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0.0 FPMLC TEST SEQUENCE:

FOR A COMPLETE TEST OF THE DEVICE, LOAD AND EXECUTE THE FOLLOWING MAP(S):

MAP EA00. (IF NO ERROR OCCURS ALL AUTO MAPS WILL RUN.)
MAP EA10. (EA12 WILL RUN IF CURRENT LOOP.)
NOTE EA10 WILL REQUEST THE DEVICE ADDRESS THEN EXECUTE AGAINST ONLY THE ONE LINE AT THAT ADDRESS.
NOTE THE EA44 MAP SHOULD BE STARTED BY USING THE "C" COMMAND RATHER THAN THE "B" COMMAND. THIS WILL INSURE THAT THE CORRECT CONTROLLER ADDRESS WILL BE USED, REGUARDLESS OF HOW MANY EA TYPE CONTROLLERS ARE INSTALLED IN THE MACHINE.

FOR DETAILS ON ALL MAPS AND EXERCISERS SEE PARAGRAPHS 3.X.

FOR ANY 'CHECK' CONDITION (MCK, PCK, PWR/THERM):
GO TO MAP 3871, ENTRY POINT A.

IF THE FIELD REPLACEMENT UNIT IS THE ATTACHMENT CARD AND THE SYSTEM FAILS AFTER REPLACEMENT OF THE CARD, ANOTHER ATTACHMENT MAY BE CAUSING THE FAILURE.
MAP 0070 IS A CHANNEL ISOLATE PROCEDURE FOR THIS PROBLEM.
GO TO MAP 0070, ENTRY POINT A.

1.0 GENERAL INFORMATION:

1.1 MINIMUM CONFIGURATION

THE SERIES/1 MAINTENANCE MATERIAL USES A MINIMUM SYSTEM CONFIGURATION OF:

1. SERIES/1 PROCESSING UNIT.
2. 16K STORAGE.
3. DISKETTE DRIVE.
4. PROGRAMMER CONSOLE.

1.2 LOADING PROCEDURES

ALL MDI MAPS, DIAGNOSTICS, UTILITIES AND EXERCISERS ARE ON DIAGNOSTIC DISKETTE(S).

| SEE THE DISKETTE LABEL FOR THIS INFORMATION |

USE STANDARD DCP LOADING METHOD:
WHEN THE CONSOLE IS ASSIGNED TO A KEYBOARD CONSOLE, PRESS 'C' (TO LOAD AND WAIT FOR OPTION SELECTION) OR 'B' (FOR LOAD AND GO) FOLLOWED BY THE FOUR CHARACTER MAP OR PROGRAM I.D.
SEE THE DIAGNOSTIC SERVICE GUIDE 07.00.00.
TO LOAD WITH THE PROGRAMMER OR C E CONSOLE SEE PARAGRAPH 4.1.

1.3 MESSAGE FORMAT

ALTERNATE CONSOLE MESSAGE FORMAT:

```
**** I3CXX MAP=YYYY STEP=ZZZZ ****
                          ZZZZ = MAP STEP #
                  YYYY         = MAP #
      I3CXX                    = THE STOP IS AN MDI OR MAP HALT.
```

IF MAP=3CXX THE STOP IS THE RESULT OF A MDI SUPERVISOR DECISION INSTEAD OF A MAP DECISION (SEE MDI HALT LIST FOLLOWING).

MDI HALT LIST

MAP =	DESCRIPTION/ACTION
3C01	ENTER ADDRESS OF DEVICE TO BE TESTED. (2 CHARACTERS, THAT IS, FOR ADDRESS 01 ENTER F01).
3C05	ENTER 'FROM' STEP. (4 CHARACTERS, THAT IS, FOR STEP 001 ENTER F0001).
3C06	ENTER 'TO' STEP. (4 CHARACTERS, THAT IS, FOR STEP 099 ENTER F0099).
3C08	DEVICE ADDRESS NOT VALID.
3C0E	DEVICE OR MAP NOT FOUND.

MESSAGES THAT ARE NOT DISPLAYED IN THIS FORMAT ARE DCP MESSAGES. FOR MORE INFORMATION CONCERNING ANY DCP HALT OR MDI SUPERVISOR HALT:
SEE THE DIAGNOSTIC SERVICE GUIDE, SECTION 06.00.00, COMMON HALT LIST.

PROGRAMMER CONSOLE HALT FORMAT (SEE THE DIAGNOSTIC SERVICE GUIDE 07.01.00).

THE 'WAIT' LAMP IS ON
THE DATA LAMPS = MAP# OR MDI OR DCP HALT CODE

THE LEVEL 3 REGISTERS WILL CONTAIN:

- R0 = MAP STEP #
- R1 = DEVICE ADDRESS AND TYPE CODE (AATT).
- R2 = UNIT ADDRESS, IF USED.
- R3 = POINTER TO ADDITIONAL DATA.

SEE THE DIAGNOSTIC SERVICE GUIDE, SECTION 05.03.00.
SEE THE DIAGNOSTIC SERVICE GUIDE, SECTION 05.04.00.

1.4 COMMENTS

THE CONFIGURATION TABLE MUST BE CORRECT BEFORE THE MAPS AND OR PROGRAMS WILL EXECUTE CORRECTLY.
SEE PARAGRAPH 5.1.
SEE THE DIAGNOSTIC SERVICE GUIDE 08.00.00

A 'SYSTEM LEVEL' FAILURE MAY BE SEEN AS A DEVICE FAILURE.
ALWAYS START AT THE SYSTEM ENTRY MAP FOR THE BEST RESULT.
GO TO MAP 0020, ENTRY POINT A.

FOR ANY 'CHECK' CONDITION (MCK, PCK, PWR/THERM):
GO TO MAP 3871, ENTRY POINT A.

IF THE FIELD REPLACEMENT UNIT IS THE ATTACHMENT CARD AND THE SYSTEM FAILS AFTER REPLACEMENT OF THE CARD, ANOTHER ATTACHMENT MAY BE CAUSING THE FAILURE.
MAP 0070 IS A CHANNEL ISOLATE PROCEDURE FOR THIS PROBLEM.
GO TO MAP 0070, ENTRY POINT A.

USE THE IBM GENERAL LOGIC PROBE, P/N453212, AND THE CE MULTIMETER, UNLESS YOU ARE INSTRUCTED BY THE MAP TO USE AN OSCILLOSCOPE OR SOME OTHER MULTIMETER.

2.0 SPECIAL TOOLS & ADDITIONAL DOCUMENTS:

2.1 SPECIAL TOOLS;

WRAP CONNECTOR P/N2704136 FOR EIA RS 232-C/CCIT V.24 OR WRAP CABLE P/N2722052. WITH CABLE P/N1632919 (JAPAN)
WRAP CONNECTOR P/N6825399 FOR CURRENT INTERFACE
WRAP CONNECTOR P/N1633811 FOR DIRECT CONNECT CABLE

2.2 ADDITIONAL DOCUMENTS:

DIAGNOSTIC SERVICE GUIDE.
PROCESSING UNIT THEORY DIAGRAMS MANUAL/COMMUNICATIONS FEATURES THEORY DIAGRAMS MANUAL.
PROCESSING UNIT MAINTENANCE INFORMATION MANUAL.
SERIES 1 LOGICS, MLD VOLUME 01.
SERIES 1 INSTALLATION INSTRUCTIONS.

3.0 PURPOSE:

THE EAXX MAPS WILL VERIFY CORRECT OPERATION OR FIND AND ISOLATE FAILING FIELD REPLACEMENT UNIT(S) IN THE FPMLC FEATURE.

3.1 'AUTO' MODE MAPS:

THE DEVICE ENTRY MAP (MAP # XX00) IS THE FIRST 'AUTO' MODE MAP. IF A COMPLETE AUTO TEST NEEDS ADDITIONAL MAPS, MDI WILL AUTOMATICALLY LOAD AND EXECUTE THEM IN THE CORRECT SEQUENCE. SEE THE DIAGNOSTIC SERVICE GUIDE 05.00.00.

MAP EA00: (DEVICE ENTRY MAP) AUTOMATIC TEST PERFORMS BASIC TESTS WITH CALLS TO MAPS EA10, EA15, OR EA20 ON ERROR CONDITIONS. CALLS MAP EA01 IF CORRECT.

NOTE: THE AUTO MAPS (EA00,THROUGH,EA05) LOAD ONCE AGAINST THE CONTROLLER BASE ADDRESS, THEN TEST THE CONTROLLER AND/OR EACH OF THE ACTIVE LINES. THE AUTO MAPS WILL RUN WITH THE EXTERNAL INTERFACE CABLES CONNECTED OR DISCONNECTED, IF DISCONNECTED THE CONFIGURATION TABLE MUST BE SET TO INDICATE NO DTR, RTS, OR DCD JUMPERS INSTALLED, AND THE DTR,RTS,AND DCD JUMPERS MUST BE REMOVED. LINE STATUS MESSAGES MAY OCCUR. IF AN ADDRESS IS OPERATING WITH 20MA CURRENT LOOP THE CARRIER DETECT JUMPER MUST BE INSTALLED ON THAT ADDRESS OR ERRORS MAY OCCUR IN THE AUTO MAPS.

MAP EA01: SECOND AUTOMATIC TEST. END OF MAP GOES TO MAP EA02

MAP EA02: THIRD AUTOMATIC TEST, CALLS MAPS EA10, EA15, OR MAP EA20 ON ERRORS. END OF MAP GOES TO MAP EA03

MAP EA03: FOURTH AUTOMATIC TEST, CALLS MAPS EA15 OR MAP EA20 ON ERRORS. END OF MAP GOES TO MAP EA04

MAP EA04: FIFTH AUTOMATIC TEST, CALLS MAPS EA15 OR MAP EA20 ON ERRORS. END OF MAP GOES TO MAP EA05

MAP EA05: LAST OF THE AUTOMATIC TESTS, POINTS TO MAP EA15 OR EA20 IF AN ERROR IS FOUND.

MAP EA40: ENGINEERING CHANGE CONTROL STORE LOAD MAP. THE FIRST AUTO MAP (EA00), THE FIRST MANUAL MAP (EA10) AND ANY STAND ALONE MAPS ALSO CALL MAP EA40. THIS MAP MAY BE CALLED BY THE USER TO LOAD ENGINEERING CHANGES WITHOUT EXECUTION OF A DIAGNOSTIC PROGRAM.

NOTE:
AUTOMATIC TESTS EXECUTE TRANSMIT AND RECEIVE WRAP TYPE INSTRUCTIONS. THIS WRAP DOES NOT TEST DRIVERS AND RECEIVERS OR EXTERNAL INTERFACE CABLES. MAP EA10 IS REQUIRED TO TEST EXTERNAL INTERFACE ITEMS. IF THE MULTI-LINE ADAPTER IS SUSPECTED OF HAVING ERRORS, RUN THE MAP EA10. IT IS NECESSARY THAT THE CONFIGURATION TABLE BE ACCURATELY FILLED FOR CORRECT MAP OPERATION

NOTE:
IF LOOP MAPS IS SELECTED, ENSURE THAT ALTERNATE CONSOLE PAGE CONTROL IS OFF.

3.2 'MANUAL' MODE MAPS:

THE FOLLOWING 'MANUAL' MODE MAPS PERFORM ADDITIONAL TESTS AND/OR ISOLATE FAILURES FOUND BY THE 'AUTO' MAPS:

MAP EA10: MANUAL MAP, TEST THE COMMUNICATIONS INDICATOR PANEL AND IF ERRORS ARE FOUND, CALLS MAP EA14. MAP EA10 EXECUTES DIAGNOSTIC 2 COMMAND, AND BECAUSE OF THE WRAP FEATURE, THE EIA RS232-C/CCITT V.24 INTERFACE IS TESTED. IF SYSTEM IS OPERATED IN CURRENT LOOP, MAP EA12 IS POINTED TO FOR TESTING OF THE CURRENT LOOP CABLE AND ASSOCIATED DRIVERS. SUSPECTED POWER SUPPLY FAILURES POINT TO MAP 1470. IF CORRECT, MAP EA10 INDICATES NO FAILURE FOUND.

MAP EA12: MANUAL MAP, EXECUTES DIAGNOSTIC 2 COMMAND, AND TEST THE DRIVERS AND RECEIVERS. THE 20MA CURRENT LOOP CABLE IS ALSO TESTED. SUSPECTED POWER SUPPLY FAILURES POINT TO MAP 1470. IF CORRECT, MAP EA12 INDICATES NO PROBLEM FOUND. THIS IS NOT A DIRECT ENTRY MAP. CALLED BY MAPEA10

MAP EA14: COMMUNICATIONS INDICATOR PANEL MAP VERIFIES CORRECT OPERATION OF THE INDICATOR PANEL. THIS IS NOT A DIRECT ENTRY MAP. CALLED BY MAPEA10 OR MAPEA21

MAP EA15: MAP USED TO ISOLATE WHICH 4-LINE CARD HAS FAILED WITH MORE THAN ONE SUSPECT. THIS IS NOT A DIRECT ENTRY MAP.

MAP EA20: MAP USED TO ISOLATE CONTROLLER ONLY WITH MORE THAN ONE SUSPECT. THIS IS NOT A DIRECT ENTRY MAP.

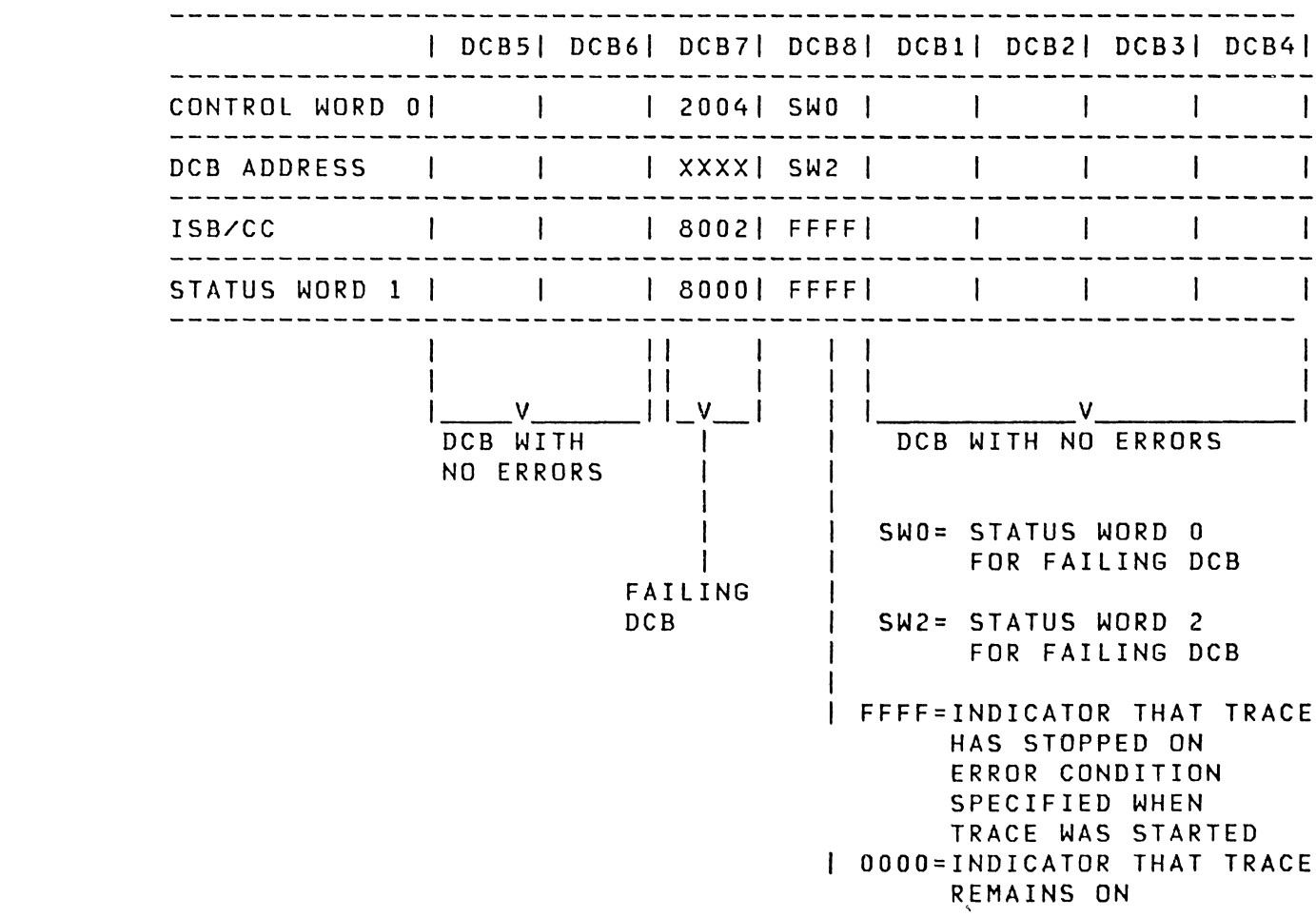
MAP EA21: IS THE CONTINUING OF MAP EA20. THIS IS NOT A DIRECT ENTRY MAP.

MAP EA41: MANUAL MAP, POINTED TO BY MAP EA40 FOR FINDING ERRORS IN THE CONTROL STORE READ/WRITE OPERATIONS. THIS IS A DIRECT ENTRY MAP. DO NOT RUN UNLESS INDICATED TO BY MAP EA40.

MAP EA44: MANUAL MAP, TEST INTERFACE BETWEEN SERIES/1 AND THE 5218 PRINTER. SEE SECTION 7.2

MAP EA42: MANUAL MAP, SUPPLIES A TRACE FUNCTION FOR RECOVERING DATA ABOUT THE LAST 8 DCB'S USED.

SEE THE EXAMPLE BELOW



THE ISB/CONDITION CODE FIELD FOR THE FAILING DCB CONTAINS THE FOLLOWING INFORMATION:

ISB	RESET INDICATOR	INTERRUPT CONDITION CODE

RESET INDICATOR AND CONDITION CODE = 00 = NO INTERRUPT RETURNED
02 = EXCEPTION INTERRUPT
03 = DEVICE END
F0 = OPERATION TERMINATED BY RESET
F2 = EXCEPTION INTERRUPT FOLLOWED BY RESET
F3 = DEVICE END FOLLOWED BY INTERRUPT

NOTE: WHEN OPERATOR REQUEST TRACE DUMP WHILE THE TRACE IS STILL ACTIVE ZEROS ARE STORED IN THE CONTROL WORD ZERO / DCB ADDRESS / ISB CC / AND STATUS WORD 1 FIELDS FOR THE DUMP TRACE COMMAND INDICATING LAST DCB ISSUED.

3.3 'PAPER ONLY' MAPS:

NONE

3.4 'FAILURE ONLY' MAPS:

THE FOLLOWING MAPS ASSUME A FAILURE. USE THEM ONLY WHEN INSTRUCTED BY ANOTHER MAP.

MAP EA41: ENGINEERING CHANGE CONTROL STORE LOAD ERROR MAP. POINTED TO BY MAP EA40 ONLY ON AN ERROR.

MAP EA15: MORE THAN 4 ERROR MAP. ADDRESSES 4 THROUGH 7 ARE DISCONNECTED FROM THE CONTROLLER AND DIAGNOSTICS ARE EXECUTED. THIS MAP HAS NO DIRECT ENTRY AND IS CALLED ONLY WHEN AN ERROR OCCURS

MAP EA20: CONTROLLER ONLY MAP. THE ADAPTER CARD(S) IS ISOLATED FROM THE CONTROLLER CARD AND THE CONTROLLER IS TESTED. THIS MAP HAS NO DIRECT ENTRY AND IS CALLED ONLY WHEN AN ERROR OCCURS

MAP EA21: CONTROLLER ONLY MAP. CALLED BY MAP EA20 AS A CONTINUATION OF THE CONTROLLER ONLY MAPS

3.5 DIAGNOSTICS, UTILITIES, EXERCISERS, OFFLINE TESTS:

THE FOLLOWING PROGRAMS ARE ON DISKETTE P/N 1635001:

PROGRAM 3CEF 'OPERATOR SELF TEST'.
SEE SECTION 7.0 FOR OPERATING INSTRUCTIONS.

4.0 PROGRAMMER'S COMMENTS:

THIS MAP WILL DISPLAY 'EXPECTED/RECEIVED' DATA WHEN AN ALTERNATE CONSOLE IS ASSIGNED. (SEE DIAGNOSTIC SERVICE GUIDE 05.03.00).

MAPS EA00 THROUGH EA05 WILL EXECUTE IN AUTO MODE. A FAILURE WILL CAUSE THE PROGRAM TO POINT TO THE MAP REQUIRED.
IF NO FAILURE OCCURS AND A MULTI-LINE ADAPTER PROBLEM IS STILL SUSPECTED, MAP EA10 SHOULD BE EXECUTED FOR MORE TESTING. THE WRAP FUNCTION TRANSMIT AND RECEIVE OPERATIONS ARE EXECUTED, AND THE EIA RS 232/CCITT V.24 INTERFACE CABLE IS TESTED.

NOTE: THE AUTO MAPS (EA00,THROUGH,EA05) LOAD ONCE AGAINST THE CONTROLLER BASE ADDRESS, THEN TEST THE CONTROLLER AND/OR EACH OF THE ACTIVE LINES:
ASSUME A CONTROLLER CARD PLUGGED TO DEVICE ADDRESS 80, AND ONE ADAPTER CARD WITH LINES 0,1, AND 2 ACTIVE (USED BY CUSTOMER - SEE DIAGNOSTICS SERVICE GUIDE FOR MAKING A CONFIGURATION RECORD YOU ENTER BEA00 (ENTRY MAP).
THE ALTERNATE CONSOLE DISPLAY WOULD APPEAR AS FOLLOWS:

```
.....IEA00 LOADED D.A.=80
.....IEA40 LOADED D.A.=80
.....IEA00 LOADED D.A.=80
.....IEA01 LOADED D.A.=80
.....IEA02 LOADED D.A.=80
.....IEA03 LOADED D.A.=80
.....IEA04 LOADED D.A.=80
.....IEA05 LOADED D.A.=80
```

EVEN THOUGH THE MAPS WERE ONLY LOADED ONCE, THE AUTOMATIC TESTS WERE EXECUTED AGAINST THE LOGIC FOR LINES 0, 1, AND 2. (BASE ADDRESS, BASE ADDRESS+1. AND BASE ADDRESS+2.)

MAP EA00 CALLS MAP EA40 TO LOAD THE E.C. CONTROL STORE BEFORE EXECUTING.

NOTE: WHEN A FAILURE IS FOUND BY THE AUTO SEQUENCE, GO TO MANUAL MODE AND START THE ENTRY MAP (EA00). MDI WILL AUTOMATICALLY LOAD THE CORRECT MANUAL MAP(S).
WHEN A MAP QUESTION OR REPAIR IS DISPLAYED R1 (LEVEL 3) WILL CONTAIN THE FAILING ADDRESS (AAXX).
(B),3,(I),(I) - SET DCP TO MANUAL MODE.
(B),B,(I),E,A,0,0,(I),(I) - LOAD AND GO MAP EA00.

4.1 LOADING WITH THE PROGRAMMER CONSOLE.

TO EXECUTE THE MAPS WITH THE PROGRAMMER CONSOLE, ENTER DATA AS FOLLOWS:
WHERE:
(B)=DATA BUFFER,
(I)=CONSOLE INTERRUPT.

MAP	CONSOLE ENTRY
EA00	(B),B,(I),(B),E,A,0,0,(I),(I)
EA01	LOAD EA00
EA02	LOAD EA00
EA03	LOAD EA00
EA04	LOAD EA00
EA05	LOAD EA00
EA10	(B),B,(I),(B),E,A,1,0,(I),(I)
EA12	LOAD EA10
EA14	LOAD EA10
EA15	LOAD EA00
EA20	LOAD EA00
EA21	LOAD EA20
EA40	(B),B,(I),(B),E,A,4,0,(I),(I)
EA41	(B),B,(I),(B),E,A,4,1,(I),(I)
EA42	(B),B,(I),(B),E,A,4,2,(I),(I)

5.0 SERVICE INFORMATION:

5.1 CONFIGURATION INFORMATION:

SEE THE DIAGNOSTIC SERVICE AND INFORMATION BELOW

FPMLC CONFIGURATION TABLE BIT DESCRIPTION

TYPICAL CONFIGURATION TABLE:

```
CONF0   CONF1   CONF2   CONF3   CONF4   CONF5   CONF6   DEVICE ID
F2EA    4402    0200    0000    0000    0000    0000    2216
| |       | |
| |       | |         | NUMBER OF LINES ATTACHED
| |       | |           SEE WORD 2 DESCRIPTION
| |       | |
| |       | |_____ADDRESS ATTACHED TO CURRENT LOOP
| |       |            SEE WORD 1 DESCRIPTION
| |       |
| |       |_________ BIT 0  USED BY DCP
| |                  BIT 1  ON IF NEXT ADDRESS IS PART OF GROUP
| |                  BIT 2  ON IF LAST ENTRY IN TABLE
| |                  BIT 3  LAST ENTRY IN SECTOR
| |                  BIT 4  USED BY DCP
| |                  BIT 5  USED BY DCP
| |                  BIT 6  TWO CHANNEL SWITCH DEVICE
| |                  BIT 7  END OF TABLE
| |                  NOTE:  IF AUTOMATIC CONFIGURE IS USED
| |                         THIS BYTE WILL BE AUTOMATICALLY FILLED.
| |                         IF NOT, CE SHOULD SET CHAIN BIT. CHAIN
| |                         BIT NOT REQUIRED FOR LAST ENTRY IN
| |                         GROUP.
| |_________________DEVICE TYPE (FPMLC)
|
|___________________DEVICE ADDRESS
```

CONFIGURATION WORD 1	MEANING
BITS 0 - 7	USED BY THE DCP/MDI PROGRAM
8	RESERVED (MUST BE 0)
9	RESERVED (MUST BE 0)
10	DATA CARRIER DETECT JUMPER INSTALLED
11	CLOCKS SUPPLIED DURING WRAP

```
                (JAPAN WRAP INSTALLED)
          12    FULL DUPLEX/DIR CONNECT/RTS JUMPER INSTALLED
          13    LEASED LINE/DIR CONNECT/DTR JUMPER INSTALLED
          14    ADDRESS ATTACHED TO CURRENT LOOP(MANUAL MAPS)
          15    RESERVED (MUST BE 0)

 NOTE: CONFIGURATION BITS 8 - 15 = HEXADECIMAL '1F' INDICATES
       LINE NOT INSTALLED OR NOT WORKING AS A DATA LINK.

CONFIGURATION   MEANING
   WORD 2
    BITS 0      RESERVED (MUST BE 0)
         1      RESERVED (MUST BE 0)
         2      RESERVED (MUST BE 0)
         3      RESERVED (MUST BE 0)
         4      RESERVED (MUST BE 0)
         5      RESERVED (MUST BE 0)
         6 - 7  BITS 6 & 7 NUMBER OF LINES/CONTROLLER ID WORD
                   8 LINES = 00     4 LINES = 10
                   2 LINES = 01     6 LINES = 11
         8 - 15 RESERVED (MUST BE 0)

CONFIGURATION   MEANING
   WORD 3
    BITS 0 - 15 RESERVED

CONFIGURATION   MEANING
   WORD 4
    BITS 0 - 15 RESERVED

CONFIGURATION   MEANING
   WORD 7
    BITS 0 - 15 DEVICE ID

 NOTE: DEVICE ID MUST MATCH ID JUMPERS
       2216 FOR 4 LINES OR 2016 FOR 8 LINES
```

5.2 GENERAL SERVICE INFORMATION:

A. COMMUNICATIONS INDICATOR PANEL CONNECTOR PINS.

A12	LAMP DRIVER 1	B12	LAMP DRIVER 0
A11	LAMP DRIVER 3	B11	LAMP DRIVER 2
A10	LAMP DRIVER 5	B12	LAMP DRIVER 4
A09	LAMP DRIVER 7	B09	LAMP DRIVER 6
A08	NOT USED	B08	NOT USED
A07	SW FUNCTION 8	B07	SW FUNCTION 16
A06	SW FUNCTION 2	B06	SW FUNCTION 4
A05	SW LINE SEL 4	B05	SW FUNCTION 1
A04	SW LINE SEL 1	B04	SW LINE SEL 2
A03	+ 5VDC	B03	NOT USED
A02	NOT USED	B02	KEY
A01	NOT USED	B01	GROUND

B. DISPLAY INDICATOR CONSOLE MAINTENANCE SWITCHES:

NOTE: DEVICE ADDRESS IS SELECTED BY USE OF THE XXX SWITCHES.

SWITCH POSITION	0	1	2	3	4	5	6	7
00000XXX	00	DCB WORD ZERO BITS 0 THROUGH 7						
00001XXX	01	DCB WORD ZERO BITS 8 THROUGH 15						
00010XXX	02	BIT RATE CONSTANT						
00011XXX	03	C.O.D. 1						
00100XXX	04	C.O.D. 2						
00101XXX	05	C.O.D. 3						
00110XXX	06	C.O.D. 4						
00111XXX	07	C.O.D. 5						
01000XXX	08	C.O.D. 6						
01001XXX	09	C.O.D. 7						
01010XXX	10	CHAIN ADDRESS BITS 0 THROUGH 7						
01011XXX	11	CHAIN ADDRESS BITS 8 THROUGH 15						
01100XXX	12	BYTE COUNT BITS 0 THROUGH 7						
01101XXX	13	BYTE COUNT BITS 8 THROUGH 15						
01110XXX	14	DATA ADDRESS BITS 0 THROUGH 7						
01111XXX	15	DATA ADDRESS BITS 8 THROUGH 15						

SWITCH POSITION	0	1	2	3	4	5	6	7
10000XXX 16	TIMER 2 BITS 0 THROUGH 7							
10001XXX 17	TIMER 2 BITS 8 THROUGH 15							
10010XXX 18	TIMER 1 BITS 0 THROUGH 7							
10011XXX 19	TIMER 1 BITS 8 THROUGH 15							
10100XXX 20	DA 8	DA 9	DA 10	DA 11	DA 12		CC 2	CC 1
10101XXX 21	ENGINEERING USE							
10110XXX 22	OVER RUN	TIME OUT		DCB REJECT		PARITY ERROR	BREAK DETECT	STOP ERROR
10111XXX 23		MODEM ERROR			PRERCV ERROR			
11000XXX 24	ENGINEERING USE							
11001XXX 25	DTR	DSR	RTS	CTS	EXT CLOCK	DCD	ECHO	RCV
11010XXX 26	ENGINEERING USE							
11011XXX 27	CONTROL OR MODE INSTRUCTIONS							
11100XXX 28	LAMP	TEST						
11101XXX 29	INTERRUPT STATUS BYTE							
11110XXX 30	ENGINEERING USE							
11111XXX 31	RESET	DTR						

INTERRUPT STATUS BYTE CONTENTS FOR COMMUNICATION ADAPTERS

BITS	0	READ CYCLE STEAL STATUS
	1	DELAYED COMMAND REJECT
	2	WRONG LENGTH RECORD (BC=0 AND NO COD OR CHAIN)
	3	DCB SPECIFICATION CHECK
	4	STORAGE CHECK
	5	NOT VALID STORAGE ADDRESS
	6	PROTECTION CHECK
	7	INTERFACE DATA CHECK

****

START CYCLE STEAL STATUS
WORD CONTENTS FOR FPMLC ADAPTERS

WORD ZERO

BITS	0 - 15	MAIN STORAGE ADDRESS OF LAST ATTEMPTED CYCLE STEAL READ.

WORD ONE

BITS	0	OVERRUN
	1	TIMEOUT
	2	RESERVED
	3	DCB REJECT
	4	RESERVED
	5	PARITY ERROR FOUND ON RECEIVE
	6	BREAK: A BREAK CONDITION WAS FOUND DURING TRANSMIT
	7	STOP BIT ERROR: MISSING STOP BIT IN RECEIVE CHARACTER
	8	RESERVED
	9	MODEM INTERFACE ERROR
	10	RESERVED
	11	RESERVED
	12	ERROR DURING PRE-RECEIVE
	13	RESERVED
	14	RESERVED
	15	RESERVED

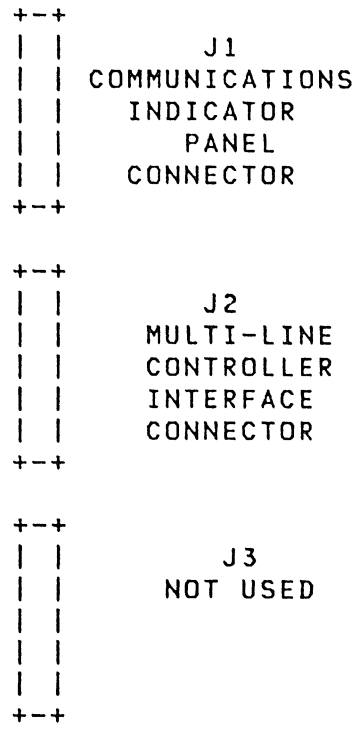
WORD TWO

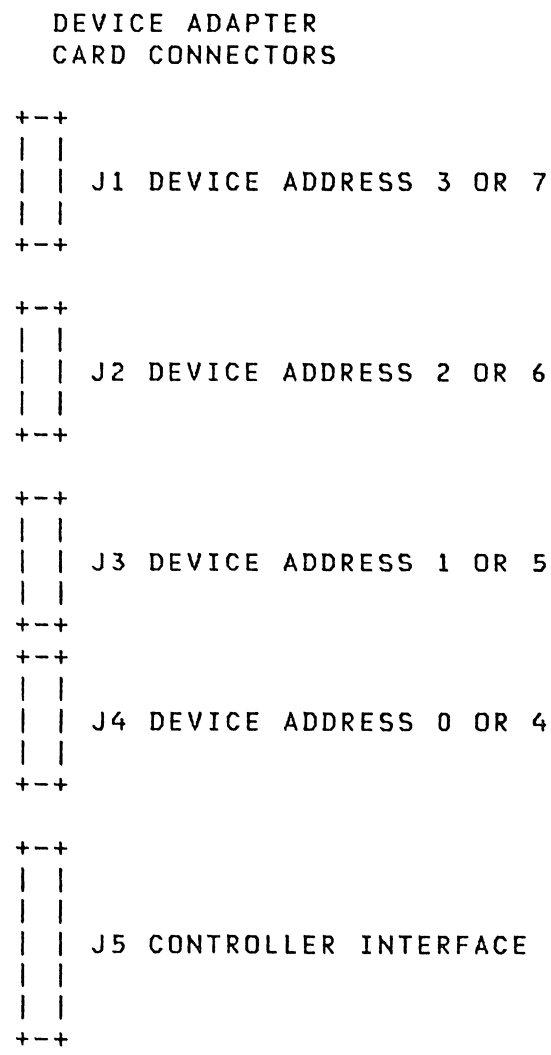
BITS	0	DATA TERMINAL READY
	1	DATA SET READY
	2	REQUEST TO SEND
	3	CLEAR TO SEND
	4	EXTERNAL CLOCKS
	5	DATA CARRIER DETECT

```
          6        ECHOPLEX IS SET
          7        RECEIVE DATA LINE
          8 - 15   INDICATOR PANEL SWITCH DATA
**********************************************************
    DIAGNOSTIC TWO CONTENTS
    WORD ZERO
     BIT  5     =  150A
          6     =  152A
          7     =  552A
          8     =  55AA

    WORD ONE
     BITS 0        DATA TERMINAL READY
          1        DATA SET READY
          2        REQUEST TO SEND
          3        CLEAR TO SEND
          4        EXTERNAL CLOCKS
          5        DATA CARRIER DETECT
          6        ECHOPLEX IS SET
          7        RECEIVE DATA LINE
          8        RING
          9        SYN/BREAK DETECT
         10        FRAMING ERROR
         11        OVERRUN
         12        PARITY ERROR
         13 - 15   RESERVED WILL BE ON

    WORD TWO
     BITS 0 - 15   BYTE TRANSMIT OF BIT RATE CONSTANT
```

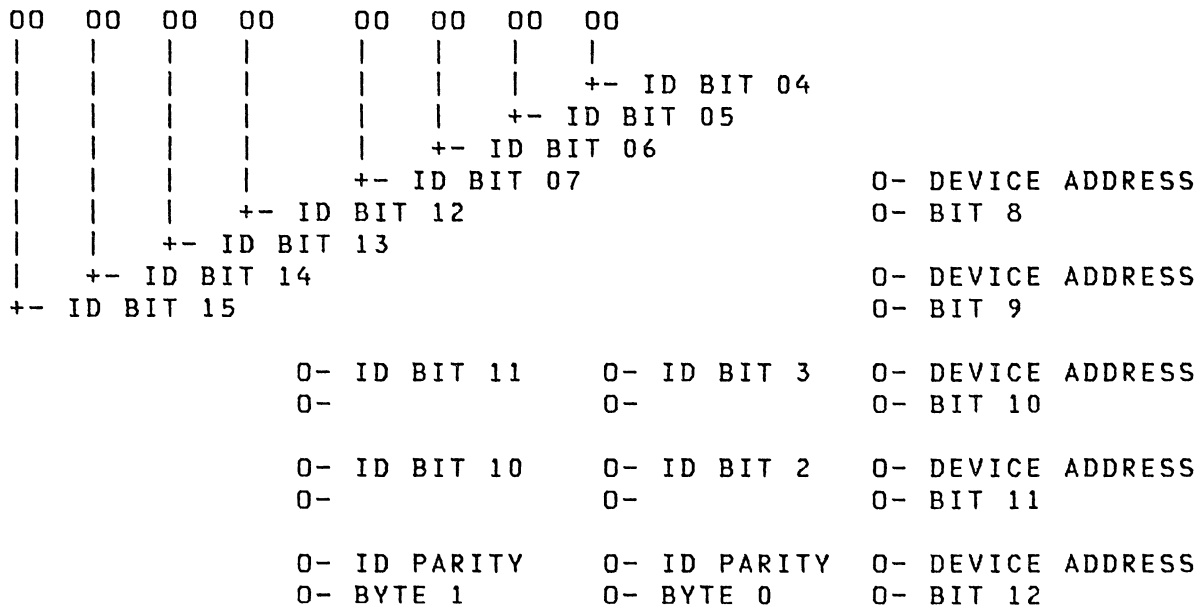
DEVICE ADAPTER AND CONTROLLER CARD CONNECTOR LOCATIONS

MULTI-LINE CONTROLLER
CARD CONNECTORS




DEVICE ADAPTER
CARD CONNECTORS
J1 DEVICE ADDRESS 3 OR 7
J2 DEVICE ADDRESS 2 OR 6
J3 DEVICE ADDRESS 1 OR 5
J4 DEVICE ADDRESS 0 OR 4
J5 CONTROLLER INTERFACE

CONTROLLER CARD ID AND DEVICE ADDRESS JUMPER POINTS



DEVICE ID JUMPER EXAMPLES

8 LINES ID JUMPERS= 2, 11, 13 AND 14
6 LINES ID JUMPERS= 2, 6, 7, 11, 13 AND 14
4 LINES ID JUMPERS= 2, 6, 11, 13 AND 14, AND PARITY BYTE 0
2 LINES ID JUMPERS= 2, 7, 11, 13 AND 14, AND PARITY BYTE 0

FPMLC 4-LINE ADAPTER CARD JUMPER FORMAT

BERG CONNECTOR	DEVICE 0	DEVICE 1	DEVICE 2	DEVICE 3
CURRENT LOOP	0 0000 0 0000	0 0000 0 0000	0 0000 0 0000	0 0000 0 0000
EIA/CCITT	0 0000	0 0000	0 0000	0 0000

EIA/CCITT	0 0	0 0	0 0	0 0
CURRENT LOOP	0	0	0	0

		LINE 0	LINE 1	LINE 2	LINE 3
		D D R C T T D R S	D D R C T T D R S	D D R C T T D R S	D D R C T T D R S
HIGH SPEED	0	0 0 0	0 0 0	0 0 0	0 0 0
LINE ZERO	0				
LO SPEED	0				

HIGH SPEED	0 0 0	LOW SPEED	LINE 1
HIGH SPEED	0 0 0	LOW SPEED	LINE 2
HIGH SPEED	0 0 0	LOW SPEED	LINE 3

6.0 DEVICE UTILITIES:

NONE

7.0 DEVICE EXERCISERS (ON DISKETTE P/N 1635001):

7.1 PROGRAM 3CEF 'OPERATOR SELF TEST'.

7.1.1 PURPOSE

THIS PROGRAM IS TO BE USED BY THE SYSTEM OPERATOR BEFORE REQUESTING THE SERVICE ORGANIZATION WHEN A PROBLEM IS FOUND IN A COMMUNICATION ADAPTER. THE PROGRAM WILL EXECUTE A DEVICE RESET, A PREPARE, A DIAGNOSTIC ONE AND A DIAGNOSTIC TWO COMMAND. ITS MAIN FUNCTION IS TO PERFORM THE WRAP TEST ON THE ADAPTER.

7.1.2 CONDITIONS

7.1.2.1 PROGRAM

THIS PROGRAM IS TO RUN WITH THE DIAGNOSTIC CONTROL PROGRAM (DCP) AND WILL OPERATE IN THE MANUAL MODE ONLY.

7.1.2.2 EQUIPMENT

SEE SECTION 2.0 FOR EQUIPMENT REQUIRED

7.1.3 OPERATING PROCEDURES

BEFORE STARTING THE PROGRAM INSTALL THE CORRECT WRAP CONNECTOR FOR THE SYSTEM CONFIGURATION IN USE, OR PLACE THE SWITCH ON THE CABLE EXTENSION P/N 2722052, IF ONE IS INSTALLED, TO THE TEST POSITION.
AFTER STARTING THE PROGRAM (3CEF), ENTER THE DEVICE ADDRESS AND LOOP OPTION.

NOTE: IF THE CONSOLE FUNCTION IS ASSIGNED TO THE PROGRAMMER CONSOLE, REFERENCE DIAGNOSTIC SERVICE GUIDE 07.01.00 FOR COMMAND/RESPONSE PROCEDURES.

USE DCP COMMAND 'B' FOR LOAD AND GO. USE DCP COMMAND 'F' TO ENTER THE OPTIONS.

EXAMPLE:

ALTERNATE CONSOLE	PROGRAMMER CONSOLE
B3CEF	(B),B,(I),(B),3,C,E,F,(I),(I)

THIS ACTION WILL CAUSE THE PROGRAM TO LOAD AND START WITHOUT OPTIONS. HALT 3CE1 WILL BE DISPLAYED (SEE 7.1.4.1 BELOW.)

7.1.4 PROGRAM MESSAGES AND ENTRIES

7.1.4.1 THE FIRST PROGRAM MESSAGE WILL BE:

ENTER DEVICE ADDRESS AND LOOP COUNT.
'DA/LC' (HALT 3CE1)

DA=DEVICE ADDRESS IN HEXADECIMAL
LC=LOOP COUNT IN HEXADECIMAL

USE DCP COMMAND 'F' TO ENTER ONE (1) HEXADECIMAL WORD.

EXAMPLE:
IF DEVICE ADDRESS IS HEXADECIMAL '18' AND THE TEST IS TO LOOP FIVE TIMES, THEN THIS ENTRY WOULD BE 'F1805'. PROGRAMMER CONSOLE ENTRY --(B),1,F,(I),(B),1,8,0,5,(I),(I).

7.1.4.2 THE NEXT MESSAGE COULD BE ANY OF THREE MESSAGES:

HALT 3CE2
DEVICE ADDRESS ERROR,
ENTER DEVICE ADDRESS AND LOOP COUNT.
'DA/LC' (HALT 3CE2)

DA=DEVICE ADDRESS IN HEXADECIMAL
LC=LOOP COUNT IN HEXADECIMAL

USE DCP COMMAND 'F' TO ENTER ONE (1) HEXADECIMAL WORD.

EXAMPLE:
IF DEVICE ADDRESS IS HEXADECIMAL '18' AND THE TEST IS TO LOOP ONE TIME, THEN THIS ENTRY WOULD BE 'F1801'. PROGRAMMER CONSOLE ENTRY --(B),1,F,(I),(B),1,8,0,1,(I),(I).

HALT 3CE3
THE TEST WAS CORRECT.
THERE IS NO MORE ACTION NECESSARY.

HALT 3CE4
THE TEST FAILED, CALL THE SERVICE ORGANIZATION.
THERE IS NO MORE ACTION NECESSARY.

7.2 MAP EA44 'RPQ D02617/5218 PRINTER TEST'.

7.2.1 PURPOSE

THIS PROGRAM IS TO BE USED BY THE CE TO VERIFY THE INTERFACE BETWEEN THE SERIES/1 AND THE 5218 PRINTER USING RPQ D02617 CABLE.
USE "C" COMMAND TO START MAP
EXAMPLE:
CEA44 (LOADS PROGRAM)
*** D3C00 LOADED
ENTER
D4000 (WILL REQUEST DEVICE ADDRESS)
ENTER
A (BEGINS PROGRAM)
ST
D3C01 MAP=3C01 STEP=0000 (REQUESTING DEVICE ADDRESS
ENTER
FXX (XX= DEVICE ADDRESS TO BE TESTED)
PROGRAM WILL BEGIN AND RUN PER MAP.

8.0 DIAGNOSTICS:

NONE

9.0 OFFLINE TESTS:

NONE