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0.0 7840 TIMER TEST SEQUENCE

TO TEST THE DEVICE, LOAD AND EXECUTE THE FOLLOWING MAP(S):

5000 ENTRY MAP.
5001 MANUAL WRAP MAP.

SEE 3.X FOR DESCRIPTION OF EACH MAP, IF NECESSARY.

NOTE: THESE MAPS TEST BOTH TIMERS ON THE CARD WITH ONE RUN. WHEN MESSAGE IS 'I5000 LOADED DA=40', THE TIMERS AT ADDRESSES 40 AND 41 WILL BE TESTED.

IF THE MDI MAPS DO NOT FAIL, DO THE FOLLOWING:
REPLACE THE TIMER CARD.

IF NO REPAIR:
GO TO MAP 0070, ENTRY POINT A.

FOR ANY 'CHECK' CONDITION (MCK, PCK, PWR/THERM):
GO TO MAP 3871, 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 UNIT.
4. PROGRAMMER OR C E CONSOLE.

1.2 LOADING PROCEDURE(S)

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

SEE MAP 0005 OR THE DISKETTE LABEL FOR THIS INFORMATION

USE THE STANDARD DCP LOAD METHOD:
IF USING A KEYBOARD CONSOLE, USE 'C' (TO LOAD AND WAIT FOR OPTION SELECTION) OR 'B' (FOR LOAD AND GO) FOLLOWED BY THE MAP OR PROGRAM I.D.
SEE THE DIAGNOSTIC SERVICE GUIDE 07.00.00.
TO LOAD WITH THE PROGRAMMER OR C E CONSOLE, SEE SECTION 4.1.

SEE SECTION 5.1 FOR CONFIGURATION INFORMATION.

1.3 MESSAGE FORMAT

ALTERNATE CONSOLE MESSAGE FORMAT:

```
**** I3CXX MAP=YYYY STEP=ZZZZ ****
                         ZZZZ = MAP STEP NUMBER
               YYYY           = MAP NUMBER
     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).

SEE THE MDI HALT LIST IN MAP 0013.

PROGRAMMER CONSOLE HALT FORMAT (DIAGNOSTIC SERVICE GUIDE 07.01.00).

THE 'WAIT' LAMP IS ON
THE DATA LAMPS = MAP NUMBER OR MDI OR DCP HALT.

IN THE LEVEL THREE (3) REGISTERS IS:

R0 = MAP STEP NUMBER.
R1 = DEVICE ADDRESS AND TYPE.
R2 = UNIT ADDRESS, IF USED.
R3 = ADDRESS FOR MORE 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 SO THAT THE MAPS AND OR PROGRAMS WILL EXECUTE WITHOUT ERROR.
SEE SECTION 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.

USE THE IBM GENERAL LOGIC PROBE, PART NUMBER 453212, AND THE C E MULTIMETER, UNLESS THE MAP SAYS TO USE AN OSCILLOSCOPE OR SOME OTHER MULTIMETER.

2.0 SPECIAL TOOL(S) AND DOCUMENT(S):

2.1 SPECIAL TOOL(S)

WRAP CONNECTOR PART NUMBER 1632917.
WRAP CONNECTOR PART NUMBER 1633835.

2.2 DOCUMENT(S):

DIAGNOSTIC SERVICE GUIDE.
PROCESSING UNIT THEORY DIAGRAMS MANUAL.
PROCESSING UNIT MAINTENANCE INFORMATION MANUAL.
SERIES I LOGIC, MLD VOLUME 01.
SERIES I INSTALLATION DOCUMENTS.

3.0 PURPOSE:

THE 500X MAPS WILL VERIFY CORRECT OPERATION OR FIND AND ISOLATE TO A FAILING FIELD REPLACEMENT UNIT IN THE 7840 TIMER ATTACHMENT.

3.1 AUTO MODE MAPS:

MAP 5000 - TESTS THE TIMER CARD.
THE ONLY AUTO MODE MAP. IF NO FAILURE IS FOUND AND A PROBLEM IS SUSPECTED, RUN MANUAL MAP 5001.

3.2 MANUAL MODE MAPS:

THE FOLLOWING 'MANUAL' MODE MAP DOES MORE TEST(S) AND/OR ISOLATE FAILURES.

MAP 5001 - TESTS EXTERNAL GATE AND CLOCK USING THE WRAP CONNECTORS.

3.3 PAPER ONLY MAPS:

NONE

3.4 FAILURE ONLY MAPS:

NONE

3.5 7840 TIMER DIAGNOSTICS, UTILITIES, EXERCISERS OR OFF LINE TEST(S).

NONE

4.0 PROGRAMMER'S COMMENTS:

THIS MAP WILL DISPLAY 'EXPECTED/RECEIVED' DATA ON THE ALTERNATE CONSOLE.
SEE THE DIAGNOSTIC SERVICE GUIDE, 05.03.00.

THE MAPS TEST THE FOLLOWING:

ALL COMMANDS.
ALL OIO AND INTERRUPT CONDITION CODES, EXCEPT INTERFACE DATA CHECK.
ACCURACY OF THE TIMER.
EXTERNAL GATE AND CLOCK, USING WRAP CONNECTORS.

ADDITIONAL PROGRAM INFORMATION IS AS FOLLOWS:

INT RTN/CKPT = RRCC, ER ADR = AAAA, STAT WD = P00E

RRCC = INTERNAL ROUTINE/ CHECKPOINT NUMBER.
AAAA = NEXT INSTRUCTION ADDRESS FOLLOWING THE TEST ROUTINE THAT FAILED.
P00E = AS FOLLOWS:
P0 = 8 = TEST RUNNING.
0E = 1 = AN ERROR OCCURRED.
0E = 2 = NOT EXPECTED INTERRUPT FROM TIMER.

THE FIELD REPLACEMENT UNIT IS THE TIMER CARD.

4.1 LOADING WITH THE PROGRAMMER OR C E MAINTENANCE CONSOLE.

TO EXECUTE THE MAPS WITH THE PROGRAMMER OR C E MAINTENANCE CONSOLE AS THE INPUT DEVICE,

ENTER ON THE CONSOLE AS FOLLOWS:

(B) B (I)
(B) 500X (I) (I)
500X = MAP NUMBER
(B) = DATA BUFFER (I) = CONSOLE INTERRUPT

5.0 SERVICE INFORMATION:

5.1 CONFIGURATION INFORMATION:

CONFIGURATION TABLE ENTRY FORMAT:
TIMER FEATURE NUMBER 7840, DEVICE TYPE 50

```
BYTE:  00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
      |DA|TT|00|00|00|00|00|00|00|00|00|00|00|00|ID|ID|
```

BYTE 00		=	DEVICE ADDRESS (DA)
BYTE 01		=	DEVICE TYPE (TT)
BYTE 02		=	FLAG BYTE
	BIT 1 = 1		FIRST ENTRY ONLY. THIS IS CHAIN BIT.
	BIT 6 = 1		IF CARD/DEVICE IS IN THE COMMON I/O. SEE 3E00 PROLOG, TWO CHANNEL SWITCH.
BYTE 03 TO 0D		=	00 = DEVICE DATA (NONE)
BYTE 0E		=	FIRST BYTE OF DEVICE ID (00ID)
BYTE 0F		=	LAST BYTE OF DEVICE ID (ID28)

EXAMPLE ENTRY:

DEVICE ADDRESS = 40 AND 41.
DEVICE TYPE = 50
DEVICE ID = 0028

```
BYTE:  00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
      |DA|50|40|00|00|00|00|00|00|00|00|00|00|00|00|28|
      |DA|50|00|00|00|00|00|00|00|00|00|00|00|00|00|28|
```

TO ADD THE ENTRY FOR THIS ATTACHMENT, DO THE FOLLOWING:

IF THE INPUT/OUTPUT DEVICE HAS A KEYBOARD:
GO TO MAP 3881, ENTRY POINT A.

IF THE PROGRAMMER OR C E CONSOLE IS THE INPUT DEVICE:
GO TO MAP 3882, ENTRY POINT A.

IF THE OUTPUT DEVICE IS A PRINTER WITH NO KEYBOARD:
GO TO MAP 3883, ENTRY POINT A.

NOTE:

WHEN THE BASIC DIAGNOSTIC DISKETTE CONFIGURATION TABLE IS CORRECT:
USE THE CONFIGURATION PROGRAM 38F0, OPTION '0D' TO WRITE THE CONFIGURATION TABLE (38F1) FROM THE BASIC DISKETTE TO THE DIAGNOSTIC, SYSTEM TEST AND RPQ DISKETTE(S) WITH THE SYSTEM.
SEE THE DIAGNOSTIC SERVICE GUIDE 08.01.02.

6.0 TIMER UTILITIES:

NONE

7.0 TIMER EXERCISERS:

NONE

8.0 TIMER DIAGNOSTICS:

NONE

9.0 TIMER OFF LINE TEST(S):

NONE