /0000     1ST MLSCF NORMAL
080A 0 0000      DC /0000     2ND MLSCF BUSY
080B 0 0000      DC /0000     3RD MLSCF TEST INTR
080C 0 FFFF      TERM DC /FFFF     TERMINATOR
080D 1 0C6A      DC PEND
080E 0 0000      DC /000
080F 0 0000      DC /000
0810 0 0000      DC /000
0811 0 0000      DC /0000     ON-LINE SWITCH
0812 0 0000      DC /0000     COMPATIBILITY SWITCH
*
0813 0 0000      EDIT1 DC /0000     RDR-PCH 1 DDEF
0814 0 0000      EDIT2 DC /0000     RDR-PCH 2 DDEF
*
0815 0 0000      EDIT DC /0000     INTR AND CHAN USED
*
***** IDENTIFY INTERRUPT ROUTINE*****
*
0816 0 0000      DC /0000     INTERRUPT SWITCH
0817 0 0000      RPDVA DC /0000     AREA CODE AND MOD
*
0818 0 0000      DSW4A DC /0000     ADDR OF RETURN
0819 1 0C00 0B38 XIO L SENSE SENSE DSW SE
0818 0 1000      KEEP3 NOP USE FOR TRAP
081C 1 F400 09D8 EOR L CNTL CK FOR OP COMPLETE
081E 1 D400 0860 STO L WAS SAVE DSW BITS
0820 1 6700 0A9F LDX L3 IRECD
0822 1 6F00 0809 STX L3 MLSCF SET MLSCF ENTRY SX
0824 1 4C80 0818 BSC I DSW4A
*
***** STARTER ROUTINE *****
*
0826 0 4480 012C GO BSI I BEGIN CALL MONITOR
0828 1 07FF      DC PID ADDR OF PST
*
***** RTO INITIALIZATION *****
*

```

```

80F00000
80F00010
80F00020
80F00030
80F00040
80F00050
80F00060
80F00070
80F00080
80F00090
80F00100
80F00110
80F00120
80F00130
80F00140
80F00150
80F00160
80F00170
80F00180
80F00190
80F00200
80F00210
80F00220
80F00230
80F00240
80F00250
80F00260
80F00270
80F00280
80F00290
80F00300
80F00310
80F00320
80F00330
80F00340
80F00350
80F00360
80F00370
80F00380
80F00390
80F00400
80F00410
80F00420
80F00430
80F00440
80F00450
80F00460
80F00470
80F00480
80F00490
80F00500
80F00510
80F00520
80F00530
80F00540
80F00550
80F00560
80F00570
80F00580
80F00590
80F00600
80F00610
80F00620
80F00630
80F00640
80F00650
80F00660
80F00670

```

```

0829 0 0000
082A 0 C0D9
082B 0 180E
082C 1 4C04 0830
082E 0 C0E4
082F 0 7001
0830 0 C0E3
0831 0 D0E3
0832 0 4480 0131
0834 1 0848
0835 1 0815
0836 1 0817
0837 1 080C
0838 0 620D
0839 1 C600 0B2E
083B 0 E8DB
083C 1 D600 0B2E
083E 0 72FE
083F 0 70F9
0840 1 4400 0A3E
0842 1 CC00 0B1E
0844 1 4400 0A86
0846 1 4C80 0829
0848 1 6500 0832
084A 1 6D00 0809
084C 0 4C80 012D
084E 1 CC00 0B1E
0850 1 4400 0A86
0852 0 4C80 012D
0854 0 C0AD
0855 0 1008
0856 1 4C28 0867
0858 1 CC00 0B3E
085A 1 4400 0A28
085C 1 C400 0802
085E 0 1008
085F 1 4C28 0867
0861 1 6500 085C
0863 1 6D00 0809
0865 0 4C80 012D
0867 1 4400 0A13
0869 1 7400 0811
086B 0 700E
086C 1 2C41 08B6
086E 1 4400 0A4E
0870 1 0C00 0B36
0872 1 4400 0A8E
0874 1 2C40 08B6
0876 1 CC00 0B52

```

```

RTO DC /0000
*
LD SW2 DEVICE SELECTION
SRA 14
BSC L NBTWO,E BCH ON BIT 1
LD EDIT1 RDR-PCH 1 DDEF
MDX XX
*
NBTWO LD EDIT2 RDR-PCH 2 DDEF
XX STO EDIT DDEF CONTORL
*
CALL BSI I REQDV REQUEST DEVICE
*
DC BSY BUSY ADDRESS
DC EDIT ADDR INTR AND CHAN
DC RPDVA ADDR AREA CODE
DC TERM TERMINATOR
*
LDX 2 13 LOAD XR 2
BUILD LD L2 FDACD LOAD FUNCTION
OR RPDVA AREA CODE
STO L2 FDACD SET IN I/O COMMAND
MDX 2 -2 ADJ XR 2
*
BSI L RPREL RELEASE DEVICE SC
*
LDD L RID1 RT NUMBER AND ADDR
BSI L RTU USE UPDATE ROUTINE SC
BSC I RTO RETURN X
*
BSY LDX L1 CALL GET MLSCK ENTRY
STX L1 MLSCF SET MLSCF ENTRY
BSC I START RETURN TO MONITOR
*
SET1 LDD L RID1 RT NUMBER AND ADDR
BSI L RTU USE UPDATE ROUTINE SC
BSC I START RETURN TO MONITOR
*
*****
***** ROUTINE I- CHECK STATUS *****
*
RT1 LD SW0 BIT SWITCH STORAGE E
SLA 8
BSC L RT1B,&Z BCH ON MINUS
LDD L MSTAR MSG- SET BIT 8 FN 00
BSI L TYPE USE TYPE ROUTINE
*
RT1A LD L SW0 BIT SWITCH STORAGE
SLA 8
BSC L RT1B,&Z BCH ON MINUS
*
LDX L1 RT1A GET MLSCF
STX L1 MLSCF SET MLSCF
BSC I START RETURN TO MONITOR SC
*
RT1B BSI L KNOW CHECK BIT SWITCHES SC
MDX L TERM&5,0 ON-LINE SW SET
MDX RTIC * YES
STX L RAREA,/41 SET STG PROTECT
BSI L RPREQ ROUTINE REQUEST SC
XIO L READX READ TO CK STG PROT
BSI L RTL USE TIMING LOOP SC
*
STX L RAREA,/40 REMOVE STG PROTECT
LDD L MSPV MSG- STG PROT VIOL

```

```

80F00680
80F00690
80F00700
80F00710
80F00720
80F00730
80F00740
80F00750
80F00760
80F00770
80F00780
80F00790
80F00791
80F00792
80F00793
80F00794
80F00795
80F00800
80F00810
80F00820
80F00830
80F00840
80F00850
80F00860
80F00870
80F00880
80F00890
80F00900
80F00910
80F00920
80F00930
80F00931
80F00933
80F00935
80F00940
80F00950
80F00960
80F00970
80F00980
80F00990
80F01000
80F01010
80F01020
80F01030
80F01040
80F01050
80F01060
80F01070
80F01080
80F01090
80F01100
80F01110
80F01120
80F01130
80F01140
80F01150
80F01160
80F01170
80F01180
80F01186
80F01188
80F01189
80F01190
80F01200
80F01210
80F01220
80F01230
80F01240
80F01250

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FL

1442 FUNCTION TEST

```

0878 1 4400 0A28      BSI L TYPE      USE TYPE ROUTINE      SC 80F01260
087A 1 4400 0A4E      RT1C BSI L RPREQ    REQUEST DEVICE        SC 80F01270
087C 1 0C00 0B38      XIO L SENSE      SENSE DSW            SC 80F01280
087E 1 4C04 0B0B      BSC L NRDY,E     BCH ON NOT READY     SC 80F01290
0880 1 4400 0A3F      BSI L RPREL      RELEASE DEVICE        SC 80F01300
0882 1 CC00 0B22      LDD L RIDX       RT NUMBER AND ADDR   SC 80F01310
0884 1 4400 0A86      BSI L RTU        USE UPDATE ROUTINE   SC 80F01320
0886 0 4C80 012D      BSC I START      RETURN TO MONITOR    X 80F01330
*
0888 1 CC00 0B20      SET2 LDD L RID2   RT NUMBER AND ADDR   SC 80F01340
088A 1 4400 0A86      BSI L RTU        USE UPDATE ROUTINE   SC 80F01350
088C 0 4C80 012D      BSC I START      RETURN TO MONITOR    X 80F01360
*
*****
***** ROUTINE 2- FD A CARD OR PUNCH *
*****
088E 1 CC00 0B40      RT2  LDD L MFEE   MSG- LOAD BLANKS     E 80F01430
0890 1 4400 0A28      BSI L TYPE       USE TYPE ROUTINE    SC 80F01440
*
0892 1 C400 0B63      RT2A LD L WA40     REMOVE TERMINATOR    SC 80F01450
0894 1 D400 0B8D      STO L WAREA&39
*
0896 1 4400 0A4E      BSI L RPREQ      REQUEST DEVICE        SC 80F01460
0898 1 0C00 0B2E      XIO L FDACD      FEED A CARD          SC 80F01470
089A 1 4400 0A8E      BSI L RTL        USE TIMING LOOP      SC 80F01480
089C 0 7001           MDX RT2B         SC 80F01490
089D 0 7011           MDX SKIP           SC 80F01500
*
089E 1 0C00 0B3A      RT2B XIO L STACK  SELECT STACKER       SC 80F01510
08A0 1 4400 0A4E      BSI L RPREQ      ROUTINE REQUEST      SC 80F01520
08A2 1 0C00 0B30      XIO L PUNCH      PUNCH COMMAND        SC 80F01530
08A4 1 4400 0A8E      BSI L RTL        USE TIMING LOOP      SC 80F01540
08A6 0 7001           MDX RT2C         SC 80F01550
08A7 0 7007           MDX SKIP           SC 80F01560
*
08A8 1 4400 0A4E      RT2C BSI L RPREQ    REQUEST DEVICE        SC 80F01570
08AA 1 0C00 0B2E      XIO L FDACD      FEED A CARD          SC 80F01580
08AC 1 4400 0A8E      BSI L RTL        USE TIMING LOOP      SC 80F01590
08AE 0 70E3           MDX RT2A         SC 80F01600
*
08AF 1 4400 0A0A      SKIP BSI L FDLCD  FEED LAST CARD       SC 80F01610
08B1 1 4400 0A13      BSI L KNOW       CHECK BIT SWITCHES   SC 80F01620
*
08B3 1 CC00 0B24      SET3 LDD L RID3   RT NUMBER AND ADDR   SC 80F01630
08B5 1 4400 0A86      BSI L RTU        USE TIMING LOOP      SC 80F01640
08B7 0 4C80 012D      BSC I START      RETURN TO MONITOR    X 80F01650
*
*****
***** ROUTINE 3- READ 8-8 & CHECK ***
*****
08B9 1 CC00 0B46      RT3  LDD L MFED2  MSG- LOAD FROM STK 2 SC 80F01660
08BB 1 4400 0A28      BSI L TYPE       USE TYPE ROUTINE    SC 80F01670
*
08BD 1 4400 0A4E      RT3A BSI L RPREQ    ROUTINE REQUEST      SC 80F01680
08BF 1 0C00 0B36      XIO L READX      READ 8-8 PACKED     SC 80F01690
08C1 1 4400 0A8E      BSI L RTL        USE TIMING LOOP      SC 80F01700
08C3 0 700A           MDX CHEC         SC 80F01710
08C4 1 4400 0A0A      BSI L FDLCD      FEED LAST CARD       SC 80F01720
08C6 1 4400 0A13      BSI L KNOW       CHECK BIT SWITCHES   SC 80F01730
*
08C8 1 CC00 0B26      SET4 LDD L RID4   RT NUMBER AND ADDR   SC 80F01740
08CA 1 4400 0A86      BSI L RTU        USE UPDATE ROUTINE   SC 80F01750
08CC 0 4C80 012D      BSC I START      RETURN TO MONITOR    X 80F01760
*

```

1442 FUNCTION TEST

```

08CE 0 62AF          CHEC LDX 2 -81      WARFA COL CTR        80F01940
08CF 0 63D8          LDX 3 -40          RARFA COL CTR        80F01950
*
08D0 1 C600 0BB7     SPEC LD L2 WAREA&81 DATA PUNCHED        80F01960
08D2 0 1803          SRA 3              80F01970
08D3 1 4C04 08E8     BSC L DOOR1,E     CK TERM ODD WORD     80F01980
08D5 0 188D          SRT 13            SHIFT ACC INTO Q REG 80F01990
08D6 0 7201          MDX 2 1           80F02000
08D7 1 C600 0BB7     LD L2 WAREA&81    DATA PUNCHED        80F02010
08D9 0 1803          SRA 3              80F02020
08DA 1 4C04 08F2     BSC L DOOR2,E     CK TERM EVEN WORD    80F02030
08DC 0 1805          SRA 5              CLEAR BITS 8 THRU 12 80F02040
08DD 0 1088          SLT 8              POS HALVES IN ACC    80F02050
08DE 1 D400 0B61     STO L O2BE        STO IN OUGHT TO BE   80F02060
08E0 1 F700 0BDE     EOR L3 RAREA&40  DATA READ           80F02070
08E2 0 7201          MDX 2 1           ADJ COL COUNT PCH    80F02080
08E3 1 4420 09E0     BSI L ERRFD,Z     BCH UN BITS          SC 80F02090
08E5 0 7301          MDX 3 1           ADJ COL COUNT RD     80F02100
08E6 0 70E9          MDX SPEC          CK NEXT COLUMN       80F02110
08E7 0 70D5          MDX RT3A          80F02120
*
*
*
08E8 0 1805          DOOR1 SRA 5        CLEAR BITS 8 THRU 12 80F02130
08E9 1 D400 0B61     STO L O2BE        STO IN OUGHT TO BE   80F02140
08EB 1 F700 0BDE     EOR L3 RAREA&40  DATA READ           80F02150
08ED 1 4420 09E0     BSI L ERRFD,Z     BCH UN BITS          SC 80F02160
08EF 0 7301          MDX 3 1           80F02170
08F0 0 700C          MDX XXXXX         80F02180
08F1 0 70CB          MDX RT3A          80F02190
*
*
*
08F2 0 1805          DOOR2 SRA 5        CLEAR BITS 8 THRU 12 80F02200
08F3 0 1088          SLT 8              POS HALVES IN ACC    80F02210
08F4 1 D400 0B61     STO L O2BE        STO IN OUGHT TO BE   80F02220
08F6 1 F700 0BDE     EOR L3 RAREA&40  DATA READ           80F02230
08F8 1 4420 09E0     BSI L ERRFD,Z     BCH UN BITS          SC 80F02240
08FA 0 7301          MDX 3 1           80F02250
08FB 0 7001          MDX XXXXX         80F02260
08FC 0 70C0          MDX RT3A          80F02270
*
*
*
08FD 0 1011          XXXXX SLA 17       CLEAR ACC TO ZERO    80F02280
08FE 1 D400 0B61     STO L O2BE        STO IN OUGHT TO BE   80F02290
0900 1 F700 0BDE     EOR L3 RAREA&40  DATA READ           80F02300
0902 1 4420 09E0     BSI L ERRFD,Z     BCH UN BITS          SC 80F02310
*
*
*
0904 0 7301          MDX 3 1           80F02320
0905 0 70F7          MDX XXXXX         80F02330
0906 0 70B6          MDX RT3A          80F02340
*
*
*
*****
***** ROUTINE 4- READ 17 BITS/COL &
*****
0907 1 CC00 0B46      RT4  LDD L MFED2  MSG- LOAD FROM STK 2 SC 80F02350
0909 1 4400 0A28      BSI L TYPE       USE TYPE ROUTINE    SC 80F02360
090B 1 4400 0A4E      RT4A BSI L RPREQ    ROUTINE REQUEST      SC 80F02370
090D 1 0C00 0B34      XIO L READ       READ COMMAND         80F02380
090F 1 4400 0A8E      BSI L RTL        DELAY LOOP           SC 80F02390
0911 0 700A           MDX CHECK-1       80F02400
0912 1 4400 0A0A      BSI L FDLCD      FEED LAST CARD       SC 80F02410
0914 1 4400 0A13      BSI L KNOW       CHECK BIT SWITCHES   SC 80F02420
*
0916 1 CC00 0B28      SET5 LDD L RID5   RT NUMBER AND ADDR   SC 80F02430
0918 1 4400 0A86      BSI L RTU        USE UPDATE ROUTINE   SC 80F02440
091A 0 4C80 012D      BSC I START      RETURN TO MONITOR    X 80F02450

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*
09C0 1 0C00 0B3A RECK XIO L STACK SELECT STACKER 2 80F03960
09C2 1 4400 0A4E BSI L RPREQ ROUTINE REQUEST 80F03970
09C4 1 0C00 0B32 XIO L PUNCX PUNCH COMMAND 80F03980
09C6 1 4400 0A8E BSI L RTL USE TIMING LOOP SC 80F03990
09C8 0 70F7 MDX RECK REPAET NO LAST CARD 80F04000
09C9 1 0C00 0B3A XIO L STACK SELECT STACKER 2 80F04010
09CB 0 403E BSI FDLCD FEED LAST CARD SC 80F04020
09CC 0 4046 BSI KNOW CHECK BIT SWITCHES SC 80F04030
*
09CD 1 2C40 0BB6 STS L RAREA,/40 REMOVE STG PROTECT 80F04040
09CF 0 4C80 012E BSC I END GO TO MONITOR X 80F04050
*
09D1 0 0000 RTEND DC /0000 80F04060
09D2 1 4400 0A3E BSI L RPREL ROUTINE RELEASE SC 80F04070
09D4 1 4C80 09D1 BSC I RTEND RETURN TO PROGRAM SX 80F04080
*
*****
***** STORAGE AREA *****
*
09D6 0 0008 BIT12 DC /0008 TERMINATOR BIT 80F04090
09D7 0 CC00 CC00 DC /CC00 CARD COLUMN 80F04100
09D8 0 0800 CNTL DC /0800 80F04110
09D9 0 0000 CONST DC /0000 80F04120
09DA 0 7251 LGA MDX 2 81 80 COLUMN COUNTER PR03 80F04130
09DB 0 72AF LGB MDX 2 -81 80 COLUMN COUNTER PR04 80F04140
09DC 0 0000 SAVE DC /0000 80F04150
09DD 0 8000 SHA DC /8000 80F04160
09DE 0 7229 SHB MDX 2 41 40 COLUMN COUNTER PR03 80F04170
09DF 0 72D7 SHB MDX 2 -41 40 COLUMN COUNTER PR04 80F04180
*
*****
***** COMMON USE ROUTINES *****
*
***** ERROR FOUND ROUTINE *****
*
09E0 0 0000 ERRFD DC /0000 ADDR STG SE 80F04190
09E1 1 F400 0B61 EOR L Q2BE 80F04200
09E3 1 D400 0B60 STO L WAS 80F04210
*
09E5 0 7251 COLA MDX 2 &81 MDX 2 81 OR MDX 2 41 PM03 80F04220
09E6 0 1000 KEEP1 NOP 0 MDX WILL SKIP THIS 80F04230
09E7 1 6E00 0B62 STX L2 COL COLUMN NUMBER 80F04240
09E9 0 72AF COLB MDX 2 -81 CORRECT XR2 PM04 80F04250
09EA 0 1000 KEEP2 NOP 0 MDX WILL SKIP THIS 80F04260
09EB 1 C400 0B62 LD L COL COLUMN NUMBER 80F04270
09ED 0 E8E9 OR CC00 80F04280
09EE 1 D400 0B62 STO L COL CD COL PLUS COL NUMB 80F04290
*
09F0 1 6E00 0B38 STX L2 SENSE SAVE XR2 80F04300
09F2 1 6F00 0B3A STX L3 STACK SAVE XR3 80F04310
09F4 1 CC00 0B4E LDD L MCDEE MSG- CARD ERROR 80F04320
09F6 0 6104 LDX 1 4 NUMBER OF MODIFIERS 80F04330
09F7 1 4400 0AE8 BSI L ERRA USE ERROR ROUTINE SC 80F04340
09F9 1 6680 0B38 LDX I2 SENSE RESTORE XR2 80F04350
09FB 1 6780 0B3A LDX I3 STACK RESTORE XR3 80F04360
09FD 1 7402 09E0 MDX L ERRFD,2 ADD 2 TO RETURN ADDR 80F04370
09FF 1 0C00 0B3A XIO L STACK SELECT ERROR CARD 80F04380
0A01 1 C400 0B02 LD L SWO BIT SWITCH STG 80F04390
0A03 0 100A SLA 10 80F04400
0A04 1 4C90 09E0 BSC I ERRFD,- BCH PLUS OR ZERO SX 80F04410

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```

0A06 1 74FE 09E0 MDX L ERRFD,-2 SUB 2 RETURN ADDR 80F04640
0A08 1 4C80 09E0 BSC I ERRFD RETURN TO ROUTINE SX 80F04650
*
***** FEED LAST CARD *****
*
0A0A 0 0000 FDLCD DC /0000 RETURN ADDR SE 80F04660
0A0B 1 4400 0A4E BSI L RPREQ ROUTINE REQUEST 80F04670
0A0D 1 0C00 0B2E XIO L FDACD FEED A CARD 80F04680
0A0F 1 4400 0A3E BSI L RPREL RELEASE DEVICE SC 80F04690
0A11 1 4C80 0A0A BSC I FDLCD RETURN TO PROG SX 80F04700
*
***** KNOW BIT SWITCH SETTINGS *****
*
0A13 0 0000 KNOW DC /0000 RETURN ADDR SE 80F04710
0A14 1 C400 0803 LD L SW1 ROUTINE NUMBER 80F04720
0A16 1 4C98 0A13 BSC I KNOW,&- BCH ON ZERO SX 80F04730
0A18 1 E400 0BA1 AND L K0007 SAVE BITS 13 THRU 15 80F04740
0A1A 1 D400 0800 STO L RID STORE RT NUMBER 80F04750
0A1C 1 6780 0800 LDX I3 RID 80F04760
0A1E 1 4F80 0A20 BSC I3 SETUP SET UP NEW ROUTINE SX 80F04770
*
0A20 0 0000 SETUP DC 0 NOT USED 80F04780
0A21 1 084E DC SET1 80F04790
0A22 1 0888 DC SET2 80F04800
0A23 1 08B3 DC SET3 80F04810
0A24 1 08C8 DC SET4 80F04820
0A25 1 0916 DC SET5 80F04830
0A26 1 0950 DC SET6 80F04840
0A27 1 09A5 DC SET7 80F04850
*
***** PRINT ROUTINE *****
*
0A28 0 0000 TYPE DC /0000 RETURN ADDR SE 80F04860
0A29 1 DC00 0B5A STD L MSGL CHANGE MESSAGE & NUM 80F04870
0A2B 1 C400 0802 LD L SW0 BIT SWITCH STORAGE 80F04880
0A2D 0 1000 SLA 13 80F04890
0A2E 1 4CA8 0A28 BSC I TYPE,&Z RETURN TO PROG ON - SX 80F04900
*
0A30 0 4480 012F TYPEA BSI I LOG CALL ON LOG SC 80F04910
0A32 1 0B58 DC INSTL ADDR OF MSG 80F04920
0A33 1 0A38 DC TYPEB BUSY ADDR 80F04930
0A34 0 0000 DC /0000 80F04940
*
0A35 1 6580 0A28 LDX I1 TYPE 80F04950
0A37 0 7002 MDX OUT1 80F04960
*
0A38 1 6500 0A30 TYPEB LDX L1 TYPEA BUSY ROUTINE 80F04970
0A3A 1 6D00 080A OUT1 STX L1 MLSCF&1 80F04980
0A3C 0 4C80 012D BSC I START RETURN TO MONITOR SX 80F04990
*
***** ROUTINE RELEASE DEVICE *****
*
0A3E 0 0000 RPREL DC /0000 RETURN ADDR SE 80F05000
0A3F 0 1000 NOP 80F05010
*
0A40 1 C400 0815 LD L EDIT 80F05020
0A42 1 4C80 0A3E BSC I RPREL,-Z BCH ON PLUS 80F05210
*
0A44 0 4480 0132 BSI I RELDV RELEASE DEVICE SC 80F05220
0A46 1 0815 DC EDIT ADDR UNTR AND CHAN 80F05230
0A47 1 080C DC TERM TERMINATOR 80F05240

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```

0A48 1 6580 0A3E      LDX I1 RPREL      GET RETURN ADRS      80F05320
0A4A 1 6D00 080A      STX L1 MLSCF&1    SET MLSCF              80F05330
0A4C 0 4C80 012D      BSC I  START      RETURN TO MONITOR     80F05340
*
*****              ROUTINE REQUEST DEVICE *****
*
0A4E 0 0000          RPREQ DC          /0000      RETURN ADDR          SE 80F05380
0A4F 0 1000          NOP
0A50 1  C400 0815      LD  L  EDIT
0A52 1 4CA8 0A4E      BSC I  RPREQ,&Z    BCH ON HAVE DEVICE   SX 80F05390
*
0A54 0 4480 0131      LABEL BSI I  REQDV  REQUEST DEVICE          SC 80F05400
*
0A56 1 0A80          DC          STDBY      BUSY ADDRESS          80F05410
0A57 1 0815          DC          EDIT      ADDR INTR AND CHAN    80F05420
0A58 1 0817          DC          RPDVA     ADDR AREA CODE & MOD  80F05430
0A59 1 080C          DC          TERM      TERMINATOR              80F05440
*
0A5A 1  C400 0839      LD  L  SENSE&1
0A5C 1  EC00 0817      OR  L  RPDVA
0A5E 1  D400 0839      STO L  SENSE&1
*
0A60 1 0C00 0838      XIO L  SENSE      SENSE DSW              80F05450
0A62 1 4404 0808      BSI L  NRDY,E     USE NRDY IF B15 IS 1 SC 80F05460
*
0A64 1 0C00 0838      SEE XIO L  SENSE      SENSE DSW              80F05470
0A66 0 100F          SLA 15
0A67 1 4C10 0A6F      BSC L  RDY,-      BCH ON READY           80F05480
*
0A69 1 6500 0A64      LDX L1 SEE        GET MLSCF ENTRY        80F05490
0A6B 1 6D00 0809      STX L1 MLSCF      SET MLSCF              80F05500
0A6D 0 4C80 012D      BSC I  START      RETURN TO MONITOR     80F05510
*
0A6F 1  C400 0802      RDY LD  L  SWO      BIT SWITCH STORAGE    80F05520
0A71 1 4C10 0A7D      BSC L  RETN3,-    CHECK BIT 0 FOR DELAY 80F05530
0A73 0 6500 0100      LDX L1 /0100     DELAY COUNT           80F05540
0A75 1 6D00 0A7F      STX L1 DLYCT      SET UP COUNTER        80F05550
*
0A77 1 6500 0A7A      RETN1 LDX L1 RETN2 GET MLSCF ENTRY      80F05560
0A79 0 7008          MDX      RETN4
*
0A7A 1 74FF 0A7F      RETN2 MDX L  DLYCT,-1 REDUCE COUNT          80F05570
0A7C 0 70FA          MDX      RETN1
0A7D 1 4C80 0A4E      RETN3 BSC I  RPREQ  RETURN TO PROG          SX 80F05580
*
0A7F 0 0000          DLYCT DC          /0000     DELAY COUNTER         80F05590
*
0A80 1 6500 0A54      STDBY LDX L1 LABEL  GET BUSY ADDR          80F05600
0A82 1 6D00 0809      RETN4 STX L1 MLSCF  SET MLSCF              80F05610
0A84 0 4C80 012D      BSC I  START      RETURN TO MONITOR     80F05620
*
*****              ROUTINE UPDATE *****
*
0A86 0 0000          RTU  DC          /0000     RETURN ADDR          SE 80F05630
0A87 1  DC00 0800      STD  L  RID        NEW RT NUMBER AND ADDR 80F05640
0A89 0 1090          SLT 16            MOVE Q TO ACC         80F05650
0A8A 1  D400 0809      STD  L  MLSCF     NEW MLSCF ENTRY       80F05660
0A8C 1 4C80 0A86      BSC I  RTU        RETURN TO ROUTINE     SX 80F05670
*
*****              ROUTINE LOOP *****
*
0A8E 0 0000          RTL  DC          /0000     RETURN ADDR          SE 80F05680
0A8F 0 6700 F000      LDX  L3 /F000     TIMING CONSTANT       80F05690

```

```

0A91 1 6F00 09D9      STX L3 CONST          80F05880
*
0A93 1 6500 0A99      RTLA LDX L1 RTM       80F05890
0A95 1 6D00 080B      STX L1 MLSCF&2      SET MLSCF ENTRY       80F05900
0A97 0 4C80 012D      BSC I  START        RETURN TO MONITOR     SC 80F05910
*
0A99 1 7401 09D9      RTM MDX L  CONST,1   80F05920
0A9B 0 70F7          MDX RTLA            80F05930
0A9C 1  CC00 0848      LDD L  MICED        MSG- NO INTERRUPT     SE 80F05940
0A9E 0 4089          BSI  TYPE           USE TYPE ROUTINE     SC 80F05950
*
0A9F 1  C400 0860      IRECD LD  L  WAS      GET DSW BITS & CHECK  80F05960
0AA1 1 4C18 0ABA      BSC L  REGO,&-      BCH ON NO BITS        80F05970
0AA3 0 6100          LDX 1 0            ALL ZEROS             80F05980
0AA4 1 6D00 0861      STX L1 02BE        CLEAR DUGHT TO BE    80F05990
0AA6 0 630F          LDX 3 15          80F06000
*
0AA7 0 1340          INERR SLCA 3 0     LOOK FOR BITS         80F06010
0AA8 1  F400 09DD      EOR  L  SAVE&1     REMOVE BIT FOUND     80F06020
0AAA 1  D400 09DC      STO L  SAVE        SAVE REST OF BITS    80F06030
0AAC 1 6E00 0838      STX L2 SENSE       SAVE XR2              80F06040
0AAE 1 6F00 083A      STX L3 STACK       SAVE XR3              80F06050
*
0AB0 1 4780 0AC7      BSI I3 DSWBT       SELECT ERROR          SC 80F06060
0AB2 1 6680 0B38      LDX I2 SENSE       RESTORE XR2           80F06070
0AB4 1 6780 0B3A      LDX I3 STACK       RESTORE XR3           80F06080
0AB6 1  C400 09DC      LD  L  SAVE        80F06090
0AB8 1 4C20 0AA7      BSC L  INERR,Z     BCH ON BITS           80F06100
*
0ABA 0 4083          RECD BSI          RPREL      ROUTINE RELEASE       SC 80F06110
0ABB 1 0C00 0B38      RECD XIO L  SENSE  SENSE DSW            80F06120
0ABD 1 4C18 0AC5      BSC L  ZIP,&-      BCH NO BITS           80F06130
0ABF 1 6500 0ABB      LDX L1 REGOT      GET MLSCF             80F06140
0AC1 1 6D00 080A      STX L1 MLSCF&1    SET MLSCF             80F06150
0AC3 0 4C80 012D      BSC I  START      RETURN TO MONITOR     SX 80F06160
*
0AC5 1 4C80 0A8E      ZIP BSC I  RTL     RETURN TO PROG        SX 80F06170
*
*****              DSW TABLES FOR LEVEL 4 *****
*
0AC7 1 0B0B          DSWBT DC          NRDY      15 NOT READY          80F06180
0AC8 1 0AD7          DC          BUSY      14 BUSY              80F06190
0AC9 1 0ADD          DC          ERR1     13                   80F06200
0ACA 1 0ADD          DC          ERR1     12                   80F06210
0ACB 1 0ADD          DC          ERR1     11                   80F06220
0ACC 1 0ADD          DC          ERR1     10                   80F06230
0ACD 1 0ADD          DC          ERR1     9                    80F06240
0ACE 1 0ADD          DC          ERR1     8                    80F06250
0ACF 1 0AFA          DC          FDCK     7 FD CK-RD STATION   80F06260
0AD0 1 0B11          DC          STGPT    6 STG PROTECT VOIL  80F06270
0AD1 1 0B18          DC          PAROR    5 PARITY ERROR       80F06280
0AD2 1 0ADD          DC          ERR1     4 OP COMPLETE        80F06290
0AD3 1 0B00          DC          LCD      3 LAST CARD          80F06300
0AD4 1 0ADD          DC          ERR1     2 ANY ERROR          80F06310
0AD5 1 0ADD          DC          ERR1     1                    80F06320
0AD6 1 0ADD          DC          ERR1     0                    80F06330
*
*****              BUSY ROUTINE *****
*
0AD7 0 0000          BUSY DC          0          RETURN ADDR          SE 80F06340
0AD8 0  C871          LDD MADD00        MSG- BUSY            80F06350
0AD9 1 4400 0A28      BSI L  TYPE       USE TYPE ROUTINE     SC 80F06360
0ADB 1 4C80 0AD7      BSC I  BUSY       RETURN TO PROG        SX 80F06370

```

```

*
***** ROUTINE ERR1 *****
*
ERR1 DC /0000 RETURN ADDR SE
LD L WAS DSW STORAGE
SLA 6
BSC I ERR1,&Z BCH ON BIT 6 SX
LDD MBIEE MSG- DSW ERROR BITS
LDX 1 3 MODIFIER NUMBER
BSI ERRA USE ERROR ROUTINE SC
BSC I ERR1 RETURN TO PROG SX
*
***** ERROR TYPE OUT *****
*
ERRA DC /0000 RETURN ADDR SE
STD MSGE CHANGE MESSAGE & NUM
STX L1 INSTE STORE MODIFIER NUM
*
REPT BSI I ERROR MONITOR ERROR CALL SC
DC INSTE ERROR MESSAGE
DC REPT1 ADDR OF BUSY
DC REPT2 ADDR OF LOOP
*
REPT2 LDX I1 ERRA
MDX OUT3
*
REPT1 LDX L1 REPT GET BUSY MLSCF
OUT3 STX L1 MLSCF&1 SET MLSCF
BSC I START RETURN TO MONITOR SX
*
***** FEED CHECK READ STATION *****
*
FDCK DC /0000 RETURN ADDR SE
LDD MFDCK MSG- FEED CHECK
BSI L TYPE USE TYPE ROUTINE SC
BSC I FDCK RETURN TO PROG SX
*
***** LAST CARD DEVISE *****
*
LCD DC /0000 RETURN ADDR SE
LDD MDEAD MSG- LAST CARD
BSI L TYPE USE TYPE ROUTINE SC
SLA 16
STO WAS
MDX L RTL,1
BSI L RPREL RELEASE ROUTINE SC
MDX ZIP RETURN TO PROG SX
*
***** NOT READY *****
*
NRDY DC /0000 RETURN ADDR SE
LDD MAIDE MSG- NOT READY
BSI L TYPE USE TYPE ROUTINE SC
BSC I NRDY RETURN TO PROG SX
*
***** STORAGE PROTECT VIOLATE *****
*
STGPT DC /0000 RETURN ADDR SE

```

OB11 0 0000

```

80F06560
80F06570
80F06580
80F06590
80F06600
80F06610
80F06620
80F06630
80F06640
80F06650
80F06660
80F06670
80F06680
80F06690
80F06700
80F06710
80F06720
80F06730
80F06740
80F06750
80F06760
80F06770
80F06780
80F06790
80F06800
80F06810
80F06820
80F06830
80F06840
80F06850
80F06860
80F06870
80F06880
80F06890
80F06900
80F06910
80F06920
80F06930
80F06940
80F06950
80F06960
80F06970
80F06980
80F06990
80F07000
80F07010
80F07020
80F07030
80F07040
80F07050
80F07060
80F07070
80F07080
80F07090
80F07100
80F07110
80F07120
80F07130
80F07140
80F07150
80F07160
80F07170
80F07180
80F07190
80F07200
80F07210
80F07220
80F07230

```

```

OB12 1 2C40 0BB6
OB14 1 7406 0A8E
OB16 1 4C80 0B11
*
***** PARITY ERROR *****
*
PAROR DC /0000 RETURN ADDR SE
LDD MPAR MSG PARITY ERROR
BSI L TYPE USE TYPE ROUTINE SC
BSC I PAROR RETURN TO PROG SX
*
***** MESSAGE AREA *****
*
BSS E 0
RID1 DC 1 ROUTINE NUMBER
DC RT1 ROUTINE ADDRESS
RID2 DC 2 ROUTINE NUMBER
DC RT2 ROUTINE ADDRESS
RIDX DC 2 ROUTINE NUMBER
DC RT2A ROUTINE ADDRESS
RID3 DC 3 ROUTINE NUMBER
DC RT3 ROUTINE ADDRESS
RID4 DC 4 ROUTINE NUMBER
DC RT4 ROUTINE ADDRESS
RID5 DC 5 ROUTINE NUMBER
DC RT5 ROUTINE ADDRESS
RID6 DC 6 ROUTINE NUMBER
DC RT6 ROUTINE ADDRESS
RID7 DC 7 ROUTINE NUMBER
DC RT7 ROUTINE ADDRESS
*
FDACD DC /0000 FEED A CARD
DC /0402
PUNCH DC WAREA PUNCH
DC /0500
PUNCX DC RAREA PUNCH
DC /0500
READ DC RAREA READ
DC /0600
READX DC RAREA READ
DC /0601
SENSE DC /0000 SENSE DSW
DC /0701
STACK DC /0000 SELECT STACKER
DC /0480
*
MDEAD DC /A001 MSG CODE AND NUMBER
DC /DEAD LAST CARD
*
MSTAR DC /C001 MESSAGE NUMBER
DC /A0A0 SET BIT 8 FUNC 00
MFEED DC /C002
DC /FEED LOAD BLANKS MAKE RDY
MAIDE DC /C003
DC /A1DE NOT READY
MABCD DC /C004
DC /ABCD LD ANY PAT PLUS BLKS
MFED2 DC /C005
DC /FED2 LOAD FROM STACKER 2
*
MICFD DC /E001
DC /ICED NO INTERRUPT
MAD00 DC /E002

```

OB18 0 0000
OB19 0 C836
OB1A 1 4400 0A28
OB1C 1 4C80 0B18

```

80F07240
80F07250
80F07260
80F07270
80F07280
80F07290
80F07300
80F07310
80F07320
80F07330
80F07340
80F07350
80F07360
80F07370
80F07380
80F07390
80F07400
80F07410
80F07420
80F07430
80F07440
80F07450
80F07460
80F07470
80F07480
80F07490
80F07500
80F07510
80F07520
80F07530
80F07540
80F07550
80F07560
80F07570
80F07580
80F07590
80F07600
80F07610
80F07620
80F07630
80F07640
80F07650
80F07660
80F07670
80F07680
80F07690
80F07700
80F07710
80F07720
80F07730
80F07740
80F07750
80F07760
80F07770
80F07780
80F07790
80F07800
80F07810
80F07820
80F07830
80F07840
80F07850
80F07860
80F07870
80F07880
80F07890
80F07900
80F07910

```


1442 FUNCTION TEST

1442 FUNCTION TEST

```

0B4B 0 A000          DC      /A000    BUSY
0B4C 0 E003          MB1EE DC      /E003
0B4D 0 B1EE          DC      /B1EE    DSW BITS IN ERROR
0B4E 0 E004          MCDEE DC      /E004
0B4F 0 CDEE          DC      /CDEE    CARD ERROR
0B50 0 E005          MPAR  DC      /E005    PARITY ERROR
0B51 0 A1EE          DC      /A1EE
0B52 0 E006          MSPV  DC      /E006
0B53 0 CODE          DC      /CODE    STG PROTECT ERROR
0B54 0 E007          MRONG DC      /E007
0B55 0 BADO          DC      /BADO    RELEASE DEVICE TWICE
0B56 0 E008          MFDCK DC      /E008
0B57 0 FDCC          DC      /FDCC    FEED CK AT READ STAT
*
*
*****             PID MID RID RAD 0000
*
*
0B58 0 0001          INSTL DC      /0001    WORD COUNT
0B59 0 0000          DC      /0000    HEX CONTROL
0B5A 0 0000          MSGL  DC      /0000    MESSAGE ID
0B5B 0 0000          DC      /0000    CODED MESSAGE
*
*
*****             PID MID RID RAD 0000 0000 0000
*
*
0B5C 0 0000          INSTE DC      /0000    WORD COUNT
0B5D 0 0000          DC      /0000    HEX CONTROL
0B5E 0 0000          MSGE  DC      /0000    MESSAGE ID
0B5F 0 0000          DC      /0000    CODED MESSAGE
0B60 0 0000          WAS   DC      /0000    ERROR BITS
0B61 0 0000          O2BE DC      /0000    CORRECT BITS
0B62 0 0000          COL  DC      /0000    COL NUMBER IN HEX
*
*
*****             WRITE AREA FOR PUNCH
*
*
0B63 0 4010          WA40  DC      /4010
0B64 0 4018          WA40A DC      /4018
0B65 0 8018          WA79  DC      /8018
*
*
0B66 0 8010          WAREA DC      /8010    COLUMN 1
0B67 0 4020          DC      /4020
0B68 0 2040          DC      /2040
0B69 0 1080          DC      /1080
0B6A 0 0900          DC      /0900
0B6B 0 0600          DC      /0600
0B6C 0 0600          DC      /0600
0B6D 0 0900          DC      /0900
0B6E 0 1080          DC      /1080
0B6F 0 2040          DC      /2040
0B70 0 4020          DC      /4020
0B71 0 8010          DC      /8010
0B72 0 FFF7          DC      /FFF7
0B73 0 8880          DC      /8880
0B74 0 CCCC          DC      /CCCC
0B75 0 EEEE          DC      /EEEE
0B76 0 FFFF          DC      /FFFF
0B77 0 7777          DC      /7777
0B78 0 3333          DC      /3333
0B79 0 1111          DC      /1111
0B7A 0 FFF7          DC      /FFF7
0B7B 0 A000          DC      /A000
0B7C 0 9000          DC      /9000
0B7D 0 8800          DC      /8800
0B7E 0 8400          DC      /8400

```

```

80F07920
80F07930
80F07940
80F07950
80F07960
80F07970
80F07980
80F07990
80F08000
80F08010
80F08020
80F08030
80F08040
80F08050
80F08060
80F08070
80F08080
80F08090
80F08100
80F08110
80F08120
80F08130
80F08140
80F08150
80F08160
80F08170
80F08180
80F08190
80F08200
80F08210
80F08220
80F08230
80F08240
80F08250
80F08260
80F08270
80F08280
80F08290
80F08300
80F08310
80F08320
80F08330
80F08340
80F08350
80F08360
80F08370
80F08380
80F08390
80F08400
80F08410
80F08420
80F08430
80F08440
80F08450
80F08460
80F08470
80F08480
80F08490
80F08500
80F08510
80F08520
80F08530
80F08540
80F08550
80F08560
80F08570
80F08580
80F08590

```

```

0B7F 0 8200
0B80 0 8100
0B81 0 8080
0B82 0 8040
0B83 0 8020
0B84 0 8010
0B85 0 5000
0B86 0 4800
0B87 0 4400
0B88 0 4200
0B89 0 4100
0B8A 0 4080
0B8B 0 4040
0B8C 0 4020
0B8D 0 4010
0B8E 0 3000
0B8F 0 2800
0B90 0 2400
0B91 0 2200
0B92 0 2100
0B93 0 2080
0B94 0 2040
0B95 0 2020
0B96 0 2010
0B97 0 0000
0B98 0 FC00
0B99 0 03F0
0B9A 0 FC00
0B9B 0 03F0
0B9C 0 0000
0B9D 0 8887
0B9E 0 4444
0B9F 0 2222
0BA0 0 1111
0BA1 0 0007
0BA2 0 8880
0BA3 0 CCC4
0BA4 0 AAA2
0BA5 0 9991
0BA6 0 4444
0BA7 0 6666
0BA8 0 5555
0BA9 0 2222
0BAA 0 3333
0BAB 0 1111
0BAC 0 0005
0BAD 0 0006
0BAE 0 FFF7
0BAF 0 FFF7
0BB0 0 FFF7
0BB1 0 0008
0BB2 0 FFF0
0BB3 0 FFF0
0BB4 0 FFF0
0BB5 0 FFF0
*
*
0BB6 0050
*
*
0C06 0064
*
*
*
*
0C6A 0 0000
*
*
0C6C 0826
NO ERRORS IN ABOVE ASSEMBLY

```

```

DC      /8200
DC      /8100
DC      /8080
DC      /8040
DC      /8020
DC      /8010
DC      /5000
DC      /4800
DC      /4400
DC      /4200
DC      /4100
DC      /4080
DC      /4040
DC      /4020
DC      /4010
DC      /3000
DC      /2800
DC      /2400
DC      /2200
DC      /2100
DC      /2080
DC      /2040
DC      /2020
DC      /2010
DC      /0000
DC      /FC00
DC      /03F0
DC      /FC00
DC      /03F0
DC      /0000
DC      /8887
DC      /4444
DC      /2222
DC      /1111
DC      /0007
DC      /8880
DC      /CCC4
DC      /AAA2
DC      /9991
DC      /4444
DC      /6666
DC      /5555
DC      /2222
DC      /3333
DC      /1111
DC      /0005
DC      /0006
DC      /FFF7
DC      /FFF7
DC      /FFF7
DC      /0008
DC      /FFF0
DC      /FFF0
DC      /FFF0
DC      /FFF0
*
*
DC      /80
DC      /100
DC      /0000
DC      /0000

```

```

COL 26
COL 40 WAREA&39
CONSTANT
CHECK PCH TERM
COLUMN 76
READ AREA
THIS AREA CAN BE USED FOR PATCH
PEND DC /0000
END GO

```

```

80F08600
80F08610
80F08620
80F08630
80F08640
80F08650
80F08660
80F08670
80F08680
80F08690
80F08700
80F08710
80F08720
80F08730
80F08740
80F08750
80F08760
80F08770
80F08780
80F08790
80F08800
80F08810
80F08820
80F08830
80F08840
80F08850
80F08860
80F08870
80F08880
80F08890
80F08900
80F08910
80F08920
80F08930
80F08940
80F08950
80F08960
80F08970
80F08980
80F08990
80F09000
80F09010
80F09020
80F09030
80F09040
80F09050
80F09060
80F09070
80F09080
80F09090
80F09100
80F09110
80F09120
80F09130
80F09140
80F09150
80F09160
80F09170
80F09180
80F09190
80F09200
80F09210
80F09220
80F09230
80F09240
80F09250
80F09260

```

C R O S S R E F E R E N C E		
NAME	VALUE	REFERENCES
BEGIN	012C	0826
BIT12	09D6	09B7
BSY	0848	0834
BUILD	0839	083F
BUSY	0AD7	0AC8,0ADB
CALL	0832	0848
CC00	09D7	09ED
CHEC	08CE	08C3
CHECK	091D	0911,092A
CHIP	097C	0970
CNTL	09D8	081C
COL	0B62	09E7,09EB,09EE
COLA	09E5	095C,099F
COLB	09E9	0960,09A2
COMP	096D	097A
CONST	09D9	0A91,0A99
CRCK	0133	
DLYCT	0A7F	0A75,0A7A
DOOR1	08E8	08D3
DOOR2	08F2	08DA
DSWBT	0AC7	0A80
DSW4A	0818	0824
DUP	0941	0949
EDIT	0815	0831,0835,0A40,0A46,0A50,0A57
EDIT1	0813	082E
EDIT2	0814	0830
END	012E	09CF
EPA	0808	
ERRA	0AE8	09F7,0AE5,0AF1
ERRFD	09E0	08E3,08ED,08F8,0902,0927,0934,0977,0984,09FD,0A04,0A06,0A08
ERROR	0130	0AEC
ERR1	0ADD	0AC9,0ACA,0ACB,0ACC,0ACD,0ACE,0AD2,0AD4,0AD5,0AD6,0AE1,0AE6
FDACD	0B2E	0839,083C,0898,08AA,09BC,0A0D
FDCK	0AFA	0ACF,0AFE
FDLCD	0A0A	08AF,08C4,0912,094C,0969,09CB,0A11
FLIP	098A	097B,0993
GO	0826	0C6C
GONOW	099D	096B
ILP	0806	
INERR	0AA7	0AB8
INSTE	0B5C	0AEA,0AEE
INSTL	0B58	0A32
IRECD	0A9F	0820
KEEP1	09E6	
KEEP2	09EA	
KEEP3	081B	
KNOW	0A13	0867,08B1,08C6,0914,094E,09A3,09CC,0A16
K0007	0BA1	0A18
LABEL	0A54	0A80
LCD	0B00	0AD3
LGA	09DA	099D
LGB	09DB	09A0
LOG	012F	0A30
LPA	0807	
MABCD	0B44	09AB
MAD00	0B4A	0AD8
MA1DE	0B42	0B0C
MB1EE	0B4C	0AE3
MCDEE	0B4E	09F4
MDEAD	0B3C	0B01
MF0CK	0B56	0AFB
MFED2	0B46	08B9,0907,0956
MFEEED	0B40	088E,093D
MLSCF	0809	0822,084A,0863,0A3A,0A4A,0A6B,0A82,0A8A,0A95,0AC1,0AF6
MPAR	0B50	0B19
MRONG	0B54	

MSGE 0B5E 0AE9
 MSGL 0B5A 0A29
 MSPV 0B52 0B76
 MSTAR 0B3E 0B58
 M1CED 0B48 0A9C
 NBTWO 0B30 0B2C
 NEXT 096C 0968
 NRDY 0B0B 0B7E,0A62,0AC7,0B0F
 OUT1 0A3A 0A37
 OUT3 0AF6 0AF3
 D2BE 0B61 0BDE,0BE9,0BF4,0BFE,0923,0930,0973,0980,09E1,0AA4
 PAROR 0B18 0AD1,0B1C
 PEND 0C6A 0B0D
 PID 07FF 0B28
 PUNCH 0B30 0BA2,0945
 PUNCX 0B32 0998,09C4
 RAD 0B01
 RAREA 0BB6 0B6C,0B74,0BE0,0BEB,0BF6,0900,0925,0932,0975,0982,098A,098C,098F
 0994,09B5,09B8,09CD,0B12,0B32,0B34,0B36
 RDY 0A6F 0A67
 READ 0B34 090D,0964,09B1
 READX 0B36 0B70,0BBF
 RECK 09C0 09C8
 REGO 0ABA 0AA1
 REGOT 0ABB 0ABF
 RELDV 0132 0A44
 REPT 0AEC 0AF4
 REPT1 0AF4 0AEF
 REPT2 0AF1 0AF0
 REQDV 0131 0B32,0A54
 RETN1 0A77 0A7C
 RETN2 0A7A 0A77
 RETN3 0A7D 0A71
 RETN4 0A82 0A79
 RID 0B00 0A1A,0A1C,0A87
 RIDX 0B22 0B82
 RID1 0B1E 0B42,0B4E
 RID2 0B20 0B88
 RID3 0B24 0B83
 RID4 0B26 0B8C
 RID5 0B28 0916
 RID6 0B2A 0950
 RID7 0B2C 09A5
 RPDVA 0B17 0B36,0B3B,0A58,0A5C
 RPREL 0A3E 0B40,0B80,09D2,0A0F,0A42,0A48,0ABA,0B0B
 RPREQ 0A4E 0B6E,0B7A,0B96,0BA0,0B8B,0B8D,090B,0943,0962,0996,09AF,09BA,09C2
 0A0B,0A52,0A7D
 RTEND 09D1 0B08,09D4
 RTL 0A8E 0B72,0B9A,0BA4,0BAC,0B81,090F,0947,0966,099A,09B3,09BE,09C6,0AC5
 0B06,0B14
 RTLA 0A93 0A9B
 RTM 0A99 0A93
 RTU 0A86 0B44,0B50,0B84,0B8A,0B85,0B8C,0918,0952,09A7,0A8C
 RT0 0B29 0B06,0B07,0B46
 RT1 0B54 0B1F
 RT1A 0B5C 0B61
 RT1B 0B67 0B56,0B5F
 RT1C 0B7A 0B6B
 RT2 0B8E 0B21
 RT2A 0B92 0BAE,0B23
 RT2B 0B9E 0B9C
 RT2C 0B8B 0BA6
 RT3 0B89 0B25
 RT3A 0B8D 0BE7,0BF1,0BFC,0906
 RT4 0907 0B27
 RT4A 090B 092B,0938
 RT5 0939 0B29
 RT6 0956 0B2B

RT6A 0962 099C
 RT7 09AB 0B2D
 SAVE 09DC 0AA8,0AAA,0AB6
 SEE 0A64 0A69
 SENSE 0B38 0B19,0B7C,09F0,09F9,0A5A,0A5E,0A60,0A64,0AAC,0AB2,0ABB
 SETUP 0A20 0A1E
 SET1 0B4E 0A21
 SET2 0B88 0A22
 SET3 0B83 0A23
 SET4 0B8C 0A24
 SET5 0916 0A25
 SET6 0950 0A26
 SET7 09A5 0A27
 SHA 09DE 095A
 SHB 09DF 095E
 SKIP 0BAF 0B9D,0BA7
 SPEC 0B80 0B86
 STACK 0B3A 0B9E,0941,094A,09C0,09C9,09F2,09FB,09FF,0AAE,0AB4
 START 012D 0B4C,0B52,0B65,0B86,0B8C,0B87,0BCC,091A,0954,09A9,0A3C,0A4C,0A6D
 0A84,0A97,0AC3,0AF8
 STDBY 0A80 0A56
 STGPT 0B11 0AD0,0B16
 SWO 0B02 0B54,0B5C,0A01,0A2B,0A6F
 SW1 0B03 0A14
 SW2 0B04 0B2A
 SW3 0B05
 TERM 0B0C 0B37,0B69,0A47,0A59
 TERMR 092C 0920
 TYPE 0A28 0B5A,0B78,0B90,0B8B,0909,093F,0958,09AD,0A2E,0A35,0A9E,0AD9,0AFC
 0B02,0B0D,0B1A
 TYPEA 0A30 0A38
 TYPEB 0A38 0A33
 WAREA 0B66 0B94,0B80,0B87,091D,093B,096D,0B30
 WAS 0B60 0B1E,09E3,0A9F,0ADE,0B05
 WA40 0B63 0B92
 WA40A 0B64 0939
 WA79 0B65
 XX 0B31 0B2F
 XXX 092F 092E,0937
 XXXX 097F 097E,0987
 XXXXX 0BFD 0BF0,0BF8,0905
 ZIP 0AC5 0ABD,0B0A

END OF ASSEMBLY

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100