Volume: 02
Title: MI MAPS 0400-4B70
Machine Type: 4331-2 / 4331-11
Power Design Level: 4/5
B/M Number 4331-2: 5683352
B/M Number 4331-11: 4687134

DEAD SYSTEM (ERRORS DURING IML)

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
A000	R	49	148
A100	R	49	148
A102	R	49	148
E001	R	49	148
E002	R	49	148
E006	R	49	148
E008	R	49	148
E680	A	2	001
E680	R	49	148
FD72	R	49	148
FD74	R	49	148
FD76	R	49	148
FD80	R	49	148
FD82	R	49	148
FD84	R	49	148
FD86	R	49	148
FE90	A	2	001
FSC	P	19	068
FXXX	GG	29	099
F100	A	2	001
F100	BB	19	068
0E04	R	49	148
0000	R	49	148
0001	A	2	001
0001	R	49	148
0010	R	49	148
0050	R	49	148
0070	A	2	001
0201	A	2	001
0401	A	2	001
0401	B	35	129
0401	S	6	010
0401	BB	19	068
0401	CC	43	141
0401	CY	35	126
0401	FF	44	144
0401	GG	29	099
0401	HH	26	091
0401	HX	28	096

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0402	B	35	129
0402	CC	43	141
0402	FF	44	144
0600	R	49	148
0800	A	2	001
0800	R	49	148
0800	GG	29	099

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
41	140	FD82	A
42	140	FD84	A
35	133	FD86	A
35	132	FD86	A
42	140	FD86	A
49	153	0001	A
41	140	0001	0
17	059	0201	A
17	053	0201	A
16	041	0401	T
16	040	0401	T
16	039	0401	T
17	056	0402	N
17	052	0800	A
18	067	0800	A

001

(Entry Point A)
****

A 'DEAD SYSTEM' situation exists when the Program Load picture does not appear on screen after performing IML.

```
**************************************************
**************************************************
** Caution:                                     **
**                                              **
** Do not touch any key on the keyboard or      **
** the START/STOP key during IML.               **
**                                              **
** The diskette unit may be sensitive to        **
** electromagnetic fields.                      **
** Therefore, the machine covers should always  **
** be closed during any diskette operation.     **
**************************************************
**************************************************
```

(Step 001 continues)

(Step 001 continued)

Service hints:

If the replacement of all suspected FRUs does not correct the error, then check the cables of the processor bus and the cables which belong to the adapters.

See Vol.13, STM, Section 1: Locations (Cabling Layout of Gate 01A and Cable Locations).

After replacement of any DCA card, turn power off and on at the operator console in order to perform 'power on reset' on the display unit.

Did the Program Load picture appear on screen?
Y N

002
This is the ENTRY POINT for errors which are detected during the IML operation. If the error comes up only after a successful IML operation, go to MAP 0800, ENTRY POINT AA.

Note:
The IML operation is completed successfully when the Program Load picture appears on the screen.

- o If operator console has a security key lock, check that the key is inserted and turned clockwise.
- o Set the CE MODE switch to the NORMAL position.
- o Do the LAMP TEST for the CE panel of the 'Support Processor Display'.

See Vol.13, STM, Section 4: Diagnostic Run Procedures
(SP Trace, Lamp Test for SP Display Indicators).

Do it in accordance with your support structure.

- o Turn power off at the system and at operator console (display station 3278-2A or 3279-2C).

Note:
The display station is switched off to reset the information on the screen.
This can also be done by operating the NORMAL/TEST switch.

(Step 002 continues)

(Step 002 continued)
o Make sure that the RLK card 1
and RLK card 2
(01A-A2W2 and 01A-A2X4) are not installed.
Remove these cards if they are installed and
return them after the repair.

o Turn power on at
operator console
(display station) and wait
at least 30 seconds.

Note:
Adjust the brightness control, if required.

Are the divider line (divider scan) and curser on the screen?

Y N

003
Go to the '3278-2A Display Console Maintenance Information'

or to the '3279-2C documentation.'
(In the pocket under the keyboard)

Repair as required. Then
Go to Page 49, Step 153, Entry Point Z.

004
Turn power on at the system.

Note:
With system power on, the SP diagnostic tests and the IML operation are started automatically.

(Entry Point AB)
****

Observe:
1.Diskette file drive access
mechanism.
2.Operator console.
3.SP Display indicator light 7
(BAT).

Note:
In some later steps, the MAP will ask for:
1.Any movement of the diskette
drive access mechanism.
2.The message 'Operator console
test of display.'
3.The switching of the BAT light.

Is the IML operation completed succesfully?

Y N

Note:
The IML operation is completed successfully when the 'Program Load' picture appears on the screen.

1
7 5
B C

005
Is the basic check indicator on?
Y N

006
Was there any movement (seek motion) of the diskette file access mechanism and headloading before the error hang?
(A seek motion may be for one track only.)
Y N

007
(Entry Point D)
****

Write down the error status from the SP Display on the CE panel.

Refer to the SP Display sheet layout and the SP Display description.
See Vol.13, STM, Section 4: Diagnostic Run Procedures (Support Processor Display).
Note:
If you are in doubt whether the display is stable do the following procedure:
1. Raise signal 'wait state gate' by forcing Pin 01A-C2E2S03 to ground.
2. Read SP Displays 8 and 9.
3. Release signal 'wait state gate.'

Repeat steps 1 - 3 several times.

The several values of displays 8 and 9 have to be equal or may differ by 2. Then the display is considered to be stable.

Are displays 8 and 9 (ADDR HI and ADDR LOW) stable (lights aren't flickering)?
Y N

008
Wait another 30 seconds and check for a stable display.

Are displays 8 and 9 stable?
Y N

1 1 1 1
7 6 6 6 6
D E F G H

009
Try IML several times and wait for a stable display.
To restart IML try alternately:
1.IML by turning power-off/on
and
2.IML by pressing IML key.

Are displays 8 and 9 stable?
Y N

010
(Entry Point S)
****

This part of the MAP is entered if an error hang happens during the IML operation and
o SP Displays 8 and 9 are not stable or
o SP Displays 8 and 9 did not match with an address shown in the Error Hang Address Table or it is in the table, but not valid.

Was there any movement (seek motion) of the diskette file access mechanism and headloading before the error hang?
(A seek motion may be for one track only.)
Y N

011
o Connect logic probe to 01A-C2F2S08. ('SP Restart' signal) called '-Power On Reset.'

For logic probe description, see General System Information, Section 4: Tools.

Note:
The 'SP Restart' signal is now checked for proper switching. This signal starts the SP diagnostic tests and the IML operation.
The 'SP Restart' is activated by:
1.Power on
2.Perform 'power on' or IML.
3.IML key (push button D) on the CE panel.

o Turn system power off/on.

(Step 011 continues)

(Step 011 continued)
Does the 'SP Restart' signal switch from down to up and remains up after power on?
Y N

012
Replace:
BPC Card 1, 01A-A2B2.

Does the 'SP Restart' signal now switch properly?
Y N

013
Trace the 'SP Restart' signal called '-Power On Reset' from 01A-A2B2J13 to 01A-C2F2S08 (SP 3 Card).

Suspected FRUs:
1.SBA Card 1, 01A-A2Q2
2.Signal cable from board 01A-A2YD to 01A-C2YK
3.SCL Card 4, 01A-C2B4
4.Support bus cable.
For 4321 or 4331-1:
From 01A-A2YF to 01A-B1L4(C).

For 4331-2 or 4331-11:
From 01A-A2YF to 01A-B1A3(C).
5.Support bus cable (if IOC is installed) from 01A-A2YE to 01A-A1ZE.
Go to Page 49, Step 153, Entry Point Z.

Note:
See Vol.13, STM, Section 1: Locations. (SP Restart Line).
The signal should switch at all test points as described above.

014
Problem is corrected.
Restart IML.
Go to Page 49, Step 153, Entry Point Z.

015
Hit the IML key (push button D) on the CE panel and watch the logic probe.

Note:
The 'SP Restart' line should be at a down-level as long as the IML key is pressed and should switch to an up-level when the key is released.

Does the 'SP Restart' signal switch properly?
Y N

016
Find the failing FRU by tracing the 'SP Restart' signal from the IML key on the CE panel to 01A-C2F2S08 (SP Card 3). Suspected FRUs (sequenced by direction of signal flow):

- o CE panel
- o Signal cable from CE panel to board 01A-C2 and from 01A-C2 to 01A-A2.
- o SBA Card 1, 01A-A2Q2.
- o Signal cable from board 01A-A2 to 01A-C2.
- o SCL Card 4, 01A-C2B4.

Go to Page 49, Step 153, Entry Point Z.

Note:
See Vol.13, STM, Section 1: Locations (SP Restart Line). The signal should switch at all test points as described in step before.

017
Repeat the procedure from the previous step with IML key on the operator control panel.

Note:
Do not switch power off.

Does the 'SP Restart' signal switch properly?
Y N

9 9
M N

018

Find the failing FRU by tracing the 'SP Restart' signal from the IML key to 01A-C2F2S08 (SP Card 3).
Suspected FRUs (sequenced by direction of signal flow):
- o IML key
- o Cables from operator control panel to board 01A-A2
- o SBA Card 1, 01A-A2Q2
- o Signal cable from 01A-A2 to 01A-C2
- o SCL Card 4, 01A-C2B4

Go to Page 49, Step 153, Entry Point Z.

Note:
See Vol.13, STM, Section 1: Locations (SP Restart Line).
The 'SP-Restart Line should be at a down-level as long as the IML key is pressed and should switch to an up-level when the key is released.

019

Connect logic probe to 01A-A2T2D04 ('Processor Bus Reset' signal). Hit the IML key.

Note:
The 'Processor Bus Reset' line should be at a down-level as long as the IML key is pressed and should switch to an up-level when the key is released.

Does the 'Processor Bus Reset' line switch properly?

Y N

020

Suspected FRUs:
1. BBA0 Card, 01A-A2T2
2. SCL Card 4, 01A-C2B4.

Go to Page 49, Step 153, Entry Point Z.

021

Connect logic probe to 01A-C2F2-U10 ('I Fetch' signal).
Hit the IML key and release it.

Note:
The 'I Fetch' signal should start pulsing when the IML key is released.

Is the 'I Fetch' signal pulsing?

Y N

022

Refer to SP Display 6 (STAT REG HI).

See Vol.13, STM, Section 4: Diagnostic Run Procedures
(Support Processor Display).

Is indicator light 4 (CSA) on?

Y N

023

Go to Page 11, Step 026, Entry Point M.

024

Suspected FRUs:

1.CDF1 Card 1, 01A-A2R2
CDF1 Card 2, 01A-A2S2
System Diskette Cable,
01A-A2ZF to
System Diskette Drive.

2.DCA Card 3, 01A-A2K2
DCA cards 1, 2,
01A-A2J4, J2
Display Cable,
01A-A2ZD to
Coax. Connectors.

3.BBA0 Card, 01A-A2T2

4.CDF2 Card 1, 01A-A2N2.
CDF2 Card 2, 01A-A2P2.
I/O Diskette Cable,
01A-A2ZE to
I/O Diskette Drive.

Go to Page 49, Step 153, Entry Point Z.

025

Go to Page 11, Step 026, Entry Point M.

026

(Entry Point M)
****

To further analyze this error, it is necessary to disconnect all adapters from the support processor by the following procedure:

o Turn power off at the system.

o Disconnect following cable connectors on board 01A-C2
1. YJ (Processor bus)
2. YK (Processor bus).

See Vol.13, STM, Section 1: Locations. (Cabling Layout of Gate 01A).

o Install a jumper from 01A-C2A1C06 to 01A-C2B4G07.

Note:
This jumper is required to make the IML key operational.

o Turn power on.

o Press the IML key, button D on the CE panel, and release. Wait for at least 20 seconds.
o Write down the error status from the SP Display on the CE panel. Read the SP Display from the card side of the gate.

Note:
Because of the removed cables, the SP diagnostic tests should now come to a defined error hang (Ref.Code E0183001).

See Vol.13, STM, Section 4: Diagnostic Run Procedures (Support Processor Display).

Are the displays 8 and 9 (ADDR HI and ADDR LOW) stable?

Note:
Do the following procedure, if you are in doubt whether or not the display is stable:
1. Raise signal 'wait state gate' by forcing Pin 01A-C2E2S03 to ground.
2. Read SP Display 8 and 9.
3. Release signal 'wait state gate.'

Repeat steps 1 - 3 several times. The several values of displays 8 and 9 have to be equal or differ by 2. Then the display is considered to

(Step 026 continues)

(Step 026 continues)

(Step 026 continued)
Y N

027
Turn power off.
Reconnect cable connectors.
Suspected FRUs:
1.SP Cards 1, 2, 3,
01A-C2D2, E2, F2
2.SP Card 4, 01A-C2G2
3.SCL Cards 3 and 4,
01A-C2C2 and B4
4.Board 01A-C2
Go to Page 49, Step 153, Entry Point Z.

028
To verify the error status, restart IML several times and compare displays 8 and 9 after each error hang.

Is the error hang address (displays 8 and 9) always the same when you do IML several times?
Y N

029
Turn power off.
Reconnect cable connectors.
Suspected FRUs:
1.SP Cards 1, 2, 3,
01A-C2D2, E2, F2
2.SP Card 4, 01A-C2G2
3.SCL Cards 3 and 4,
01A-C2C2 and B4
4.Board 01A-C2
Go to Page 49, Step 153, Entry Point Z.

030
Is the error hang address 0B22 or 0B24 (Ref.Code E0183001 or E0183101)?

Y N

1 1
4 3
R S

(Step 026 continued)
be stable.

Note:
If the error hang address is 0B22 or 0B24, the failing FRU is probably located on board 01A-A2.

031
Is the error hang address higher than 0B0A?
Y N

032
The error hang address is lower than 0B0A.

Note:
If the error hang address is lower than 0B0A, the failing FRU is located on board 01A-C2.

Is the error hang address:

0A22,
0A34,
0A46,
0A58,
or 0A5E ?
Y N

033
Turn power off.
Reconnect cable connectors
01A-C2YJ and YK
and remove jumper.
Suspected FRUs:
1.SP Cards 1, 2, 3,
01A-C2D2, E2, F2
2.SP Card 4, 01A-C2G2
3.SCL Cards 3 and 4,
01A-C2C2 and B4
4.Board 01A-C2.
Go to Page 49, Step 153, Entry Point Z.

034
Turn power off.
Reconnect cable connectors
01A-C2YJ and YK
and remove jumper.
Suspected FRUs:
1.SP Card 4; 01A-C2G2
2.SP Card 1, 2, 3;
01A-C2D2 to F2
Go to Page 49, Step 153, Entry Point Z.

035

Turn power-off.
Reconnect cable connectors
01A-C2YJ and YK
and remove jumper.
Suspected FRUs:
1.SP Cards 1, 2, 3,
01A-C2D2, E2, F2
2.SP Card 4, 01A-C2G2
3.SCL Cards 3 and 4,
01A-C2C2 and B4
4.Board 01A-C2.
Go to Page 49, Step 153, Entry Point Z.

Note:
The address displayed is invalid and cannot be used for further analysis.

036

o Switch power off.
o Install cable connectors
01A-C2YJ and YK (removed before).
o Remove jumper
(installed before).

o Switch power on.
o Restart IML and make sure that the error symptoms have not changed from the original ones.

Note:
If the error symptoms have changed, visually check for loose cards and cables on board 01A-C2. If reseating of cards/cables is required, turn power off.

o Refer to SP Display
6 (STAT REG HI).

See Vol.13, STM, Section 4: Diagnostic Run Procedures
(Support Processor Display).

Is indicator light 4 (CSA) on?

Y N

037

Suspected FRUs:

1. CDF1 Card 1 and 2, 01A-A2R2 and S2
   System Diskette cable, 01A-A2ZF
   to System Diskette Drive.
2. CDF2 Card 1 and 2, 01A-A2N2 and P2
   I/O Diskette cable, 01A-A2ZE
   to I/O Diskette Drive.
3. I/O diskette Drive.

   For a quick checkout
   of the I/O diskette drive
   GO TO MAP FD70
   ENTRY POINT A.
   Then return to here
   again.

4. DCA Card 3 01A-A2K2
5. BBA0 Card 01A-A2T2
6. PCI Card 1 01A-A2E2
7. SBA Card 1 01A-A2Q2
8. Board 01A-A2

Go to Page 49, Step 153, Entry Point Z.

038

Suspected FRUs:

1. SP Card 3 01A-C2F2
2. CDF1 Card 1 and 2, 01A-A2R2 and S2
   System Diskette cable, 01A-A2ZF
   to System Diskette Drive.
3. System Diskette Drive.

   For a quick checkout
   of the system
   diskette drive
   GO TO MAP FD80
   ENTRY POINT A.
   Then return to
   here again.

4. DCA Card 3 01A-A2K2
5. BBA0 Card 01A-A2T2
6. CDF2 Card 1 and 2, 01A-A2N2 and P2
   I/O Diskette cable, 01A-A2ZE
   to I/O Diskette Drive.
7. Board 01A-A2

(Step 038 continues)

(Step 038 continued)
Go to Page 49, Step 153, Entry Point Z.

039
Go To Map 0401, Entry Point T.

040
Go To Map 0401, Entry Point T.

041
Go To Map 0401, Entry Point T.

042
Did the test message 'Operator Console Test of Display' appear on the screen?
Y N

For logic probe description, see General System Information, (GSI), Section 4: Tools.

Note:
The 3278-2A display station must have power on.

043
Go to Page 5, Step 007, Entry Point D.

044
Is any reference code on the screen?
Y N

045
Did the message SP LOADER IN PROCESS appear on the screen?
Y N

046
Go to Page 5, Step 007, Entry Point D.

047
Did the SP Display indicator light 7 (BAT) switch on and off?
Y N

Note:
The BAT indicator light is switched on with power on or IML key and is switched off when the message SP LOADER IN PROCESS appears on the screen.

1 1 1
7 7 7
W X Y

048
Suspected FRUs:
o SCL card 3, 01A-C2C2
o CE panel
o Cable from CE panel
01A-D1A1 to 0A1-C2YA
Repair or replace as required.
Try IML again.
Go to Page 49, Step 153, Entry Point Z.

049
Is the message POWER ON IN PROCESS now on the screen?
Y N

050
Is the IML picture now on the screen?
Y N

051
Go to Page 5, Step 007, Entry Point D.

052
Go To Map 0800, Entry Point A.

053
Go To Map 0201, Entry Point A.

054
Reference Code E019XXXX?
Y N

055
Go to MAP according to the reference code displayed.

056
Go To Map 0402, Entry Point N.

057
Is any reference code displayed?
Y N

A
Z A

058
Press the CANCEL key and wait approximately 2 minutes.

Is any reference code displayed?
Y N

059
Go To Map 0201, Entry Point A.

060
Go to corresponding MAP.

061
Go to corresponding MAP.

062
Are you here the first time?
Y N

063
Are you here the second time?
Y N

064
You reached this point now more than two times. See note below.
Proceed in trying IML alternately:
1.IML by power off/on.
2.IML by pressing IML key.

Then
Go to Page 2, Step 001, Entry Point A.

Note:
If you always return to this step, the error is intermittent or not detected by the SP diagnostic tests. Perform a complete system checkout.
Go to Page 41, Step 140, Entry Point H.

065
Try IML again by pressing IML key.
Go to Page 4, Step 004, Entry Point AB.

066
Try IML again by turning power off and on.
Go to Page 2, Step 001, Entry Point A.

067
Go To Map 0800, Entry Point A.

068

(Entry Point BB)
****

This part of the MAP is entered if a basic processor bus error is suspected.

(Entry Point P)
****

To further analyze this error, it is necessary to disconnect all adapters from the support processor by the following procedure:

o Turn power off at the system.
o Disconnect following cable connectors on board 01A-C2:
1. YJ (Processor bus)
2. YK (Processor bus)

See Vol.13, STM, Section 1: Locations (Cabling Layout on Gate 01A).

o Install a jumper from 01A-C2A1C06 to 01A-C2B4G07.

Note:
This jumper is required to make the IML key operational.

o Turn power on.

o Press the IML key (push button D) on the CE panel and wait for at least 20 seconds.
o Write down the error status from the SP Display on the CE panel.

Note:
Because of the removed cables, the SP diagnostic tests should now come to a defined error hang (Ref.Code E0183001).

Is the error hang address (display 8 and 9) 0B22 or 0B24 (Ref.Code E0183001 or E0183101)?

Y N
| |

2 2
0 0
A A
C D

069

o Turn power off
o Remove the jumper
o Reconnect cable connectors
in 01A-C2YJ and YK
Suspected FRUs:

1. SP cards 1, 2, 3, 01A-C2D2, E2, F2
2. SCL cards 3, 4, 01A-C2C2 and B4
3. SP card 4, 01A-C2G2
4. Board 01A-C2

Go to Page 49, Step 153, Entry Point Z.

070

o Turn power off.
o Reconnect cable connectors
in 01A-C2YJ and JK.
o Remove following cards from board 01A-A2:

1. DCA cards 1, 2, 3, 01A-A2J4, J2, K2,
2. CDF2 cards 1, 2, 01A-A2N2, P2 if installed
3. SBA card 1, 01A-A2Q2
4. CDF1 card 1, 2, 01A-A2R2, S2
5. BBA0 card, 01A-A2T2
6. RLK card 1, 01A-A2W2 if installed
RLK card 2, 01A-A2X4 if installed.

o Turn power on.

o Press the IML key
(push button D) on the CE panel
and wait for at
least 20 seconds.
o Write down the error status
by displaying the SP Display
on the CE panel.

Note:
The jumper from 01A-C2A1C06 to 01A-C2B4G07 must remain installed.

Is the error hang address, display 8 and 9, 0B22 or 0B24 (Ref. code E0183001 or E0183101)?

Y N

Note:
This is an expected error hang with above cards removed.

071
Suspected FRUs:
1.PCI card 1, 01A-A2E2
2.Cable from: 01A-C2YJ to
01A-A2YM
Cable from: 01A-C2YK to
01A-A2YD.
3.Board A2, 01A-A2.
Install all cards removed
previously and remove jumper
from 01A-C2A1C06 to
01A-C2B4G07.
Go to Page 49, Step 153, Entry Point Z.

See Vol.13, STM, Section 1: Locations (Cabling Layout on Gate 01A).

072
o Turn power off
o Install CDF1 cards 1, 2,
01A-A2R2, S2.
o Turn power on
o Press the IML key (pushbutton D) on the CE panel and wait for at least 30 seconds.

o Write down the error status
from the SP Display
on the CE panel.

Note:
All cards previously removed will be re-installed by the following procedure.

Is the error hang address, (display 8 and 9), 596A (Ref. code E01A0201)?
Y N

Note
This is an expected error hang if the diskette file adapter cards are good.

073
Suspected FRUs:
CDF1 cards 1, 2, 01A-A2R2, S2.
System Diskette cable;
01A-A2ZF to
System Diskette Drive.
Install all previously removed cards and remove jumper from 01A-C2A1C06 to 01A-C2B4G07.
Go to Page 49, Step 153, Entry Point Z.

074
Is a second diskette drive (I/O diskette) installed?
Y N

075
Go to Step 078, Entry Point BC.

076
o Turn power off.

o Install CDF2 cards 1 and 2, 01A-A2N2, P2.

o Turn power on.

o Press the IML key (push button D) on the CE panel and wait for at least 30 seconds.
Write down the error status from the SP Displays on the CE panel.

Is the error hang address,(display 8 and 9), 596A (Ref. code E01A0201)?
Y N

Note:
This is an expected error hang if the CDF2 cards are good.

077
Suspected FRUs:
CDF2 cards 1, 2, 01A-A2N2, P2.
I/O Diskette Cable;
01A-A2ZE to
I/O Diskette Drive.
Go to Page 49, Step 153, Entry Point Z.

078
(Entry Point BC)
****

o Turn power off
o Install DCA cards 1, 2, 3, 01A-A2J4, J2, K2.

o Turn power on
o Press the IML key (push button D) on the CE panel and wait for at least one minute.

(Step 078 continues)

(Step 078 continued)
Is reference code E0341101 displayed on operator console line 23?
Y N

Note:
This is an expected error hang if the DCA cards are good.

079
Is any other reference code displayed?
Y N

080
Suspected FRUs:
1.DCA card 3, 01A-A2K2
2.DCA cards 1, 2, 01A-A2J4, J2
Displays cable,
01A-A2ZD to
Coax. connectors.
Go to Page 49, Step 153, Entry Point Z.

081
Go to MAP according to reference code displayed. Before proceeding, install all cards previously removed and remove jumper from 01A-C2A1C06 to 01A-C2B4G07.

Go to Page 49, Step 153, Entry Point Z.

082
o Turn power off.
Install SBA card 1, 01A-A2Q2.
Remove jumper from
01A-C2A1C06 to
01A-C2B4G07.
o Turn power on and watch the operator console for message IML TEST FOR SBA.

Did the SBA test run error free?
Y N

Note:
The SBA test runs error free if no reference code E03XXX01 is displayed on the operator console while IML TEST OF SBA is indicated on the screen.

2 2
4 4
A A
H J

083
Suspected FRU:
SBA card 1, 01A-A2Q2.
Install all previously removed cards.
Go to Page 49, Step 153, Entry Point Z.

084
o Turn power off.
o Install BBA0 card, 01A-A2T2.
o Turn power on.

Is the IML operation completed successfully?
Y N

085
Suspected FRU:
BBA0 card, 01A-A2T2.
Go to Page 49, Step 153, Entry Point Z.

086
Have you removed the RLK cards 1 and 2 (01A-A2W2 and X4) previously?
Y N

087
Reseating of all affected cards has fixed the problem.
Run IML again to verify the repair.
Go to Page 49, Step 153, Entry Point Z.

088
o Turn power off.
o Install RLK cards 1 and 2, 01A-A2W2 and X4.
o Turn power on.

Is IML operation completed successfully?
Y N

Note:
The IML operation is completed successfully when the 'Program Load' picture appears on the screen.

089

Suspected FRU:
RLK card 1, 01A-A2W2.
Remote Link Terminal cable;
01A-A2ZH to
01E-A1BD.

Note:
If a spare card (01A-A2W2) is not available, remove both the RLK card 1 and RLK card 2. The machine should run without these cards installed; so you can replace the failing card at a later time.

Go to Page 49, Step 153, Entry Point Z.

090

Reseating of all affected cards has fixed the problem.
Run IML again to verify the repair.
Go to Page 49, Step 153, Entry Point Z.

091

(Entry Point HH)
****

Start the SP Trace.

Do it in accordance with your support structure.

If the trace picture appears on the operator console the trace is operational.

See Vol.13, STM, Section 4: Diagnostic Run Procedures
(Trace).

Is trace operational?
Y N

092
o Turn power off at the system
o Remove following cards
from board 01A-A2:

```
PCS  Card 1, 01A-A2D2
PCS  Card 2, 01A-A2C2
PCI  Card 1, 01A-A2E2
DCA  Card 1, 2, 01A-A2J4, J2
DCA  Card 3, 01A-A2K2
CDF2 Card 1, 2, 01A-A2N2, P2
SBA  Card 1, 01A-A2Q2
BBA0 Card  , 01A-A2T2
RLK  Card 1, 01A-A2W2,
if installed.
RLK  Card 2, 01A-A2X4,
if installed.
```

Note:
CDF1 Card 1, 2 in position 01A-A2R2,S2 are now the only adapter cards which are still connected to the processor bus.

o Install a jumper from
01A-C2A1C06 to
01A-C2B4G07.
o Turn power on.
o Press the IML key
(push button D) on the
CE panel and wait at least
20 seconds.
o Write down the error status
by displaying the SP Display
on the CE panel.

Note:
This jumper is required to make the IML key operational.

(Step 092 continues)

(Step 092 continued)
Is the reference code again E0183001 or E0183101?
Y N

093
Turn power off
o Remove the jumper
o Install all cards
o Turn power on
o Start IML again and make sure the error symptoms have not changed from the original ones.

Note:
If the error symptoms have changed, check for loose cards on board 01A-A2.
If reseating of cards/cables is required, turn power off.

Suspected FRUs:
1.DCA Card 3, 01A-A2K2
2.BBA0 Card, 01A-A2T2
3.PCI Card 1, 01A-A2E2
4.SBA Card 1, 01A-A2Q2
Go to Page 49, Step 153, Entry Point Z.

094
Turn power off.

Suspected FRUs:

1.CDF1 Card 1, 2, 01A-A2R2 and S2
  System Diskette cable;
  01A-A2ZF to
  System Diskette Drive.
2.SP Cards 2, 3; 01A-C2E2 and F2
3.SCL Cards 3, 4; 01A-C2C2 and B4

4.Cable from 01A-C2YJ to 01A-A2YM;
  Cable from 01A-C2YK to 01A-A2YD
5.Boards 01A-A2 and 01A-C2

Don't forget to remove the jumper from
01A-C2A1C06 to 01A-C2B4G07 after the repair.
Go to Page 49, Step 153, Entry Point Z.

095
Suspected FRU:
CDF1 Card 1 and 2, 01A-A2R2, S2
System Diskette cable;
01A-A2ZF to
System Diskette Drive.
Go to Page 49, Step 153, Entry Point Z.

096
(Entry Point HX)
****

Did the access mechanism travel to the outer diskette position?
Y N

097
Diskette drive SEEK error.

Go to Page 42, Step 140, Entry Point NN.

098
Diskette drive READ error.

Go to Page 42, Step 140, Entry Point OO.

099

(Entry Point GG)
****

Note:
This part of the MAP is entered when an SP machine check has occurred at any time and the SP machine check program now loops. Possibly the SP machine check program saved the error data.

Is the reference code F0XXXX01?
Y N

100
Is the reference code F1072001?
Y N

101
Is the reference code F1082201?
Y N

102
Is the reference code F1021201?
Y N

103
Is the reference code F1011001, F1043001 or F1053201?
Y N

3 3 3 3 3 3
3 A A 2 2 0
A N P Q R S T

104
Is the reference code F1150001?
Y N

105
Is the reference code FXXXX801?
Y N

106

(Entry Point G)
****

Suspected FRUs:
SP Card 1, 2, 3; 01A-C2D2, E2, F2
SP Card 4, 5, 6; 01A-C2G2, H2, J2
Go to Page 49, Step 153, Entry Point Z.

The SP Card 5 may not be installed.

107
Error during cycle steal operation.

Invoke trace program.

Do it in accordance with your support structure.

If the trace picture appears on the operator console, the trace is operational.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (Trace).

Is the Trace operational?
Y N

108
Suspected FRUs:

1. CDF1 Card 1, 2, 01A-A2R2 and S2
   System Diskette cable; 01A-A2ZF
   to System Diskette Drive.
2. CDF2 Card 1, 2, 01A-A2N2 and P2
   I/O Diskette cable, 01A-A2ZE
   to I/O Diskette Drive.
3. DCA Card 1,2,3, 01A-A2J4,J2 and K2
   Displays cable, 01A-A2ZD
   to Coax. Connectors.
4. BBA0 Card, 01A-A2T2
5. Board A2, 01A-A2

(Step 108 continues)

(Step 108 continued)
6.Board C2, 01A-C2

Go to Page 49, Step 153, Entry Point Z.

109
Suspected FRUs:

1.CDF1 Card 1 and 2, 01A-A2R2 and S2
System Diskette cable, 01A-A2ZF
to System Diskette Drive.
2.CDF2 Card 1 and 2, 01A-A2N2 and P2
I/O Diskette cable, 01A-A2ZE
to I/O Diskette Drive.
3.BBA0 Card, 01A-A2T2
Go to Page 49, Step 153, Entry Point Z.

110
Invoke the trace program.

Do it in accordance with your support structure.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (Trace).

Is the trace operational (trace picture appeared on screen)?
Y N

111
Go to Page 41, Step 140, Entry Point H.

112
Use the trace display function and display the address X '0154.'

Is the lefthand byte of the displayed halfword X '05'?
Y N

113
Go to Page 41, Step 140, Entry Point H.

114
Suspected FRUs:
DCA Card 1, 2 and 3; 01A-A2J4, J2 and K2.

Go to Page 49, Step 153, Entry Point Z.

115
Go to Page 30, Step 106, Entry Point G.

116
Invalid operation.

Invoke trace program.

Do it in accordance with your support structure.

See Vol.13, STM, Section 4: Diagnostic Run Procedures
(Trace).

Is the trace operational (trace picture appeared on screen)?
Y N

117
Suspected FRUs:
1.SP Cards 1, 2, 3;
01A-C2D2, E2, F2
2.SP Card 4; 01A-C2G2

Further possibly supspected FRUs:
CDF1 Card 1, 2 ; 01A-A2R2, S2
CDF2 Card 1, 2 ; 01A-A2N2, P2
DCA Card 1, 2, 3;01A-A2J4, J2, K2
PCI Card 1 ; 01A-A2E2
SBA Card ; 01A-A2Q2
BBA 0 Card ; 01A-A2T2
Processor Bus for MSSS; 01A-C2YJ to 01A-A2YM
01A-C2YK to 01A-A2YD

Go to Page 49, Step 153, Entry Point Z.

118
Go to Page 41, Step 140, Entry Point H.

119
(Entry Point X)
****

This part of the MAP is entered when an SP storage parity error has been detected during instruction fetching.

(Step 119 continues)

(Step 119 continued)
Use the SP trace display function and display address position X'0156'.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (Trace).

Do it in accordance with your support structure.

The halfword displayed is an SP storage address.

Is the storage address below X'8000'?
Y N

120
The storage address is in the range of X'8000' through X'FFFF'.
Replace SP card 5, 01A-C2H2.

If no SP card 5 is plugged in position 01A-C2H2, the SP card 4 in position 01A-C2G2 has to be suspected.

Go to Page 49, Step 153, Entry Point Z.

121
Replace SP card 4, 01A-C2G2.

Go to Page 49, Step 153, Entry Point Z.

122
Suspect 01A-C2G2 and 01A-C2J2.
After the repair
Go to Page 49, Step 153, Entry Point Z.

123
Error during processor bus operation.

Invoke trace program.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (Trace).

Do it in accordance with your support structure.

Is the trace operational (trace picture appeared on screen)?
Y N

124

Suspected FRUs:

1. CDF1 Card 1 and 2, 01A-A2R2, S2
   System Diskette cable; 01A-A2ZF
   to System Diskette Drive.
2. DCA Card 3, 01A-A2K2
   Displays cable, 01A-A2ZD
   to Coax. Connectors.
3. CDF2 Card 1 and 2, 01A-A2N2, P2
   I/O Diskette cable, 01A-A2ZE
   to I/O Diskette Drive.
4. BBA0 Card, 01A-A2T2
5. PCI Card 1, 01A-A2E2
   Power Supply cable, 01A-A2YA to PS 102
   Power Supply cable, 01A-A2YJ to PS 105
6. SBA Card 1, 01A-A2Q2
7. Cable from board 01A-C2 to 01A-A2
8. Board A2, 01A-A2
9. Board C2, 01A-C2

Go to Page 49, Step 153, Entry Point Z.

125

Go to Page 36, Step 134, Entry Point I.

126
(Entry Point CY)
****

Did the access mechanism travel to the outer diskette position?
Y N

127
Diskette drive SEEK error.

Go to Page 42, Step 140, Entry Point NN.

128
Diskette drive READ error.

Go to Page 42, Step 140, Entry Point OO.

129
(Entry Point B)
****

This is probably a diskette error.

Did this error come up after a new diskette had been installed?
Y N

130
Install backup diskette (FU2).
Perform IML.

Any more errors?
Y N

131
The diskette installed first is defective.
Order a new diskette.
Then retry IML.

Go to Page 49, Step 153, Entry Point Z.

132
Install the diskette which first showed the error.
Go To Map FD86, Entry Point A.

133
o The new diskette is defective.
o Order a new diskette.
o To verify check, again with the old diskette.
o In case of doubt perform a diskette drive check out.

Go To Map FD86, Entry Point A.

134

(Entry Point I)
****

The SP machine check is processor bus oriented. To find out the involved SP adapter, use the following procedure;

do it in accordance with your support structure.

o Use the SP trace display function and display address positions 0150 and 015A through 015D.

See Vol.13, STM, Section 4: Diagnostic Run Procedures
(Trace)

o Check the byte displayed in position 0150.

Is bit 6 on?
Y N

135
For further analysis, use the halfword displayed in position 015C and 015D (ignore 015A and 015B).
Go to Page 37, Step 136, Entry Point U.

136
For further analysis, use the halfword displayed in position 015A and 015B (ignore 015C and 015D).

(Entry Point U)
****

Compare the halfword displayed in position 015A and 015B or 015C and 015D (use only one halfword as instructed before) with the table below.

015A	015B
or 015C	015D
61	XX
63	XX
65	XX
67	XX
69	XX
6B	XX
6D	XX
6F	XX

Note:
X means 'don't care.'

Does the display match with one of the 8 halfwords?
Y N

137
Compare the halfword displayed in position 015A and 015B or 015C and 015D with the table below.

015A	015B
or 015C	015D
AX	X4
AX	X5

Note:
X means 'don't care.'

Does the display match with one of the 2 halfwords?
Y N

138

This is an invalid display. Check the display again.

139
(Entry Point L)
****

o Refer to byte found in
position 015B or 015D.
(use only one position as instructed before).

According to bits 0-3 of
this byte, find two address
entries in columns 2 and 3
of the table below.

Note: The address entry
in column 2 points to an
SP adapter address.
The address entry in column 3
points to an 'SP adapter command.'

o Display the SP storage location
using the address entry found
in column 2.

The displayed halfword contains
the address of the failing
SP adapter (high order byte)
and the associated command
(low order byte).
See example on the right hand side.

See Vol.13, STM, Section 4: Diagnostic Run Procedures. (Trace)

Example:
o The byte in position
015B or 015D = X'4X'
o Bits 0-3 = X'4'
o Corresponding address
entries in column 2 and 3 =
0184 and 0185
o The failing SP adapter
address is
displayed in SP storage position 0184
o The associated SP adapter
command
is displayed in SP storage position 0185

(Step 139 continues)

(Step 139 continued)

Column 1	Column 2	Column 3
Bit 0 - 3	SP storage position of adapter address	SP storage position of adapter command
0	0180	0181
2	0182	0183
4	0184	0185
6	0186	0187
8	0188	0189
A	018A	018B
C	018C	018D
E	018E	018F
1	0190	0191
3	0192	0193
5	0194	0195
7	0196	0197
9	0198	0199
B	019A	019B
D	019C	019D
F	019E	019F

Write down the SP adapter address and command:

Refer to the following 'Table of Valid Addresses and Commands' and find out whether the adapter address and the adapter command are valid.

When both are valid, replace the FRUs that correspond to the appropriate address. Replace the suspected FRUs one at a time.

(Step 139 continues)

Example:
Adapter address found = 2A.
Valid commands are: 14, 42 and 47
The command is valid if it corresponds to the adapter address in the table.
Example:
Adapter address found = X'2A'
Suspected FRU = DCA Card 1, 2, 3; 01A-A2J4,J2,K2

(Step 139 continued)
Go to Page 45, Step 147, Entry Point ZZ.

140

Use the SP trace display function and display the position 0180.

See Vol.13, STM, Section 4: Diagnostic Run Procedures
(Trace).

Do it in accordance with your support structure.

The contents of the left byte displayed is an SP adapter address. Write down this address.
Refer to data found in position 015B or 015D.
The contents of this byte is an SP adapter command. Write down this command.
Refer to the 'Table of Valid Address and Commands'
(in next step of MAP)
and find out whether the adapter address found in position 0180 and the adapter command found in position 015B or 015D are valid.
When both are valid replace the FRUs that correspond to the appropriate address.
Replace the FRUs one at a time. Check for proper operation by restarting IML after every FRU replacement and put the good FRUs back each time.

Note:
Use only one of the two positions as instructed before.
Example:
Adapter address found = 2A.
Valid commands are: 14, 42 and 47. The command is valid if it corresponds to the adapter address in the table.

Example:
Adapter address found = X'2A'
Suspected FRU= DCA Card 1, 2, 3;
01A-A2J4,J2,K2

Go to Page 45, Step 147, Entry Point ZZ.

(Entry Point H)
****

Exit to call for support:

Go To Map 0001, Entry Point O.

These are the exits to the diskette drive MAPs:

(Entry Point LL)
****

Go To Map FD82, Entry Point A.

(Step 140 continues)

(Step 140 continued)
(Entry Point NN)
****

Go To Map FD84, Entry Point A.

(Entry Point OO)
****

Go To Map FD86, Entry Point A.

141

(Entry Point CC)
****

See Vol.13, STM, Section 4: Diagnostic Run Procedures
(Trace).

Invoke SP trace.

Do it in accordance with your support structure.

Trace operational
(trace picture appeared on screen)?
Y N

142
Suspected FRUs:

1.SP Card 2, 01A-C2E2
2.CDF1 Card 1, 2, 01A-A2R2, S2
System Diskette cable;
01A-A2ZF to System Diskette Drive.
3.System Diskette Drive itself.
For a quick checkout of the system diskette drive refer to MAP FD80.
If the drive is ok, go to this MAP again and continue here,
4.DCA Card 1, 2, 3, 01A-A2J4,J2 and K2
Display cable,
01A-A2ZD to
Coax. connectors.
5.BBA0 Card, 01A-A2T2
6.SCL Card 3, 4, 01A-C2C2, B4
7.Board A2, 01A-A2
8.Board C2, 01A-C2
Go to Page 49, Step 153, Entry Point Z.

143
Suspected FRU:

CDF1 Card 1, 2, 01A-A2R2, S2
System Diskette cable,
01A-A2ZF to
to System Diskette Drive.
SCL Card 3; 01A-C2C2

Go to Page 49, Step 153, Entry Point Z.

144

(Entry Point FF)
****

This part of the MAP is entered if invalid error symptoms occur.
The following reasons are suspected:

1. Intermittent SP hardware errors
2. Two different errors at the same time
3. Design errors on control information.

Is the error solid?
Y N

145
Suspected FRUs:

1. SP Card 1, 2, 3, 01A-C2D2 to F2
2. SP Card 4, 01A-C2G2
3. SCL Card 4, 01A-C2B4
4. Board A2, 01A-A2
5. Board C2, 01A-C2.

Go to Page 49, Step 153, Entry Point Z.

146
Go to Page 41, Step 140, Entry Point H.

147

(Entry Point ZZ)
****

TABLE OF VALID ADDRESSES AND COMMANDS

Valid addr.	Valid commands	Suspected FRUs
02	02 04 06 07 12 14 16 17 27 42 44 46 47	DCA Card 1,2,3 01A-A2J4,J2,K2 Display cable; 01A-A2ZD to Coax.connector
0A	14 42 47	DCA Card 1,2,3 01A-A2J4,J2,K2 Display cable; 01A-A2ZD to Coax.connector
12	14 42 47	DCA Card 1,2,3 01A-A2J4,J2,K2 Display cable; 01A-A2ZD to Coax.connector
16	01 02 03 04 05 06 07 08 09 0A 20 22 30 38 60 80 82 84 86 88 8A 8C 8E A0	CDF1 Card 1, 2 01A-A2R2, S2 System Diskette cable 01A-A2ZF to System Diskette Drive
17	02 04 06 07 81 C0 C1 even values between: 20 to 2E, 40 to 4E 60 to 6E, 90 to 9E A0 to AE, B0 to BE	SCL Card 3 01A-C2C2

(Step 147 continues)

(Step 147 continued)

Valid addr.	Valid commands	Suspected FRUs
1A	14 42 47	DCA Card 1,2,3 01A-A2J4,J2,K2 Display cable; 01A-A2ZD to Coax.connector
22	14 42 47	DCA Card 1,2,3 01A-A2J4,J2,K2 Display cable; 01A-A2Zd to Coax.connector
23	02 04 06 07 08 09 10 12 13 14 15 16 17 1A 1B 1C 1D 1E 1F 20 21 22 23	BBA0 Card 01A-A2T2
24	02 04 06 07 08 09 10 11 18 19 20 21 28 29 30 38 Note: Remove RLK cards 1 and 2 01A-A2W2 and 01A-A2X4 (if installed) and try IML again W/O these cards. If you only have problems with above cards installed, those two cards are suspect.	RLK Card 1, 2 01A-A2W2 + X4 Remote Link Terminal cable 01A-A2ZH to 01E-A1BD

(Step 147 continues)

(Step 147 continued)

Valid addr.	Valid commands	Suspected FRUs
26	01 02 03 04 05 06 07 08 09 0A 20 22 30 38 60 80 82 84 86 88 8A 8E A0	CDF2, Card 1,2 01A-A2N2, P2 I/O Diskette cable; 01A-A2ZE to I/O Diskette Drive
2A	14 42 47	DCA Card 1,2,3 01A-A2J4,J2,K2 Display cable; 01A-A2ZD to Coax.connector
32	14 42 47	DCA Card 1,2,3 01A-A2J4,J2,K2 Display cable; 01A-A2ZD to Coax.connector
3A	14 42 47	DCA Card 1,2,3 01A-A2J4,J2,K2 Display cable; 01A-A2ZD to Coax.connector

(Step 147 continues)

(Step 147 continued)

Valid addr.	Valid commands	Suspected FRUs
85	11 30 to 37 40 to 47 50 to 57 81 83 85 87 91 93 95 97 A1 A3 A5 A7 B1 B3 B5 B7	PSC Card 1, 2 01A-A2D2, C2 PCI Card 1 01A-A2E2 Power Supply cable; 01A-A2YJ to PS 105 Power Supply cable; 01A-A2YA to PS 102
87	02 04 06 07 08 09 0A 0C 0E	SBA Card 1 01A-A2Q2

If either or both the adapter address or the adapter command are invalid, or if the replaced FRUs did not solve the problem,
Go to Page 41, Step 140, Entry Point H.

148

(Entry Point R)
****

An error occurred during IML operation. Since the operator console is not operational, the machine is now in a 'dead system' state.

If the cursor and divider line are on screen, the operator console is ready.

Is the operator console ready?
Y N

149
Go to Page 2, Step 001, Entry Point A.

150
Is the system diskette file ready (diskette installed and diskette file cover closed)?

Y N

151
Install the CTL diskette. Try IML again.

The IML operation is completed successfully when the 'Program Load' picture appears on the screen.

Is the IML operation completed successfully?
Y N

152
Go to Page 2, Step 001, Entry Point A.

153
(Entry Point Z)
****

Go To Map 0001, Entry Point A.

154
Go to Page 5, Step 007, Entry Point D.

ERROR HANG ADDRESS TABLE

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
EXXX	T	1	001
0XXX	T	1	001
0400	T	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
35	001	FD82	A
36	001	FD84	A
36	001	FD86	A
35	001	0001	0
27	001	0400	B
10	001	0400	S
11	001	0400	S
34	001	0400	S
35	001	0400	BB
35	001	0400	CC
7	001	0400	CY
15	001	0400	FF
33	001	0400	FF
11	001	0400	GG
5	001	0400	HH
8	001	0400	HX
15	001	0600	A
15	001	0600	A
34	001	0600	A

001

(Entry Point T)

- Assemble SP Displays 8 and 9 (ADDR HI and ADDR LOW) to a two-byte address.
  Example:
  ADDR HI = 08
  ADDR LOW = F2
  Assembled address = 08F2

- Compare the two-byte address with the addresses listed in the 'Error Hang Address Table' below.

- Follow the instructions associated to the matching line. Perform FRU replacement in the indicated priority sequence.

- If FRU replacement is not successful or

(Step 001 continues)

(Step 001 continued)

if no FRU replacement is indicated in the table, follow the 'go to' instruction.

- o If displays 8 and 9 (ADDRESS HIGH and ADDRESS LOW) do not match with one of the addresses listed in the table below, see note 'IMPORTANT' at the end of the table.

ERROR HANG ADDRESS TABLE

This table is split into groups according to the suspected FRUs.

The error hang addresses are listed in an ascending hexadecimal sequence.

A reference code is assigned to each hang address.
Note: This specific reference code will never be displayed on the screen nor stored in the error log.
This reference code is used
- for Reference Code Data Bank look up
- for further failure analysis in the Dead System MAP.

General Note:

Check for loose cards, cables and top connectors on 01A-A2 and 01A-C2.

ADDR	Ref. Code	Suspected FRUs:
0808	E0100101	1.SP card 1, 2, 3, 01A-C2D2 to F2
081E	E0100201	
0822	E0100301	2.SP card 4, 01A-C2G2
0826	E0100401	3.SCL card 3,4; 01A-C2C2,B4
082A	E0100501	4.SP card 5, 01A-C2H2. If the SP card 5 in position 01A-C2H2 is not plugged, the SP card 4 in position 01A-C2G2 has to be suspected only.
0832	E0100601	
0838	E0100701	
083E	E0100801	
0842	E0100901	5.SP card 6, 01A-C2J2
0848	E0101001	
0850	E0101101	

(Step 001 continues)

(Step 001 continued)

0858	E0101201
0862	E0101301
086A	E0101401
0872	E0101501
087C	E0101601
0882	E0101701
088A	E0101801
0894	E0101901
08A0	E0102001
08AC	E0102101
08B8	E0102201
08CA	E0102301
08CE	E0102401
08D2	E0102501
08D8	E0102601
08DE	E0102701
08E2	E0102801
08E6	E0102901
08F2	E0103001
08FA	E0103101
0908	E0103201
0914	E0103301

ADDR	Ref. Code	Suspected FRUs:
092E		1.SP Card 4; 01A-C2G2
093E	E0123401	2.SP Card 1, 2, 3;
0944	E0123501	01A-C2D2 to F2
0958	E0123601	
095E	E0123701	

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code	Suspected FRUs:
0966	E0103A01	1.SP Card 1, 2, 3;
096A	E0103801	01A-C2D2 to F2
096E	E0103901	2.SP Card 4; 01A-C2G2
0976	E0104001	
0978	E0104101	
097E	E0104201	
0982	E0104301	
0984	E0104401	
098A	E0104501	
0990	E0104601	
0992	E0104701	
0996	E0104801	
099A	E0104901	
099E	E0105001	
09A8	E0105101	
09AA	E0105201	
09AE	E0105301	
09B2	E0105401	
09BC	E0105501	
09CA	E0105601	
09D0	E0105701	
09DE	E0105801	

ADDR	Ref. Code	Suspected FRUs:
0A22	E0126301	1.SP Card 4; 01A-C2G2
0A34	E0126001	2.SP Card 1, 2, 3;
0A46	E0126401	01A-C2D2 to F2
0A58	E0126501	
0A5E	E0126601	

(Step 001 continues)

ERROR HANG ADDRESS

(Step 001 continued)

ADDR	Ref. Code	Suspected FRUs:
0A72	E0107001	1.SP Card 1, 2, 3; 01A-C2D2 to F2
0A74	E0107101	
0A78	E0107201	2.SP Card 4; 01A-C2G2
0A7A	E0107301	
0A7E	E0107401	
0A82	E0107501	
0A86	E0107601	
0A9C	E0107801	
0AA0	E0107901	
0AA6	E0108101	

ADDR	Ref. Code	Suspected FRUs:
0AA8	E0148401	1.SCL Card 4; 01A-C2B4
0AAA	E0148501	2.SP Card 1, 2, 3; 01A-C2D2 to F2

ADDR	Ref. Code
0AB8	E0160601
0ABA	E0160701
0ACC	E0160801
0ACE	E0160901
0AE0	E0161001
0AE2	E0161101
0AFA	E0161201
0AFC	E0161301
0B08	E0161401
0B0A	E0161501

Go to Page 35, Step 001, Entry Point BB.

ADDR	Ref. Code
0B22	E0183001
0B24	E0183101

Go To Map 0400, Entry Point HH.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code	Suspected FRUs:
0B48	E0160101	1.SP Card 1, 2, 3; 01A-C2D2 to F2
0B4A	E0160201	2.SP Card 4, 01A-C2G2 SCL Card 3; 01A-C2C2
0B4C	E0160301	

Try IML again and if an error still comes up, put the replaced FRU back; then ... (see reference at the left hand side)

Go to Page 35, Step 001, Entry Point BB.

ADDR	Ref. Code	Suspected FRUs:
0B88	E0180001	CDF1 Card 1 and 2; 01A-A2R2, S2
0B90	E0180101	System Diskette cable;
0B98	E0180201	01A-A2ZF to System Diskette Drive.

ADDR	Ref. Code
0B9E	E0180301

Diskette drive NOT READY problem.

Go to Page 35, Step 001, Entry Point LL.

ADDR	Ref. Code	Suspected FRUs:
0BA6	E0180701	CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive.

ADDR	Ref. Code
0BBA	E0180901

Diskette drive NOT READY problem.

Go to Page 35, Step 001, Entry Point LL.

(Step 001 continues)

ERROR HANG ADDRESS

(Step 001 continued)

ADDR	Ref. Code
0BE6	E0180401
0C00	E0182501
0C16	E0180501
0C34	E0180601
0C8E	E0180801
0CA4	E0181001

Suspected FRUs:

CDF1 Card 1 and 2; 01A-A2R2, S2
System Diskette cable;
01A-A2ZF
to System Diskette Drive.

ADDR	Ref. Code
0CDC	E0181101

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
0CE0	E0181201

Diskette drive NOT READY problem.

Go to Page 35, Step 001, Entry Point LL.

ADDR	Ref. Code
0CE4	E0182501

Go To Map 0400, Entry Point CY.

ADDR	Ref. Code
0CE8	E0182601

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

(Step 001 continues)

ERROR HANG ADDRESS

(Step 001 continued)

ADDR	Ref. Code	Suspected FRUs:
0CEE	E0181301	CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive.

ADDR	Ref. Code
0CF6	E0181401
0CFE	E0181501

Diskette drive SEEK error.

Go To Map 0400, Entry Point HX.

ADDR	Ref. Code	Suspected FRUs:
0D06	E0181601	1.Wrong diskette or type. Change diskette and try IML again. 2.CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive.

ADDR	Ref. Code
0D28	E0181701

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
0D2C	E0181801

Diskette drive NOT READY problem.

Go to Page 35, Step 001, Entry Point LL.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
0D30	E0181901

Suspected FRUs:

CDF1 Card 1 and 2; 01A-A2R2, S2
System Diskette cable;
01A-A2ZF
to System Diskette Drive.

ADDR	Ref. Code
0D34	E0182001

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
0D40	E0182101

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code
0D4E	E0182201

Suspected FRUs:

Wrong diskette or diskette type. Change diskette and try IML again.

ADDR	Ref. Code
0D6C	E0182301

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code
0D82	E0182401

Go to Page 35, Step 001, Entry Point CC.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
0DA4	E0185101
0DA8	E01852201

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code	Suspected FRUs:
0DAC	E0185301	1.CDF1 Card 1 and 2; 01A-A2R2, S2 2.SP Card 2: 01A-C2E2 System Diskette cable; 01A-A2ZF to System Diskette Drive. 3.Processor Bus 01A-A2YM-01A-C2YJ. Processor Bus 01A-A2YD-01A-C2YK.

ADDR	Ref. Code
0DB0	E0185401
0DB4	E0185501

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code	Suspected FRUs:
0DB8	E0185601	1.CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive.
0DBA	E0185701	

ADDR	Ref. Code
10A6	E0160401

Go To Map 0400, Entry Point S.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
121E	F1031801
1222	F1021201
1224	F1011001
1228	F1063801
122C	F1053201
122E	F1043001
1236	F1092801
123A	F1082201
123C	F1072001
1244	F0118801
1246	F0108001
124E	F0134801
1250	F0124001
1254	F1140801
1258	F1150001
125A	F1160001

Go To Map 0400, Entry Point GG.

ADDR	Ref. Code
1FEA	E0161601
1FEC	E0161701
1FEE	E0161801

Go To Map 0400, Entry Point S.

ADDR	Ref. Code
2058	E0184001
205E	E0184101

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
209C	E0184201

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
20A4	E0184301
20C8	E0184401

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code
20D8	E0184501

Diskette drive NOT READY problem.

Go to Page 35, Step 001, Entry Point LL.

ADDR	Ref. Code
20DC	E0184601

Diskette drive NOT READY problem.

Go to Page 35, Step 001, Entry Point LL.

ADDR	Ref. Code
20E0	E0184701

Suspected FRUs:

CDF1 Card 1 and 2; 01A-A2R2, S2
System Diskette cable; 01A-A2ZF to System Diskette Drive.

ADDR	Ref. Code
20D4	E0184801

Diskette drive NOT READ problem.

Go to Page 35, Step 001, Entry Point LL.

ADDR	Ref. Code
20E4	E0184901

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
20FE	E0189101
2102	E0189201

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code	Suspected FRUs:
2106	E0189301	CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive.

ADDR	Ref. Code
210A	E0189401
210E	E0189501

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code	Suspected FRUs:
2112	E0189601	CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive.

ADDR	Ref. Code	Suspected FRUs:
2114	E0189701	1.CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive. 2.SP Card 2: 01A-C2E2

ADDR	Ref. Code	Suspected FRUs:
514E	E01AC001	1.DCA Card 1,2,3; 01A-A2J4,J2 and K2 Display's cable 01A-A2ZD to Coax. Connectors. 2.SP Card 2; 01A-C2E2

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code	Suspected FRUs:
5152	E01AC101	DCA Card 1, 2, 3; 01A-A2J4, J2 and K2
5166	E01AC201	Display's cable
516C	E01AC301	01A-A2ZD
5182	E01AC401	to Coax. Connectors.
5186	E01AC501	
519A	E01AC601	
51A0	E01AC701	
51AA	E01AC801	
51B0	E01AC901	
51BC	E01ACA01	
51C2	E01ACB01	
51D8	E01ACC01	
51F0	E01ACD01	
5204	E01ACE01	
5218	E01ACF01	
522E	E01AD001	
5252	E01AD101	
5258	E01AD201	
5288	E01AD301	
528E	E01AD401	
52A6	E01AD501	
52AC	E01AD601	

ADDR	Ref. Code	The display station is not ready. A 3-minute waitloop is entered. Make sure that the display station has power on and the Coax. cable is connected. After the 3-minute time out, address 52D0 is displayed on the SP Display at Gate 01A on CE panel (refer to address 52D0).
52BC	E01AD701	

(Step 001 continues)

ERROR HANG ADDRESS

(Step 001 continued)

ADDR	Ref. Code
52C6	E01AD801
52EC	E01AD901
52F2	E01ADA01
5308	E01ADB01
530E	E01ADC01
5310	E01ADC01
534A	E01ADD01
5362	E01ADE01
5368	E01ADF01
540C	E01AE001
5420	E01AE101
5466	E01AE201
54C6	E01AE301
54F0	E01AE401
5516	E01AE501
551C	E01AE601
5528	E01AE701
5560	E01AE801

Suspected FRUs:

1. DCA Card 1,2,3; 01A-A2J4,J2 and K2
2. Coax cable for operator console.
3. Operator Console (Refer to 3278 Operator Console Manual).
4. Display's cable 01A-A2ZD to Coax. Connectors.

Go To Map 0600, Entry Point A.

ADDR	Ref. Code
57D6	E01AE901

Go To Map 0400, Entry Point FF.

ADDR	Ref. Code
58B6	E01AEA01

Suspect FRUs:

1. DCA Card 1,2,3; 01A-A2J4,J2 and K2 Display's cable 01A-A2ZD to Coax. Connectors.
2. Operator console

Go To Map 0600, Entry Point A.

(Step 001 continues)

ERROR HANG ADDRESS

(Step 001 continued)

ADDR	Ref. Code
5968	E01A0101
596A	E01A0201
596C	E01A0301
596E	E01A0401
5970	E01A0501
5972	E01A0601
5974	E01A0701
5976	E01A0801
5978	E01A0901
597A	E01A0A01
597C	E01A0B01
597E	E01A0C01
5980	E01A0D01
5982	E01A0E01
5984	E01A0F01
5986	E01A1001
5988	E01A1101
598A	E01A1201
598C	E01A1301
598E	E01A1401
5990	E01A1501
5992	E01A1601
5994	E01A1701
5996	E01A1801
5998	E01A1901
599A	E01A1A01
599C	E01A1B01
599E	E01A1C01
59A0	E01A1D01
59A2	E01A1E01
59A4	E01A1F01
59A6	E01A2001
59A8	E01A2101
59AA	E01A2201
59AC	E01A2301
59AE	E01A2401
59B0	E01A2501
59B2	E01A2601
59B4	E01A2701
59B6	E01A2801
59B8	E01A2901
59BA	E01A2A01
59BC	E01A2B01
59BE	E01A2C01

(Step 001 continues)

(Step 001 continued)

59C0	E01A2D01
59C2	E01A2E01
59C4	E01A2F01
59C6	E01A3001
59C8	E01A3101
59CA	E01A3201
59CC	E01A3301
59CE	E01A3401
59D0	E01A3501
59D2	E01A3601
59D4	E01A3701
59D6	E01A3801
59D8	E01A3901
59DA	E01A3A01
59DC	E01A3B01
59DE	E01A3C01
59E0	E01A3D01
59E2	E01A3E01
59E4	E01A3F01
59E6	E01A4001
59E8	E01A4101
59EA	E01A4201
59EC	E01A4301
59EE	E01A4401
59F0	E01A4501
59F2	E01A4601
59F4	E01A4701
59F6	E01A4801
59F8	E01A4901
59FA	E01A4A01
59FC	E01A4B01
59FE	E01A4C01
5A00	E01A4D01
5A02	E01A4E01
5A04	E01A4F01
5A06	E01A5001
5A08	E01A5101
5A0A	E01A5201
5A0C	E01A5301
5A0E	E01A5401
5A10	E01A5501
5A12	E01A5601

(Step 001 continues)

(Step 001 continued)

5A14	E01A5701
5A16	E01A5801
5A18	E01A5901
5A1A	E01A5A01
5A1C	E01A5B01
5A1E	E01A5C01
5A20	E01A5D01
5A22	E01A5E01
5A24	E01A5F01
5A26	E01A6001
5A28	E01A6101
5A2A	E01A6201
5A2C	E01A6301
5A2E	E01A6401
5A30	E01A6501
5A32	E01A6601
5A34	E01A6701
5A36	E01A6801
5A38	E01A6901
5A3A	E01A6A01
5A3C	E01A6B01
5A3E	E01A6C01
5A40	E01A6D01
5A42	E01A6E01
5A44	E01A6F01
5A46	E01A7001
5A48	E01A7101
5A4A	E01A7201
5A4C	E01A7301
5A4E	E01A7401
5A50	E01A7501
5A52	E01A7601
5A54	E01A7701
5A56	E01A7801
5A58	E01A7901
5A5A	E01A7A01
5A5C	E01A7B01
5A5E	E01A7C01
5A60	E01A7D01
5A62	E01A7E01
5A64	E01A7F01
5A66	E01A8001
5A68	E01A8101
5A6A	E01A8201
5A6C	E01A8301
5A6E	E01A8401

(Step 001 continues)

(Step 001 continued)

5A70	E01A8501
5A72	E01A8601
5A74	E01A8701
5A76	E01A8801
5A78	E01A8901
5A7A	E01A8A01
5A7C	E01A8B01
5A7E	E01A8C01
5A80	E01A8D01
5A82	E01A8E01
5A84	E01A8F01
5A86	E01A9001
5A88	E01A9101
5A8A	E01A9201
5A8C	E01A9301
5A8E	E01A9401
5A90	E01A9501
5A92	E01A9601
5A94	E01A9701
5A96	E01A9801
5A98	E01A9901
5A9A	E01A9A01
5A9C	E01A9B01
5A9E	E01A9C01
5AA0	E01A9D01
5AA2	E01A9E01
5AA4	E01A9F01

Suspected FRUs:

DCA Card 1, 2, 3; 01A-A2K2,J2 and J4
Display's cable
01A-A2ZD
to Coax. Connectors.

ADDR	Ref. Code
6E00	E0192801

Diskette drive adapter error.

Suspected FRUs:
01A-A2R2/S2.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
6E28	E0192901
6E3C	E0193001

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
6E6E	E0191101

Suspected FRUs:
01A-A2R2/S2.

Diskette drive adapter error.

ADDR	Ref. Code
6E92	E0191201

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
6E9A	E0191301

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
6EA4	E0191401

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

(Step 001 continues)

ERROR HANG ADDRESS

(Step 001 continued)

ADDR	Ref. Code
6EBA	E0191501
6EC8	E0191601
6ED4	E0191701
6EE0	E0191801

Diskette drive adapter error.

Suspected FRUs:
01A-A2R2/S2.

ADDR	Ref. Code
6EF8	E0193801

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
6D68	E0196001
6D74	E0196101
6DAA	E0196201
6DBA	E0196301
6DC2	E0196401

MCPC errors caused by
diskette drive adapter
(01A-A2R2/S2)
or processor bus of MSSS.

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code
6F0E	E0193701
6F38	E0190301
6F4C	E0190401

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
6F5C	E0196001
6F68	E0196101
6FA4	E0196201
6FB4	E0196301
6FBC	E0196401

Suspected FRUs:

1.CDF1 Card 1 and 2;
01A-A2R2 and S2
System Diskette cable;
01A-A2ZF
to System Diskette Drive.

ADDR	Ref. Code
6FE8	E0192801

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
7010	E0192901

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
701E	E0194501

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
7024	E0193001

Go to Page 35, Step 001, Entry Point CC.

(Step 001 continues)

(Step 001 continued)

ADDR Ref. Code

7044 E0194601

Suspected FRUs:
01A-A2R2/S2.

Diskette drive adapter error.

ADDR Ref. Code

7056 E0191101

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR Ref. Code

706C E0194701

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR Ref. Code

707A E0191201

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR Ref. Code

7082 E0191301

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR Ref. Code

708C E0191401

Go to Page 35, Step 001, Entry Point CC.
(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
70A2	E0191501
70B2	E0191601
70B4	E019A101
70BC	E0191701
70C8	E0191801
70D2	E019A201
70E0	E0193801

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
70F6	E0193701
70FA	E019A301
7116	E019A401
7120	E0190301

Try first the backup diskette.

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
7134	E0190401

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code
7154	E019A501

Try first the backup diskette.

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
7164	E019AA01

Jumper from D08 to D09 is missing on card 01A-A2R2.
See also description to reference code E019AA01 in MAP 0402.

ADDR	Ref. Code
71FE	E0194501

Suspected FRUs:

1.CDF1 Card 1 and 2; 01A-A2R2, S2
System Diskette cable;
01A-A2ZF
to System Diskette Drive.
2.SP Card 2;
01A-C2E2

ADDR	Ref. Code
7224	E0194701

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
7250	E0194601

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
7300	E0190501

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
7320	E0190601

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
7344	E0190701
7382	E0193101
739E	E0191001

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
73C8	E0192001

Suspected FRUs:
01A-A2R2/S2.

Diskette drive adapter error.

ADDR	Ref. Code
73F0	E0190601

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
73F4	E0192101
7410	E0192301

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

(Step 001 continues)

(Step 001 continued)

ADDR Ref. Code

7414 E0190701
Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR Ref. Code

Suspected FRUs:
01A-A2R2/S2.

7452 E0192201
Diskette drive adapter error.

ADDR Ref. Code

746E E0191001

Go To Map 0400, Entry Point B.

ADDR Ref. Code

7474 E0192401

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR Ref. Code

7498 E0192501

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR Ref. Code

74C4 E0192101

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
74D8	E0190001

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
74E0	E0192301

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code
74FC	E0190101

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
751C	E0190201

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
7524	E0192201
7546	E0192401

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
756A	E0192501

Diskette drive READ error.

(Step 001 continues)

(Step 001 continued)
Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
75AA	E0190001

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

ADDR	Ref. Code
75CA	E0193301

Diskette drive NOT READY error.

Go to Page 35, Step 001, Entry Point LL.

ADDR	Ref. Code
75CE	E0190101

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
75E2	E0194901

Diskette drive NOT READY error.

Go to Page 35, Step 001, Entry Point LL.

ADDR	Ref. Code
75EE	E0190201

Diskette drive SEEK error.

Go to Page 35, Step 001, Entry Point NN.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
761E	E0193201

Diskette drive NOT READY error.

Go to Page 35, Step 001, Entry Point LL.

ADDR	Ref. Code
7634	E0193401
764A	E0193501
7660	E0193601

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
7688	E0193301

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code
76A0	E0194901

Diskette drive NOT READY problem.

Go to Page 35, Step 001, Entry Point LL.

ADDR	Ref. Code
76C6	E0197001

MCPC error caused by diskette drive adapter (01A-A2R2/S2)
or processor bus of MSSS.

Go to Page 35, Step 001, Entry Point CC.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code	Suspected FRUs:
76D0	E0194001	1.CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive. 2.SP Card 2; 01A-C2E2

ADDR	Ref. Code
76E0	E0193201

Diskette drive NOT READY problem.

Go to Page 35, Step 001, Entry Point LL.

ADDR	Ref. Code
76EC	E0197501

MCPC error caused by diskette drive adapter (01A-A2R2/S2) or processor bus of MSSS.

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code	Suspected FRUs:
76F0	E0193401	CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive.

ADDR	Ref. Code	Suspected FRUs:
7700	E0193501	1.CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code
7710	E0193601

Diskette drive READ error.

Go to Page 36, Step 001, Entry Point OO.

ADDR	Ref. Code
7732	E0197101
775A	E0197401
776A	E0197201
777A	E0197301

MCPC errors caused by diskette drive adapter
(01A-A2R2/S2)
or processor bus of MSSS.

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code
77C4	E0195101
77C8	E0195201

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code
77CC	E0195301

Suspected FRUs:

1. CDF1 Card 1 and 2; 01A-A2R2, S2
   System Diskette cable;
   01A-A2ZF
   to System Diskette Drive.

ADDR	Ref. Code
77D0	E0195401
77D4	E0195501

Go to Page 35, Step 001, Entry Point CC.

(Step 001 continues)

(Step 001 continued)

ADDR	Ref. Code	Suspected FRUs:
77D8	E0195601	1.CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive.

ADDR	Ref. Code	Suspected FRUs:
77DA	E0195701	1.CDF1 Card 1 and 2; 01A-A2R2, S2 System Diskette cable; 01A-A2ZF to System Diskette Drive. 2.SP Card 1; 01A-C2E2

ADDR	Ref. Code
7836	E0195101
783A	E0195201
783E	E0195301
7842	E0195401
7846	E0195501
784A	E0195601
784C	E0195701

MCPC errors caused by diskette drive adapter (01A-A2R2/S2) and Processor Bus of MSSS.

Go to Page 35, Step 001, Entry Point CC.

ADDR	Ref. Code
7E12	E01AE901
7E84	E01AF901

Go To Map 0400, Entry Point FF.

ADDR	Ref. Code	Suspected FRUs:
7EF4	E01AEA01	1.DCA Card 1,2,3; 01A-A2J4,J2,K2 Display's cable 01A-A2ZD to Coax. Connectors. 2.Operator Console
7F64	E01AFA01	

(Step 001 continues)

(Step 001 continued)
Go To Map 0600, Entry Point A.

```
 |
 |
 V
You fell through the table above
without getting any match.
```

Invoke the TRACE program.

See Supplement to MAPs, Section 4: Diagnostic Run Procedures, 'Trace'

Is the trace operational?

```
 Y       N
 |       |
 |       Proceed with the note
 |       'IMPORTANT' below.
 |
 Use the displayed instruction
 address to scan the
 error hang address table
 again.
```

```
 I M P O R T A N T :

 Try IML again several times and follow the
 instructions in the MAP very precisely.

 Check again for a match in the
 error hang address table.
```

Go to Page 1, Step 001, Entry Point T.

```
 If displays 8, 9 still do not
 match with one of the addresses
 listed in the
 error hang address table
```

Go To Map 0400, Entry Point S.

(Step 001 continues)

(Step 001 continued)

(Entry Point BB)

Go To Map 0400, Entry Point BB.

(Entry Point CC)

Go To Map 0400, Entry Point CC.

(Entry Point H)

Exit used to call for support.
Go To Map 0001, Entry Point O.

These are exits to the diskette drive MAPs:

(Entry Point LL)

Go To Map FD82, Entry Point A.

(Entry Point NN)

(Step 001 continues)

(Step 001 continued)
Go To Map FD84, Entry Point A.

(Entry Point OO)

Go To Map FD86, Entry Point A.

DEAD SYSTEM (Ref. Code Table)

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
EXXX	N	1	001
FD60	N	1	001
0400	N	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
10	001	FD76	A
11	001	FD76	A
12	001	FD82	A
12	001	FD84	A
12	001	FD86	A
10	001	0001	A
11	001	0001	A
3	001	0400	B
12	001	0400	CC
10	001	0400	FF
10	001	0600	A

001

(Entry Point N)

REFERENCE CODE TABLE
==========

Look up the reference code in the following table. When you find a match, replace the FRUs if there are any indicated on the right hand side of the matching reference code, or follow the 'go to' statement below the matching reference code:

Ref. Code

E0190001

Diskette drive SEEK error.

Go to Page 12, Step 001, Entry Point NN.

(Step 001 continues)

(Step 001 continued)

Ref. Code

E0190101

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

Ref. Code

E0190201
E0190301

Diskette drive SEEK error.

Go to Page 12, Step 001, Entry Point NN.

Ref. Code

E0190401

Go to Page 12, Step 001, Entry Point CC.

Ref. Code

E0190601
Diskette drive SEEK error.

Go to Page 12, Step 001, Entry Point NN.

Ref. Code

E0190701

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

(Step 001 continues)

(Step 001 continued)

Ref. Code

E0191001

Go To Map 0400, Entry Point B.

Ref. Code

E0191101

Diskette drive SEEK error.

Go to Page 12, Step 001, Entry Point NN.

Ref. Code

E0191201

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

Ref. Code

E0191301
Diskette drive SEEK error.

Go to Page 12, Step 001, Entry Point NN.

Ref. Code

E0191401

Go to Page 12, Step 001, Entry Point CC.

(Step 001 continues)

(Step 001 continued)

Ref. Code

E0191501
E0191601
E0191701
E0191801
E0192001

Diskette drive SEEK error.

Go to Page 12, Step 001, Entry Point NN.

Ref. Code

E0192101

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

Ref. Code

E0192201

Diskette drive SEEK error.

Go to Page 12, Step 001, Entry Point NN.

Ref. Code

E0192301

Go to Page 12, Step 001, Entry Point CC.

Ref. Code

E0192401

Diskette drive SEEK error.

(Step 001 continues)

(Step 001 continued)
Go to Page 12, Step 001, Entry Point NN.

Ref. Code

E0192501

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

Ref. Code

E0192801

Diskette drive SEEK error.

Go to Page 12, Step 001, Entry Point NN.

Ref. Code

E0192901

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

Ref. Code

E0193001

Go to Page 12, Step 001, Entry Point CC.

Ref. Code

E0193101

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

(Step 001 continues)

(Step 001 continued)

Ref. Code

E0193201

Diskette drive NOT READY problem.

Go to Page 12, Step 001, Entry Point LL.

Ref. Code

E0193301

Go to Page 12, Step 001, Entry Point CC.

Ref. Code

E0193401

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

Ref. Code

E0193501

Ref. Code

E0193601

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

(Step 001 continues)

Suspected FRUs:

1.CDF1 Card 1 and 2; 01A-A2R2, S2
2.System Diskette cable ;
01A-A2ZF
to System Diskette Drive.

(Step 001 continued)

Ref. Code

E0193701

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

Ref. Code

E0193801

Diskette drive SEEK error.

Go to Page 12, Step 001, Entry Point NN.

Ref. Code

E0194001
E0194501

Suspected FRUs:

1.CDF1 Card 1 and 2; 01A-A2R2, S2
2.System Diskette cable ;
01A-A2ZF
to System Diskette Drive.
3.Sp Card 1;
01A-C2E2

Ref. Code

E0194601

Diskette drive READ error.

Go to Page 12, Step 001, Entry Point OO.

Ref. Code

E0194701

Diskette drive SEEK error.

Go to Page 12, Step 001, Entry Point NN.

(Step 001 continues)

(Step 001 continued)

Ref. Code

E0194901
Diskette drive NOT READY problem.

Go to Page 12, Step 001, Entry Point LL.

Ref. Code

E0195101
E0195201

Go to Page 12, Step 001, Entry Point CC.

Ref. Code

E0195301

Suspected FRUs:

1.CDF1 Card 1 and 2; 01A-A2R2, S2
2.System Diskette cable ;
01A-A2ZF
to System Diskette Drive.

Ref. Code

E0195401
E0195501

Go to Page 12, Step 001, Entry Point CC.

Ref. Code

E0195601

Suspected FRUs:

CDF1 Card 1 and 2; 01A-A2R2, S2

(Step 001 continues)

(Step 001 continued)

Ref. Code	Suspected FRUs:
E0195701	1.CDF1 Card 1 and 2; 01A-A2R2, S2 2.System Diskette cable ; 01A-A2ZF to System Diskette Drive. 3.SP Card 1; 01A-C2E2

Ref. Code	Suspected FRUs:
E0196001 E0196101 E0196201 E0196301 E0196401	1.CDF1 Cards 1 and 2; 01A-A2R2 and S2 2.System Diskette cable ; 01A-A2ZF to System Diskette Drive.

Ref. Code

E0197001
E0197101
E0197201
E0197301
E0197401
E0197501

Diskette drive SEEK error.
Go to Page 12, Step 001, Entry Point NN.

Ref. Code

E019A101
E019A201
E019A301
E019A401
E019A501

Diskette drive WRITE error.
Go to Page 12, Step 001, Entry Point OO.

(Step 001 continues)

(Step 001 continued)

Ref. Code

E019AA01

Non-compatible hardware.
Install a jumper from 01A-A2R2-D09 to D08.

See also Vol. 30, STM ,Jumper/ Tie Down List.

The jumper is required if the disk unit card with PN 8528195 or PN 4178068 is used.

This is a temporary action in emergency cases only.

If the diskette is accidentally pulled out during a read/ write operation, the read/ write heads and the diskette might be destroyed.

If PN 4178065 is used, no jumper is needed.

Go To Map 0001, Entry Point A.

Ref. Code

E01AE901
E01AF901

Go To Map 0400, Entry Point FF.

Ref. Code

E01AEA01
E01AFA01

Go To Map 0600, Entry Point A.
---
ref. Code

FD00FF81
FD010181

I/O diskette drive READ error
Go To Map FD76, Entry Point A.

(Step 001 continues)

(Step 001 continued)
Ref. Code

FD400181

I/O diskette drive WRITE error
Go To Map FD76, Entry Point A.

Ref. Code

FDAAAA81

Non-compatible hardware. If the disk unit card with PN 8528195 or PN 4178068 is installed, put a Jumper from 01A-A2N2-D09 to D08. This is a temporary action in emergency cases only.
If the I/O diskette is accidentally pulled out during a read/ write operation, the read/write heads and the diskette might be destroyed.

Order card PN 4179065 immediately and install it and remove the Jumper.

Go To Map 0001, Entry Point A.

End of the reference code table.

See also Vol. 30, STM, Jumper/ Tie Down List.

(Step 001 continues)

(Step 001 continued)

(Entry Point CC)

Go To Map 0400, Entry Point CC.

These are the exits to the diskette drive MAPs:

(Entry Point LL)

Go To Map FD82, Entry Point A.

(Entry Point NN)

Go To Map FD84, Entry Point A.

(Entry Point OO)

Go To Map FD86, Entry Point A.

Processor Bus Problems

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7EA	A	1	001
F7ED	A	1	001
F7E0	A	1	001
F7E9	A	1	001
F7F0	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	001	0001	0

001
(Entry Point A)

When you are guided to this MAP, reseat the processor bus cables in the following listed positions:
01A-C2YK
01A-C2YJ
01A-A2YD
01A-A2YM

If no trouble is found, replace the following listed adapters, one at a time, and perform IML. If possible use the same application as before.

1. SCL card 3 and 4, 01A-C2C2 and B4
2. CDF1 card 1 and 2, 01A-A2R2 and S2
3. BBA0 card , 01A-A2T2
4. DCA card 1, 2 and 3, 01A-A2J4, J2 and K2
5. PCS card 1 and 2 , 01A-A2D2 and C2
6. SBA card , 01A-A2Q2
7. SP card 1,2 and 3 , 01A-C2D2,E2 and F2

If problem cannot be solved by previous card replacements,

Go To Map 0001, Entry Point O.

OPERATOR CONSOLE TROUBLE

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
E680	A	1	001
0E04	C	11	036
0E04	N	3	004
0XXX	A	1	001
0000	A	1	001
0400	A	1	001
0401	A	1	001
0402	A	1	001
0800	A	1	001
0800	N	3	004

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
8	025	0E04	C
7	015	0E04	C
2	002	0001	A
7	013	0001	A
8	021	0001	A
7	017	0001	A
11	040	0001	A
13	049	0001	A
7	016	0001	0
12	048	0001	0
7	014	0020	A
10	035	0020	A
6	012	0400	R
9	033	0400	R
9	034	0800	K

001
(Entry Point A)
****

O P E R A T O R S C O N S O L E

P R O B L E M D E T E R M I N A T I O N.

Prerequisites

Before starting any maintenance action perform or check the following setup for the operator console.

o Turn power on at the display station.

o Enable the display station by turning the key of the security keylock (optional feature) clockwise.

o Set the brightness control to a comfortable viewing level.

(Step 001 continues)

(Step 001 continued)

o Set the Normal/Test switch to Normal.

Is the divider line and the cursor on the screen?

Y N

002

(Entry Point B)

Perform the display station check out procedure and repair as required.

Refer to *3278-2A Display Console Maintenance Information*, form number SY27-2546 or refer to the *3279-2C Display Console Maintenance Information*.

After repair
Go To Map 0001, Entry Point A.

003

Is any text on screen and readable?

Y N

Readable means:
Text or characters are not scrambled and have a correct size and shape.

9 3
A B

004
(Entry Point N)

Press MODE SEL key.

This is a check, whether the SP, DCA, COAX-cable and Display Station is operational (no solid error).

Does the °MODE SELECT° picture appear on screen?
Y N

005
Put the TEST/NORMAL switch in the TEST position.
Perform the display station check out procedure.

Refer to °Display Console Maintenance Information.

Any problem found?
Y N

006
Put the TEST/NORMAL switch back to NORMAL.

Press MODE SEL key.

Does the °MODE SELECT° picture appear on screen?
Y N

8 8 8 4
C D E F

007
(Entry Point X)
****

Check the following suspected FRUs:

1.COAX-cable and its connector to the I/O unit.
Check the COAX-cable for continuity.
COAX-cable resistance is approximately 1.0 ohm/10 meter (0.3 ohm/10 feet).
Verify proper COAX-cable connection.
Display-cable from board 01A-A2ZD to coaxial connectors.

Note:

REMEMBER,

When working on a terminal or coax-cable, the DCA can loose the DCA-device communication and turn on the disable latch on the driver card (01A-A2J2,J4). In this case the terminal can no longer be serviced by the application and there is no way to put the Display Station in service by the software. This is only possible via power on reset or by switching from NORMAL to TEST mode and back to NORMAL from the Display Station.

2.Missing *ground* for COAX-connector plate.
Check pin 01A-A2ZDD08 for proper *ground*.

Do the following:

2.1 Remove COAX-connector plate.
Keep it isolated from machine frame!

2.2 Measure with CE meter the resistance between the connector plate and machine frame or any D08-pin.

(Step 007 continues)

(Step 007 continued)
The resistance should be zero ohm.

3.Check also electrical grounding on all DCA connected I/Os as described in the I/O Maintenance Documentation.

4.Check if DCA card 3 (01A-A2K2) is at latest EC.

See Vol.30, Plug List of board A2 (page PA220).
Compare the listed P/N with the P/N of the card installed in location 01A-A2K2.
If the P/N does not match, replace the card in position 01A-A2K2 with the P/N given in the Plug List.
If the P/N matches proceed with item number 5 of this step.

5.Reseat :
Processor Bus cable for SP,
from 01A-A2YM to 01A-C2YJ, and
from 01A-A2YD to 01A-C2YK.

Any problem found?
Y N

008
Were you told before by this MAP to perform a console printer checkout procedure?
Y N

009
Is any other Display Unit on DCA operational?
Y N

7 7 7 6
G H J K

010
You will probably have a Service Processor hang.
Perform IML with the CNTRL diskette FU1 to test the Service Processor.

Any Reference Code?
Y N

011
Note:
IML is complete when the 'Program Load' picture appears on the screen.

Is IML complete?
Y N

012
Go To Map 0400, Entry Point R.

OPERATOR CONSOLE

013
Problem can not be recreated by
IML or may be intermittent.
If the same trouble comes up again
contact your support structure.

Suspect the following FRUs and
replace it one at a time:

1. SP Cards 4, 5, 6 01A-C2G2,H2,J2
   SP card 5 may not be installed;
2. DCA Card 3 01A-A2K2
3. DCA Card 1, 2 01A-A2J4,J2
   depending on the affected port;
4. SP Cards 1, 2, 3 01A-C2D2,E2,F2
5. SCL Card 3 01A-C2C2
6. BBA0 Card 01A-A2T2
7. CDF1 Cards 1, 2 01A-A2R2,S2
8. CDF2 Cards 1, 2 01A-A2N2,P2
9. SBA Card 01A-A2Q2
10. PSC Card 1 01A-A2D2
11. Processor Bus cable for SP,
    from 01A-A2YM to 01A-C2YJ and
    from 01A-A2YD to 01A-C2YK.

After repair,
Go To Map 0001, Entry Point A.

014
Go To Map 0020, Entry Point A.

015
Go To Map 0E04, Entry Point C.

016
Run the application which brought up the
problem.
If the trouble comes up again,
Go To Map 0001, Entry Point O.

017
Do the repair as required.
After repair
Go To Map 0001, Entry Point A.

018
Check the operator console configuration.

See Vol.13, STM, Section 4:
Diagnostic Run Procedures,
(Configuration of Native Displays and
Printers).

Is the configuration correct?
Y N

019
Correct the configuration!

Perform IML!

020
Suspect intermittent operator console problem.

Go to Page 4, Step 007, Entry Point X.

021
Repair as required.
Then,
Go To Map 0001, Entry Point A.

022
Check if the characters are readable.
That means: the characters are not scrambled and have a correct size and shape.

Are the characters readable?
Y N

023
Go to Page 2, Step 002, Entry Point B.

024
Check if the customer works in *1052 mode*.

Is a console printer problem suspected?
Y N

025
Go To Map 0E04, Entry Point C.

026
Go to Page 11, Step 036, Entry Point C.

027
Is any reference code displayed?
Y N

028
Make sure that the CE mode switch is in normal position.
The switch is located on top of gate 01A.

Is the °Basic Check° indicator on?
Y N

029
Did the operator's console trouble occur during IML?
Y N

030
The operator's console trouble came up during any customer's job was running, or any other machine operation was performed.

Check if the customer works in °1052 mode°.

Is a console printer problem suspected?
Y N

031
Go to Page 3, Step 004, Entry Point N.

032
Go to Page 11, Step 036, Entry Point C.

033
Go To Map 0400, Entry Point R.

034
Go To Map 0800, Entry Point K.

035

Go To Map 0020, Entry Point A.

036
(Entry Point C)

Press COPY key!

Does the printer print?
Y N

037
Check the configuration!
Press MODE SEL key
Customer Manual Operations picture appears.
Select 'Native Display and Printer.

See Vol.13, STM, Section 4:
Diagnostic Run Procedures
(Configuration of Native Displays and Printers).

Is the console printer correct configured ?
Y N

038
Correct the configuration, then perform IML.
Press the COPY key and try printing once more!

Is printing correct now?
Y N

039
Go to Page 12, Step 041, Entry Point XA.

040
Go To Map 0001, Entry Point A.

041

(Entry Point XA)
****

Check the *1052 mode* on the 'Program Load' screen!

Is the printing correctly specified?
Y N

042
Correct on the 'Program Load' screen the *1052 mode* in accordance with the customer.

043

(Entry Point XX)
****

Refer to printer Maintenance Information and perform the printer check out procedure.

Any problem found?
Y N

044
Go to Page 4, Step 007, Entry Point X.

045
Repair as required in accordance with the Maintenance Information.

046
Does the printer print correctly?
Y N

047
Go to the printer documentation for repair.
Then try printing again.
Printing satisfactory?
Y N

048
Go To Map 0001, Entry Point O.

049
Go To Map 0001, Entry Point A.

050
Go to Page 12, Step 041, Entry Point XA.

DEAD SYSTEM (Error after IML)

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
NDS	AA	3	006
0000	A	1	001
0001	A	1	001
0050	A	1	001
0070	B	2	004
0070	AS	2	002
0400	A	1	001
0400	AA	3	006
0600	A	1	001
0600	K	10	037
0600	BC	3	010
0600	TT	4	012

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
10	036	0001	A
5	019	0001	0
7	023	0001	0
8	028	0001	U
9	033	0001	Y
10	040	0200	A
11	042	0200	A
5	017	0400	A
8	027	0400	A
9	032	0400	A
11	045	0400	R
9	029	0400	GG
7	024	0400	GG
2	005	0600	A
3	007	0600	N

001
(Entry Point A)
****

Did the dead system situation occur during the IML operation?
Y N

002
The dead system situation occurred any time after a successful IML operation (for example, any customer job was running).

(Step 002 continues)

Note: The IML operation was completed successfully when the PROGRAM LOAD picture appeared on the screen.

(Step 002 continued)
Prerequisites:

- Make sure that the CE Mode switch is not switched to ON and is still in the normal position.
- Make sure that the operator's console power is turned on and the screen brightness control is adjusted correctly (turn clockwise).
- After the error has been detected, you should wait at least one minute before you start the procedure.

(Entry Point AS)
****

Is any reference code on the screen?
Y N

003
Is the 'basic check' indicator on?
Y N

004
(Entry Point B)
****

Is the divider line on the operator's console screen?
Y N

005
Go To Map 0600, Entry Point A.

1 1
1 0 3
B C D

Caution: The diskette unit is sensitive to electromagnetic fields. Therefore, the machine covers should always be closed during any diskette operation.

DEAD SYSTEM MAP

006
(Entry Point AA)
****

Is any text on the operator's console screen and readable?
Y N

Readable means:
Text or characters are not scrambled and have a correct size and shape.

007
Go To Map 0600, Entry Point N.

008
Is keyboard locked?

Keyboard locked means:
There is no response when any key is pressed.

Y N

009
Go to Page 9, Step 033, Entry Point Q.

010
(Entry Point BC)
****

Is there any progress on the screen, so that you can assume that the SP is working?
Y N

Progress on screen means:
Any information is changing.

011
Press Keyboard Reset.

Then press the ALT key and the MODE SEL/DIAG key together.

Does the MAINTENANCE and SERVICE PROGRAM SELECTION picture appear on the screen?
Y N

1
0 9 4
E F G

012
(Entry Point TT)
****

Write down the error information from the SP display on the CE panel.

To write down the error status, use copies of the 'SP Display' sheet from the SP-Display Introduction in Vol. 13, STM, Section 4.

Are the displays 8 and 9 (ADDR HI and ADDR LOW) stable?
Y N

013
Invoke the trace program in order to trace the loop.
Write down the address of every step for possible later use.

Go to Step 016, Entry Point H.

See Vol.13, STM, Section 4: SP Trace.

014
o Save the SP display data for later use.

o Start SP Trace.

Is the trace operational?
Y N

015
Go to Step 016, Entry Point H.

016
Use the trace display function and display address 0150 through 015F and 0180 through 019F.
Save the data for later use.

(Entry Point H)
****

(Step 016 continues)

(Step 016 continued)
o Turn power off at the system
and at the 3278-2A/3279-2C
operator's console
(display station).

o Turn power on at the system
and at the 3278-2A/3279-2C
operator's console.

With system power on, the SP diagnostic tests and the IML operation are started automatically.

Is the IML operation completed successfully?
Y N

The IML operation is completed successfully when the PROGRAM LOAD picture appears on the screen.

017
Go To Map 0400, Entry Point A.

018
Run the application which showed the problem.

You may also run the system test ST 4300.

Does again a dead system problem come up?
Y N

019
The problem is not reconstructable.
Save all error data you have got before, and save them for possible later use.

The problem may be:

1.A control program error.

2.An electronic discharge (ESD) problem. Refer to the ESD checklist in the MI Power Manual and perform the ESD checkout.

3.A problem of the operator's console (display, keyboard).

In this case GO TO MAP 0600, ENTRY POINT N.

If the trouble cannot be found, or a control program error is suspected,

Go To Map 0001, Entry Point O.

020
Any reference code?
Y N

021
Write down the error status (SP display).

Are the displays 8 and 9 stable?
Y N

022
To further analyze the problem, you need the error status information you saved before:

1. The first SP Display and associated reference code

2. The data displayed by trace (if available).

Note: By the following procedure an attempt is made to find the failing FRU by analyzing the error data of the first stable display.

Compare the two-byte address with the addresses listed in column 1 of the list below.

Example:
ADDR HI = 12
ADDR LOW = 84
Assembled address = 1284

The two-byte address is an error hang address.

1 ADDRESS	2 REF.CODE
1284	F1031801
1288	F1021201
128A	F1011001
128E	F1063801
1292	F1053201
1294	F1043001
129C	F1092801
12A0	F1082201
12A2	F1072001
12AA	F0118801
12AC	F0108001
12B4	F0134801

(Step 022 continues)

(Step 022 continued)

12B6	F0124001
12BA	F1140801
12BE	F1150001
12C0	F1160001

Does the SP display 8 and 9 match with any address in column 1?

Y N

023
Save all error data available.
Invoke your support structure especially for a problem search in the data bank.

Go To Map 0001, Entry Point O.

024
Attention:
Within the following steps you may be asked 'Trace operational?'.
In this case DO NOT START THE TRACE PROGRAM!

Answer with YES if you have trace data available. Answer with NO if trace data is not available.

Go To Map 0400, Entry Point GG.

025
Assemble 'SP display 8 and 9 (ADDR HI and ADDR LOW) to a two-byte address.
Compare this two-byte address with the addresses listed in column 1 of the list below.

Example:
ADDR HI = 12
ADDR LOW = 84
Assembled address = 1284

The two-byte address is an error hang address.

(Step 025 continues)

(Step 025 continued)

1 ADDRESS	2 REF.CODE
1284	F1031801
1288	F1021201
128A	F1011001
128E	F1063801
1292	F1053201
1294	F1043001
129C	F1092801
12A0	F1082201
12A2	F1072001
12AA	F0118801
12AC	F0108001
12B4	F0134801
12B6	F0124001
12BA	F1140801
12BE	F1150001
12C0	F1160001

Does the SP display 8, 9 match with any address in column 1?

Y N

026

Perform IML several times
(if needed several times in order to force the error to come up).

Note: The SP diagnostics are started automatically with power on or by pressing the IML key.

Is the IML operation completed successfully?

Y N

027

Go To Map 0400, Entry Point A.

028

Save all available error data.
Call for support, especially for a problem search in the reference code data bank.

Go To Map 0001, Entry Point U.

029
Attention:
Within the following steps you may be asked 'Trace operational?'.
In this case DO NOT START THE TRACE PROGRAM!

Answer with YES if you have trace data available. Answer with NO if trace data is not available.

Go To Map 0400, Entry Point GG.

030
Go to Map according to the reference code displayed.

031
The possible causes of this failure may be:

1.A control program error.

2.An intermittent error in the service processor hardware.

Turn power off at system and 3278-2A/3279-2C display station.

Turn power on at system and 3278-2A/3279-2C display station.

Note:
With system power on, the SP diagnostic tests and the IML operation are started automatically.

Is the IML-operation completed successfully?
Y N

The IML operation is completed successfully when the PROGRAM LOAD picture appears on the screen.

032
Go To Map 0400, Entry Point A.

033
(Entry Point Q)
****

Go To Map 0001, Entry Point Y.

034
Perform the keyboard checkout procedure.

Refer to the I/O documentation:
3278 Model 2A or
3279 Model 2C Display Console Maintenance Information
(under the keyboard).

Any error?
Y N

035
This is not a dead system problem.
Go to Page 9, Step 033, Entry Point Q.

036
Repair the keyboard, then
Go To Map 0001, Entry Point A.

037
(Entry Point K)
****

Press cancel key!

Is any reference code displayed now?
Y N

038
Is any power failure indicated?
Y N

039
Are the gate blowers running?
Y N

040
The hard wired sequence is switched off.

Go To Map 0200, Entry Point A.

041
Go to Page 2, Step 004, Entry Point B.

042
This failure is caused by a power problem.

Go To Map 0200, Entry Point A.

043
Go to MAP according to the indicated reference code.

044
Go to MAP according to the reference code displayed.

045
Go To Map 0400, Entry Point R.

TEST CHAINING MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
A200	A	2	001
C400	A	2	001
C500	A	2	001
C600	A	2	001
F200	A	2	001
RFCA	Q	3	008
TEST	D	12	065
0020	D	12	065
0020	Q	3	008
2X00	A	2	001
2X00	JK	9	046
2370	J	9	044
3X00	A	2	001
3X00	JK	9	046
3370	D	12	065
3370	J	9	044
4B00	A	2	001
4B70	D	12	065
4900	A	2	001
4970	D	12	065
8000	A	2	001
8100	A	2	001
8200	A	2	001
8400	A	2	001
8800	A	2	001
8800	D	12	065
8880	A	2	001
8888	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	025	A200	AA
10	049	A200	MM
12	061	A280	A
11	054	C180	A
11	054	C280	A
11	054	C380	A
6	025	C400	AA
10	049	C400	MM
11	061	C480	A
6	025	C500	AA
10	049	C500	MM
11	061	C580	A
6	025	C600	AA
10	049	C600	MM
11	061	C680	A
10	052	DXXX	A
6	025	F200	AA
10	049	F200	MM
12	061	F280	A
11	059	0001	A
8	032	2X00	AA
8	039	2X00	AA
12	062	2370	A
8	032	3X00	AA
8	039	3X00	AA
12	062	3370	A
10	053	4B00	AA
12	064	4B70	A
10	053	4900	AA
3	007	4970	A
10	051	8XXX	A
6	025	8000	AA
10	049	8000	MM
11	061	8070	A
11	054	8080	A
6	025	8100	AA
10	049	8100	MM
11	061	8170	A
11	054	8180	A

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	025	8200	AA
10	049	8200	MM
11	061	8270	A
11	054	8280	A
6	025	8400	AA
10	049	8400	MM
11	061	8470	A
11	054	8480	A
6	025	8800	AA
11	061	8888	A

001

(Entry Point A)
****

Did a reference code come up when running the test chaining?
Y N

002
Go to Page 9, Step 044, Entry Point J.

003
Is it a reference code 4.....81?
Y N

004
Go to appropriate MAP via reference code directory (2XXX, 3XXX, etc. to FXXX), respectively use the REFCODE ANALYSIS.

005
Is the system a 4331-2 or 4331-11?
Y N

1
2 3
A B

Attention,
if the test chaining is selected make sure that you did IML with DIAG diskette in order to reset PU.

006

The system is a 4321 or a 4331-1.

Select 'IBM MAINTENANCE AND SERVICE PROGRAM SELECTION'.

Select 'REFCODE ANALYSIS'.

Key in the reference code from the PU/BSM test.

Does the REFCODE ANALYSIS tell you to go to MAP 0C00, ENTRY POINT Q?

Y N

007

Do the repair as told by the REFCODE ANALYSIS, respectively MAP 4970.

Go To Map 4970, Entry Point A.

008

(Entry Point Q)

****

A problem in the IC-bus and adapter's area is suspected, not in the processing unit.

In order to continue the test chaining select the test chaining again, but exclude the PU/BSM test now.

Any reference code?

Y N

009

TEST CHAINING COMPLETED.

The test chaining ran error free, except the reference code during the PU/BSM test, pointing to the IC-bus and adapters area.

Go to Page 12, Step 066, Entry Point DE.

010
Write it down.

To continue answer now the following questions:

(Entry Point DD)
****

Was the reference code from the error log 4.....01 (PU/ BSM error log)?
Y N

011

Was the reference code from the error log 2.....01 or 3.....01 (IC bus error log)?
Y N

012
Check if any of the following reference codes where logged:

8.....01 (BMPX1/ 2, HSC, MPX, or CA error log),
A2....01 (BBA1 error log),
C.....01 (FTA1/ 2/ 3 error log),
F2....01 (BBA0 error log)?

Is any of the above reference codes logged?
Y N

013
Go to Page 8, Step 040, Entry Point F.

014
When continuing the test chaining, has any reference code 23....81 or 33....81 come up?
Y N

015

When continuing the test chaining, has any reference code:
8.....81,
A2....81,
C.....81,
F2....81 come up?

Y N

016

Has any other reference code come up?

Y N

017
TEST CHAINING COMPLETED.

The rest of test chaining ran error free. But since the PU/BSM test pointed to a problem in the IC-bus area, we have now to continue with further testing:

(Entry Point G)
****

Is the 5424 MFCU attached to the system?

Y N

6 6 6
H J K L

018

(Entry Point XL)
****

Now select and run the interface wrap test for the adapter for which a log occured.

Attention,

Power down the controllers/control units for every interface that you test.

Start the tests by putting the wrap plugs in the first controller/control unit after the processor, then in the most distant controller/control unit.

By systematically putting the wrap plugs in the other controllers/control units the area in which the error lies is approached.

(For the BBAs, interface tests do not exist.)

Does any reference code come up?

Y N

019
The error is obviously intermittent.

Do the repair according to the adapter log MAP, respectively use the REFCODE ANALYSIS:
Go to Page 6, Step 025, Entry Point W.

If the reference code analysis for the adapter log does not help to find the trouble, proceed with this MAP again and
Go to Page 9, Step 046, Entry Point JK.

020
Go to Page 11, Step 054, Entry Point Z.

021
Run the MFCU adapter test, which is on the CNTRL diskette (FU1).

Any error?
Y N

022
Insert the DIAG diskette again, then
Go to Page 5, Step 018, Entry Point XL.

023
Go to appropriate MAP via reference code directory (AXXX), respectively use the REFCODE ANALYSIS:

024
Go to Page 11, Step 058, Entry Point FK.

025
Write down the reference code and first test symptoms for later use.

It will be needed for error re-creation, and verification that the correct FRU has been replaced.

(Entry Point W)
****

Do the repair according to the adapter log MAP, respectively use the REFCODE ANALYSIS.

---

for BMPX1
Go To Map 8000, Entry Point AA.

---

for BMPX2
Go To Map 8100, Entry Point AA.

---

for HSC
Go To Map 8200, Entry Point AA.

---

for MPX
Go To Map 8400, Entry Point AA.
(Step 025 continues)

(Step 025 continued)

---

for CA-BA
Go To Map 8800, Entry Point AA.

---

for FTA1
Go To Map C400, Entry Point AA.

---

for FTA2
Go To Map C500, Entry Point AA.

For FTA3
Go To Map C600, Entry Point AA.

---

for BBA0
Go To Map F200, Entry Point AA.

---

for BBA1
Go To Map A200, Entry Point AA.

026
Go to Page 12, Step 062, Entry Point XZ.

027

(Entry Point E)
****

When continuing the test chaining, has any reference code 23....81 or 33....81 come up?
Y N

028
When continuing the test chaining, has any reference code
8.....81,
A2....81,
C.....81,
F2....81 come up?
Y N

029

Has any other reference code come up?
Y N

030
TEST CHAINING COMPLETED.

The rest of the test chaining ran error free. But since the PU/BSM test pointed to a problem in the IC-bus area we have to continue with further testing.

(Entry Point K)
****

Is the 5424 MFCU attached to the processor?
Y N

031

(Entry Point XK)
****

Run the interface wrap tests one after the other (for all adapters installed).

You may run the interface wrap tests in the following sequence:
1. MPX,
2. FTA3/HSC,
3. BMPX2/FTA2,
4. FTA1,
5. BMPX1.

(For the BBAs, interface wrap tests do not exist.)

(Entry Point KK)
****

Does any reference code come up?
Y N

8 8 8
R S T

Attention
Power down the controllers/control units for every interface that you test.

Start the tests by putting the wrap plugs in the first controller/control unit after the processor, then in the most distant controller/control unit.

By systematically putting the wrap plugs in the other controllers/control units the area in which the error lies is approached.

032
The error is obviously intermittent

Do the repair according to the IC-Bus Log MAP, respectively use the REFCODE ANALYSIS:

For system 4321 or 4331-1
Go To Map 2X00, Entry Point AA.

For system 4331-2 or 4331-11
Go To Map 3X00, Entry Point AA.

If the reference code analysis for the IC-bus log does not help to find the trouble, proceed with this MAP again and
Go to Page 9, Step 046, Entry Point JK.

033
Go to Page 11, Step 054, Entry Point Z.

034
Run also the MFCU adapter test, which is located on the CNTRL diskette (FU1).

Any error?
Y N

035
Insert again the DIAG diskette, then
Go to Page 7, Step 031, Entry Point XK.

036
Go to appropriate MAP via reference code directory (AXXX), respectively use the REFCODE ANALYSIS.

037
Go to Page 11, Step 058, Entry Point FK.

038
Go to Step 039, Entry Point EE.

039
(Entry Point EE)
****

Write down the test symptoms for later use.

It will be needed for error re-creation, and verification that the correct FRU has been replaced.

Do the repair according to the IC-bus log MAP, respectively use the REFCODE ANALYSIS:

For system 4321 or 4331-1
Go To Map 2X00, Entry Point AA.

For system 4331-2 or 4331-11
Go To Map 3X00, Entry Point AA.

040
(Entry Point F)
****

When continuing the test chaining, has any reference code 23....81 or 33....81 come up?
Y N

041

When continuing the test chaining, has any reference code
8.....81,
A2....81,
C.....81,
F2....81 come up?
Y N

042

Has any other reference code come up?
Y N

043
TEST CHAINING COMPLETED.
The rest of the test chaining ran error free.
But since the PU/BSM test pointed to the IC-Bus area, we have now to continue with further testing.

(Entry Point H)
****

Is the 5424 MFCU attached to the system?
Y N

044
(Entry Point J)
****

Run the interface wrap tests one after the other (for all adapters installed).

Attention

Power down the controllers/control units for every interface that you test.

Start the tests by putting the wrap plugs in the first controller/control unit after the processor, then in the most distant controller/control unit.

By systematically putting the wrap plugs in the other controllers/control units the area in which the error lies is approached.

You may do it in the following sequence:
1. MPX
2. FTA3/HSC
3. BMPX2/FTA2
4. FTA1
5. BMPX1

(For the BBAs, interface (wrap) tests do not exist.)

Does any reference code come up?
Y N

1 1
1 1 A
Y Z A

045

Was the reference code from the error log 4.....01 (PU/BSM error log)?
Y N

046

(Entry Point JK)
****

Run the inline tests for the disks and tapes.
Any error?
Y N

047
Run the inline tests for the CA.
Any error?
Y N

048
All testing is done without getting an error.
Either there is no error or the error is obviously intermittent.

Hint:
Check also the air filters of the gate blowers for excessive dust. Clean them, if necessary.
The air filters are located in the front and rear cover.

Did the PU/BSM test indicate more symptoms than the symptom *IC* (for example: IC, 04, 06) ?
Y N

1 1 1 1 1
0 0 0 0 0
A A A A A
B C D E F

049
(Entry Point MZ)
****

Proceed with the appropriate MAP.
If a problem is suspected in:

BMPX-1 - I/Os
Go To Map 8000, Entry Point MM.

BMPX-2 - I/Os
Go To Map 8100, Entry Point MM.

HSC - I/Os
Go To Map 8200, Entry Point MM.

MPX - I/Os
Go To Map 8400, Entry Point MM.

FTA1 - I/Os
Go To Map C400, Entry Point MM.

FTA2 - I/Os
Go To Map C500, Entry Point MM.

FTA3 - I/Os
Go To Map C600, Entry Point MM.

BBA1 - I/O Subsystem
Go To Map A200, Entry Point MM.

BBA0 - Supp. Subsystem
Go To Map F200, Entry Point MM.

050
(Entry Point NZ)
****

Follow first the other symptoms one after the other using the REFCODE ANALYSIS.

(Remember that you key in only one symptom (consisting of two digits) each time, for example: 04.)

If the trouble cannot be found, return to this MAP again and
Go to Step 049,
Entry Point MZ.

051
Go to the appropriate MAP via ref. code directory
Go To Map 8XXX, Entry Point A.

052
Go to the appropriate MAP via ref. code directory
Go To Map DXXX, Entry Point A.

053
Do the repair according to the PU/BSM log MAP, respectively use the REFCODE ANALYSIS:

For system 4321 or 4331-1
Go To Map 4900, Entry Point AA.

For system 4331-2 or 4331-11
Go To Map 4B00, Entry Point AA.

If the PU/BSM log MAP does not help to find the trouble, proceed with this MAP again and
Go to Page 9, Step 046, Entry Point JK.

054
(Entry Point Z)
****

Proceed with the appropriate interface wrap test MAP:

for Standard Interface BMPX1
Go To Map 8080, Entry Point A.
---
for Standard Interface BMPX2
Go To Map 8180, Entry Point A.
---
for Standard Interface HSC
Go To Map 8280, Entry Point A.
---
for Standard Interface MPX
Go To Map 8480, Entry Point A.
---
for CTLI1 (FTA1)
Go To Map C180, Entry Point A.
---
for CTLI2 (FTA2)
Go To Map C280, Entry Point A.
---
for CTLI3 (FTA3)
Go To Map C380, Entry Point A.

055
Run also the MFCU adapter test, which is on the CNTRL diskette (FU1).

Any error?
Y N

056
Insert again the DIAG diskette, then
Go to Page 9, Step 044, Entry Point J.

057
Go to appropriate MAP via reference code directory (AXXX), respectively use the REFCODE ANALYSIS:

058
(Entry Point FK)
****

Go to the appropriate MAP, respectively use the REFCODE ANALYSIS.

Then run the test chaining once more.

Any error?
Y N

059
Go To Map 0001, Entry Point A.

060
Go to Page 2, Step 001, Entry Point A.

061
Do the repair according to the respective adapter test MAP, respectively use the REFCODE ANALYSIS:

for BMPX1 adapter
Go To Map 8070, Entry Point A.
---
for BMPX2 adapter
Go To Map 8170, Entry Point A.
---
for HSC
Go To Map 8270, Entry Point A.

MPX adapter
Go To Map 8470, Entry Point A.
---
for CA-BA
Go To Map 8888, Entry Point A.
---
for FTA1
Go To Map C480, Entry Point A.
---
for FTA2
Go To Map C580, Entry Point A.
---
for FTA3
Go To Map C680, Entry Point A.
(Step 061 continues)

REF.CODE 0C000001

TEST CHAINING MAP

(Step 061 continued)

---

for BBA0
Go To Map F280, Entry Point A.

---

for BBA1
Go To Map A280, Entry Point A.

062
(Entry Point XZ)
****

Do the repair according to the IC-bus test MAP, respectively use the REFCODE ANALYSIS:

For system 4321 or 4331-1
Go To Map 2370, Entry Point A.

For the system 4331-2 or 4331-11
Go To Map 3370, Entry Point A.

063
Is the symptom 'IC' indicated on screen?
Y N

064
Do the repair as told by the PU/BSM test MAP, respectively use the REFCODE ANALYSIS:

For system 4331-2 or 4331-11
Go To Map 4B70, Entry Point A.

065
(Entry Point D)
****

The symptom *IC* means, that there is an error assumed in the IC-bus - adapters - I/Os area.

Continue the test chaining by pressing ENTER key.

With pressing the ENTER key the rest of the test chaining is started, hoping the trouble in the IC-bus area will be detected by any other test of the test chaining.

Any reference code?
Y N

066
TEST CHAINING COMPLETED.
The test chaining ran error free, except the symptom 'IC' came up during the PU/BSM test run.

(Entry Point DE)
****

Are you here because there was an error log?
Y N

067
You ran the test chaining for any other reason.

Is the processor a 4321 or 4331-1?
Y N

068
Was any other symptom shown additionally by the PU/BSM test (not only the symptom *IC*) ?
Y N

069
Only the symptom *IC* was indicated.
Go to Page 9, Step 043, Entry Point H.

070
Go to Page 10, Step 050, Entry Point NZ.

071
Go to Page 9, Step 043, Entry Point H.

072
Was the reference code from the error log
4.....01
(PU/BSM error log)?
Y N

073
Was the reference code from the error log
2.....01 or 3.....01
(IC-bus error log)?
Y N

074
Was the reference code from the error log
8.....01,
A2....01,
C.....01or
F2....01
(any adapter error log)?

Y N

075
Go to Page 9, Step 043, Entry Point H.

076
Go to Page 5, Step 017, Entry Point G.

077
Go to Page 7, Step 030, Entry Point K.

078
Go to Page 9, Step 043, Entry Point H.

A H 1 2

079
Write it down.

Answer now the following questions.
Go to Page 4, Step 010, Entry Point DD.

15SEP82 PN 5683213
EC 366589 PEC 366515

OPERATING SYSTEM MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
E400	A	1	001
E680	A	1	001
0XXX	A	1	001
0000	A	1	001
0010	A	1	001
0060	E	19	085

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
12	037	0001	A
22	087	0001	A
2	013	0001	0
7	021	0001	0
10	029	0001	0
13	048	0001	0
22	086	0001	0
16	066	0001	0
16	056	0001	0
16	060	0001	0
9	026	0001	0
17	074	0001	0
12	036	0001	Y
8	024	0001	0
10	032	0020	A
10	030	0060	L

001
(Entry Point A)
****

O P E R A T I N G S Y S T E M

P R O B L E M D E T E R M I N A T I O N.

Reference code E6202081?
Y N

002
Any other reference code?
Y N

003
Is *IPL ERROR* displayed in line 21, left hand side, on the screen?
Y N

004
Is any MESSAGE from the OPERATING SYSTEM (DOS/VSE or SSX/VSE for example) displayed?
Y N

005
Can any customer's job be performed?
Y N

006
Be sure that the system is not in manual state. In this case MAN is shown in line 21 on the left side of the screen.
If MAN is shown, go to ENTRY POINT PP on page 8, step 022.

Are both, the SYSTEM light and the WAIT light on?
Y N

007
Is only the WAIT light on?
Y N

008
Is only the SYSTEM light on?
Y N

009
Go to Page 9, Step 025, Entry Point ZS.

010
Go to Page 7, Step 020, Entry Point P.

011
(Entry Point H)
****

Press Request or Enter Key!

Does the System respond?
Y N

012
The problem is a HARD WAIT situation.

The following procedure is applicable for DOS/VSE only.

Check in line 21 on screen whether the system is used in VSE mode or in 370 mode.

Is the operating system DOS/VSE?
Y N

013
Refer to the software documentation of the operating system used to attempt problem isolation.

Ask the system operator for help if necessary.

In the software documentation follow the debugging procedures for 'Wait States'.

If the problem cannot be isolated

Go To Map 0001, Entry Point O.

014
Do the following in order to get a storage dump:

1.Press MODE SEL key.

2.Select S = MACHINE SAVE,

SAVE should appear on screen.

3.Press MODE SEL key.

4.Key in DV00.

Press ENTER.

(Step 014 continues)

(Step 014 continued)

A storage dump appears beginning with address 000000.

Write down the first eight bytes (hard wait code) beginning at address 000000.

Display example:

MAIN STORAGE (HEX)

```
      0    2    4    6    8    A    C    E
00000 .... 0FFE .... .... xxxx xxxx xxxx xxxx
```

Is byte 000002 and 000003 showing *0FFE* or '0FF9'?

Y N

015
Go to Page 9, Step 029, Entry Point K2.

4
K

016

The system is in HARD WAIT situation.

Key in
Selection: V
Address: 48

Press ENTER.

The storage dump beginning with address 000040 appears on screen.

Byte 000040 to 000047 contains the CHANNEL STATUS WORD (CSW).

Byte 000044 shows the UNIT STATUS (In this example *0E* = Channel End, Device End, Unit Check.

Byte 000048 to 00004B contains the CHANNEL ADDRESS WORD (CAW).

```
    Display example:

                  *MAIN STORAGE (HEX)*

             0    2    4    6    8    A    C    E
        00004 xxxx xxxx 0E00 xxxx 0000 A5F0 xxxx xxxx

                        _|_       _________________
                         |        |    ____________
                         |        |    |
                         |        |    |
                         |        |    V
                         |        |    Address
                         V        V
                   Unit Status    Channel Address Word
```

```
Key in
Selection:   V
  Address:  taken from CAW, byte 00049 to 0004B
            (in the above example "00A5F0".)
```

(Step 016 continues)

(Step 016 continued)

Press ENTER.

The main storage dump shows now the contents of address 00A5F0. Byte 00 should show the SENSE COMMAND (*04*).
The contents of 00A5F1 to 00A5F3 show the data address where the sense information is stored.

Display example:

```
              *MAIN STORAGE (HEX)*

      0    2    4    6    8    A    C    E
00A5F 0400 A606 xxxx xxxx xxxx xxxx xxxx xxxx
        -------
      |      |
      V      V
Sense Cmd.   Addr. of Sense Data
```

Is sense command (04) displayed?

Y N

017

Go to Page 9, Step 029, Entry Point K2.

018

Key in
Selection: V
Address: address of sense data
(in the example above "A606").

Press ENTER.

The main storage dump shows now the content
beginning with address 00A60.

MAIN STORAGE (HEX)

```
        0    2    4    6    8    A    C    E
00A60 xxxx xxxx xxxx(.... .... .... .... ....
00A61 .... .... .... .... .... .... !!!!)xxxx
```

The string of bytes - in this example marked with brackets ( ) -
are twenty-four I/O SENSE BYTES.
The last two bytes are the FAULT SYMPTOM INDEX (FSI)
often also called the FAULT SYMPTOM CODE (FSC).
Write it down.

In order to get the address of the failing unit, do the following procedure:

Note: This address is only valid, if nobody touched for example the console after the hard wait had come up!

Key in
Selection: V
(Step 018 continues)

(Step 018 continued)
Address: BA

Display example:

```
                *MAIN STORAGE (HEX)*


        0    2    4    6    8    A    C    E
0000B xxxx xxxx xxxx xxxx xxxx 0200 xxxx xxxx
```

In EC-mode (Extended control mode = normal mode for DOS or VSE) address 0000BA contains the unit address of the failing unit (in the above example "0200").

Write down the address of the failing unit.

Now use the FSI (FSC) and proceed with the I/O maintenance documentation of the failing unit.

The FSI (FSC) and the other sense bytes will be evaluated in the I/O maintenance documentation.

019
Go to Page 10, Step 031, Entry Point K1.

020

(Entry Point P)
****

Press STOP key.

Does *MAN* appear in line 21 on the screen on the left side?
Y N

021
Control program hang.
Invoke your support structure.
Go To Map 0001, Entry Point O.

022

(Entry Point PP)
****

Is still
SYSTEM or
SYSTEM and WAIT
light indicated?
Y N

023
Only MAN is indicated on screen in line 21.

Hang of the machine language program.

See now DATA:....ADDRESS:.... in line 21 on the right side on the screen.

Write down the values of the DATA and ADDRESS fields.

The further problem determination will refer to these in order to find out whether the address is changing, respectively the machine language program is in a loop.

Go to Page 9, Step 029, Entry Point K2.

024
Channel or interrupt hang.

Suspected:

1.Channel(s)/FTA(s) working continuously.

2.Trap condition continuously active.

Invoke your support structure.
Go To Map 0001, Entry Point 0.

025
(Entry Point ZS)
****

Ask customer to run either the EREP summary or the EREP of a specific I/O device if possible.
(Environmental recording, editing and printing).

Is EREP possible?
Y N

026
Invoke your support structure.
Go To Map 0001, Entry Point O.

027
Go to Page 19, Step 085, Entry Point E.

028
Does the operating system message indicate an I/O error?
Y N

Examples of message text for I/O errors:
- 'INTERVENTION REQUIRED....'
- 'DEVICE NOT OPERATIONAL....'
- 'I/O INTERRUPT....'
- 'UNIT CHECK....'
- 'UNRECOVERABLE I/O ERROR....'

029
(Entry Point K2)
****

Verify with the customer the problem determination guide in the

Operator's Library,
IBM 4321/4331 Processor,
Operating Procedures,
and Problem
Determination Guide,
Chapter 4, or
if applicable,
Serviceability Aids and Debugging Procedures,
Chapter 3: Debugging for Operators.

(Step 029 continues)

(Step 029 continued)
When at any point the problem determination guide asks for the *Service Representative*, you invoke your support structure; this means
Go To Map 0001, Entry Point O.

030
Go To Map 0060, Entry Point L.

031

(Entry Point K1)
****

Verify with the customer the problem determination guide in the

Operator's Library,
IBM 4321/4331 Processor,
Operating Procedures,
and Problem
Determination Guide,
Chapter 4.

When at any point the problem determination guide asks for the *Service Representative*, you go again to the START MAP 0000, ENTRY POINT AA.

032
Go To Map 0020, Entry Point A.

033
Go to Page 11, Step 034, Entry Point C.

034
(Entry Point C)
****

Ref.Code E6202081 IIXXYYZZ
(IIXXYYZZ=Ref.Code Extension).

Do now the following:

A) Check the IPL picture whether the IPL device address is correct.

B) Check the configuration of the I/Os, especially for the IPL device.

See Vol.13, STM, Section 6: Configure Procedure.

Make sure that the devices are ready and all device addresses are correct.

Check addresses shown on the screen with the addresses pasted on all I/Os.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (Utilities Program Selection):

1.Alter Channel Number.
2.FTA Configurator.
3.SCA Configurator
4.HSC configurator.
5.Displays and Printers.
6.Diskette Set Device Address.
7.Loop Adapter Configurator.
8.CA Configurator.

Is the I/O configuration correctly specified, especially for the IPL channel and device?

Y N

1 1
2 2
P Q

035
Correct the I/O configuration.

See Vol13, STM Section 6: Configure Procedure.

(Entry Point R)
****

Ask customer to perform IPL again.

Is IPL successful?
Y N

036
We perform now a complete system checkout.
Go To Map 0001, Entry Point Y.

037
Go To Map 0001, Entry Point A.

038
Look at the reference code extension:
IIXXYYZZ.

Is II = 01?
Y N

039
Is II = 02
or II = 03
or II = 04?
Y N

Subchannel find error.
Subchannel not installed.
Subchannel not available.

040
Is II = 05?
Y N

041
Is II = 06?
Y N

042
Is II = 07?
Y N

043
Is II = 08?
Y N

044
Is II = 09?
Y N

045
Is II = 0A?
Y N

046
Is II = 0B?
Y N

047
Is II = 0C?
Y N

048
(Entry Point K)
****

Invoke your support structure especially for a problem search, and probable software support.

Go To Map 0001, Entry Point O.

049
PSW fetch error.

Suspected:

1.Wrong IPL record.

2.PSW may not have the correct format or it is located on the wrong place.

Software support needed.

Go to Step 048,
Entry Point K.

1 1 1 1 4
5 4 4 A
X Y Z A

050
Control program protection check.
Go to Page 13, Step 048, Entry Point K.

051
Error during subchannel dequeue.
Go to Page 13, Step 048, Entry Point K.

052
Unexpected unit status (unit status not zero).

Look for the unit status.
It is represented by YY of the reference code extension:

```
E6....81 09XXYYZZ
            ¯T
             |
             V
          Bit:   Meaning:
          ----   --------
             0   Attention
             1   Status modifier
             2   Control unit end
             3   Busy
             4   Channel end
             5   Device end
             6   Unit check
             7   Unit exception
```

Write down the unit status.

Go to Page 24, Step 089, Entry Point LZ.

053

Unexpected channel status (channel status not zero).

Look for the channel status, which is represented by ZZ of the reference code extension.

```
E6....81 08XXYYZZ
               ─┐
                |
                V
           Bit:   Meaning:
           ----   --------

              0 = Program-controlled interruption
              1 = Incorrect length
              2 = Program check
              3 = Protection check
              4 = Channel data check
              5 = Channel control check
              6 = Interface control check
              7 = Chaining check
```

Write down the channel status.

Channel Status bit 6 indicates an 'Interface Control Check'.

Is bit 6 on?

Y N

054

Channel Status bit 4 or 5 indicates a 'Channel Data Check' or a 'Channel Control Check.

Is bit 4 or 5 on?

Y N

16AB 16AC 16AD

055
Channel Status bit 2 indicates a Program Check.

Is bit 2 on?
Y N

056
Invoke your support structure, especially for a problem search,

Go To Map 0001, Entry Point O.

057
Suspected:
The IPL record on the IPL device is defective.

058
Run test chaining.

Any reference code?
Y N

059
(Entry Point XX)
****

Run Inline Tests or OLTEP if applicable.

Any error?
Y N

060
Invoke your support structure, expecially for a problem search,
Go To Map 0001, Entry Point O.

061
Follow reference code if any, or use test description.

062
Go to appropriate MAP, respectively use the REFCODE ANALYSIS.

063
Run appropriate interface (wrap) test.

Any reference code?
Y N

064
Go to Step 059,
Entry Point XX.

065
Go to appropriate MAP.

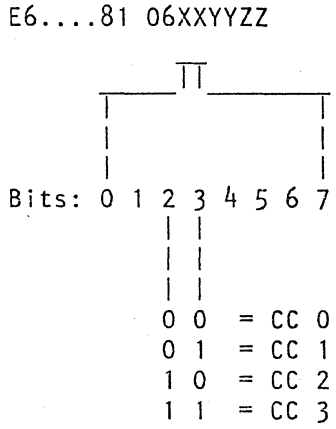
066
Subchannel not working or interrupt pending.

Invoke your support structure, especially for a problem search, therefore
Go To Map 0001, Entry Point O.

067
Is LOG PENDING indicated on left had side of screen?
Y N

068
Look for the Condition Code (CC).

It is represented by the bits 2 and 3 of byte XX of the reference code extension.



Is the CC = 0?
Y N

069
Is the CC = 1?
Y N

070
Is the CC = 2?
Y N

AAAA
GHJK

AAAA
GHJK 0730 MAP 0E00-17

071
The CC = 3.

The IPL device is not operational.

The problem may be:

1.No power on for the IPL device.

2.IPL device not ready.

3.IPL device not correctly configured.

Refer to Vol.13, STM, Section 6: Configure Procedure.

4.Wrong IPL device defined, check the PROGRAM LOAD picture.

5.Problem of the I/O itself.

Proceed with the I/O documentation.

072
If CC = 2, the IPL device appears as being erroneously busy.

I/O Reset did not work correctly.

Go to Page 24, Step 096, Entry Point X.

073
Unexpected unit status and/or channel status.
Go to Page 23, Step 088, Entry Point NX.

074
Call for support.
Go To Map 0001, Entry Point O.

075
Press CANCEL key.
Follow the last log.
Go to appropriate MAP, respectively use the REFCODE ANALYSIS.

076
Channel not available.

Check the configuration.

Refer to Vol.13, STM, Section 6: Configure Procedures.

Is the Configuration correct?
Y N

077
Correct it, then
Go to Page 12, Step 035, Entry Point R.

078
Go to Page 13, Step 048, Entry Point K.

079
1.No subchannel allocated, reconfigure, re-IML.

2.Wrong channel/subchannel specified in IPL selection, check device address 'CUU'.

Refer to Vol.13, STM, Section 6: Configure Procedure.

Is it correct?
Y N

080
Correct it, then
Go to Page 12, Step 035, Entry Point R.

081
Go to Page 13, Step 048, Entry Point K.

082
Channel address to large, greater than 6.

Check the PROGRAM LOAD picture.

Is it correct?
Y N

083
Correct it, then
Go to Page 12, Step 035, Entry Point R.

084
Go to Page 13, Step 048, Entry Point K.

085

(Entry Point E)
****

HOW TO USE THE TABLES BELOW

Check the EREP, the logs on the system diskette,
or ask the operator to answer the following question.

Is more than one device failing on the suspected
channel or adapter?
Y N
|
| Locate the failing device type in column 1 below.
| Proceed to the MAP or I/O maintenance documentation
| indicated in column 3.
|
|
Locate the failing device type in column 1 below.
Perform the actions indicated in column 2. If a test
fails proceed with the reference code from the test.
If the test does not fail, proceed with the MAP or
I/O maintenance documentation indicated in column 3.

Column 1	Column 2	Column 3
Natively attached I/Os:	Prerequisite action:	Proceed with MAP/MIM :
5424 MFCU:	Run 5424 MFCU adapter test and all tests for 5424 MFCU.	0E02 ENTRY POINT A
3540/XXXX I/O Diskette:	Run I/O diskette tests	0E03 ENTRY POINT A
DCA attached devices, such as display stations and printers:		0E04, ENTRY POINT A

(Step 085 continues)

(Step 085 continued)

Column 1	Column 2	Column 3
Channel attached I/Os:	Prerequisite action:	Proceed with MAP/MIM :
Control units and drives on BMPX 1/2:	Run BMPX 1/2 adapter test and BMPX 1/2 standard interface (wrap) test (Note 1)	of respective control unit
Control units and drives on MPX:	Run MPX adapter test and MPX standard interface (wrap) test (Note 1)	of respective control unit
Control units and drivers on HSC:	Run HSC adapter test and HSC standard interface (wrap) test. (Note 1)	of respective control unit
CA and attached devices	Run inline test 21	VOL. 14, STM (FEAT), Section CA, CA Unit Check Log and Sense Byte Analysis

(The notes are on the last page of this table.)

(Step 085 continues)

(Step 085 continued)

Column 1	Column 2	Column 3
FTA attached I/Os:	Prerequisite action:	Proceed with MAP/MIM :
3310 (FTA1)	Run respective FTA test and CTLI (wrap) test (Note 1)	ST10 of 3310
3340/ 3344 (FTA1)	Run respective FTA test and CTLI (wrap) test (Note 1)	START of 3340/3344 (Note 2)
3370 (FTA1)	Run respect. FTA test and CTLI (wrap) test (Note 1)	of 3370 with Maint. Device via MLX pages, Entry 1 (Note 3)
8809 (FTA2)	Run respect. FTA test and CTLI (wrap) test (Note 1)	Start MIM of 8809, ENTRY POINT A

(The notes are on the next page.)

(Step 085 continues)

(Step 085 continued)

Note 1) Run the interface (wrap) test only if it is not an obvious I/O problem.

Power down the controllers/control units before starting the test run.
Start the test by putting the wrap plugs in the first control unit after the processor then in the most distant controller/control unit.
By systematically putting the wrap plugs in the other controllers/control units the area in which the fault lies is approached. If a reference code comes up go to the appropriate MAP, otherwise proceed with the MAP or documentation indicated in column 3 of the table above.

Note 2) See 3340 Disk Storage Manual, page MLX1 Column 4331, Entry 1.

Note 3) As soon as you use the maintenance device, ignore the temporary error messages displayed on line 23 of console screen during running the 3370 inline tests.
See VOL.13, STM, Section 4: Diagnostic Run Procedures (Disk/ Tape Inline Test-General).

Repair successful?
Y N

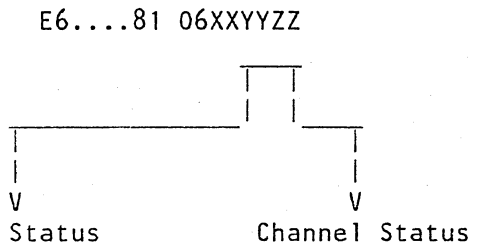
086
Go To Map 0001, Entry Point O.

087
Go To Map 0001, Entry Point A.

088

(Entry Point NX)
****

Either the IPL device is not ready or it is defective.
Look for the unit status and the channel status.
They are represented by the bytes YY and ZZ
of the reference code extension:



Bits: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Bit	Meaning
0	Attention
1	Status modifier
2	Control unit end
3	Busy
4	Channel end
5	Device end
6	Unit check
7	Unit exception
8	Program-controlled interruption
9	Incorrect length
10	Program check
11	Protection check
12	Channel data check
13	Channel control check
14	Interface control check
15	Chaining check

Write down the unit and channel status.

(Step 088 continues)

(Step 088 continued)
Channel Status bit 14 indicates an 'Interface Control Check'

Is bit 14 on?
Y N

089
(Entry Point LZ)
****

See Unit Status bit 6 indicates an 'Unit Check'

Is bit 6 on?
Y N

090
Unit Status bit 7 indicates an UNIT EXCEPTION

Is bit 7 on?
Y N

091

(Entry Point MZ)
****

Make the IPL device ready, check for example the CE switch. Proceed with the appropriate I/O documentation.

092
Make sure that the right tape or disk module is installed for IPL.

A defective IPL record or a defective I/O device can also cause the problem.

Repair as required, then

Go to Step 091, Entry Point MZ.

093
(Entry Point Y)
****

Run appropriate Inline Tests or OLTEP if applicable.

Any error?
Y N

094
(Entry Point Z)
****

Proceed immediately with the I/O documentation.

095
Follow reference code, if present or repair according to test description.
Use documentation of I/O.

096
(Entry Point X)
****

Run the appropriate interface (wrap) test.

Power down the controllers/control units before starting the test run.

Start the test by putting the wrap plugs in the controller/control unit next to the processor and then into the most distant controller/control unit. By systematically putting the wrap plugs in the other controllers/control units the area in which the fault lies is approached.

Any error?
Y N

097
Go to Step 093, Entry Point Y.

098

Go to appropriate MAP.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0E00	A	1	001
0XXX	A	1	001

001
(Entry Point A)

EREP 5424

Look up the error message, which you got from the EREP 5424, in the table below and find the needed MAP chart.

The error message is the content of sense byte 11 and 12 shown in EREP printout of MFCU.

Err. Mesg	Reason	Go to MAP
0200	Hoppercheck	AA84
0201	Feed check 1	AA84
0202	Feed check 2	AA86
0203	Feed check 3	AA86
0204	Feed check 4	AA86
0205	Feed check 5	AA88
0206	Feed check 6	AA88
0207	Feed check 7	AA8A
0208	Feed check 8	AA8A
0209	Feed check 9	AA8C
0210	Feed check 10	AA8A
0211	Feed check 11	AA8C
0212	Feed check 12	AA8A
0213	Feed check 13	AA8C
0214	Feed check 14	AA8E

(Step 001 continues)

(Step 001 continued)

Err. Mesg	Reason	Go to MAP
0215	Feed check 15	AA90
0216	Feed check 16	AA8E
0217	Feed check 17	AA90
0218	Feed check 18	AA8E
0219	Feed check 19	AA92
0220	Feed check 20	AA94
0221	Feed check 21	AA94
0222	Feed check 22	AA96
0300	Read check	AA98
0400	Punch check	AA9A
0500	Punch data check	AA9C
0600	Print clutch check	AA9E
0700	Print data check	AAA0
0A00	Cycle steal overrun	AAA6
0F80	Read Cycle steal end address is wrong	AAA8
0F40	Punch Cycle steal end address is wrong	AAA8
0F20	Read Cycle steal started too early	AAA8
0F10	Punch Cycle steal started too early	AAA8
0F04	Read translate interrupt request was missing	AAA8
0F02	Read translate interrupt request came up erroneously	AAA8
0F01	Unexpected MFCU interrupt request	AAA8

EREP I/O Diskette

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
FD70	A	1	001
0E00	A	1	001
0XXX	A	1	001
0060	A	1	001

001
(Entry Point A)

EREP I/O Diskette

To find the required action or the MAP chart which is necessary to solve the problem, proceed as follows:

Is an EREP printout possible?
Y N

002
1.Press Mode SEL key on operator console.
2.Key in character 'G' to get the diskette control screen.

Successful?
Y N

003
Try to get the operating system message about the I/O diskette error and look for the sense bytes. Sense byte 2 shows the error code 'XX'.
Go to Page 2, Step 005, Entry Point B.

004
Look for the error code 'XX'.
(It is identical with the I/O diskette sense byte 2.)
Go to Page 2, Step 005, Entry Point B.

005
1.Get an EREP printout IFCEREP 1.

2.Look for the EREP 3540/XXXX.

3.See SENSE Byte 2. Its content is the error message.

(Entry Point B)

4.Take this error code 'XX' and look it up in the table below:

XX	Reason	Indication	Go to MAP
AE	No identifier found, intervention required, motion malfunction.	Diskette defective, not ready.	Note 1
AF	Identifier record. Cylinder check failure.	Diskette defective, not ready.	Note 1
D0	Control record 'D' or 'F' required.	No error, handled by operating system.	
D3	CRC error.		FD74
D9	Other control record than 'D' or 'F' transfered.	No error, handled by operating system.	
E2	No record found.		FD74
E3	Disk speed incorrect, equipment check.	Not ready.	FD72

(Step 005 continues)

(Step 005 continued)

XX	Reason	Indication	Go to MAP
E4	Overrun/ underrun error equipment check.		FD74
E9	Identifier record. Head/Length check, equipment check.	Diskette defective.	Note 1

Note 1:

Perform a start function to the diskette,
or check for correct format (Diskette1, Diskette2, Diskette2D),
or check if a diskette 1 is not inserted backwards,
or check if diskette is formated.
or Insert new diskette.

For further information see SENSE BYTE DESCRIPTION in Vol.13 STM, Section 5.

PROBLEMS OF DCA ATT. DEVICES

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0E00	A	1	001
0000	A	1	001
0600	C	2	003

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	012	0001	A
4	014	0001	A
4	013	0001	A
2	007	0001	0
4	016	0600	C
4	017	0600	N

001
(Entry Point A)
****

Problems of DCA attached devices,
such as display stations or printers.

Is a Hang Condition or Keyboard locked on Operator Console?
Y N

Indication of hang condition or keyboard locked :
There is no progress on screen when any key is pressed.

002
Check if the customer works in *1052 mode*.

Is a console printer problem suspected?
Y N

4 4 2
A B C

003
The Hang- or Lock-Condition is on any DCA attached Device.

(Entry Point C)
****

If not already done check the configuration.

See Vol.13, STM, Section 4:
Diagnostic Run Procedures
(Configuration of Native Displays and Printers).

Is the configuration correct?
Y N

004
Correct the configuration.

005
Execute DCA Test 01 from any working display unit or from the Operator Console for every device attached to DCA.

See Vol.13, STM, Section 4: Tests for DCA and attached devices.

This test displays device and adapter (DCA) information.

Read out line 2.

Any 2XX error in line 2?
Y N

4
D E

006
Proceed with the Test 03 for DCA and attached devices.
Run Test 03 in order to find out whether the DISABLE latch has been set.

Check Line 3 for a '0' or '-' sign which indicates Disable Latch ON for the respective port.

Is the disable latch on?
Y N

007
No terminal or DCA error is indicated.
The problem may be caused by the software.
Invoke your support structure for problem determination.

NOTE for Support Structure:

To check whether an interrupt is generated for the software, set Address Compare Stop on MS-Address X'44' (CSW) and check if the Attention bit (Bit 0 in Unit-Status) is on after pressing the ENTER key on the affected terminal.
a. If no interrupt is generated, check DCA Configuration.
b. If an interrupt is shown suspect software problem.

Go To Map 0001, Entry Point O.

008
Was the coax cable changed before or just disconnected?
Y N

4 3
F G

009
Suspect the terminale itself.
Perform an I/O check out procedure in according to the I/O Maintenance Documentation.

Is the check out procedure successful?
Y N

010
Repair as required.

011
The reason may be the COAX-cable itself, a bad contact of COAX-cable connectors, missing ground or any other electrical problem on any DCA connected I/O.

If yet not already done check the following suspected FRUs:

1.COAX-cable and its connector to the I/O unit.
Check the COAX-cable for continuity.
COAX-cable resistance is approximately 1.0 ohm/10 meter (0.3 ohm/10 feet).
Verify proper COAX-cable connection.
Display-cable from board 01A-A2ZD to coaxial connectors.

Note:

REMEMBER!

When working on a terminal or COAX-cable, the DCA can loose the DCA-device communication and turn on the disable latch on the driver card (01A-A2J2,J4). In this case the terminal can no longer be serviced by the application and there is no way to put the terminal in service by the software. This is only possible via POWER-ON reset or by switching from NORMAL to TEST mode and back to NORMAL from the affected terminal.

(Step 011 continues)

(Step 011 continued)
2.COAX-cable may not be in correct specification.

For example:
Not RG 62 AU or longer than 1500 m or 4920 feet.

If you suspect that the COAX-cable specification is not correct, invoke your support structure.

3.Missing *ground* for COAX-connector plate.
Check pin 01A-A2ZDD08 for proper *ground*.

Do the following:

3.1 Remove COAX-connector plate.
Keep it isolated from machine frame!

3.2 Measure with CE meter the resistance between the connector plate and machine frame or any D08-pin.

The resistance should be zero ohm.

4.Check also electrical grounding on all DCA connected I/Os as described in the I/O Maintenance Documentation.

Any problem found?
Y N

012
The problem may be caused by bad DCA cards.

1.Check if DCA card 3 (01A-A2K2) is at latest EC.

See Vol.30, Plug List of board A2 (page PA220).

Compare the listed P/N with the P/N of the card installed in location 01A-A2K2. If the P/N does not match, replace the card in position 01A-A2K2 with P/N given in the Plug List.
If the P/N matches proceed with item number 2 of this step.

2.Suspect DCA cards 1 or 2:

01A-A2J4 or J2 depending on the affected port.

Then,
Go To Map 0001, Entry Point A.

013
Repair or replace as required.

Do a reset of the DISABLE LATCH by POWER ON from the terminal of the affected port, or by switching from NORMAL to TEST mode and back to NORMAL.

Then,
Go To Map 0001, Entry Point A.

014
Switch POWER ON at the terminal of the affected port, because the disable latch can only be reset by POWER ON RESET or by switching from NORMAL to TEST mode and back to NORMAL.

Then,
Go To Map 0001, Entry Point A.

015
Go to Page 5, Step 018, Entry Point ZX.

016
Go To Map 0600, Entry Point C.

017
Go To Map 0600, Entry Point N.

018
(Entry Point ZX)
****

Read out also line 3 (Statistical Counters) for device or COAX-cable problems and write them down.
Then perform the recommended action in the following tables.

See Vol. 13, STM, section 4:
Tests for DCA and attached devices.

Is the error number higher than 290?
Y N

019

Device Type	Error Number	Recommended Action
3278 and 3279	203 204 207 208 209 211	Proceed with the Display Station Maintenance Information of the 3278 or 3279
3278 only	229	Check the configurator picture for the 3278. If the configuration is correct, proceed with the Display Station Maintenance Information of the 3278.
3279 only	228 231	Proceed with the Display Station Maintenance Information of the 3279.

6
K

020

Device Type	Error Number	Recommended Action
DCA	292 296	Either COAX-cable, COAX-cableconnector or the I/O is continuously causing an error. A Reference code should be available: E.....01 or F9....01. See the reference code log and go to the appropriate Map. If there is no reference code logged, use now the counter values from line 3 of DCA Test 01 for every device. See Vol.13, STM, Section 4: Tests for DCA and Attached Devices. Find out which device has the highest error counts and proceed with the I/O maintenance documentation of this device.
DCA	293	Check the configurator picture. If the configuration is correct, replace DCA card 1 or 2 (01A-A2J4,J2) depending on the affected port. Go to MAP 0001, ENTRY POINT A
DCA	294 298	If this problem can not be recreated contact your support structure. Suspect the following FRUs and replace it one at a time: 1. SP cards 4, 5, 6 01A-C2G2,H2,J2 SP card 5 may not be installed; 2. DCA card 3 01A-A2K2 3. DCA card 1, 2 01A-A2J4,J2 depending on the affected port; 4. SP cards 1, 2, 3 01A-C2D2,E2,F2 5. SCL card 3 01A-C2C2 6. BBA0 card 01A-A2T2 7. CDF1 cards 1, 2 01A-A2R2,S2 8. CDF2 cards 1, 2 01A-A2N2,P2 9. SBA card 01A-A2Q2 10. PSC card 1 01A-A2D2 11. Processor Bus cable for SP, from 01A-A2YM to 01A-C2YJ and from 01A-A2YD to 01A-C2YK. After repair, Go to Map 0001, ENTRY POINT A.

REF. CODE DIRECTORY

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0020	A	1	001

001
(Entry Point A)

REFERENCE CODE DIRECTORY

Reference Code	Title	Goto MAP
33000081	IC-Bus Test MAP	3370
3XXXXX01	IC-Bus Log MAP	3X00

IC-BUS TEST MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
RFCA	A	1	001
RFCA	B	5	021
RFCA	V	2	004
0C00	A	1	001
3XXX	A	1	001
8270	A	1	001
8480	A	1	001

EXIT POINTS

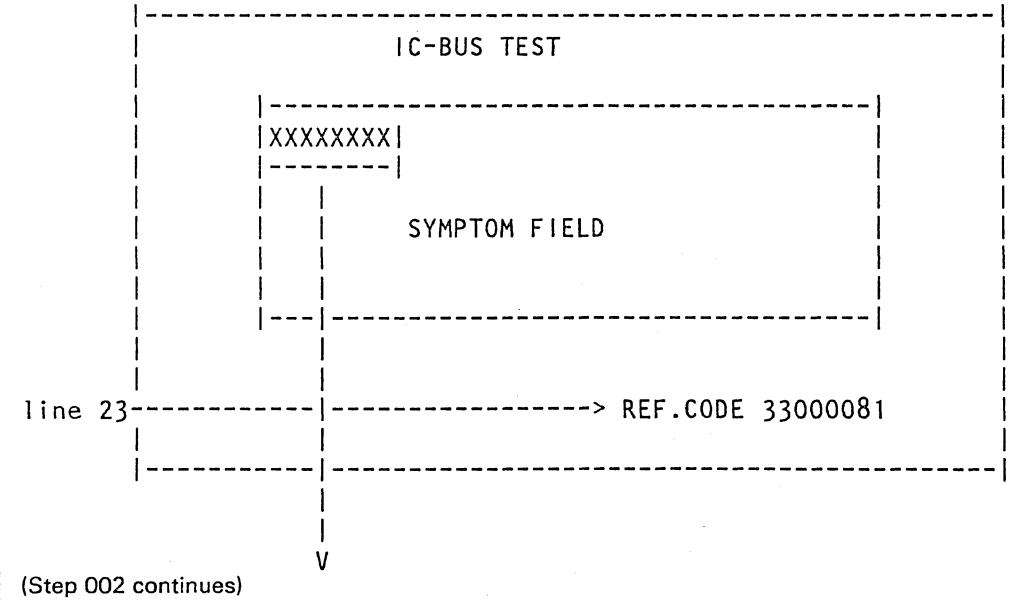
EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	020	FE90	DD
4	018	0C00	J
2	005	0001	A
3	011	0001	A
4	019	0001	0
5	023	0001	0
3	016	0001	U

001

(Entry Point A)
****

Are you led to this MAP by the REFCODE ANALYSIS?
Y N

002



(Step 002 continues)

(Step 002 continued)

Select the IBM MAINTENANCE AND SERVICE PROGRAM SELECTION.

Invoke the REFCODE ANALYSIS.

Key in the reference code from the IC-bus test.

Key in the first symptom from the symptom field.

Go to Step 003, Entry Point P.

003

(Entry Point P)
****

Do now the repair as told by the REFCODE ANALYSIS.

After the repair do the verification.
Go to Step 004, Entry Point V.

004

(Entry Point V)
****

VERIFICATION:

After a FRU replacement run the test chaining.

Any error?
Y N

005
Go To Map 0001, Entry Point A.

006
Same symptoms as originally indicated?
Y N

007
The new card may also be defective.
Correct it, then
Go to Step 004, Entry Point V.

008
Are all suspected FRUs replaced as indicated by the reference code analysis program?
Y N

009
Replace the next FRU, then
Go to Step 004, Entry Point V.

010
Change the Terminator Cards:
01A-B2X2 (IC-Bus 0)
01A-B2YM/ YL (IC-Bus 1) after having changed all suspected FRUs without success.

(Entry Point MX)
****

Run test chaining again.

Any error?
Y N

011
Go To Map 0001, Entry Point A.

012
Same symptom as originally indicated?
Y N

013
A new terminator card may also be defective.
Correct it, then
Go to Step 010, Entry Point MX.

014
Suspect now an adapter configuration mismatch.

Was IML done before with the DIAG diskette (DD1)?
Y N

4
C D

015
IML was done before with the CNTRL diskette (FU1).

(Entry Point S)
****

Make sure that the CNTRL diskette FU1 is installed.

See Vol.13, STM, Diagnostic Run Procedure (Diskette Identification).

Select *IBM MAINTENANCE AND SERVICE PROGRAM SELECTION*.

Select *Utilities/Remote*.

Select *Diskette Identification*.
Select *C* (Display Configuration).

You see now the Hardware Configuration screen.

Read the information shown on the screen and compare it with the actually installed units.

Is the configuration correct?
Y N

016
Invoke your support structure immediately,
Go To Map 0001, Entry Point U.

4
E

017
(Entry Point NX)
****

If after all FRU replacement the error still exists the symptom may originate from any adapter.

- Perform IML with the DIAG diskette DD1.
- Select TEST CHAINING.

- For TEST CHAINING selection see VOL.13, STM: Section 4, 'Test Chaining Selection'.

- Delecte the IC-Bus test from the TEST CHAINING. This will allow you testing of the adapters attached to the IC-Bus.
- Start the TEST CHAINING.

Any reference code?
Y N

018
Go To Map 0C00, Entry Point J.

019
Go to appropriate MAP, respectively use the REFCODE ANALYSIS.

If the error still comes up, the board B2 may be suspected. This you may replace in accordance with your support structure. Write down all error symptoms.
Go To Map 0001, Entry Point O.

020
Use the *copy configurator program* to copy the configuration from the CNTRL diskette (FU1) to the DIAG diskette (DD1).
Go To Map FE90, Entry Point DD.

Then run the test chaining again. If the same error still comes up,
Go to Page 3, Step 015, Entry Point S.

021

(Entry Point B)
****

Does the REFCODE ANALYSIS show any suspected FRU?
Y N

022
Check whether a typing error happened when entering the symptom code for the REFCODE ANALYSIS.

Is the symptom code known by the REFCODE ANALYSIS?
Y N

023
Invoke your support structure,
Go To Map 0001, Entry Point O.

024
Follow the REFCODE ANALYSIS.

025
Repair as told by the REFCODE ANALYSIS.

IC BUS LOG MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
RFCA	A	1	001
RFCA	B	3	004
RFCA	V	5	007
0C00	AA	1	002
2XXX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	018	0C00	JK
5	009	0001	A
5	013	0001	A
4	005	0001	0
5	020	0001	U

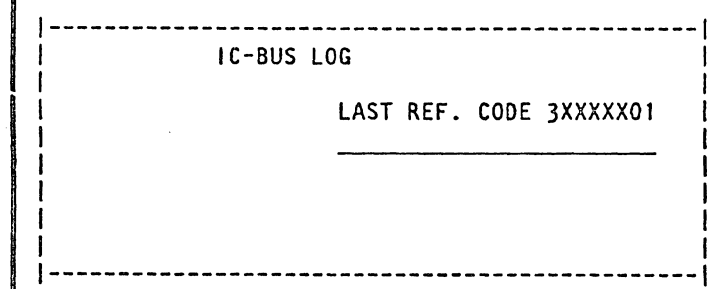
001
(Entry Point A)

Make sure that you have followed the START MAP 0000 precisely. Another reference code may be more important than the one you have got first.

Are you led to this MAP by the REFCODE ANALYSIS?
Y N

002
(Entry Point AA)

IC-Bus Log Display (Example)



(Step 002 continues)

IC BUS LOG

(Step 002 continued)
Insert the DIAG diskette DD2.

Select the IBM MAINTENANCE and SERVICE SELECTION PROGRAM.

Invoke the REFCODE ANALYSIS.

Key in the reference code from the IC-Bus Log.

Go to Step 003, Entry Point P.

003
(Entry Point P)

Do now the repair as told by the REFCODE ANALYSIS.

After the repair, do the verification.
Go to Page 5, Step 007, Entry Point V.

004
(Entry Point B)

REFERENCE CODE	Recommended Action	Go to
30000001	IC-bus log was invoked from PU log although there isn't any bus error information contained in the PU Save the associated PU and IC-bus detailed log data and report to your support location	Vol.13 STM , Sect.4
30200001	Attention: For this log error data may be unpredictable. Save PU and IC-bus detailed log data for use in case of support.	Vol.13 STM , Sect.4
30300001	The problem may also be caused by wrong configuration. The back-up CTL diskette should be used to continue the customers application. If the error happens again, invoke your support structure.	0001 ENTRY POINT U

(Step 004 continues)

IC BUS LOG

(Step 004 continued)

REFERENCE CODE	Recommended Action	Go to
312XXX01	Further possible error rason: FTA 3 error, but recognized by the next adapter connected to the IC-bus. Suspect FTA 3 card 2 (QF2) ; 01A-B2Q2. For replacement the new card has to have REA 64-20544.	
31607201	FTA 1 error, but recognized by the next adapter connected to the IC-bus. Suspect FTA 1 card 2 (QF2) ; 01A-B2F2. For replacement the new card has to have REA 64-20544.	

Ref. Code found ?
Y N

005
Go To Map 0001, Entry Point O.

006
After the repair
Go to Page 5, Step 007, Entry Point V.

007
(Entry Point V)

VERIFICATION:

After a repair action run the test chaining.

Any error?
Y N

008
If possible run the application which caused the error.

Does the error come up again?
Y N

009
Go To Map 0001, Entry Point A.

010
Are all suspected FRUs replaced as indicated by the reference code analysis program?
Y N

011
Replace the next FRU, then
Go to Step 007, Entry Point V.

012
Suspect the Terminator Cards
01A-B2X2 (IC-Bus 0)
01A-B2YL/YM (IC-Bus 1)

(Entry Point XM)

Run the test chaining again.

Any error?
Y N

013
Go To Map 0001, Entry Point A.

B C

B C 0770 MAP 3X00-5

014
Same error symptoms as before?
Y N

015
A new terminator card may also be defective.
Correct it, then
Go to Step 012, Entry Point XM.

016
Make sure that the CNTRL diskette is installed.

Select the MAINTENANCE AND SERVICE PROGRAM SELECTION.
Key in °C9C° to get the °CONFIGURATOR DISPLAY°.

Read all information shown on screen and compare it with the actually installed parts.

Any configuration mismatch?
Y N

017
Run the interface (wrap) tests which belong to the adapters.

Any error?
Y N

018
Go To Map 0C00, Entry Point JK.

019
Go to appropriate MAP.

020
Invoke your support structure immediately,
Go To Map 0001, Entry Point U.

021
Go to appropriate MAP, respectively use the REFCODE ANALYSIS.

REF. CODE DIRECTORY

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0020	A	1	001

001
(Entry Point A)

REFERENCE CODE DIRECTORY
==========

Reference Code	Title	Goto MAP
*		
4BXXXX01	PU-log MAP	4B00
4BXXXX81	PU-test	4B70

PU STOP LOG MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
RFCA	A	1	001
RFCA	P	3	003
RFCA	V	5	022
0C00	AA	2	002
0020	TA	4	009
4B70	AA	2	002
4XXX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	004	0001	A
5	027	0001	A
6	030	0001	A
6	037	0001	0
6	038	0001	U
4	008	0275	A

001

(Entry Point A)
****

Make sure that you have followed the START MAP 0000 precisely.

Another reference code may be more important than the one you have got first.

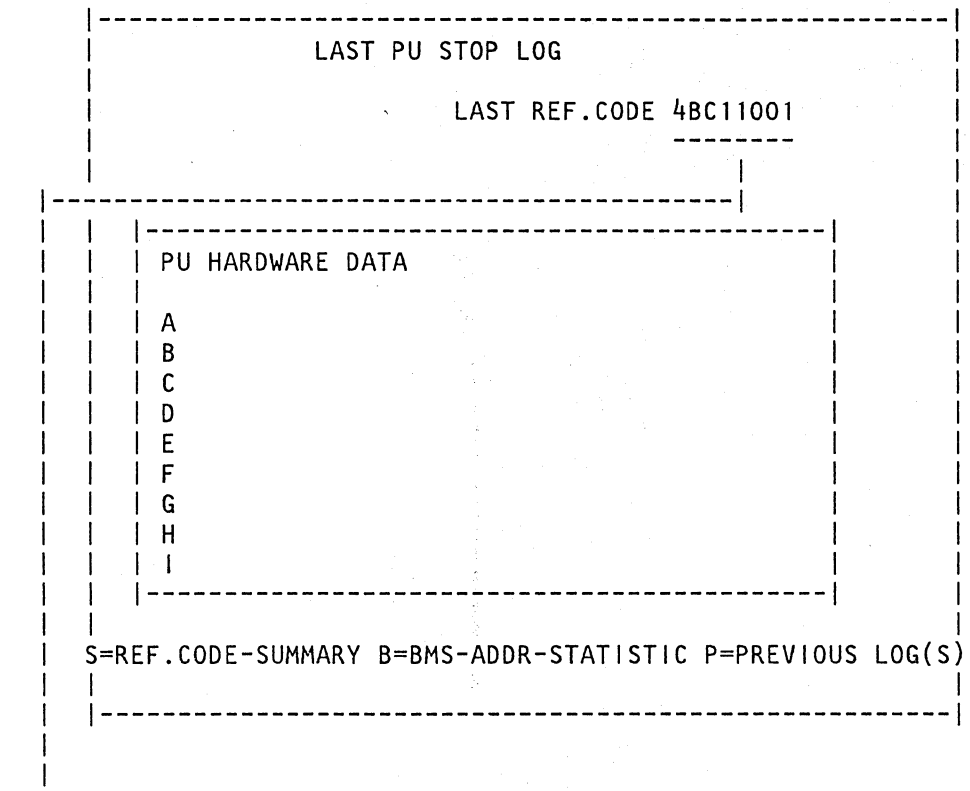
Are you led to this MAP by the REFCODE ANALYSIS?

Y N

3 2
A B

002
(Entry Point AA)
****

PU Stop Log Display (Example)



Write down the reference code from the PU STOP LOG,
also write down any symptom code(s),
if not already done.

Go to Page 3, Step 003, Entry Point P.

003
(Entry Point P)
****

It is necessary to do first the following prerequisites before using the REFCODE ANALYSIS.

PREREQUISITES:

Make sure that the BSM configuration which is written on diskette, matches the really plugged BSM cards on board B1.

See Vol. 13, STM, Section 6:
Configuration Procedures
(MES Update without a New Diskette).

Select the IBM MAINTENANCE AND SERVICE PROGRAM SELECTION.

Key in : *C0*

You see now the MES UPDATE screen.

Is the configuration correct?
Y N

004
Correct it, and don't replace any BSM card.
Go To Map 0001, Entry Point A.

005
Is the ref. code 4B40XX01?
Y N

006

(Entry Point T)
****

Is the PU/BSM error highly intermittent?
Y N

4 4
C D E

007
(Entry Point PP)
****

IMPORTANT HINTS:

Take thorough care for the sensitive PU/BSM cards!

See Vol.13, STM, Section 2:
Removals and Replacements
(Handling of ESD Sensitive Parts).

Do not remove the cover from the B1-board; don't do any soldering on the board!

Do not clean card or board contacts; contacts are lubricated!

NOW DO THE FOLLOWING:

Select the IBM MAINTENANCE AND SERVICE PROGRAM SELECTION.

Invoke the REFCODE ANALYSIS.

Key in the reference code from the PU STOP LOG.

Also key in any symptom code(s), but one at a time.
(Remember that a symptom code from the PU STOP LOG consists of two digits only.)

Do the repair as told by the REFCODE ANALYSIS.

If more than one FRU is suspected, suspect also the board B1, but with lowest priority.

After the repair do the verification.
Go to Page 5, Step 022, Entry Point V.

008
Suspect the voltages for board B1:
The reason may be that one voltage is too close to its upper limit and another one is too close to its lower limit, although both are still within their limits.

Go To Map 0275, Entry Point A.

If no adjustment necessary, continue here,
Go to Page 3, Step 007, Entry Point PP.

009

(Entry Point TA)
****

Make sure that the CNTRL diskette (FU1) is installed.

Select the MAINTENANCE AND SERVICE PROGRAM SELECTION.

Key in *C9C*.

Press ENTER.

Now you see the HW CONFIGURATOR screen.

Locate *CS-TYP:* on the screen.

Is *CS-TYP:1=QS2* displayed (P/N 4007699 Feat. BM 8481300)?
Y N

010
Does the REFCODE ANALYSIS suspect the FRUs 01A-B1C2/D2 ?
Y N

011
Go to Page 3, Step 006, Entry Point T.

012
Display the corresponding PU STOP LOG and write down bytes 4 and 5 from line A (CSAR Address).

Is the CSAR Address between X'0000' and X'0BFF'?
Y N

013
Is the address between X'0C00' and X'4BFF'?
Y N

014
Is the address between X'4C00' and X'8BFF'?
Y N

015
Suspect also the BSM if the address is >X'8C00'.

016
Replace 01A-B1C2. Then
Go to Page 5, Step 022, Entry Point V

017
Replace 01A-B1D2. Then
Go to Page 5, Step 022, Entry Point V.

018
Replace 01A-B1E2. Then
Go to Page 5, Step 022, Entry Point V.

019
Perform IML with the CNTRL diskette (FU1).

IML is complete when the *Program Load* picture appears on screen.

Does the *Program Load* picture appear?
Y N

020
Follow the reference code from IML and do the repair as told by the REFCODE ANALYSIS.

021
No further action is required, because the failing bit should be automatically corrected by IML.

If the same reference code comes up again within one week the error may be intermittent.

In this case return to IRECA and replace the FRUs listed there.

For problem tracking use the INFO-BOX that is included in the REFCODE ANALYSIS.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (IRECA-Info Box Selection).

Type in the date, reference code and value of CSAR (see PU STOP LOG, line A, byte 4 and 5).

022
(Entry Point V)
****

Verification:
After a FRU replacement or a configuration update run the test chaining.

Any error?
Y N

023
Was PU Card 1 or 2 replaced (01A-B1C2 or 01A-B1D2)?
Y N

024
Go to Step 026, Entry Point PX.

025
Run and loop PU/BSM test, Selection CT!

See Vol.13, STM, Section 4: Diagnostic Run Procedures (Special CS test).

Any reference code?
Y N

026

(Entry Point PX)
****

Have you replaced the BSM control card 01A-B1K2 or any BSM array card?
Y N

027
Go To Map 0001, Entry Point A.

028
Select the PU-Tool (selection B3).

Run DM test (selection DM).

Any error?
Y N

029
Run IM test (selection IM).
Any error?
Y N

030
Go To Map 0001, Entry Point A.

031
Go to Step 035, Entry Point K.

032
Go to Step 035, Entry Point K.

033
Go to Step 035, Entry Point K.

034
Are all suspected FRU's replaced?
Y N

035

(Entry Point K)
****

Go to appropriate MAP, respectively use the REFCODE ANALYSIS.

N

N 0790 MAP 4B00-6

036
(Entry Point ST)
****

If not already done, check the configuration:

Make sure that the CNTRL diskette FU1 is installed.

Select the IBM MAINTENANCE AND SERVICE PROGRAM SELECTION.

Select *C* (Utilities/Remote).

Select *0* (*MES UPDATE*).

Read all information shown on the MES UPDATE screen and compare the hardware configuration that is shown on screen with the actual installed units.

Any configuration mismatch?
Y N

037
Go To Map 0001, Entry Point O.

038
Invoke your support structure immediately.
Go To Map 0001, Entry Point U.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
E004	A	1	001
F400	A	1	001
RFCA	A	1	001
RFCA	B	4	010
RFCA	V	7	039
0C00	A	1	001
4B00	A	1	001
4XXX	A	1	001
8270	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
8	053	FE90	DD
5	028	0C00	D
3	004	0001	A
5	023	0001	A
7	041	0001	A
7	043	0001	A
7	050	0001	A
6	030	0001	A
5	026	0001	0
5	021	0001	0
6	032	0001	0
6	035	0001	0
8	052	0001	U

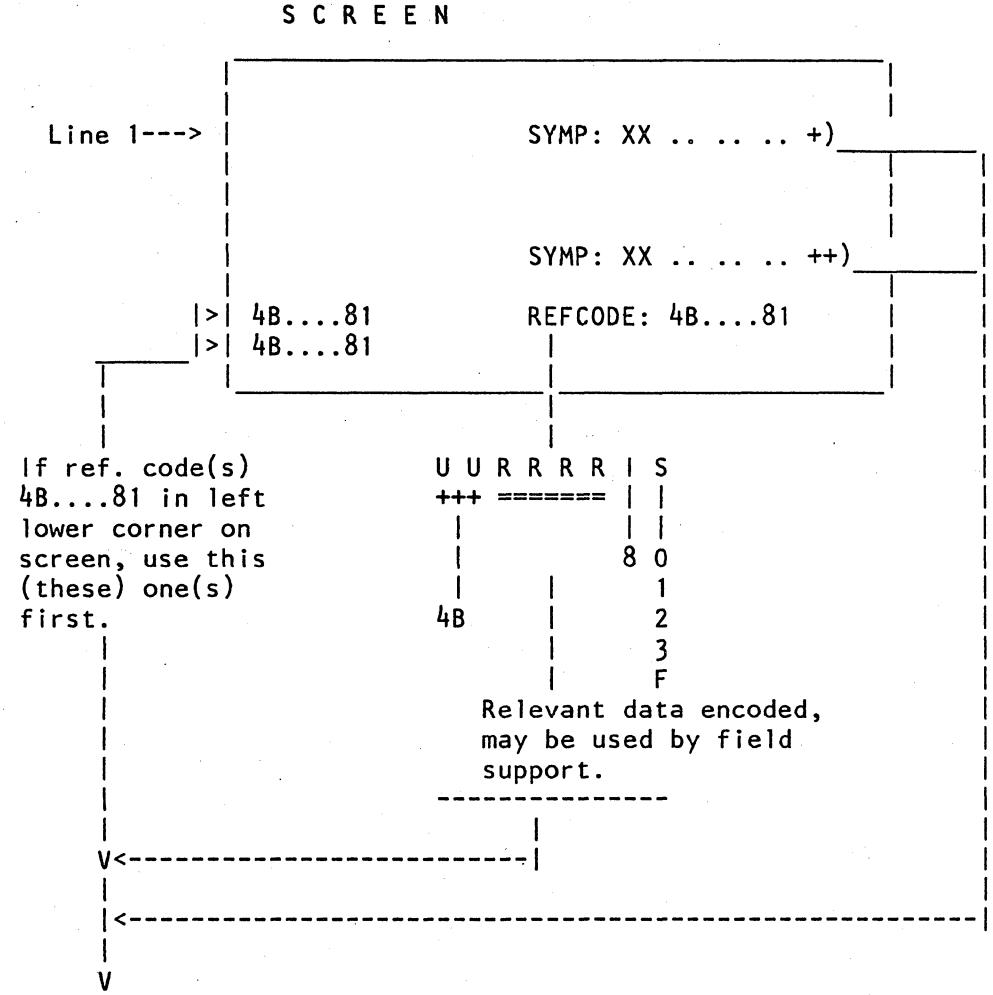
001

(Entry Point A)
****

Are you led to this MAP by the REFCODE ANALYSIS?

Y N

3 2
A B



+) Symptom(s), if reference code 4B0XXX81 to 4B3XXX81

++) Symptom(s), if reference code 4BBXXX81

(Step 002 continues)

(Step 002 continued)
Select the IBM MAINTENANCE AND SERVICE PROGRAM SELECTION.

Invoke the REFCODE ANALYSIS.

Key in the reference code from the PU/BSM test.

Also key in any symptom code(s), but one at a time.
(IRECA handles one symptom byte (two digits only).)

Go to Step 003, Entry Point P.

003
(Entry Point P)
****

Do now the repair as told by the REFCODE ANALYSIS.

Take thorough care for the sensitive PU/BSM cards!

See Vol.13, STM, Section 2:
REMOVALS and REPLACEMENTS
(Handling of ESD Sensitive Parts)

Run test again.

Any reference code?
Y N

004
Go To Map 0001, Entry Point A.

005
Same reference Code?
Y N

006
Invoke REFCODE ANALYSIS.

007
Is more than one symptom code displayed?
Y N

008
Go to Page 6, Step 033, Entry Point SK.

009
Go to Page 5, Step 019, Entry Point T.

010
(Entry Point B)
****

Any Reference Code

4B0XXX81,
4B1XXX81,
4B2XXX81,
4B3XXX81?
Y N

011
Reference Code 4BB30081?
Y N

012
Reference Code 4BB30881?
Y N

013
Reference Code 4BB30A81?
Y N

014
Reference Code 4BB30F81?
Y N

6 6 6 6 6 J
D E F G H

J 0800 MAP 4B70-4

015
Reference Code 4BBFFF81?
Y N

016
(Entry Point L)
****

Reference Code 4BBXXX81:

There may be one or more symptom codes shown by the PU/BSM test.

Is any of the symptom codes *IC*?
Y N

017
Is any of the symptom codes *UNCADR*?
Y N

018
Replace the FRUs suspected by the REFCODE ANALYSIS for the first symptom code (2 digits).
This is the FRU with the highest priority.

(Entry Point M)
****

Run PU/BSM test again.

Does the test run error free now?
Y N

6 5 5 5 5
K L M N P

019
(Entry Point T)
****

Now replace the FRU(s) for the remaining symptom(s) according to the following table.

Look up the symptom(s) indicated by the test in the table and replace the FRUs according to the sequence in which the symptoms are shown by the test:
(Leftmost symptom byte points to the FRU suspected with highest priority.)
Replace only one FRU at a time. After each replacement go to Entry point V, on page 7, step 039.

Symptom	FRU in Location
01	01A-B1 B2
02	01A-B1 C2
03	01A-B1 D2
04	01A-B1 E2
05	01A-B1 F2
06	01A-B1 G2
07	01A-B1 H2
08	01A-B1 I2
09	01A-B1 K2
10	01A-B1 L2
11	01A-B1 M2
12	01A-B1 N2
13	01A-B1 P2
14	01A-B1 Q2
15	01A-B1 R2
16	01A-B1 --
17	01A-B1 T2
18	01A-B1 U2

Have all symptom codes been used?
Y N

020
Replace the FRUs according to the next symptom code, then
Go to Page 4, Step 018, Entry Point M.

Q

021
Go To Map 0001, Entry Point O.

022
Go to Page 7, Step 040, Entry Point R.

023
Run PU/BSM test, routine DM for the given main storage address.
Do the repair as required, then
Go To Map 0001, Entry Point A.

024
Did the reference code come up during test chaining?
Y N

025
Run IC-Bus test and all adapter tests.

Any reference code?
Y N

026
Invoke your support structure.
Go To Map 0001, Entry Point O.

027
Go to the appropriate MAP, respectively use the REFCODE ANALYSIS.

028
Go To Map 0C00, Entry Point D.

029
Ref. code 4BBFFF81 can come up after MES to convert from model 1 to model 2.
MES instructions are at EC 366441 and HSC is being added.
MES instructions step 10.16.4.2 ask whether high speed channel is being installed.
If so, you must remove present cable at location 01A-B1D4(C) and plug it into location 01A-B1D4(B).
If this is not done, ref. code 4BBFFF81 will be posted.

Please check cards in the following possible positions dependent on the configuration:

01A-B2D2,
01A-B2N2,
01A-B2V2,
01A-A2V2

The correct P/N of all of these positions is 8562678.

DO NOT USE P/N 8484878!

Is the cable correctly plugged and the P/Ns ok?
Y N

030
Repair as required, then
Go To Map 0001, Entry Point A.

031
Replace the FRUs as indicated by the REFCODE ANALYSIS for ref. code 4BBXXX81.
Use the symptom code that was shown for ref. code 4BBFFF81.

032
Test ended with abnormal condition. Run now the PU/BSM test.
Go To Map 0001, Entry Point O.

033
(Entry Point SK)
****

Replace the cards listed by the IM test in column FRU of the test picture on screen.

034
PU program could not be loaded. Test could not be executed.
Run PU/BSM test, selection CT.

Any reference code?
Y N

035
Go To Map 0001, Entry Point O.

036
Go to appropriate MAP, respectively use the REFCODE ANALYSIS.

037
Go to Step 033, Entry Point SK.

038
Go to Page 4, Step 016, Entry Point L.

039
(Entry Point V)
****

VERIFICATION :

After any FRU replacement run PU/BSM test again.

Does the error still come up?
Y N

040
(Entry Point R)
****

Was PU card 1 or 2 (01A-B1C2/D2) replaced?
Y N

041
Go To Map 0001, Entry Point A.

042
Run and loop PU/BSM test, selection CT.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (PU/BSM Test).

Any reference code?
Y N

043
Go To Map 0001, Entry Point A.

044
Go to Page 1, Step 001, Entry Point A.

045
Are all suspected FRUs replaced?
Y N

046
Replace the FRU with the next higher priority then
Go to Step 039, Entry Point V.

R

R 0800 MAP 4B70-7

047
(Entry Point K)
****

Suspected:
Incorrect hardware configuration:

Was IML done before with the DIAG diskette (DD1)?
Y N

048
IML was done before with the CNTRL diskette (FU1):

(Entry Point S)
****

Make sure that the CNTRL diskette (FU1) is installed.

Select the MAINTENANCE AND SERVICE PROGRAM SELECTION.
Key in *C9C* to get the *CONFIGURATOR DISPLAY*.

Read the information shown on screen and compare with the actual installed parts.

Any configuration mismatch?
Y N

049
If there is no mismatch, do at least IML with the DIAG diskette before you run the PU/BSM test again.

Does the error still come up?
Y N

050
Go To Map 0001, Entry Point A.

051
Go to Page 5, Step 019, Entry Point T.

052
Invoke your support structure immediately.
Go To Map 0001, Entry Point U.

053
Use the *copy configurator program* to copy the configuration from the CNTRL diskette (FU1) to the DIAG diskette (DD1), therefore
Go To Map FE90, Entry Point DD.

Then run the PU/BSM test again. If the error still comes up
Go to Page 7, Step 048, Entry Point S.