EC 826380			PN 2597100
27MAY83			

MSP Entry IPL MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	1	003
0116	A	1	003
1183	A	1	003
1184	A	1	003
1185	A	1	003
1186	A	1	003
1187	A	1	003
1188	A	1	003
1193	A	1	003

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	0101	A
2	007	0101	A
2	009	0101	C
1	002	1170	A

001
Is there a card in A1Q2 ?
Y N

002
Go To Map 1170, Entry Point A.

003
(Entry Point A)
To cause an IPL from the diskette and run the MSP tests, perform the following:

- If the Force CSP Run light is on, reset it by pressing the Force CSP Run key.
- If the Adr Cmp Stop CSP light is on, reset it by pressing the Adr Cmp Stop CSP key.
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Insert diskette DIAG21.
- Enter FC03.
- Press the Load key.
- Wait until the System In Use light is on or flashing or the Processor Check light is on before continuing.

(Step 003 continues)

MAP DESCRIPTION:
This MAP instructs the CE/CSR to loop on the IPL third load diagnostics. If that fails to find an error, the CE/CSR is instructed to run the IPL diagnostics.

START CONDITIONS:
The MSP or main storage is known to have an error.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2
main storage cards

(Step 003 continued)
Is the Processor Check light on?
Y N

004
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter 0000.
- Press the Load key.
- Wait several minutes for the load to complete.

Is the Processor Check light on?
Y N

005
- Look at the system console for messages.

Is there a message for the main storage processor or main storage?
Y N

006
The following information will aid you in finding a machine problem.

- If there are any other messages, go to MAP 0101, entry point A.
- Return to this point if the error is not solved.

- IPL the system from the DIAG21/41 diskette using CSIPL load option FC03.
- See the general MIM (01-410).

- If possible, IPL from disk andrun SYSTEST to find an MSP error if the normal IPL did not find any problems.

- If possible, IPL the system from the disk with CSIPL load option FF00 and look at the MSP error history table using 'ERAP'.
- See the general MIM (01-360).
- Use MAPs 0115 and 0312 and the Processing Unit and Channel MIM (10-500 and 10-550) to analyze the error history table information for the main storage processor and control storage processor.

A B C

A B C

007
Go To Map 0101, Entry Point A.

008
Go To Map 0101, Entry Point A.

009
There is a new reference code in the control panel display. Go to MAP 0113, 0114, 0115 and 0116, and exchange FRU(s) as directed by the new reference code in the control panel display, unless some other action is called for in the new reference code comment section, and then return to Entry Point B, MAP 0101. If you cannot find the reference code in the list in MAP 0113, 0114, 0115 or 0116,
Go To Map 0101, Entry Point C.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2S10 (- S1 to MSP)
A-A1P2S11 (- S1 to MSP)
A-A1P2U09 (- S2 to MSP).

Are the lights correct?
Y N

002
- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1P2 card.
- Press the Power key (power on).
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2S10 (- S1 to MSP)
A-A1P2S11 (- S1 to MSP)
A-A1P2U09 (- S2 to MSP).

Are the lights correct?
Y N

003
Bad card:
A-A1N2.

MAP DESCRIPTION:
A CSP timeout error has occurred. This can be caused by cards A-A1N2, A-A1P2 or A-A1Q2.

START CONDITIONS:
None

FRUs PARTIALLY TESTED:
A-A1N2, P2, Q2

2 A 2 B

004
Bad card:
A-A1P2.

005
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z30 (+ S1)
A-A1P2Z10 (+ S2).
Are the lights correct?
Y N

006
- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1Q2 card.
- Press the Power key (power on).
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z30 (+ S1)
A-A1P2Z10 (+ S2).
Are the lights correct?
Y N

007
Bad card:
A-A1P2.

008
Bad card:
A-A1Q2.

C

C

009
- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1Q2 card.
- Press the Power key (power on).
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2Y27 (+ Block control clocks)
A-A1P2Y05 (- Extend CS)
A-A1P2Z32 (Main store control bit 0).
Are the lights correct?
Y N

010
Bad card:
A-A1P2.

011
- Select mode 6.
- Press the Power key (power off).
- Reinstall the A-A1Q2 card.
- Press the Power key (power on).
- Probe the following:

```
Up   Light: Off
Down Light: Off
```

A-A1Q2U13 (- Clock MSAR)
A-A1Q2U06 (- Storage function from CSP).
Are the lights correct?
Y N

012

- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1Q2S13 (- Temp stop request).

Are the lights correct?

Y N

013

Bad card:
A-A1Q2
---or---
A-A1N2.

014

Bad card:
A-A1N2.

015

Bad card:
A-A1Q2.

001
(Entry Point A)
- Select mode 1.
- Enter 0007.
- Press the Display Output key.
- Probe the signal according to table given.
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE81.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.

```
Up   Light: On
Down Light: On
```

MAP DESCRIPTION:
The CSP is attempting to load different addresses into the MSAR and is getting an MSP checks in TU 81 for some addresses used. This could be caused by the MSP wrongly executing the CSP register load storage and causing storage checks or it could be caused by the problem with the external system bus.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1N2, Q2

Table

Displayed Result	Signal
8002	A-A1Q2P06
8003	A-A1Q2M11
8005	A-A1Q2P12
8009	A-A1Q2M10
8011	A-A1Q2M12
8021	A-A1Q2M13
8041	A-A1Q2P09
8081	A-A1Q2P10

Are the lights correct?

Y **N**

2 A 2 B

002
- Probe the signal which was probed before.

```
Up   Light: On
Down Light: Off
```

Are the lights correct?
Y N

003
- Select mode 6.
- Press the Power key (power off).
- Remove Q2 card.
- Press the Power key (power on).
- Probe the signal which was probed before.

```
Up Light: On
Down Light: Ignore
```

Are the lights correct?
Y N

004
Bad card:
A-A1N2.

005
Bad card:
A-A1Q2.

006
Bad card:
A-A1N2.

007
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2S11 (- sns/load MSP regs).
Are the lights correct?
Y N

C D

008
- Select mode 1.
- Probe the following:

```
Up   Light: Off
Down Light: Off
```

A-A1Q2S11 (- sns/load MSP regs).
Are the lights correct?
Y N

009
Bad card:
A-A1N2.

010
Bad card:
A-A1Q2.

011
- Select mode 1.
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1N2M04 (- read buffer gated).
Are the lights correct?
Y N

012
- Use the procedure 10-305 to find the bad card.

013
Bad card:
A-A1Q2
---or---
A-A1P2.

MSP CSP IPL MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0121	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z30 (+ s1)
A-A1Q2Z10 (+ s2).

Are the lights correct?
Y N

002
- Probe the following:

```
Up   Light: On
Down Light: On

A-A1P2S10 (- s1 to MSP)
     P2S11 (- s1 to MSP)
     P2U09 (- s2 to MSP).
```

Are the lights correct?
Y N

2A 2B 2C

MAP DESCRIPTION:
The MSP prevents the CSP IPL diagnostics from running because the MSP wrongly gates data to the external system bus.

The first steps of this MAP verify clock signals to ensure the MSP is not hung because of missing clocks.

START CONDITIONS:
power on

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

003
Bad card:
A-A1N2
---or---
A-A1M2.

004
Bad card:
A-A1P2.

005
- Probe the following:

```
Up   Light: Ignore
Down Light: Off
```

A-A1Q2U06 (- storage function from CSP (S2)).
Are the lights correct?
Y N

006
Bad card:
A-A1N2
A-A1M2.

007
- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1P2Y26 (+ gate control clocks).
Are the lights correct?
Y N

008
Bad card:
A-A1Q2.

D

D

009
- Press and hold the System Reset key.
- While holding the System Reset key, probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Y26 (+ gate control clocks).
Are the lights correct?
Y N

010
Bad card:
A-A1Q2.

011
- Press and hold the System Reset key.
- While holding the System Reset key, probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1Q2Y10 (- system reset latched).
Are the lights correct?
Y N

012
Bad card:
A-A1Q2.

013
- Release the System Reset key.
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1P2Y26 (+ gate control clocks).
Are the lights correct?
Y N

3 3
E F

014
Bad card:
A-A1Q2
---or---
A-A1P2.

015
- Probe the following:

```
Up    Light: On
Down  Light: Off
```

A-A1P2Y25 (- main storage control bit 1)
A-A1P2Z32 (- main storage control bit 0)
A-A1Q2X04 (- system bus driver control).

Are the lights correct?
Y N

016
Bad card:
A-A1P2
---or---
A-A1Q2.

017
Bad card:
A-A1Q2
---or---
A-A1P2.

Several control lines could cause the MSP data flow to wrongly gate data to the external system bus or to generate MSP checks.

MSP Unexpected Error MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1100	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z30 (+ s1)
A-A1Q2Z10 (+ s2).

Are the lights correct?
Y N

002
- Probe the following:

```
Up   Light: On
Down Light: On

A-A1P2S10 (- s1 to MSP)
    P2S11 (- s1 to MSP)
    P2U09 (- s2 to MSP).
```

Are the lights correct?
Y N

003
Was system reference code dCxx?
Y N

004
Bad card:
A-A1N2.

MAP DESCRIPTION:
An unexpected error occurred while running the MSP diagnostics. There are several lines that can cause the MSP diagnostics to fail.

START CONDITIONS:
power on

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

2A 2B 2C

005
Bad card:
A-A1M2.

006
Bad card:
A-A1P2.

007
- Probe the following:

```
Up   Light: Ignore
Down Light: Off
```

A-A1Q2U06 (- storage function from CSP (S2)).
Are the lights correct?
Y N

008
Was system reference code dCxx?
Y N

009
Bad card:
A-A1N2.

010
Bad card:
A-A1M2.

011
- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1P2Y26 (+ gate control clocks).
Are the lights correct?
Y N

012
Bad card:
A-A1Q2.

D

013
- Press and hold the System Reset key.
- While holding the System Reset key, probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Y26 (+ gate control clocks).
Are the lights correct?
Y N

014
Bad card:
A-A1Q2.

015
- Press and hold the System Reset key.
- While holding the System Reset key, probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1Q2Y10 (- system reset latched).
Are the lights correct?
Y N

016
Bad card:
A-A1Q2.

017
- Release the System Reset key.
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1P2Y26 (+ gate control clocks).
Are the lights correct?
Y N

3 3
E F

018
Bad card:
A-A1Q2
---or---
A-A1P2.

019
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2Y25 (- main storage control bit 1)
A-A1P2Y27 (- block control clocks)
A-A1P2Z32 (- main storage control bit 0)
A-A1Q2X04 (- system bus driver control).

Are the lights correct?
Y N

020
Bad card:
A-A1P2
---or---
A-A1Q2.

021
Bad card:
A-A1Q2
---or---
A-A1P2
---or---
A-A1N2
---or---
A-A1M2.

MSP Load Register Time Out MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z30 (+ s1)
A-A1Q2Z10 (+ s2).

Are the lights correct?
Y N

002
- Probe the following:

```
Up   Light: On
Down Light: On

A-A1P2S10 (- s1 to MSP)
    P2S11 (- s1 to MSP)
    P2U09 (- s2 to MSP).
```

Are the lights correct?
Y N

003
Was system reference code dCxx?
Y N

2A 2B 2C 2D

MAP DESCRIPTION:
The CSP is attempting to load different addresses into the MSAR and is getting a time out check in TU 2080.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

004
Bad card:
A-A1N2.

005
Bad card:
A-A1M2.

006
Bad card:
A-A1P2.

007
Is the MSP Run light on?
Y N

008
- Jumper A-A1Q2U11 (- MSP data available) to A-A1Q2S11 (- sense/load MSP registers) for the remaining steps in this MAP.
- Select mode E.
- Enter EE80.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2S13 (- temp stop request (S2))
A-A1Q2U04 (- reset MSP (s2))
A-A1Q2U06 (- storage function from CSP (S2))
A-A1Q2U13 (- clock MSAR (S2)).

Are the lights correct?
Y N

The CSP gets a time out because there is no (- MSP data available). The jumper permits the CSP to run at nearly normal speed so that the interface lines which can cause a time out can be probed.

009

- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter FA02.
- Press the Load key.
- Wait until the CSP Run light and Load light are off before continuing.
- Probe the following:

```
Up   Light: Off
Down Light: Off
```

A-A1Q2S13 (- temp stop request (S2))
A-A1Q2U04 (- reset MSP (S2))
A-A1Q2U06 (- storage function from CSP (S2))
A-A1Q2U13 (- clock MSAR (S2)).

For any of the above signals are the lights correct?

Y N

010

Was system reference code dCxx?

Y N

011

Bad card:
A-A1N2.

012

Bad card:
A-A1M2.

013

Bad card:
A-A1Q2.

014

- Select mode 1.
- Press and hold the System Reset key.
- While holding the System Reset key, probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Y26 (+ gate control clocks).

Are the lights correct?

Y N

015
Bad card:
A-A1Q2.

016

- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1P2X33 (- allow alt req).

Are the lights correct?

Y N

017
Bad card:
A-A1P2.

018

- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1P2Z26 (- alt mode req).

Are the lights correct?

Y N

019
Bad card:
A-A1Q2.

- Verify that the MSP is reset and that it recognizes the CSP access.

020
Bad card:
A-A1Q2
---or---
A-A1P2.

021
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1P2Z25 (- MSP clk stop/sel proc mode 1).
Are the lights correct?
Y N

022
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1Q2Y13 (+ allow MSP run internal).
Are the lights correct?
Y N

023
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1Q2U10 (+ allow MSP run (S2)).
Are the lights correct?
Y N

024
Was system reference code dCxx?
Y N

025
Bad card:
A-A1N2.

If the MSP fails to stop for CSP access, a time out occurs.

MSP Time Out MAP

5360 Systems Unit

026
Bad card:
A-A1M2.

027
Bad card:
A-A1Q2.

028
- Press and hold the System Reset key.
- While holding the System Reset key, probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1P2Y10 (- system reset latched).
Are the lights correct?
Y N

029
- Press and hold the System Reset key.
- While holding the System Reset key, probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1Q2U04 (- reset MSP (S2)).
Are the lights correct?
Y N

030
Was system reference code dCxx?
Y N

031
Bad card:
A-A1N2.

032
Bad card:
A-A1M2.

N P

033
Bad card:
A-A1Q2.

034
Bad card:
A-A1P2
---or---
A-A1Q2.

035
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1Q2U02 (- MSP clocks stopped).
Are the lights correct?
Y N

036
Bad card:
A-A1Q2.

037
Was system reference code dCxx?
Y N

038
Bad card:
A-A1N2.

039
Bad card:
A-A1M2.

MSP MSAR Parity Check MAP 1

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Enter 0007.
- Press the Display Output key.
- Probe the signal according to table given.
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE80.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.

(Step 001 continues)

MAP DESCRIPTION:
The CSP is attempting to load different addresses into the MSAR and is getting an MSP check in TU 2080 for some addresses used. This could be caused by the MSP wrongly executing the CSP register load as a storage access and causing storage checks or it could be caused by bad lower byte of external system bus.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100, Entry Point A.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

Table

Displayed Result	Signal to Probe	Light Up	Light Down
8000	A-A1Q2M02 (+External System Bus Low Parity)	On	On
8001	A-A1Q2M08 A-A1Q2P02 (+Ext Bus High Parity)	On On	On On

(Step 001 continues)

(Step 001 continued)

(Step 001 continued)

	(Ext Bus 15)		
8002	A-A1Q2M03 (+Ext Bus 14)	On	On
8004	A-A1Q2P13 (+Ext Bus 13)	On	On
8008	A-A1Q2M04 (+Ext Bus 12)	On	On
8010	A-A1Q2M05 (+Ext Bus 11)	On	On
8020	A-A1Q2M06 (+Ext Bus 10)	On	On
8040	A-A1Q2M07 (+Ext Bus 9)	On	On
8080	A-A1Q2P05 (+Ext Bus 8)	On	On

Are the lights correct?

Y N

002

- Probe the signal which was probed before.

```
Up   Light: On
Down Light: Off
```

Are the lights correct?

Y N

3A 3B 3C

003
- Select mode 6.
- Press the Power key (power off).
- Remove Q2 card.
- Press the Power key (power on).
- Press the load key.
- Probe the signal which was probed before.

```
Up   Light: On
Down Light Ignore
```

Are the lights correct?
Y N

004
Was system reference code dCxx?
Y N

005
Bad card:
A-A1N2.

006
Bad card:
A-A1M2.

007
Bad card:
A-A1Q2.

008
Was system reference code dCxx?
Y N

009
Bad card:
A-A1N2.

010
Bad card:
A-A1M2.

011
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE80.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2S11 (- sns/load MSP regs).

Are the lights correct?
Y N

012
- Select mode 1.
- Probe the following:

```
Up   Light: Off
Down Light: Off
```

A-A1Q2S11 (- sns/load MSP regs).

Are the lights correct?
Y N

013
Was system reference code dCxx?
Y N

014
Bad card:
A-A1N2.

015
Bad card:
A-A1M2.

016
Bad card:
A-A1Q2.

017

Was system reference code dCxx?

Y N

018

Bad card:
A-A1Q2
---or---
A-A1P2.

019

- Select mode 1.
- Probe the following:

```
Up    Light: On
Down  Light: Off
```

A-A1N2M04 (- read buffer gated).

Are the lights correct?

Y N

020

Use the procedure 10-305 to find the bad card.

021

Bad card:
A-A1Q2
---or---
A-A1P2.

MSP MSAR Parity Check MAP 2

5360 Systems Unit

PAGE 1 OF 4

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE80.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Y10 (- system reset latched).

Are the lights correct?

Y N

002
- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1Q2U04 (- reset MSP (S2)).

Are the lights correct?

Y N

003

Was system reference code dCxx?

Y N

2A 2B 2C 2D

MAP DESCRIPTION:
The CSP is attempting to load different addresses into the MSAR and is getting an MSP check in TU 2080 or TU 2081 for most addresses used. The error is not caused by a data bus.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

MSAR Parity MAP 2

5360 Systems Unit

004
Bad card:
A-A1N2.

005
Bad card:
A-A1M2.

006
Bad card:
A-A1Q2.

007
- Set Gate Ref on the probe to +1.4 V.
- Connect - Gating to A-A1Q2U11 (- MSP data available).
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1Q2Z05 (- op reg bit 7/(- regs/+storage)).
Are the lights correct?
Y N

008
- Remove - Gating.
- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1Q2S11 (- sns/load MSP regs (S2)).
Are the lights correct?
Y N

009
Was system reference code dCxx?
Y N

010
Bad card:
A-A1N2.

E F G

011
Bad card:
A-A1M2.

012
Bad card:
A-A1Q2.

013
- Remove - Gating.
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1Q2U10 (+ allow MSP run (S2)).
Are the lights correct?
Y N

014
Was system reference code dCxx?
Y N

015
Bad card:
A-A1N2.

016
Bad card:
A-A1M2.

017
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2S10 (- MSP check).
Are the lights correct?
Y N

3 3
H J

018

- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1Q2S10 (- MSP check).

Are the lights correct?

Y N

019

Was system reference code dCxx?

Y N

020

Bad card:
A-A1N2.

021

Bad card:
A-A1M2.

022

Bad card:
A-A1Q2.

023

- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2Y23 (- q control bit 1)
A-A1P2X30 (- q control bit 0)
A-A1Q2Y12 (- LSR bus control bit 1)
A-A1Q2Z02 (- LSR bus control bit 0)
A-A1Q2Z04 (- destination control bit 2)
A-A1Q2Z08 (- source control bit 0)
A-A1Q2Z09 (- source control bit 1).

Are the lights correct?

Y N

MSP control signals move the MSP register address from the external system bus to MSAR, op and q registers.

024
Bad card:
A-A1P2.

025
- Connect + Gating to A-A1P2D06 (+ p2 clock).
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2X25 (- control parity bad).
Are the lights correct?
Y N

026
Bad card:
A-A1P2.

027
- Remove + Gating.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1Q2Y05 (- extend c2)
A-A1Q2Z07 (- destination control bit 1).
Are the lights correct?
Y N

028
Bad card:
A-A1P2.

029
Bad card:
A-A1P2
---or---
A-A1Q2.

MSP MSAR Parity Check MAP 3

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE80.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1Q2Y13 (+ allow MSP run internal).

Are the lights correct?
Y N

002
- Probe the following:

```
Up   Light: Off
Down Light: Ignore
```

A-A1Q2U10 (+ allow MSP run (S2)).
Are the lights correct?
Y N

003
Was system reference code dCxx?
Y N

2A 2B 2C 2D

MAP DESCRIPTION:
In TU 2080 the CSP is attempting to load different addresses into the MSAR and gets an MSP parity check for some addresses used. This results if the MSP control decodes that a load of an illegal register is attempted and the load operation C2 clock is not extended.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

004
Bad card:
A-A1N2.

005
Bad card:
A-A1M2.

006
Bad card:
A-A1Q2.

007
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2W28 (- op reg bit 10/q reg Bit 2)
A-A1P2X28 (- op reg bit 12/q reg bit 4)
A-A1Q2W08 (- op reg bit 11/q reg Bit 3)
A-A1Q2X02 (- op reg bit 9/q reg Bit 1)
A-A1Q2X08 (- op reg bit 15/q reg Bit 7)
A-A1Q2X09 (- op reg bit 13/q reg bit 5)
A-A1Q2X10 (- op reg bit 14/q reg bit 6).

Are the lights correct?
Y N

008
Bad card:
A-A1Q2.

009
Bad card:
A-A1P2
---or---
A-A1Q2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE82.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: Ignore
Down Light: Off
```

A-A1Q2S10 (- MSP check).
Are the lights correct?
Y N

002
Was system reference code dCxx?
Y N

003
Bad card:
A-A1N2.

004
Bad card:
A-A1M2.

MAP DESCRIPTION:
The CSP does not cause an MSP check if loading MSP registers using addresses with wrong parity in TU 2082.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

005

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2U11 (- MSP data available).

Are the lights correct?

Y N

If the timing on the interface is not exactly correct the CSP may latch (- MSP check) before it is valid.

006

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z30 (+ s1).

Are the lights correct?

Y N

007

Bad card:
A-A1P2.

008

Bad card:
A-A1Q2.

009

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z30 (+ s1).

Are the lights correct?

Y N

010

Bad card:
A-A1P2.

011

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Y26 (+ gate control clocks)
A-A1Q2Y10 (- system reset latched)
A-A1Q2Z05 (- op reg bit 7/(+regs/-storage)).

Are the lights correct?

Y N

The MSP may not be reset or may not recognize the CSP register access.

012

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2S11 (- sns/load MSP regs (S2))
A-A1Q2U04 (- reset MSP (S2)).

Are the lights correct?

Y N

013

Was system reference code dCxx?

Y N

014

Bad card:
A-A1N2.

015

Bad card:
A-A1M2.

016

Bad card:
A-A1Q2.

017

- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1P2Y28 (- op reg bit 1/temp stop req).

Are the lights correct?

Y N

018

Bad card:
A-A1Q2.

019

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z33 (- destination control bit 3)
A-A1Q2Y05 (- extend c2)
A-A1Q2Z07 (- destination control bit 1).

Are the lights correct?

Y N

020

Bad card:
A-A1P2.

021

- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2Z27 (- source control bit 3)
A-A1Q2Z04 (- destination control bit 2).

Are the lights correct?

Y N

022

Bad card:
A-A1P2.

Various MSP control signals must be correct to move the data with wrong parity from the CSP external system bus to the MSAR, op and q registers.

Cause MSAR Parity Check

5360 Systems Unit

023
Bad card:
A-A1Q2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Display LSR 07.
- Select mode 1.
- Enter 0007.
- Press the Display Output key.
- See table 1.

MAP DESCRIPTION:
The CSP gets an SDR parity check while sensing status bytes 0 or 2 or the program status register in TU 2071. This MAP interprets the result bytes of TU 2071 to determine which bit in the flow of data from the MSP control card to the MSP data flow card is not correct.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

Table 1

Control Panel Display	Page	Step Number	Entry Point
8000	4	008	B
8001	5	011	C
8002	6	014	D
8004	7	017	E
8008	8	020	F
8010	9	023	G
8020	10	026	H
8040	11	029	J
8080	12	032	K

(Step 001 continues)

(Step 001 continued)
Is the display value in table 1?
Y N

002
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1Q2S11 (- sns/load MSP regs (S2)).

Are the lights correct?
Y N

003
Was system reference code dCxx?
Y N

004
Bad card:
A-A1N2.

005
Bad card:
A-A1M2.

006
Bad card:
A-A1Q2
---or---
A-A1P2.

The error is more than just a single bit in the data flow being wrong. Since this is the first MSP register sense, perhaps none of the register senses are performed correctly.
- See the processing unit and channel MIM (10-840) for the sequence of events for this operation.

007

Goto the entry point of this MAP indicated in table 1.

Table 1

Control Panel Display	Page	Step Number	Entry Point
8000	4	008	B
8001	5	011	C
8002	6	014	D
8004	7	017	E
8008	8	020	F
8010	9	023	G
8020	10	026	H
8040	11	029	J
8080	12	032	K

008

(Entry Point B)

- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2W26 (- ALU control bit 4).

Are the lights correct?

Y N

009
Bad card:
A-A1P2.

010
Bad card:
A-A1Q2
---or---
A-A1P2.

The parity bit of the data sensed is not correct. The parity bit is passed from the MSP control to the MSP data flow using the (- ALU control bit 4) signal.

011
(Entry Point C)
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2W12 (- ALU control bit 3).

Are the lights correct?
Y N

012
Bad card:
A-A1P2.

013
Bad card:
A-A1Q2.

Bit 7 of the data sensed is not correct. This data bit is passed from the MSP control to the MSP dataflow using the (- ALU control bit 3) signal.

014
(Entry Point D)
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2W23 (- ALU control bit 2).

Are the lights correct?

Y **N**

015
Bad card:
A-A1P2.

016
Bad card:
A-A1Q2.

Bit 6 of the data sensed is not correct. This data bit is passed from the MSP control to the MSP dataflow using the (- ALU control bit 2) signal.

017
(Entry Point E)
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2W13 (- ALU control bit 1).

Are the lights correct?

Y **N**

018
Bad card:
A-A1P2.

019
Bad card:
A-A1Q2.

Bit 5 of the data sensed is not correct. This data bit is passed from the MSP control to the MSP dataflow using the (- ALU control bit 1) signal.

020
(Entry Point F)
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2W05 (- ALU control bit 0).

Are the lights correct?
Y N

021
Bad card:
A-A1P2.

022
Bad card:
A-A1Q2.

Bit 4 of the data sensed is not correct. This data bit is passed from the MSP control to the MSP dataflow using the (- ALU control bit 0) signal.

023
(Entry Point G)
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2W33 (- y gate control bit 1).

Are the lights correct?

Y N

024
Bad card:
A-A1P2.

025
Bad card:
A-A1Q2.

Bit 3 of the data sensed is not correct. This data bit is passed from the MSP control to the MSP dataflow using the (- y gate control bit 1) signal.

026

(Entry Point H)

- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2W10 (- y gate control bit 0).

Are the lights correct?

Y N

027

Bad card:
A-A1P2.

028

Bad card:
A-A1Q2.

Bit 2 of the data sensed is not correct. This data bit is passed from the MSP control to the MSP dataflow using the (- y gate control bit 0) signal.

029
(Entry Point J)
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2W32 (- x gate control bit 1).

Are the lights correct?
Y N

030
Bad card:
A-A1P2.

031
Bad card:
A-A1Q2.

Bit 1 of the data sensed is not correct. This data bit is passed from the MSP control to the MSP dataflow using the (- x gate control bit 1) signal.

032
(Entry Point K)
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2W31 (-x gate control bit 0).

Are the lights correct?

Y **N**

033
Bad card:
A-A1P2.

034
Bad card:
A-A1Q2.

Bit 0 of the data sensed is not correct. This data bit is passed from the MSP control to the MSP dataflow using the (- x gate control bit 0) signal.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2U13 (- clock MSAR (S2)).

Are the lights correct?

Y N

002
Was system reference code dCxx?

Y N

003
Bad card:
A-A1N2.

004
Bad card:
A-A1M2.

MAP DESCRIPTION:
A check other than an SDR parity check occurred when sensing status bytes 0,2 or the program status register after a reset in TU 2071.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

005

- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1P2Y13 (+ allow MSP run internal).

Are the lights correct?

Y N

The MSP should not execute instructions now. The MSP clocks should start and stop only in response to the CSP register senses.

006

Bad card:
A-A1Q2.

007

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Y10 (- system reset latched)
A-A1P2Y26 (+ gate control clocks).

Are the lights correct?

Y N

008

Bad card:
A-A1Q2.

009

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Y27 (- block control clocks)
A-A1Q2Z12 (- destination control bit 0).

Are the lights correct?

Y N

010

Bad card:
A-A1P2.

011

- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1P2X33 (- allow alt req).

Are the lights correct?

Y N

012
Bad card:
A-A1P2.

013

- Probe the following:

```
Up   Light: On
Down Light: Ignore
```

A-A1Q2Z07 (- destination control bit 1)
A-A1Q2Z09 (- source control bit 1).

Are the lights correct?

Y N

014
Bad card:
A-A1P2.

015

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Y31 (- op reg bit 6/(- read/+write)).

Are the lights correct?

Y N

016
Bad card:
A-A1Q2.

The MSP data flow card uses the MSP control lines to select the byte of data on the x gate control, y gate control, and ALU control lines and to move it to the external system bus.

In response to the (- allow alt req) signal, the MSP data flow should indicate that this CSP access is a read. This is the first register read.

017
Bad card:
A-A1P2
---or---
A-A1Q2
---or---
A-A1N2
---or---
A-A1M2.

Sense Status Byte 2

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2X08 (- op reg bit 15/q reg bit 7)
A-A1Q2X10 (- op reg bit 14/q reg bit 6).

Are the lights correct?

Y N

002
Bad card:
A-A1Q2.

MAP DESCRIPTION:
In TU 2071 the CSP gets the wrong results when sensing status byte 2 after a reset. The error could be that this status byte is not addressed correctly or that some of the status bits passed are not correct.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

Status Byte 2

5360 Systems Unit

003

- Probe the following:

```
Up    Light: On
Down  Light: Ignore
```

A-A1P2X31 (- op reg bit 3/adr cmpr stop)
A-A1Q2Y04 (- op reg bit 2/checks detected).

Are the lights correct?

Y N

004
Bad card:
A-A1Q2.

005
Bad card:
A-A1P2.

Some of the status byte 2 bits are passed from the MSP data flow card to the MSP control card by gating then on op reg bits 2 and 3 and then passed to the data flow card on the x gate control, y gate control and ALU control lines.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2X10 (- op reg bit 14/q reg bit 6).

Are the lights correct?

Y N

002
Bad card:
A-A1Q2.

003
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1P2X33 (- allow alt req).

Are the lights correct?

Y N

2 2
A B

MAP DESCRIPTION:
In TU 2071 the CSP gets the wrong results when sensing status byte 0 and the program status register after a reset.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

A B
1 1

Status Byte 0 and PSR

5360 Systems Unit

PAGE 2 OF 2

004
Bad card:
A-A1P2.

005
Bad card:
A-A1P2
---or---
A-A1Q2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2X08 (- op reg bit 15/q reg bit 7).

Are the lights correct?

Y N

002
Bad card:
A-A1Q2.

003
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Y05 (- extend C2).

Are the lights correct?

Y N

MAP DESCRIPTION:
The CSP gets the wrong results when sensing status byte 0 or 2 and the program status register after a reset in TU 2071.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

2 2
A B

004
Bad card:
A-A1P2.

005
Bad card:
A-A1P2
---or---
A-A1Q2.

Sense Status Bytes 0, 2 and PSR MAP 2

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001

(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE71.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2S11 (- sns/load MSP regs (S2)).

Are the lights correct?

Y N

2 2
A B

MAP DESCRIPTION:
The CSP receives the wrong results when sensing status bytes 0, 2 and the program status register after a reset in TU 2071.

This is the first MSP register sense. The status bytes are addressed by the op reg. The status bytes are placed on the x gate control, y gate control and ALU control lines and passed from the MSP control card to the MSP data flow card. The MSP control card instructs the data flow card to pass the data to the external system bus using control lines.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

Status 0, 2 and PSR MAP 2

5360 Systems Unit

002
- Select mode 1.
- Probe the following:

```
Up   Light: Off
Down Light: Off
```

A-A1Q2S11 (- sns/load MSP regs (S2)).
Are the lights correct?
Y N

003
Was system reference code dCxx?
Y N

004
Bad card:
A-A1N2
---or---
A-A1Q2.

005
Bad card:
A-A1M2
---or---
A-A1Q2.

006
Bad card:
A-A1Q2.

007
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Y10 (- system reset latched).
Are the lights correct?
Y N

C D

C D

008
- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1Q2U04 (- reset MSP (S2)).
Are the lights correct?
Y N

009
Was system reference code dCxx?
Y N

010
Bad card:
A-A1N2.

011
Bad card:
A-A1M2.

012
Bad card:
A-A1Q2.

013
- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1P2X33 (- allow alt req).
Are the lights correct?
Y N

014
Bad card:
A-A1P2.

3
E

015

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2W28 (- op reg bit 10/q reg bit 2)
A-A1P2X28 (- op reg bit 12/q reg bit 4)
A-A1P2Y28 (- op reg bit 1/temp stop req)
A-A1P2Z26 (- alt mode req)
A-A1Q2W08 (- op reg bit 11/q reg bit 3)
A-A1Q2W09 (- op reg bit 8/q reg bit 0)
A-A1Q2X09 (- op reg bit 13/q reg bit 5).

Are the lights correct?

Y N

016
Bad card:
A-A1Q2.

017

- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1Q2X02 (- op reg bit 9/q reg bit 1).

Are the lights correct?

Y N

018
Bad card:
A-A1Q2.

F

019

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z27 (- source control bit 3)
A-A1Q2X04 (- system bus driver control).

Are the lights correct?

Y N

020
Bad card:
A-A1P2.

021

- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2Y23 (- q control bit 1).

Are the lights correct?

Y N

022
Bad card:
A-A1P2.

023

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Y25 (- main storage control bit 1).

Are the lights correct?

Y N

4 4
G H

024
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Y05 (- extend c2).
Are the lights correct?
Y N

025
Bad card:
A-A1P2.

026
Bad card:
A-A1P2
---or---
A-A1Q2
---or---
A-A1N2
---or---
A-A1M2.

027
Bad card:
A-A1P2
---or---
A-A1Q2
---or---
A-A1N2
---or---
A-A1M2.

Load and Sense PSR MAP 1

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE72.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2U06 (- storage function from CSP (S2)).

Are the lights correct?
Y N

002
Was system reference code dCxx?
Y N

003
Bad card:
A-A1N2.

004
Bad card:
A-A1M2.

MAP DESCRIPTION:
The CSP loads different data patterns into the program status register and senses the program status register in TU 2072. None of the senses are correct. This is the first register load. The lines that the MSP uses to determine a load or a sense will be probed in this MAP.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

005

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Y10 (- system reset latched).

Are the lights correct?

Y N

006

Bad card:
A-A1Q2.

007

- Set Gate Ref on the probe to +1.4 V.
- Connect - Gating to A-A1Q2U11 (- MSP data available).
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Y31 (- op reg bit 6/(-read/+write)).

Are the lights correct?

Y N

008

Bad card:
A-A1Q2.

009

Bad card:
A-A1P2.

Load and Sense PSR MAP 2

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE72.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2W28 (- op reg bit 10/q reg bit 2)
A-A1P2X28 (- op reg bit 12/q reg bit 4)
A-A1Q2W08 (- op reg bit 11/q reg bit 3)
A-A1Q2X09 (- op reg bit 13/q reg bit 5).

Are the lights correct?

Y N

002
Bad card:
A-A1Q2.

003
Bad card:
A-A1P2.

MAP DESCRIPTION:
The CSP loads various data patterns into the program status register and senses the program status register in TU 2072. Some the the patterns fail. The data is passed from the MSP data flow card to the control card through the q register.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP LSR Load and Sense MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001

MAP DESCRIPTION:
The CSP gets the wrong results when loading and sensing the MSP LSR in TU 2073.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

(Entry Point A)
Display LSR 07.
- Select mode 1.
- Enter 0007.
- Press the Display Output key.
- See table 1.

Table 1

control panel display	Page	Step Number	entry point
8000	4	012	B
4000	5	017	C
2000	6	022	D
1000	7	027	E
0800	8	032	F
0400	8	032	F

Is the display value in table 1?

Y N

3 2
A B

002

- Press the System Reset key.
- Select mode E.
- Enter EE73.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: Ignore
```

A-A1Q2S05 (- two byte op to MSP (S2)).

Are the lights correct?

Y N

003

Was system reference code dCxx?

Y N

004

Bad card:
A-A1N2
---or---
A-A1Q2.

005

Bad card:
A-A1M2
---or---
A-A1Q2.

006

- Probe the following:

```
Up   Light: On
Down Light: Ignore
```

A-A1Q2Z03 (- op reg bit 5/two byte op).

Are the lights correct?

Y N

More than one LSR location cannot be loaded and sensed correctly. Several control lines that can cause this will be probed.

007
Bad card:
A-A1Q2.

008
- Probe the following:

Up Light: On
Down Light: On

A-A1P2Z28 (- source control bit 2)
A-A1Q2Z12 (- destination control bit 0).

Are the lights correct?
Y N

009
Bad card:
A-A1P2.

010
Bad card:
A-A1P2
---or---
A-A1Q2.

011
Go to the entry point of this MAP indicated in table 1.

Table 1

control panel display	Page	Step Number	entry point
8000	4	012	B
4000	5	017	C
2000	6	022	D
1000	7	027	E
0800	8	032	F
0400	8	032	F

012
(Entry Point B)
- Press the System Reset key.
- Select mode E.
- Enter EE73.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2W08 (- op reg bit 11/q reg bit 3).
Are the lights correct?
Y N

013
Bad card:
A-A1Q2.

014
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2W02 (- LSR address bit 0).
Are the lights correct?
Y N

015
Bad card:
A-A1P2.

016
Bad card:
A-A1Q2.

Some LSR locations can be loaded and sensed, but there is an address error.

017
(Entry Point C)
- Press the System Reset key.
- Select mode E.
- Enter EE73.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2X28 (- op reg bit 12/q reg bit 4).

Are the lights correct?

Y **N**

018
Bad card:
A-A1Q2.

019
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2W27 (- LSR address bit 1).

Are the lights correct?

Y **N**

020
Bad card:
A-A1P2.

021
Bad card:
A-A1Q2.

Some LSR locations can be loaded and sensed, but there is an address error.

022
(Entry Point D)
- Press the System Reset key.
- Select mode E.
- Enter EE73.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2X09 (- op reg bit 13/q reg bit 5).
Are the lights correct?
Y N

023
Bad card:
A-A1Q2.

024
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2W25 (- LSR address bit 2).
Are the lights correct?
Y N

025
Bad card:
A-A1P2.

026
Bad card:
A-A1Q2.

Some LSR locations can be loaded and sensed, but there is an address error.

027
(Entry Point E)
- Press the System Reset key.
- Select mode E.
- Enter EE73.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2X10 (-op reg bit 14/q reg bit 6).
Are the lights correct?
Y N

028
Bad card:
A-A1Q2.

029
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2W22 (- LSR address bit 3).
Are the lights correct?
Y N

030
Bad card:
A-A1P2.

031
Bad card:
A-A1Q2.

Some LSR locations can be loaded and sensed, but there is an address error.

032

(Entry Point F)

- Press the System Reset key.
- Select mode E.
- Enter EE73.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: Ignore
```

A-A1Q2S05 (- two byte op to MSP (S2)).

Are the lights correct?

Y **N**

033

Was system reference code dCxx?

Y **N**

034

Bad card:
A-A1N2
---or---
A-A1Q2.

035

Bad card:
A-A1M2
---or---
A-A1Q2.

036

- Probe the following:

```
Up   Light: On
Down Light: Ignore
```

A-A1Q2Z03 (- op reg bit 5/two byte op).

Are the lights correct?

Y **N**

9 9
E F

There is a problem with either the high or the low LSR byte but not both. Address lines and control lines that can cause this will be probed.

037
Bad card:
A-A1Q2.

038
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2X08 (- op reg bit 15/q reg bit 7).
Are the lights correct?
Y N

039
Bad card:
A-A1Q2.

040
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z27 (- source control bit 3)
A-A1P2Z31 (- destination control bit 4).
Are the lights correct?
Y N

041
Bad card:
A-A1P2.

042
Bad card:
A-A1Q2
---or---
A-A1P2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Press the System Reset key.
- Select mode E.
- Enter EE88.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: Ignore
Down Light: On
```

A-A1Q2S05 (- two byte op to MSP (S2)).

Are the lights correct?

Y **N**

002
Was system reference code dCxx?

Y **N**

003
Bad card:
A-A1N2.

004
Bad card:
A-A1M2.

MAP DESCRIPTION:
The CSP is not getting the correct results when doing two byte loads and senses of the MSP LSR in TU 2088.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

005

- Connect - gating to A-A1Q2U11 (- MSP data available).
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Z03 (- op reg bit 5/two byte op).

Are the lights correct?

Y **N**

006
Bad card:
A-A1Q2.

007
Bad card:
A-A1P2
---or---
A-A1Q2.

MSP Interrupt Level 5 MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Probe the following:

```
Up   Light: Off
Down Light: On
```

A-A1P2U06 (- interrupt level 5 request).

Are the lights correct?
Y N

002
Bad card:
A-A1P2.

003
Was system reference code dCxx?
Y N

004
Bad card:
A-A1N2.

005
Bad card:
A-A1M2.

MAP DESCRIPTION:
In TU 2064 an interrupt on level 5 from the MSP is not occurring.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2

MSP CCR MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE70.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2Y33 (+ PACT address bit 0).
Are the lights correct?
Y N

002
Bad card:
A-A1P2.

003
Bad card:
A-A1Q2.

MAP DESCRIPTION:
In TU T2070 the CCR is not loaded or sensed correctly.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP PMR and CMR Load and Sense

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE75.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: Ignore
```

A-A1Q2X02 (- op reg bit 9/q reg bit 1).

Are the lights correct?

Y **N**

002
Bad card:
A-A1Q2.

003
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2Y33 (+ PACT address bit 0).

Are the lights correct?

Y **N**

MAP DESCRIPTION:
The CSP cannot load and sense the MSP registers, PMR and CMR in TU T2075. There could be an address error or an error in these registers, which are in the A-A1Q2 card.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

2A 2B

004
Bad card:
A-A1P2.

005
Bad card:
A-A1Q2
---or---
A-A1P2.

MSP Control Parity MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE60.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2X25 (- control parity bad).
Are the lights correct?
Y N

002
Bad card:
A-A1P2.

003
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1Q2U05 (- check run).
Are the lights correct?
Y N

2 2
A B

MAP DESCRIPTION:
In TU T2060 a control parity check is not caused by loading status byte 1. The parity check is verified by sensing status byte 2.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, P2, Q2

004
Was system reference code dCxx?
Y N

005
Bad card:
A-A1N2.

006
Bad card:
A-A1M2.

007
- Set Gate Ref on the probe to +1.4 V.
- Connect - Gating to A-A1Q2U11 (- data available).
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Y04 (- op reg bit 2/checks detected).
Are the lights correct?
Y N

008
Bad card:
A-A1Q2.

009
Bad card:
A-A1P2
---or---
A-A1Q2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE76.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

  Up Light: On
  Down Light: On

  A-A1Q2S06 (- CMR ctrl required (S2))
  A-A1Q2S11 (- sns/load MSP regs (S2)).

Are the lights correct?

Y N

2 2
A B

MAP DESCRIPTION:
The CSP attempts to cause main storage invalid address checks in TU T2076. Either an invalid address check did not occur if it should have or it occurred if it should not.

The error may be that the MSP performs a register load instead of a storage write, that the wrong address translation register is used for the storage write, or that the invalid address check logic on the MSP data flow is failing.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

MSP Interrupt 5 MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE64.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2U06 (- interrupt level 5 request).

Are the lights correct?

Y N

002
Bad card:
A-A1P2.

003
Was system reference code dCxx?

Y N

004
Bad card:
A-A1N2.

005
Bad card:
A-A1M2.

MAP DESCRIPTION:
In TU T2064 an interrupt from the MSP is not reset or a machine check occurs while attempting to reset the interrupt request.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2

MSP Time Out MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001

MAP DESCRIPTION:
In TU T2069 a CSP time out check occurred during a write or read of main storage.

This occurs if the MSP control or data flow card lines fail to indicate a storage read or write correctly, but the time out period is so long that probing cannot be done.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE69.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Set Latch to up.
- Probe the following:

```
Up   Light: On
Down Light: Ignore
```

A-A1Q2S11 (- sns/load MSP regs (S2)).

Are the lights correct?

Y **N**

2 A 2 B

002

- Select mode 1.
- Probe the following:

```
Up   Light: Off
Down Light: Off
```

A-A1Q2S11 (- sns/load MSP regs (S2)).

Are the lights correct?

Y N

003

Was system reference code dCxx?

Y N

004

Bad card:
A-A1N2.

005

Bad card:
A-A1M2.

006

Bad card:
A-A1Q2.

007

Bad card:
A-A1Q2
---or---
A-A1P2.

MSP SVC Instruction MAP 1

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE20.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z22 (- ATR bank 1 selected).

Are the lights correct?

Y N

002
Bad card:
A-A1P2.

003
Bad card:
A-A1Q2
---or---
A-A1P2.

MAP DESCRIPTION:
In TU T2020 the MSP fails to execute an SVC instruction correctly if using ATR group 0 address translation.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP SVC Instruction MAP 2

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE20.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z22 (- ATR bank 1 selected).

Are the lights correct?

Y N

002
Bad card:
A-A1P2.

003
Bad card:
A-A1Q2.

MAP DESCRIPTION:
In TU T2020 the MSP fails to execute the second SVC instruction correctly if using the address translation register group 1 address translation.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP SVC Instruction MAP 3

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE20.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1U2M02 (- load buffer)
A-A1U2M04 (- read buffer).

Are the lights correct?
Y N

002
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z23 (- buffer).

Are the lights correct?
Y N

003
Bad card:
A-A1P2.

MAP DESCRIPTION:
In TU T2020 the MSP attempts to execute the first instruction, an SVC, using a PACT register. During the second storage read the MSP got FF from main storage.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2, U2

2 2
A B

004
Bad card:
A-A1Q2.

005
Bad card:
A-A1U2.

MSP SVC Instruction MAP 4

5360 Systems Unit

PAGE 1 OF 5

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	026	1179	A

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE20.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Select mode 1.

MAP DESCRIPTION:
In TU T2020 the MSP fails to correctly execute the first instruction, an SVC, using a PACT register.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

Is the MSP Run light on?
Y N

002
- Select mode 0.
- Press the CSP Start key.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2U10 (+ allow MSP run (S2)).

Are the lights correct?
Y N

The CSP might not have started the MSP.

003
Was the system reference code dCxx or D4xx or D1xx?
Y N

5 2 2 2
A B C D

004
Bad card:
A-A1N2.

005
Bad card:
A-A1M2.

006
- Probe the following:

```
Up    Light: On
Down  Light: On
```

A-A1Q2S13 (- temp stop request (S2)).
Are the lights correct?
Y N

007
Was the system reference code dCxx or D4xx or D1xx?
Y N

008
Bad card:
A-A1N2
A-A1Q2.

009
Bad card:
A-A1M2
A-A1Q2.

010

- Probe the following:

```
Up    Light: On
Down  Light: On
```

A-A1P2W30 (- op reg bit 0)
A-A1P2Z26 (- alt mode req)
A-A1Q2Y13 (+ allow MSP run internal)
A-A1Q2Z05 (- op reg bit 5/two byte op).

Are the lights correct?

Y N

The MSP might not have started to execute any instructions. Observing status byte 0 and the IAR will show if this is the problem.

011

Bad card:
A-A1Q2.

012

- Probe the following:

```
Up    Light: On
Down  Light: On
```

A-A1P2X22 (+ MSAR increment control bit 1)
A-A1P2Y30 (- clock MSAR N2)
A-A1P2Z25 (- MSP clk stop/sel proc mode 1)
A-A1Q2X13 (+ MSAR increment control bit 2)
A-A1Q2Y03 (- clock op/q/x/y N2).

Are the lights correct?

Y N

The IAR might not be increased correctly or the op or q registers might not be loaded.

013

Bad card:
A-A1P2.

014

- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1P2M05 (- LSR address select)
A-A1Q2X07 (+ MSAR increment control bit 0).

The IAR might not be increased correctly, or the wrong ATR group could be selected.

Are the lights correct?

Y N

015
Bad card:
A-A1P2.

016

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2B07 (+ control sequencer bit 0)
A-A1P2B10 (+ control sequencer bit 1)
A-A1P2B12 (+ control sequencer bit 3)
A-A1P2J02 (+ control sequencer bit 2).

Are the lights correct?

Y N

017
Bad card:
A-A1P2.

018

- Probe the following:

```
Up   Light: On
Down Light: On
```

This is the first time the main storage buffer is used.

A-A1U2M02 (- load buffer).

Are the lights correct?

Y N

019
- Probe the following:

  Up Light: On
  Down Light: On

  A-A1P2Y25 (- main storage control bit 1).
  A-A1P2Z23 (- buffer)

Are the lights correct?
Y N

020
Bad card:
A-A1P2.

021
Bad card:
A-A1P2
---or---
A-A1Q2.

022
Is there a card in A-A1T2?
Y N

023
- Note the reference code.
- Jumper A-A1Q2S04 (- I/O ATR Select Bit 1) to A-A1Q2U08 (ground).
- Select mode E.
- Enter 0000.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.

Is the system reference code the same?
Y N

024
Bad card:
A-A1U2.

J K

A J K
1

025
Bad card:
A-A1P2
---or---
A-A1Q2
---or---
A-A1U2.

026
Go To Map 1179, Entry Point A.

027
Bad card:
A-A1P2
---or---
A-A1Q2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE25.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

Up Light: On
Down Light: On

A-A1P2S11 (- s1 to MSP).

Are the lights correct?

Y N

002
Was system reference code dCxx?

Y N

003
Bad card:
A-A1N2.

004
Bad card:
A-A1M2.

MAP DESCRIPTION:
In TU T2025 the MSP fails to execute the load register instruction correctly. This is the first one operand instruction to be executed.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

005

- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1P2Z23 (- buffer).

Are the lights correct?

Y N

The storage buffer should only be used during the instruction fetch and not while executing the instruction.

006

Bad card:
A-A1P2.

007

- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1P2W30 (- op reg bit 0)
A-A1P2X31 (- op reg bit 3/adr cmpr stop)
A-A1P2Y28 (- op reg bit 1/temp stop req)
A-A1Q2W07 (+ q zone zero).

Are the lights correct?

Y N

The instruction operation code and q byte will be verified.

008

Bad card:
A-A1Q2.

009

- Set Gate Ref on the probe to +1.4 V.
- Connect + Gating to A-A1P2D06 (+ p2 clock).
- Probe the following:

```
Up   Light: Ignore
Down Light: Off
```

A-A1P2X25 (- control parity bad).

Are the lights correct?

Y N

010
Bad card:
A-A1P2.

011
- Remove + Gating.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2X22 (+ MSAR increment control bit 1)
A-A1Q2X13 (+ MSAR increment control bit 2).

This is the first time an address is decreased.

Are the lights correct?
Y N

012
Bad card:
A-A1P2.

013
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1Q2Y09 (- enable sys reg control).

Are the lights correct?
Y N

014
- Select mode 1.
- Press the System Reset key.
- Select mode 0.
- Enter EE24.
- Press the CSP Start key.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1Q2Y09 (- enable sys reg control).
(Step 014 continues)

(Step 014 continued)
Are the lights correct?
Y N

015
Bad card:
A-A1P2.

016
Bad card:
A-A1P2
---or---
A-A1Q2.

017
- Probe the following:

```
Up   Light: On or flashing
Down Light: Ignore
```

A-A1Q2X07 (+ MSAR increment control bit 0).
Are the lights correct?
Y N

018
Bad card:
A-A1P2.

019
- Select mode 1.
- Press the System Reset key.
- Select mode 0.
- Enter EE82.
- Press the CSP Start key.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1Q2Y02 (+ q numeric zero).
Are the lights correct?
Y N

(+ q numeric zero) will not change in TU 2025 if the complete test is not executed because of an error.

020
Bad card:
A-A1Q2.

021
Bad card:
A-A1P2
---or---
A-A1Q2.

MSP Branch On Condition MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE21.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2G02 (+ type bit 0)
A-A1P2G03 (+ type bit 1)
A-A1P2S03 (- PSR control bit 0)
A-A1P2S04 (- PSR control bit 1)
A-A1Q2X03 (+ carry in).

Are the lights correct?
Y N

002
Bad card:
A-A1P2.

003
Bad card:
A-A1P2
---or---
A-A1Q2.

MAP DESCRIPTION:
In TU T2021 the MSP fails to execute the branch on condition instruction correctly.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP Jump Backward MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE23.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2X03 (+ carry in).
Are the lights correct?
Y N

002
Bad card:
A-A1P2.

003
Bad card:
A-A1P2
---or---
A-A1Q2.

MAP DESCRIPTION:
In TU T2023 the MSP fails to execute the jump backward instruction correctly.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP Load PMR MAP

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE24.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1Q2Y08 (+ PACT address bit)
A-A1P2Y32 (+ PACT address bit).

Are the lights correct?

Y **N**

002
Bad card:
A-A1P2.

003
Bad card:
A-A1P2
---or---
A-A1Q2.

MAP DESCRIPTION:
In TU T2024 the MSP fails to execute the load program mode register instruction correctly.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP Store Register Instruction MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE26.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z23 (- buffer).

Are the lights correct?
Y N

002
Bad card:
A-A1P2.

003
Bad card:
A-A1P2
---or---
A-A1Q2.

MAP DESCRIPTION:
In TU T2026 the MSP fails to execute the store register instruction correctly. This is the first instruction that writes main storage to be tested.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP Compare Logical Immediate MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE27.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

Up Light: On
Down Light: On

A-A1P2X23 (+ zero/x reg bit 3)
A-A1P2Y22 (- op reg bit 4)
A-A1Q2X05 (+ ALU carry out).

Are the lights correct?
Y N

002
Bad card:
A-A1Q2.

003
Bad card:
A-A1P2
---or---
A-A1Q2.

MAP DESCRIPTION:
In TU T2027 the MSP fails to execute the compare logical immediate instruction correctly. In this instruction the ALU is used to compare two bytes.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP Test Bits On/Off MAP

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE30.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2X32 (+ ones).
Are the lights correct?
Y N

002
Bad card:
A-A1Q2.

003
Bad card:
A-A1P2.

MAP DESCRIPTION:
In TU T2031 the MSP fails to correctly execute a test bits on or test bits off instruction.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP Add To Register MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE82.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

Up Light: On
Down Light: On

A-A1Q2W07 (+ q zone zero)
A-A1Q2Y02 (+ q numeric zero).

Are the lights correct?
Y N

002
Bad card:
A-A1Q2.

003
Bad card:
A-A1P2
---or---
A-A1Q2.

MAP DESCRIPTION:
In TU T2032 the MSP fails to execute the add to register instruction correctly. TU 2082 is used to verify q register decodes.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP Edit Instruction MAP

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE32.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2X26 (+ hex 20).

Are the lights correct?

Y **N**

002
Bad card:
A-A1Q2.

003
Bad card:
A-A1P2.

MAP DESCRIPTION:
In TU T2041 the MSP fails to execute the edit instruction correctly. TU 2032 is used for probing.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP Performance MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE51.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Z23 (- buffer)
A-A1Q2Y05 (- extend c2).

Are the lights correct?
Y N

002
Bad card:
A-A1P2.

003
Bad card:
A-A1Q2
---or---
A-A1P2
---or---
A-A1U2.

MAP DESCRIPTION:
In TU T2051 the MSP executes a group of instructions too slowly. This could occur if the main storage buffer is not being correctly used or if too many MSP clock times are being extended an extra 100 nanoseconds.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2, U2

MSP Insert and Test Character MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE38.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2X27 (+ significant digit).
Are the lights correct?
Y N

002
Bad card:
A-A1Q2.

003
Bad card:
A-A1P2.

MAP DESCRIPTION:
In TU T2042 the MSP fails to execute the insert and test character instruction correctly. TU 2038 is used to verify an MSP data flow decode.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP Add Logical Character MAP

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE20.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Y03 (- clock op/q/x/y I2).
Are the lights correct?
Y N

002
Bad card:
A-A1P2.

003
Bad card:
A-A1P2
---or---
A-A1Q2.

MAP DESCRIPTION:
In TU T2044 the MSP fails to execute the add logical character instruction correctly. TU 2020 is used to verify an MSP control signal.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE52.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2Y32 (+ PACT address bit 1)
A-A1P2Y33 (+ PACT address bit 0)
A-A1Q2Y08 (+ PACT address bit 2).

Are the lights correct?
Y N

002
Bad card:
A-A1P2

003
Bad card:
A-A1P2
---or---
A-A1Q2.

MAP DESCRIPTION:
In TU T2052 the MSP fails to correctly execute an instruction using a PACT register.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

MSP Alternate Mode MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE20.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2U02 (- MSP clocks stopped).

Are the lights correct?

Y **N**

002
Bad card:
A-A1Q2
---or---
A-A1N2
---or---
A-A1M2.

MAP DESCRIPTION:
In TU T2046 the MSP fails to correctly execute instructions while the CSP does main storage accesses. TU 2020 is used to check several MSP control signals.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1P2, Q2

003

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1P2X33 (- allow alt req)
A-A1P2Y30 (- clock MSAR I2).

Are the lights correct?

Y N

004

Bad card:
A-A1P2.

005

Bad card:
A-A1Q2
---or---
A-A1P2.

Write and Read Main Storage MAP 1

5360 Systems Unit

PAGE 1 OF 6

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
Main storage write and read tests failed. This can be caused by A-A1P2 or any bad main storage card. This map determines which card is bad. The card A-A1U2 location is used as a card test location. The main storage cards are inserted into this location one at a time and tested. If it is determined that every main storage card is good, then A-A1P2 is bad

START CONDITIONS:
none

FRUs PARTIALLY TESTED:
Configured main storage cards (A-A1R2, S2, T2, U2)

Is there a card in A-A1R2?
Y N

002
Is there a card in A-A1S2?
Y N

003
Is there a card in A-A1T2?
Y N

004
Bad card:
A-A1U2
---or---
A-A1P2.

5 3 2
A B C

005

- Select mode 6.
- Press the Power key (power off).
- Label the A-A1T2 card 'T2', and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2.

- Press the Power key (power on).
- Select mode E.
- Enter FA03

DIAG41

- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

006

- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

007

Bad card:
A-A1P2.

008

Bad card:
labeled 'T2'.

One of the storage cards or the MSP, CSP or channel is bad. Test each storage card one at a time using the A-A1U2 location. If no cards or all cards fail, then the MSP, CSP or channel is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of the test.

009

- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

010
Bad card:
labeled 'U2'.

011
Bad card:
A-A1P2.

012

- Select mode 6.
- Press the Power key (power off).
- Label the A-A1S2 card 'S2', the A-A1T2 card 'T2' and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2
  A-A1S2.
- Remember which main cards have been tested and the results of the test for each card.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.

DIAG41

- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

One of the storage cards or the MSP, CSP or channel is bad. Test each storage card one at a time using the A-A1U2 location. If no cards or all cards fail, then the MSP, CSP or channel is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of the test.

013

- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

014

- Select mode 6.
- Press the Power key (power off).
- Reinstall the S2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

015

Bad card:
A-A1P2.

016

Bad card:
labeled 'S2'.

017

Bad card:
labeled 'T2'.

018

- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

019
Bad card:
labeled 'U2'.

020
Bad card:
A-A1P2.

021

- Select mode 6.
- Press the Power key (power off).
- Label the A-A1R2 card 'R2', the A-A1S2 card 'S2', the A-A1T2 card 'T2' and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2
  A-A1S2
  A-A1R2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.

DIAG41

- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

One of the storage cards or the MSP, CSP or channel is bad. Test each storage card one at a time using the A-A1U2 location. If no cards or all cards fail, then the MSP, CSP or channel is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of the test.

022
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

023
- Select mode 6.
- Press the Power key (power off).
- Reinstall the S2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

024
- Select mode 6.
- Press the Power key (power off).
- Reinstall the R2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

(Step 024 continues)

J K

G J K 5

(Step 024 continued)

Is the Processor Check light on?

Y N

025
Bad card:
A-A1P2.

026
Bad card:
labeled 'R2'.

027
Bad card:
labeled 'S2'.

028
Bad card:
labeled 'T2'.

029
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

030
Bad card:
labeled 'U2'.

031
Bad card:
A-A1P2.

MS Parity MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode E.
- Enter EEA0.
- Insert diskette DIAG21/41.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1U2G02 (+ Bi-di MS bus high parity)
A-A1U2B02 (+ Bi-di MS bus low parity).

Are the lights correct?

Y N

002
- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1U2 card.
- Press the Power key (power on).
- Select mode E.
- Enter EEA0.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1U2G02 (+ Bi-di MS bus high parity)
A-A1U2B02 (+ Bi-di MS bus low parity).
(Step 002 continues)

MAP DESCRIPTION:
This is a Bi-di parity problem. This can be caused by either the A-A1Q2 or A-A1U2 card. This MAP determines which card is bad.

START CONDITIONS:
None

FRUs PARTIALLY TESTED:
A-A1Q2, U2

(Step 002 continued)
Are the lights correct?
Y N

003
Bad card:
A-A1Q2.

004
Bad card:
A-A1U2.

005
- Set Gate Ref on the probe to +1.4V.
- Connect -Gating to A-A1Q2U11 (+ MSP data available).
- Probe the following:

```
Up   Light: Off
Down Light: Off
```

A-A1U2P04 (+ MS parity check).
Are the lights correct?
Y N

006
Bad card:
A-A1U2.

007
Bad card:
A-A1Q2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EEA7.
- Insert diskette DIAG21/41.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1U2S04 (+ address bit 6).

Are the lights correct?

Y N

002
Bad card:
A-A1Q2.

003
Bad card:
A-A1U2.

MAP DESCRIPTION:
TU 20A7 failed. A (+ address bit 6) has caused the problem. This MAP tests the (+ address bit 6) signal to determine if it is a bad A-A1Q2 card or a bad A-A1U2 card.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1Q2, U2

Write and Read Main Storage MAP 1

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001
1183	A	1	001
1187	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	1191	A
5	013	1191	A
7	023	1191	A
3	009	1191	A
5	018	1191	A
8	029	1191	A

001
(Entry Point A)

MAP DESCRIPTION:
Main storage write and read tests failed. This can be caused by A-A1P2, A-A1Q2 or any bad main storage card. This map determines which card is bad. The card A-A1U2 location is used a a card test location. The 256 Kb main storage cards are inserted into this location one at a time and tested. If it is determined that every main storage card is good, then go to MAP 1191 to determine if it is a A-A1P2 or A-A1Q2 card that is bad.

START CONDITIONS:
none

FRUs PARTIALLY TESTED:
Configured main storage cards (A-A1R2, S2, T2, U2)

Is there a card in A-A1R2?
Y N

002
Is there a card in A-A1S2?
Y N

6 3 2
A B C

003

This system is configured for 512 Kb of main storage
- Select mode 6.
- Press the Power key (power off).
- Label the A-A1T2 card 'T2', and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2.

- Press the Power key (power on).
- Select mode E.
- Enter E902
- Insert diskette DIAG21.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

One of the storage cards or the MSP, CSP or channel is bad. Test each storage card one at a time using the A-A1U2 location. If no cards or all cards fail, then the MSP, CSP or channel is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of the test.

004
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E902.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

The 2 main store cards that were just tested could both be bad.

005
- Select mode 6.
- Press the Power key (power off).
- Reinstall all storage cards that were previously removed.
- Press the Power key (power on).

Go To Map 1191, Entry Point A.

006
Bad card:
labeled 'T2'.

007
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E902.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?
Y N

008
Bad card:
labeled 'U2'.

009
- Select mode 6.
- Press the Power key (power off).
- Reinstall all storage cards that were previously removed.
- Press the Power key (power on).

Go To Map 1191, Entry Point A.

The 2 main store cards that were just tested could both be bad.

010
This system is configured for 768 Kb of main storage
- Select mode 6.
- Press the Power key (power off).
- Label the A-A1S2 card 'S2', the A-A1T2 card 'T2' and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2
  A-A1S2.
- Remember which main cards have been tested and the results of the test for each card.
- Press the Power key (power on).
- Select mode E.

(Step 010 continues)

One of the storage cards or the MSP, CSP or channel is bad. Test each storage card one at a time using the A-A1U2 location. If no cards or all cards fail, then the MSP, CSP or channel is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of the test.

(Step 010 continued)
- Enter E902.
- Insert diskette DIAG21.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

011
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E902.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

012
- Select mode 6.
- Press the Power key (power off).
- Reinstall the S2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E902.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

5 5 5 5
F G H J

013
- Select mode 6.
- Press the Power key (power off).
- Reinstall all storage cards that were previously removed.
- Press the Power key (power on).

Go To Map 1191, Entry Point A.

The 2 main store cards that were just tested could both be bad.

014
Bad card:
labeled 'S2'.

015
Bad card:
labeled 'T2'.

016
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E902.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

017
Bad card:
labeled 'U2'.

018
- Select mode 6.
- Press the Power key (power off).
- Reinstall all storage cards that were previously removed.
- Press the Power key (power on).

Go To Map 1191, Entry Point A.

The 2 main store cards that were just tested could both be bad.

019

This system is configured for 1 Mb of main storage
- Select mode 6.
- Press the Power key (power off).
- Label the A-A1R2 card 'R2', the A-A1S2 card 'S2', the A-A1T2 card 'T2' and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2
  A-A1S2
  A-A1R2.
- Press the Power key (power on).
- Select mode E.
- Enter E902.
- Insert diskette DIAG21.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

020
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E902.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

One of the storage cards or the MSP, CSP or channel is bad. Test each storage card one at a time using the A-A1U2 location. If no cards or all cards fail, then the MSP, CSP or channel is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of the test.

021

- Select mode 6.
- Press the Power key (power off).
- Reinstall the S2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E902.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

022

- Select mode 6.
- Press the Power key (power off).
- Reinstall the R2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E902.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

023

- Select mode 6.
- Press the Power key (power off).
- Reinstall all storage cards that were previously removed.
- Press the Power key (power on).

Go To Map 1191, Entry Point A.

The 2 main store cards that were just tested could both be bad.

024

Bad card:
labeled 'R2'.

025
Bad card:
labeled 'S2'.

026
Bad card:
labeled 'T2'.

027
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E902.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

028
Bad card:
labeled 'U2'.

029
- Select mode 6.
- Press the Power key (power off).
- Reinstall all storage cards that were previously removed.
- Press the Power key (power on).

Go To Map 1191, Entry Point A.

The 2 main store cards that were just tested could both be bad.

Write and Read Main Storage MAP 2

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001
1195	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	003	1191	A
3	007	1191	A

001
(Entry Point A)

This system is configured for 384 Kb of main storage.
- Select mode 6.
- Press the Power key (power off).
- Label the A-A1T2 card 'T2' and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2.
- Press the Power key (power on).
- Select mode E.
- Enter E902
- Insert diskette DIAG21.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

MAP DESCRIPTION:
Main storage write and read tests failed. This can be caused by A-A1P2, A-A1Q2 or any bad main storage card. This map is used for mixed card types. It will determine which card is bad. The card A-A1U2 location is used as a test card location. The main storage cards are inserted into this location one at a time and tested. If it is determined that every main storage card is good, then go to MAP 1191 to determine if it is a A-A1P2 or A-A1Q2 card that is bad.

START CONDITIONS:
none

FRUs PARTIALLY TESTED:
Configured main storage cards (A-A1T2, U2)

One of the storage cards or the MSP, CSP or channel is bad. Test each storage card one at a time using the A-A1U2 location. If no cards or all cards fail, then the MSP, CSP or channel is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of the test.

Is the Processor Check light on?

Y N

2A 2B

002

- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

003

- Select mode 6.
- Press the Power key (power off).
- Reinstall all storage cards that were previously removed.
- Press the Power key (power on).

Go To Map 1191, Entry Point A.

The 2 main store cards that were just tested could both be bad.

004

Bad card:
labeled 'T2'.

005

- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

006

Bad card:
labeled 'U2'.

007

- Select mode 6.
- Press the Power key (power off).
- Reinstall all storage cards that were previously removed.
- Press the Power key (power on).

Go To Map 1191, Entry Point A.

The 2 main store cards that were just tested could both be bad.

Write and Read Main Storage MAP 1

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001
1187	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
Main storage write and read tests failed. This can be caused by A-A1P2, A-A1Q2 or any bad main storage card. This map determines which card is bad. The card A-A1U2 location is used as a card test location. The main storage cards are inserted into this location one at a time and tested. If it is determined that every main storage card is good, then A-A1Q2 or A-A1P2 is bad

START CONDITIONS:
none

FRUs PARTIALLY TESTED:
Configured main storage cards (A-A1R2, S2, T2, U2)

Is there a card in A-A1R2?
Y N

002
Is there a card in A-A1S2?
Y N

5 3 2
A B C

003

- Select mode 6.
- Press the Power key (power off).
- Label the A-A1T2 card 'T2', and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2.

- Press the Power key (power on).
- Select mode E.
- Enter FA03
- Insert diskette DIAG21.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?
Y N

004

- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?
Y N

005
Bad card:
A-A1Q2
---or---
A-A1P2.

006
Bad card:
labeled 'T2'.

One of the storage cards or the MSP, CSP or channel is bad. Test each storage card one at a time using the A-A1U2 location. If no cards or all cards fail, then the MSP, CSP or channel is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of the test.

007

- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

008

Bad card:
labeled 'U2'.

009

Bad card:
A-A1Q2
---or---
A-A1P2.

010

- Select mode 6.
- Press the Power key (power off).
- Label the A-A1S2 card 'S2', the A-A1T2 card 'T2' and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2
  A-A1S2.
- Remember which main cards have been tested and the results of the test for each card.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Insert diskette DIAG21.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

(Step 010 continues)

One of the storage cards or the MSP, CSP or channel is bad. Test each storage card one at a time using the A-A1U2 location. If no cards or all cards fail, then the MSP, CSP or channel is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of the test.

(Step 010 continued)
Is the Processor Check light on?
Y N

011
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?
Y N

012
- Select mode 6.
- Press the Power key (power off).
- Reinstall the S2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?
Y N

013
Bad card:
A-A1Q2
---or---
A-A1P2.

014
Bad card:
labeled 'S2'.

5 5
E F

015
Bad card:
labeled 'T2'.

016
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?
Y N

017
Bad card:
labeled 'U2'.

018
Bad card:
A-A1Q2
---or---
A-A1P2.

019
- Select mode 6.
- Press the Power key (power off).
- Label the A-A1R2 card 'R2', the A-A1S2 card 'S2', the A-A1T2 card 'T2' and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2
  A-A1S2
  A-A1R2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Insert diskette DIAG21.
- Press the Load key.

(Step 019 continues)

One of the storage cards or the MSP, CSP or channel is bad. Test each storage card one at a time using the A-A1U2 location. If no cards or all cards fail, then the MSP, CSP or channel is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of the test.

(Step 019 continued)
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

020
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

021
- Select mode 6.
- Press the Power key (power off).
- Reinstall the S2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

7
G H J K

H J K

022
- Select mode 6.
- Press the Power key (power off).
- Reinstall the R2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.

- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

023
Bad card:
A-A1Q2
---or---
A-A1P2.

024
Bad card:
labeled 'R2'.

025
Bad card:
labeled 'S2'.

026
Bad card:
labeled 'T2'.

027

- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter FA03.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

028
Bad card:
labeled 'U2'.

029
Bad card:
A-A1Q2
---or---
A-A1P2.

ENTRY POINTS			
FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001
1177	A	1	001

(Entry Point A)

MAP DESCRIPTION:
A main storage write and read test failed. This can be caused by cards A-A1P2, A-A1Q2 or any bad main storage card. This MAP determines if a 256 Kb storage card is bad. The main storage and control storage cards are swapped and the CSIPL first and second loads are then run. For the 256 Kb card, this test is run twice; once to test the upper half and once to test the lower half. If these loads are completed correctly, then either the A-A1P2 or A-A1Q2 card is bad and MAP 1191 determines which card is bad. If these loads are not ok, then the main storage card swapped into the A-A1N2 location is bad.

START CONDITIONS:
None

FRUs PARTIALLY TESTED:
A-A1U2 card

- For information concerning jumper installation on the A-A1N2 card and control storage and main storage card swapping, see the Proecessing Unit and Channel MIM (10-310).

A1U2 is a 256 Kb storage card.
This MAP uses swapping between card locations as a diagnostic tool.
- Select mode 6.
- Press the Power key (power off).
- Go to the Processing Unit and Channel MIM (10-310).
- See note 1 below.
- Go to Hardmap 1191, Entry Point A.

Note 1: - Verify that the system can be loaded using the CSIPL load option FA02 and the DIAG21/41 Diskette. See the general MIM (01-410).
After the CSIPL, the CSP Run light, Load light and Processor Check light will be off and FA02 should appear on the display if there is no error.
If E255 is on the display and the Processor Check light is on, then the jumpers on the CSP data flow card A-A1M2 are wrong.
- See the Processing Unit and Channel MIM (10-310).
- Go to Hardmap 1191, Entry Point A.

ENTRY POINTS			
FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001
1179	A	1	001

(Entry Point A)

MAP DESCRIPTION:
A main storage write and read test failed. This can be caused by cards A-A1P2, A-A1Q2 or any bad main storage card. This MAP determines if a 128 Kb storage card is bad. The main storage and control storage cards are swapped and the CSIPL first and second loads are then run. If these loads are completed correctly, then either the A-A1P2 or A-A1Q2 card is bad and MAP 1191 determines which card is bad.
If these loads are not ok, then the main storage card swapped into the A-A1M2 location is bad.

START CONDITIONS:
None

FRUs PARTIALLY TESTED:
A-A1U2 card

- For information concerning jumper installation on the A-A1N2 card and control storage and main storage swapping, see the Processing Unit and Channel MIM (10-310).

A1U2 is a 128 Kb storage card.

This MAP uses swapping between card locations as a diagnostic tool.
- Select mode 6.
- Press the Power key (power off).
- Go to the Processing Unit and Channel MIM (10-310).

Note 1: - Verify that the system can be loaded using the CSIPL load option FA02 and the DIAG21/41 Diskette. See the general MIM (01-410).

After the CSIPL, the CSP Run light, Load light and Processor Check light will be off and FA02 should appear on the display if there is no error.

If E255 is on the display and the Processor Check light is on, then the jumpers on the CSP data flow card A-A1M2 are wrong.
- See the Processing Unit and Channel MIM (10-310).
- Go to Hardmap 1191, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001
1191	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EEA0.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1Q2S05 (- two byte op).
Are the lights correct?
Y N

002
Was system reference code dCxx?
Y N

003
Bad card:
A-A1N2.

004
Bad card:
A-A1M2.

MAP DESCRIPTION:
Main storage accesses fail for every main storage card. This MAP attempts to isolate the problem between the two MSP cards. Main storage is assumed to be good.

START CONDITIONS:
The starting conditions are set up by MAP 1191 or by a CSIPL that displays a dC82 system reference code. If you did not come from MAP 1191 or if there is not a dC82 in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1M2, N2, P2, Q2

005

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Y07 (+ MS address bit 23).

Are the lights correct?

Y N

006

Bad card:
A-A1Q2.

007

- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1U2G07 (- MS card select 1)
A-A1U2J02 (- MS byte select high)
A-A1U2J07 (- MS byte select low)
A-A1U2J10 (- MS read/+write).

Are the lights correct?

Y N

008

Bad card:
A-A1Q2.

009

- Probe the following:

```
Up   Light: On
Down Light: Off
```

A-A1U2M02 (- load buffer).

Are the lights correct?

Y N

The MSP data card controls the main storage card signals to do storage accesses without using the storage buffer.

010

- Probe the following:

```
Up    Light: On
Down  Light: Off
```

A-A1P2Z23 (-buffer).

Are the lights correct?

Y N

011

Bad card:
A-A1P2.

012

Bad card:
A-A1Q2.

013

Bad card:
A-A1Q2
---or---
A-A1P2.

Main Storage Card Select MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	A

001
(Entry Point A)

MAP DESCRIPTION:
Main storage write and read tests failed. This can be caused by cards A-A1Q2 or any bad main storage card. It has been determined that a main storage card select or (- clock enable) has caused the problem. This MAP tests the appropriate card select and determines if it is a bad A-A1Q2 card or a main storage card.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1Q2 and configured main storage cards (A-A1R2 , A-A1S2, A-A1T2, A-A1U2)

Is the display = dxxx?
Y N

002
Go To Map 1100, Entry Point A.

003
- Select mode 1.
- Enter 0007.
- Press the Display Output key.

Is the display = xx1x?
Y N

3 2
A B

004
Is the display = xxx1?
Y N

005
Is the display = xxx2?
Y N

006
Is the display = xxx4?
Y N

007
- Press the System Reset key.
- Select mode E.
- Enter EE79.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1R2G07 (- MS card select 4).
Are the lights correct?
Y N

008
Bad card:
A-A1Q2.

009
Bad card:
A-A1R2.

3
C D E

D E

010
- Press the System Reset key.
- Select mode E.
- Enter EE79.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1S2G07 (- MS card select 3).
Are the lights correct?
Y N

011
Bad card:
A-A1Q2.

012
Bad card:
A-A1S2.

013
- Press the System Reset key.
- Select mode E.
- Enter EE79.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1T2G07 (- MS card select 2).
Are the lights correct?
Y N

3 3
F G

014
Bad card:
A-A1Q2.

015
Bad card:
A-A1T2.

016
- Press the System Reset key.
- Select mode E.
- Enter EE79.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1U2G07 (- MS card select 1).

Are the lights correct?

Y N

017
Bad card:
A-A1Q2.

018
Bad card:
A-A1U2.

019
Bad card:
A-A1Q2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	A

001
(Entry Point A)

MAP DESCRIPTION:
In TU T2061, the MSP cannot cause a single bit storage error on one or more of the main storage cards. Either a bad MSP data flow card (A-A1Q2) or any main storage card can cause this.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1Q2 and configured main storage cards (A-A1R2, A-A1S2, A-A1T2, A-A1U2)

Is the display = dxxx?
Y N

002
Go To Map 1100, Entry Point A.

003

- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE61.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1U2P13 (- disable ECC).

Are the lights correct?

Y N

004
Bad card:
A-A1Q2.

005

- Jumper A1-A1U2P09 (- MS single bit error) to A1-A1U2P08.
- Enter 0020.
- Use the Main Stg Sel key to select control storage (the Main Stg Sel light off indicates control storage is selected).
- Press the Adr Cmp Stop CSP key (the Adr Cmp Stop CSP light appears; a CSP Stop should occur).
- Wait until the CSP Run light is off before continuing.
- Press the Adr Cmp Stop CSP key (the Adr Cmp Stop CSP light disappears; the stop function is deactivated).
- Select mode 1.
- Enter 0007.
- Press the Display Output key.

Is one of the following values on the display: x1xx, x3xx, x5xx, or x7xx ?

Y N

3 3
B C

- Ground the (- MS single bit error) single bit error) signal and run TU T2061 to see if the SBME can be sensed by the MSP data flow card. To do this, insert diskette DIAG21/41. Put the keylock switch in the Service position. Select mode E.
- Enter EE61.
- Press the Load key.
- Wait until the System In Use light is on before proceeding. Perform an address compare stop CSP (control storage) at address 0020. See the general MIM (01-252).
- Display CSP local storage register 0007. See the general MIM (01-225).

If bit 7 of WR 7 (high) is not set, then the MSP data flow card is bad. If bit 7 of WR 7 (high) is set, then determine from bits 4-7 of WR 7 (low) which main storage card is bad.

006
Bad card:
A-A1Q2.
- Remove the jumper.

007
- Remove the jumper.
- Press the System Reset key.
- Select mode 0.
- Enter EE61.
- Press the CSP Start key.
- Enter 0020.
- Use the Main Stg Sel key to select control storage (the Main Stg Sel light off indicates control storage is selected).
- Press the Adr Cmp Stop CSP key (the Adr Cmp Stop CSP light appears; a CSP Stop should occur).
- Wait until the CSP Run light is off before continuing.
- Press the Adr Cmp Stop CSP key (the Adr Cmp Stop CSP light disappears; the stop function is deactivated).
- Select mode 1.
- Enter 0007.
- Press the Display Output key.

Is the value in the display xxx1?
Y N

008
Is the value in the display xxx2?
Y N

009
Is the value in the display xxx4?
Y N

010
Bad card:
A-A1R2.

011
Bad card:
A-A1S2.

D E

D E

012
Bad card:
A-A1T2.

013
Bad card:
A-A1U2.

MS Multiple Bit Error MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	A

001
(Entry Point A)

MAP DESCRIPTION:
In TU T2061, the MSP cannot cause a multiple bit storage error on one or more of the main storage cards. This can be caused by either a bad MSP data flow card (A-A1Q2) or any main storage card.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1Q2 and configured main storage cards (A-A1R2, A-A1S2, A-A1T2, A-A1U2).

Is the display = dxxx?
Y N

002
Go To Map 1100, Entry Point A.

003

- Select mode 1.
- Enter 0007.
- Press the Display Output key.
- See table 1.

Table 1

Control Panel Display	Page	Step Number	Entry Point
xxx1	3	006	B
xxx2	4	009	C
xxx4	5	012	D
xxx8	6	015	E

Is the value on the display also in table 1?

Y N

004

Bad card:
A-A1Q2.

005

Go to the entry point of this MAP indicated in table 1.

006

(Entry Point B)

- Jumper A1-A1U2P10 (- MS multiple bit error) to A1-A1U2P08 (ground).
- Press the System Reset key.
- Select mode 0.
- Press the Load key.
- Wait five minutes or until the Processor Check light is on before continuing.

Is dx79 or dx97 on the display?

Y N

007

Bad card:
A-A1Q2.
- Remove the jumper.

008

Bad card:
A-A1U2.
- Remove the jumper.
- Ground the (- MS multiple bit) error signal and IPL.

If the system processor checks because of multiple bit errors in routines 2079, 207A and 207B, the main storage card is bad. If not, then the MSP data flow card is bad.

009

(Entry Point C)

- Jumper A1-A1U2P10 (- MS multiple bit error) to A1-A1U2P08 (ground).
- Press the System Reset key.
- Select mode 0.
- Press the Load key.
- Wait five minutes or until the Processor Check light is on before continuing.

Is dx79 or dx97 on the display?

Y N

010

Bad card:
A-A1Q2.
- Remove the jumper.

011

Bad card:
A-A1T2.
- Remove the jumper.

- Ground the (- MS multiple bit) error signal and IPL.

If the system processor checks because of multiple bit errors in routines 2079, 207A and 207B, the main storage card is bad. If not, then the MSP data flow card is bad.

012
(Entry Point D)
- Jumper A1-A1U2P10 (- MS multiple bit error) to A1-A1U2P08 (ground).
- Press the System Reset key.
- Select mode 0.
- Press the Load key.
- Wait five minutes or until the Processor Check light is on before continuing.

Is dx79 or dx97 on the display?

Y **N**

013
Bad card:
A-A1Q2.
- Remove the jumper.

014
Bad card:
A-A1S2.
- Remove the jumper.

- Ground the (- MS multiple bit) error signal and IPL.

If the system processor checks because of multiple bit errors in routines 2079, 207A and 207B, the main storage card is bad. If not, then the MSP data flow card is bad.

015

(Entry Point E)

- Jumper A1-A1U2P10 (- MS multiple bit error) to A1-A1U2P08 (ground).
- Press the System Reset key.
- Select mode 0.
- Press the Load key.
- Wait five minutes or until the Processor Check light is on before continuing.

Is dx79 or dx97 on the display?

Y N

016

Bad card:
A-A1Q2.
- Remove the jumper.

017

Bad card:
A-A1R2.
- Remove the jumper.

- Ground the (- MS multiple bit) error signal and IPL.

If the system processor checks because of multiple bit errors in routines 2079, 207A and 207B, the main storage card is bad. If not, then the MSP data flow card is bad.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	A

001
(Entry Point A)

MAP DESCRIPTION:
A main storage write and read test failed because of a main storage time out check. This can be caused by card A-A1Q2 or any bad main storage card. This MAP tests (- MS clock enable) and (- MS card select 1) signal to determine if it is a bad A-A1Q2 card or a main storage card.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1Q2, U2

Is the display = dxxx?
Y N

002
Go To Map 1100, Entry Point A.

003

- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE63.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1U2G07 (- MS card select 1).

Are the lights correct?

Y N

004
Bad card:
A-A1Q2

005

- Probe the following:

```
Up   Light: Ignore
Down Light: On or flashing
```

A-A1Q2S08 (- MS clock enable).

Are the lights correct?

Y N

006
Bad card:
A-A1U2.

007
Bad card:
A-A1Q2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	1179	A

001
(Entry Point A)

MAP DESCRIPTION:
A main storage write and read test (T2068) failed. The main storage access time to do a storage write or read is too long. This can be caused by A-A1Q2 or any bad main storage card. This MAP tests the (- MS card select 1) signal to determine if it is a bad A-A1Q2 card or go to MAP 1179 to determine which 128 Kb main storage card is bad.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1Q2

Is there a card in A-A1T2?
Y N

002
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE63.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

(Step 002 continues)

(Step 002 continued)

A-A1Q2G07 (- MS card select 1).

Are the lights correct?

Y N

003
Bad card:
A-A1Q2.

004
Bad card:
A-A1U2
---or---
A-A1Q2.

005
Go To Map 1179, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	A

001
(Entry Point A)

MAP DESCRIPTION:
In TU T2094, the MSP cannot cause a storage parity check. This can be caused by cards A-A1Q2 or any bad main storage card. It has been determined that a (- MS parity error) has caused the problem. This MAP tests (- MS parity error) signal to determine if it is a bad A-A1Q2 card or a main storage card.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1Q2, U2

Is the display = dxxx?
Y N

002
Go To Map 1100, Entry Point A.

003

- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE94.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: Ignore
Down Light: On or flashing
```

A-A1Q2S02 (- MS parity error).

Are the lights correct?

Y N

004
Bad card:
A-A1U2.

005
Bad card:
A-A1Q2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE79.
- Insert diskette DIAG21/41.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1U2J10 (- MS Read/+ Write)
A-A1U2J02 (- MS byte select high)
A-A1U2J07 (- MS byte select low).

Are the lights correct?
Y N

002
Bad card:
A-A1Q2.

MAP DESCRIPTION:
There is a Read/Write problem. This can be caused by cards A-A1Q2 or A-A1U2. This MAP determines whether the A-A1Q2 or A-A1U2 card is bad.

START CONDITIONS:
None

FRUs PARTIALLY TESTED:
A-A1Q2, U2

003
- Probe the following:

```
Up   Light: On
Down Light: On
```

A-A1Q2Y07 (- MS address bit 23).
Are the lights correct?
Y N

004
Bad card:
A-A1Q2.

005
Bad card:
A-A1U2
---or---
A-A1Q2.

Write and Read Main Storage MAP 4

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ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1146	A	1	001

001

MAP DESCRIPTION:
A main storage write and read test failed. This can be caused by card A-A1P2, A-A1Q2 or any bad main storage card. This map determines which card is bad. The card A-A1U2 location is used as a card test location. The main storage cards are inserted into this location one at a time and tested. If it is determined that every main storage card is good, then cards A-A1P2 and A-A1Q2 are bad.

(Entry Point A)

START CONDITIONS:
none

FRUs PARTIALLY TESTED:
A-A1P2, A-A1Q2 and configured main storage cards (A-A1R2 (256Kb), A-A1S2 (256Kb), A-A1T2 (128 or 256Kb), A-A1U2 (128 or 256Kb)

Is there a card in A-A1R2?
Y N

002
Is there a card in A-A1S2?
Y N

5 3 2
A B C

003

This system is configured for 256, 384 or 512 Kb of main storage.
- Select mode 6.
- Press the Power key (power off).
- Label the A-A1T2 card 'T2' and the A-A1U2 card 'U2'.
- Remove the following card:
  A-A1T2.

- Press the Power key (power on).
- Select mode E.
- Insert diskette DIAG21.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

One of the storage cards or the MSP is bad. Test each storage card, one at a time, using the A-A1U2 location. If no cards or all cards fail, then the MSP is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of each test.

004
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

005
- Reinstall all cards to their original locations.

Bad card:
A-A1P2
---or---
A-A1Q2.

The 2 main store cards that were just tested could both be bad.

006
Bad card:
labeled 'T2'.

007
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?
Y N

008
Bad card:
labeled 'U2'.

009
Bad card:
A-A1P2
---or---
A-A1Q2.
- Reinstall all cards to their original locations.

The 2 main store cards that were just tested could both be bad.

010
This system is configured for 768 Kb of main storage
- Select mode 6.
- Press the Power key (power off).
- Label the A-A1S2 card 'S2', the A-A1T2 card 'T2', and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2
  A-A1S2.
- Press the Power key (power on).
- Select mode E.
- Insert diskette DIAG21.
- Enter E901.
- Press the Load key.

(Step 010 continues)

One of the storage cards or the MSP is bad. Test each storage card, one at a time, using the A-A1U2 location. If no cards or all cards fail, then the MSP is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of each test.

(Step 010 continued)
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y **N**

011
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y **N**

012
- Select mode 6.
- Press the Power key (power off).
- Reinstall the S2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y **N**

013
Bad card:
A-A1P2
---or---
A-A1Q2.
- Reinstall all cards to their original locations.

The 2 main store cards that were just tested could both be bad.

014
Bad card:
labeled 'S2'.

015
Bad card:
labeled 'T2'.

016
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?
Y N

017
Bad card:
labeled 'U2'.

018
Bad card:
A-A1P2
---or---
A-A1Q2.
- Reinstall all cards to their original locations.

The 2 main store cards that were just tested could both be bad.

019
This system is configured for 1 Mb of main storage
- Select mode 6.
- Press the Power key (power off).
- Label the A-A1R2 card 'R2', the A-A1S2 card 'S2', the A-A1T2 card 'T2', and the A-A1U2 card 'U2'.
- Remove the following cards:
  A-A1T2
  A-A1S2
  A-A1R2.
- Press the Power key (power on).
- Select mode E.
- Insert diskette DIAG21.
- Enter E901.

(Step 019 continues)

One of the storage cards or the MSP is bad. Test each storage card, one at a time, using the A-A1U2 location. If no cards or all cards fail, then the MSP is bad. If any storage card fails and another storage card does not, the failing storage card is bad. Be sure to keep track of each card and whether it has been tested or not and the results of each test.

(Step 019 continued)
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y **N**

020
- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y **N**

021
- Select mode 6.
- Press the Power key (power off).
- Reinstall the S2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y **N**

8 7 7 7
H J K L

022

- Select mode 6.
- Press the Power key (power off).
- Reinstall the R2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y N

023

Bad card:
A-A1P2
---or---
A-A1Q2.

- Reinstall all cards to their original locations.

The 2 main store cards that were just tested could both be bad.

024

Bad card:
labeled 'R2'.

025

Bad card:
labeled 'S2'.

026

Bad card:
labeled 'T2'.

027

- Select mode 6.
- Press the Power key (power off).
- Reinstall the T2 card which has not yet been tested into location A1U2.
- Press the Power key (power on).
- Select mode E.
- Enter E901.
- Press the Load key.
- Wait until the Load light, MSP Run light and the CSP Run light are off.

Is the Processor Check light on?

Y **N**

028
Bad card:
labeled 'U2'.

029
Bad card:
A-A1P2
---or---
A-A1Q2.

The 2 main store cards that were just tested could both be bad.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1177	A	1	001
1178	A	1	001
1179	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1182	A

001
(Entry Point A)
- Insert diskette DIAG21.
- Select mode E.
- Enter EEA5.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Enter 0020.
- If the Main Stg Sel light is on, switch it off by pressing the Main Stg Sel key.
- Press the Adr Cmp Stop CSP key (the Adr Cmp Stop CSP light appears; a CSP Stop should occur).
- Wait until the CSP Run light is off before continuing.
- Press the Adr Cmp Stop CSP key (the Adr Cmp Stop CSP light disappears; the stop function is deactivated).
- Display LSR 07.
- Select mode 1.
- Enter 0007.
- Press the Display Output key.

Is the Display 0000, 02xx, 04xx, 08xx, 10xx, 11xx, 18xx, 24xx or 44xx?

Y N

002
Go To Map 1182, Entry Point A.

003
Bad card:
A-A1Q2

MAP DESCRIPTION:
Main storage writes or reads failed. Main storage has been verified.
What check occurs during a main storage write or read may indicate which main storage processor card is bad.

START CONDITIONS:
Power on.

FRUs PARTIALLY TESTED:
A-A1Q2

ENTRY POINTS			
FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001
1146	A	1	001

(Entry Point A)

MAP DESCRIPTION:
TU 2020 failed. This can be caused by cards A-A1P2, A-A1Q2 or any bad main storage card. This MAP determines if a storage card is bad. The main storage and control storage cards are swapped and the CSIPL first and second loads are then run. If these loads are completed correctly, then either the A-A1P2 or A-A1Q2 card is bad. If these loads are not ok, then the main storage card swapped into the A-A1N2 location is bad.
START CONDITIONS:
None.
FRUs PARTIALLY TESTED:
A-A1P2 and configured main storage cards (A-A1T2 (128 or 256 Kb), U2 (128 or 256 Kb))

- For information concerning the jumper confiquration on the A-A1N2 card and for information concerning control storage and main storage card swapping, see the Processing Unit and Channel MIM (10-310).

This MAP uses swapping between card locations as a diagnostic tool.
- Select mode 6.
- Press the Power key (power off).
- Go to the Processing Unit and Channel MIM (10-310).

Bad card:
A-A1P2
---or---
A-A1Q2.

- Verify that the system can be loaded using the CSIPL load option FA02 and the DIAG21/41 diskette.
- See the general MIM (01-410).

After the CSIPL, the CSP Run light, Load light and Processor Check light will be off and FA02 will appear on the display if there is no error.

If the display shows E255 and the processor check light is on then the jumpers on the CSP data flow card (A-A1M2) are wrong.
- See the Processing Unit and Channel MIM (10-310).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	A

001
(Entry Point A)

MAP DESCRIPTION:
In TU T2089, it was determined that (- read buffer) is always down. This can be caused by cards A-A1Q2 or A-A1U2. This MAP tests the read buffer signal to determine if it is a bad A-A1Q2 card or A-A1U2 card.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1Q2, U2

Is the display = dxxx?
Y N

002
Go To Map 1100, Entry Point A.

003
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE89.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

(Step 003 continues)

(Step 003 continued)

A-A1U2M04 (- read buffer).

Are the lights correct?

Y N

004
Bad card:
A-A1Q2.

005
Bad card:
A-A1U2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	1177	A

001
(Entry Point A)

MAP DESCRIPTION:
A main storage write and read test (T2068) failed. The main storage access time to do a storage write or read is too long. This can be caused by cards A-A1Q2 or any bad main storage card. This MAP tests the (- MS card select 1) signal to determine if it is a bad A-A1Q2 card or go to MAP 1177 to determine which 256 Kb main storage card is bad.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1Q2

Is there a card in A-A1T2?
Y N

002
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE63.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

(Step 002 continues)

(Step 002 continued)

A-A1Q2G07 (- MS card select 1).

Are the lights correct?

Y N

003
Bad card:
A-A1Q2.

004
Bad card:
A-A1U2
---or---
A-A1Q2.

005
Go To Map 1177, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	A
2	004	1178	A

001
(Entry Point A)

MAP DESCRIPTION:
A main storage write and read test (T2068) failed. The main storage access time to do a storage write or read is too long. This can be caused by cards A-A1Q2 or any bad main storage card. This MAP tests (- MS clock enable) signal to determine if it is a bad A-A1Q2 card or go to MAP 1178 to determine whether the 128 Kb or 256 Kb main storage card is bad.

START CONDITIONS:
The starting conditions are set up by a CSIPL that causes a system reference code of dxxx to be displayed. If there is no dxxx system reference code in the display, go to MAP 1100.

FRUs PARTIALLY TESTED:
A-A1Q2

Is the display = dxxx?
Y N

002
Go To Map 1100, Entry Point A.

003

- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter EE63.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

```
Up   Light: On or flashing
Down Light: On or flashing
```

A-A1Q2S08 (- MS clock enable).

Are the lights correct?

Y N

004

Go To Map 1178, Entry Point A.

005

Bad card:
A-A1Q2.

MS Multiple Bit Error MAP 2

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1U2 card.
- Press the Power key (power on).
- Select mode E.
- Enter EEA5.
- Insert diskette DIAG21/41.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Enter 0020.
- If the Main Stg Sel light is on, switch if off by pressing the Main Stg Sel key.
- Press the Adr Cmp Stop CSP key (the Adr Cmp Stop CSP light appears; a CSP Stop should occur).
- Wait until the CSP run light is off before continuing.
- Press the Adr Cmp Stop CSP key (the Adr Cmp Stop CSP light disappears; the stop function is deactivated).
- Select mode 1.
- Enter 0007.
- Press the Display Output key.

Is the display x2xx, x3xx, x6xx, x7xx, xAxx, xbxx, xExx, xFxx?
Y N

002
Bad card:
A-A1U2.

MAP DESCRIPTION:
TU 20A3 failed. A (- MS multiple bit error) is causing the problem. This can be caused by cards A-A1Q2 or a bad main storage card. This MAP determines if it is a bad A-A1Q2 card or a bad A-A1U2 card.

START CONDITIONS:
None

FRUs PARTIALLY TESTED:
A-A1Q2, U2

003
Bad card:
A-A1Q2.

MS Address MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Enter 0007.
- Press the Display Output key.

The low byte in the display is the value of the failing address line.
- See table.
- Select mode E.
- Enter EEA9.
- Insert diskette DIAG21/41.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the failing address line as found in table 1.

Up Light: On or flashing
Down Light: On or flashing

(Step 001 continues)

MAP DESCRIPTION:
It has been determined that there is an address problem. TU 20A9 determines which address bit is stuck. The problem could be caused by the A-A1Q2 card or the A-A1U2 card. This MAP determines which card is bad.

START CONDITIONS:
None

FRUs PARTIALLY TESTED:
A-A1Q2, U2

Table 1

Displayed Value	Address Bit	Failing Address Line
xx06	6	A-A1U2S04
xx07	7	A-A1U2J11
xx08	8	A-A1U2J12
xx09	9	A-A1U2G04
xx0A	10	A-A1U2J05
xx0b	11	A-A1U2D02
xx0C	12	A-A1U2B03
xx0d	13	A-A1U2D05
xx0E	14	A-A1U2D07
xx0F	15	A-A1U2B07
xx10	16	A-A1U2D09
xx11	17	A-A1U2D10
xx12	18	A-A1U2D11
xx13	19	A-A1U2D12
xx14	20	A-A1U2B13

(Step 001 continues)

(Step 001 continued)

Are the lights correct?

Y N

002
Bad card:
A-A1Q2.

003
Bad card:
A-A1U2.

(Step 001 continued)

xx15	21	A-A1U2B04
xx16	22	A-A1U2G03

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001

001
(Entry Point A)
- Select mode 1.
- Enter 0006.
- Press the Display Output key.

The two-byte value in the display represents the failing data line according to bit position.
- See table 1.
- Select mode E.
- Enter EEA8.
- Insert diskette DIAG21/41.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the failing data bit as found in table 1.

```
Up   Light: On or flashing
Down Light: On or flashing
```

(Step 001 continues)

MAP DESCRIPTION:
TU 20A8 failed. It has been determined that a single data line is causing the problem. This could be caused by the A-A1Q2 card or the A-A1U2 card. This MAP determines which card is bad.

START CONDITIONS:
None

FRUs PARTIALLY TESTED:
A-A1Q2, U2

Table 1

Displayed Hex Value	Data Bit	Failing Data Line
8000	0	A-A1U2J13
4000	1	A-A1U2G12
2000	2	A-A1U2G10
1000	3	A-A1U2G09
0800	4	A-A1U2G08
0400	5	A-A1U2J06
0200	6	A-A1U2G05
0100	7	A-A1U2J04
0080	8	A-A1U2D13
0040	9	A-A1U2B12
0020	10	A-A1U2B10
0010	11	A-A1U2B09
0008	12	A-A1U2B08
0004	13	A-A1U2D06
0002	14	A-A1U2B05
0001	15	A-A1U2D04

(Step 001 continued)
Are the lights correct?

Y **N**

002

- Continue probing the same line (as found table 1).

Up Light: On or Flashing
Down Light: Off

Table 1

Displayed Hex Value	Data Bit	Failing Data Line
8000	0	A-A1U2J13
4000	1	A-A1U2G12
2000	2	A-A1U2G10
1000	3	A-A1U2G09
0800	4	A-A1U2G08
0400	5	A-A1U2J06
0200	6	A-A1U2G05
0100	7	A-A1U2J04
0080	8	A-A1U2D13
0040	9	A-A1U2B12
0020	10	A-A1U2B10
0010	11	A-A1U2B09
0008	12	A-A1U2B08
0004	13	A-A1U2D06
0002	14	A-A1U2B05
0001	15	A-A1U2D04

Are the lights correct?

Y **N**

003

- Select mode 6.
- Press the Power key (power off).
- Remove the following card:
  A-A1U2.
- Press the Power key (power on).
- Continue probing the same line (as found table 1).

Up Light: On
Down Light: Off

Are the lights correct?

Y **N**

3A 3B 3C 3D

004
Bad card:
A-A1Q2.

005
Bad card:
A-A1U2.

006
Bad card:
A-A1Q2.

007
Bad card:
A-A1U2.

5360 MAPS

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