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0.0 TTY ATTACHMENT TEST SEQUENCE:

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

MAP 4000 (ENTRY MAP),
 MAP 4001 (WRAP MAP),
 MAP 4002 (ECHO MAP) IF A KEYBOARD DEVICE IS ATTACHED.

SEE PARAGRAPHS 3.X FOR DETAILS ON ALL MAPS.

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

IF THESE MAPS SAY TO CHANGE THE ATTACHMENT CARD AND THE SYSTEM STILL FAILS AFTER REPLACEMENT OF THE CARD, ANOTHER ATTACHMENT MAY BE CAUSING THE FAILURE. MAP 0070 IS A CHANNEL ISOLATE PROCEDURE FOR THIS TYPE OF PROBLEM.

1.0 GENERAL INFORMATION:

1.1 MINIMUM CONFIGURATION

THE SERIES/1 MAINTENANCE PACKAGE NEEDS A MINIMUM SYSTEM CONFIGURATION OF: SERIES/1 PROCESSOR, 16K STORAGE, A DISKETTE DRIVE AND A PROGRAMMER CONSOLE.

1.2 LOADING PROCEDURES

ALL MDI MAPS, UTILITIES AND EXERCISERS ARE ON ONE OF THE DIAGNOSTIC DISKETTES. SEE THE DISKETTE LABEL.

USE STANDARD DCP LOADING PROCEDURES:

WHEN THE CONSOLE FUNCTION IS ASSIGNED TO A KEYBOARD CONSOLE DEVICE PRESS 'C' (TO LOAD AND WAIT FOR OPTION SELECTION) OR 'B' (FOR LOAD AND GO) FOLLOWED BY THE FOUR CHARACTER MAP/ PROGRAM I.D. (SEE THE DIAGNOSTIC SERVICE GUIDE 07.00.00).
 TO LOAD WITH THE PROGRAMMER CONSOLE SEE 4.1 THIS DOCUMENT.

1.3 MESSAGE FORMAT

IF AN ALTERNATE CONSOLE IS ASSIGNED, MAP MESSAGES ARE FORMATTED AS FOLLOWS:

***** 13CXX MAP=YYYY STEP=ZZZZ *****

13CXX IDENTIFIES THE HALT AS A MDI/MAP HALT

YYYY=MAP #
 ZZZZ=MAP STEP #

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 F001)

3C06 ENTER 'TO' STEP (4 CHARACTERS, THAT IS, FOR STEP 099 ENTER F099)

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 ABOUT ANY DCP HALT OR MDI SUPERVISOR HALT (MAP=3CXX), SEE THE DIAGNOSTIC SERVICE GUIDE, 06.00.00, COMMON HALT LIST.

WHEN THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE, HALTS ARE IDENTIFIED AS FOLLOWS.

'WAIT' LAMP ON.

DATA LAMPS=MAP# OR MDI/DCP HALT CODE.

LEVEL 3 REGISTERS WILL CONTAIN:

R0= MAP STEP #.

R1=DEVICE ADDRESS AND TYPE CODE (AATT).

R3=POINTER TO ADDITIONAL DATA (SEE 4.0, PROGRAMMER COMMENTS)

REFERENCE DIAGNOSTIC SERVICE GUIDE 07.01.00.

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MAP 4000-2

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1.4 COMMENTS

THE DISKETTE MUST BE CORRECTLY CONFIGURED BEFORE THE MAPS/ PROGRAMS WILL EXECUTE CORRECTLY. SEE 5.1 THIS DOCUMENT AND DIAGNOSTIC SERVICE GUIDE 08.00.00

A 'SYSTEM LEVEL' FAILURE MAY APPEAR TO BE A DEVICE FAILURE. ALWAYS USE SYSTEM ENTRY MAP (MAP 0020) FOR BEST RESULTS.

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

IF THESE MAPS SAY TO CHANGE THE ATTACHMENT CARD AND THE SYSTEM STILL FAILS AFTER REPLACEMENT OF THE CARD, ANOTHER ATTACHMENT MAY BE CAUSING THE FAILURE. MAP 0070 IS A CHANNEL ISOLATE PROCEDURE FOR THIS TYPE OF PROBLEM.

USE THE IBM GENERAL LOGIC PROBE, P/N453212, AND THE CE METER UNLESS THE MAP SPECIFIES AN OSCILLOSCOPE, OR A DIFFERENT METER.

2.0 SPECIAL TOOLS & ADDITIONAL DOCUMENTATION:

2.1 SPECIAL TOOLS:

WRAP CONNECTOR P/N 1633834

2.2 ADDITIONAL DOCUMENTATION:

DIAGNOSTIC SERVICE GUIDE.
PROCESSOR THEORY DIAGRAMS MANUAL.
PROCESSOR MAINTENANCE INFORMATION MANUAL.
SERIES 1 LOGICS, MLD VOLUME 01.

3.1 'AUTO' MODE MAPS:

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

MAP 4000 (DEVICE ENTRY MAP):
AUTOMATICALLY TEST THE TTY ATTACHMENT

3.2 'MANUAL' MODE MAPS:

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

MAP 4001 (WRAP MAP):
IN 'MANUAL MODE', TEST THE TTY ATTACHMENT DRIVER AND RECEIVER CIRCUITS.
ALSO USED FOR IPL PROBLEMS.

MAP 4002 (ECHO-PRINT MAP):
IN 'MANUAL MODE', ECHO-PRINT KEYBOARD ENTRIES MADE BY THE USER.

3.3 'PAPER ONLY' MAPS:

NONE

3.4 'FAULT ONLY' MAPS:

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

MAP 4071 (PAPER ONLY MAP):
ISOLATE, TO THE FAILING FRU, FAILURES DETECTED, BUT NOT FIXED, BY MAPS 4000 AND 4001.

3.5 DIAGNOSTICS, UTILITIES, EXERCISERS, OFF-LINE TESTS:

NONE

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MAP 4000-3

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4.0 PROGRAMMER'S COMMENTS:

THIS MAP DISPLAYS 'EXPECTED/RECEIVED' DATA WHEN AN ALTERNATE CONSOLE IS ASSIGNED. SEE 4.0, PROGRAMMER COMMENTS.

THESE MAPS, 4000, 4001 AND 4002, TEST APPROXIMATELY 70% OF THE TTY ATTACHMENT LOGIC. IF MAP 4000 DETECTS AN ERROR, MAP 4071 MAY BE USED TO DIAGNOSE THE ERROR. FOR MORE TESTING OF THE TTY ATTACHMENT, MAP 4001 SHOULD BE LOADED IN 'MANUAL MODE'. THIS WILL TEST THE TRANSMIT DRIVERS AND THE RECEIVERS. MAP 4002 WILL PERMIT KEYBOARD ENTRIES, AND WILL ECHO-PRINT THOSE CHARACTERS.

THESE MAPS EXECUTE THE FOLLOWING TTY ATTACHMENT TESTS.

EXECUTE ALL COMMANDS TO THE TTY ATTACHMENT.
CHECKS ALL OIO AND INTERRUPT CONDITION CODES.
CHECKS EXECUTION OF THE 'DIAGNOSTIC WRAP' COMMAND.

THESE MAPS DO NOT TEST THE FOLLOWING:
IPL CIRCUITS (CONTROLS, REQUESTS, CYCLE STEAL MECHANISM, ETC.
DATA RATES AND SELECTION JUMPERING.
DATA MARK LEVELS AND SELECTION JUMPERING.

THESE MAPS IDENTIFY THESE FRU'S:
FEATURE CODE 7845 TTY ATTACHMENT CARD.
FEATURE CODE 7845 TTY ATTACHMENT CABLE.

ADDITIONAL INFORMATION MAY BE DISPLAYED, FOR MAPS 4000 AND 4001, AS FOLLOWS:
MESSAGE FORMAT
INTERNAL RTNE = RRRR INTERNAL CKPT = CCCC

WHERE: RRRR = INTERNAL ROUTINE NUMBER IN 14000
CCCC = INTERNAL CHECKPOINT NUMBER IN THE ROUTINE

IF THE CONSOLE FUNCTION IS ASSIGNED TO THE PROGRAMMER CONSOLE:
R3 WILL CONTAIN THE ADDRESS OF THE FOLLOWING TABLE:

'TUID' - (WORD) THE PROGRAM ID OF THE PROGRAM EXECUTING
'RTNE' - (WORD) THE INTERNAL ROUTINE NUMBER IN THE PROGRAM
'CKPT' - (WORD) THE INTERNAL CHECKPOINT NUMBER IN THE ROUTINE
'IDCB' - (DOUBLEWORD) THE IMMEDIATE DEVICE CONTROL BLOCK (IDCB)
OF THE LAST OIO COMMAND.
'XIOCC/RIOCC' - (BYTE/BYTE) THE 'EXPECTED/RECEIVED' CONDITION
CODE FROM THE LAST OIO COMMAND.
'XINCC/RINCC' - (BYTE/BYTE) THE 'EXPECTED/RECEIVED' CONDITION
CODE FROM THE LAST INTERRUPT CAUSED BY
THE NORMAL EXECUTION OF THIS TEST.
'IDRDA/LEVEL' - (BYTE/BYTE) THE ID WORD OR ADDRESS OF THE DEVICE
RESPONDING TO THE TEST, AND THE LEVEL
OF THE LAST INTERRUPT. BYTE 0 WILL
CONTAIN THE ID ONLY WHEN A READ ID
COMMAND FAILS. FOR ALL OTHER COMMANDS
IT WILL CONTAIN THE DEVICE ADDRESS.

ADDITIONAL INFORMATION, FOR MAP 4002, MAY BE DISPLAYED, AS FOLLOWS:
REGISTER 0 = LAST CHARACTER INPUT.
REGISTERS 2 AND 3 = LAST FOUR CHARACTERS INPUT.
REGISTER 7 = LAST CHARACTER OUTPUT.

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
4000	(B),B,(I),(B),4,0,0,0,(I),(I)
4001	(B),B,(I),(B),4,0,0,1,(I),(I)
4002	(B),B,(I),(B),4,0,0,2,(I),(I)

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MAP 4000-4

5.0 GENERAL SERVICE INFORMATION:
5.1 CONFIGURATION INFORMATION.

SEE DIAGNOSTIC SERVICE GUIDE 08.01.04.

6.0 DEVICE UTILITIES:

NONE

7.0 DEVICE EXERCISERS:

NONE

8.0 FAULT LOCATING DIAGNOSTICS:

NONE

9.0 OFF-LINE TESTS:

NONE