EC 826380		PN 2597100
27MAY83		

MSP Entry IPL MAP

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	А	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

MAP 1100-1

EXIT POINTS

EXIT THIS MAP		то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	0101	A
2	007	0101	Α
2	009	0101	С
1	002	1170	Α

001

Is there a card in A1Q2 ?

ΥN

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

© Copyright IBM Corp. 1983

30Jun86 PN 4177348 EC 842375 PEC 826487A MAP 1100-1

MSP Entry IPL MAP

5360 Systems Unit

PAGE 2 OF 2

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

ΥN

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 MAP 1100-2

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.

CSP Timeout MAP

5360 Systems Unit

PAGE 1 OF 3

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?
```

```
ΥN
```

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.

© Copyright IBM Corp. 1983

15Feb84 PN 2596196

EC 826487 PEC -----MAP 1102-1

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

```
A B
1 1
```

CSP Timeout MAP

5360 Systems Unit

PAGE 2 OF 3

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?

YN

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?

YN

007 Bad card: A-A1P2.

008

Bad card: A-A1Q2.

- Select mode 6. - Press the Power key (power off). - Remove the A-A102 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?

Ν γ 010

С

ÖO9

Bad card: A-A1P2.

011

N

3 3 D E

- 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?

> 15Feb84 PN 2596196 EC 826487 PEC -----MAP 1102-2

С

```
D E
2 2
              CSP Timeout MAP
              5360 Systems Unit
              PAGE 3 OF 3
  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.

> 15Feb84 PN 2596196 EC 826487 PEC -----MAP 1102-3

External System Bus MAP

5360 Systems Unit

PAGE 1 OF 2

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		
l 8005	A-A1Q2P12		
8009	A-A1Q2M10		
8011	A-A1Q2M12		
8021	A-A1Q2M13		
8041	A-A1Q2P09		
8081	A-A1Q2P10		

Are the lights correct?

© Copyright IBM Corp. 1983

2 2 A B

ΥN

```
A B
1 1
               External System Bus MAP
                                                     C D
                                                                                        MAP 1103-2
               5360 Systems Unit
               PAGE 2 OF 2
  002
                                                        008
  - Probe the signal which was probed before.
                                                        - Select mode 1.
                                                        - Probe the following:
     Up
           Light: On
     Down Light: Off
                                                          Up
                                                                 Light: Off
                                                          Down Light: Off
  Are the lights correct?
  YN
                                                         A-A102S11 (- sns/load MSP regs).
                                                        Are the lights correct?
     003
                                                        Y N
     - Select mode 6.
     - Press the Power key (power off).
                                                          009
     - Remove Q2 card.
                                                          Bad card:
     - Press the Power key (power on).
                                                          A-A1N2.
     - Probe the signal which was probed before.
                                                        010
     Up Light: On
                                                        Bad card:
     Down Light: Ignore
                                                        A-A1Q2.
     Are the lights correct?
                                                     011
     YN
                                                     - Select mode 1.
                                                     - Probe the following:
       004
       Bad card:
                                                        Up
                                                              Light: On
       A-A1N2.
                                                        Down Light: Off
     005
                                                      A-A1N2M04 (- read buffer gated).
     Bad card:
                                                     Are the lights correct?
     A-A1Q2.
                                                      ΥN
  006
                                                        012
  Bad card:
                                                        - Use the procedure 10-305 to find the bad card.
  A-A1N2.
                                                     013
007
                                                     Bad card:
- Probe the following:
                                                     A-A1Q2
                                                     ---or---
  Up
        Light: On
                                                     A-A1P2.
  Down Light: On
 A-A1Q2S11 (- sns/load MSP regs).
Are the lights correct?
  N
                                                                           15Feb84
                                                                                       PN 2596200
                                                                           EC 826487
                                                                                       PEC -----
C D
                                                                                       MAP 1103-2
```

MSP CSP IPL MAP

5360 Systems Unit

PAGE 1 OF 3

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?

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

> 20Mar84 PN 4177349 EC 826487A PEC 826487

```
A B C
1 1 1
               MSP CSP IPL MAP
                                                     D
                                                                                        MAP 1104-2
               5360 Systems Unit
               PAGE 2 OF 3
     003
                                                      009
     Bad card:
                                                     - Press and hold the System Reset key.
     A-A1N2
                                                     - While holding the System Reset key, probe the
     ---or---
                                                       following:
     A-A1M2.
                                                        Up
                                                            Light: On
  004
                                                        Down Light: On
  Bad card:
  A-A1P2.
                                                       A-A1P2Y26 (+ gate control clocks).
                                                     Are the lights correct?
005
                                                      Y N
- Probe the following:
                                                        010
  Up
        Light: Ignore
                                                        Bad card:
  Down Light: Off
                                                        A-A1Q2.
 A-A1Q2U06 (- storage function from CSP (S2)).
                                                     011
Are the lights correct?
                                                     - Press and hold the System Reset key.
Y N
                                                     - While holding the System Reset key, probe the
                                                       following:
  006
  Bad card:
                                                        Up
                                                            Light: Off
  A-A1N2
                                                        Down Light: On
  A-A1M2.
                                                       A-A102Y10 (- system reset latched).
007
                                                     Are the lights correct?
- Probe the following:
                                                      ΥN
  Up
        Light: Ignore
                                                        012
  Down Light: On
                                                        Bad card:
                                                        A-A1Q2.
 A-A1P2Y26 (+ gate control clocks).
Are the lights correct?
                                                     013
ΥN
                                                     - Release the System Reset key.
                                                     - Probe the following:
  008
  Bad card:
                                                        Up
                                                              Light: Off
  A-A1Q2.
                                                        Down Light: On
                                                       A-A1P2Y26 (+ gate control clocks).
                                                     Are the lights correct?
                                                      ΥN
                                                                           20Mar84
                                                                                        PN 4177349
                                                                           EC 826487A PEC 826487
                                                     3 3
E F
D
                                                                                        MAP 1104-2
```

```
E F
2 2
               MSP CSP IPL MAP
               5360 Systems Unit
               PAGE 3 OF 3
  014
  Bad card:
  A-A1Q2
  ---or---
  A-A1P2.
015
- Probe the following:
         Light: On
  Up
  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?
ΥN
  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.

> 20Mar84 PN 4177349 EC 826487A PEC 826487

MAP 1104-3

MSP Unexpected Error MAP

5360 Systems Unit

PAGE 1 OF 3

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?

ΥN

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?
```

Ν

2 2 2 A B C

003 Was system reference code dCxx? Y N

004 Bad card: A-A1N2.

© Copyright IBM Corp. 1983

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

20Mar84 PN 4177350 EC 826487A PEC 826487 MAP 1105-1

```
A B C
1 1 1
               Unexpected Error
                                                      D
                                                                                        MAP 1105-2
               5360 Systems Unit
               PAGE 2 OF 3
     005
                                                      013
     Bad card:
                                                      - Press and hold the System Reset key.
     A-A1M2.
                                                      - While holding the System Reset key, probe the
                                                       following:
  006
  Bad card:
                                                        Up
                                                              Light: On
  A-A1P2.
                                                        Down Light: On
007
                                                       A-A1P2Y26 (+ gate control clocks).
- Probe the following:
                                                      Are the lights correct?
                                                      ΥN
  Up
        Light: Ignore
  Down Light: Off
                                                        014
                                                        Bad card:
 A-A102U06 (- storage function from CSP (S2)).
                                                        A-A1Q2.
Are the lights correct?
YN
                                                      015
                                                      - Press and hold the System Reset key.
  800
                                                      - While holding the System Reset key, probe the
  Was system reference code dCxx?
                                                       following:
   Y N
                                                        Up
                                                              Light: Off
     009
                                                        Down Light: On
     Bad card:
     A-A1N2.
                                                       A-A1Q2Y10 (- system reset latched).
                                                      Are the lights correct?
  010
                                                      Y N
  Bad card:
  A-A1M2.
                                                        016
                                                        Bad card:
011
                                                        A-A1Q2.
- Probe the following:
                                                      017
  Up
         Light: Ignore
                                                      - Release the System Reset key.
  Down Light: On
                                                      - Probe the following:
 A-A1P2Y26 (+ gate control clocks),
                                                        Up
                                                               Light: Off
Are the lights correct?
                                                        Down Light: On
Y N
                                                       A-A1P2Y26 (+ gate control clocks).
  012
                                                      Are the lights correct?
  Bad card:
                                                        N
  A-A1Q2.
                                                                           20Mar84
                                                                                        PN 4177350
                                                                           EC 826487A PEC 826487
                                                        3
D
                                                                                        MAP 1105-2
```

```
E F
2 2
               Unexpected Error
               5360 Systems Unit
               PAGE 3 OF 3
  018
  Bad card:
  A-A1Q2
  ---or---
  A-A1P2.
019
- Probe the following:
        Light: On
  Up
  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?
ΥN
  020
  Bad card:
  A-A1P2
  ---or---
  A-A1Q2.
021
Bad card:
A-A1Q2
---or---
A-A1P2
---or---
A-A1N2
---or---
A-A1M2.
```

20Mar84 PN 4177350 EC 826487A PEC 826487 MAP 1105-3

MSP Load Register Time Out MAP

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)

- 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?

```
YN
  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?
  ΥN
    003
    Was system reference code dCxx?
       M
              © Copyright IBM Corp. 1983
2 2 2 2 2
A B C D
```

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

> 20Mar84 PN 4177351 EC 826487A PEC 826487 MAP 1106-1



MAP 1106-2

MAP 1106-2

MSP Time Out MAP

5360 Systems Unit

PAGE 3 OF 6

009

G 2

```
- 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.

20Mar84 PN 4177351 EC 826487A PEC 826487 MAP 1106-3

MSP Time Out MAP 5360 Systems Unit PAGE 4 OF 6 **Ö14**

- 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?

ΥN

F 2

015 Bad card: A-A1Q2.

016

- Probe the following:

Light: Off Up Down Light: On

A-A1P2X33 (- allow alt req).

Are the lights correct? ΥN

017 Bad card: A-A1P2.

018

5 H

```
- Probe the following:
```

Light: Ignore Up Down Light: On

```
A-A1P2Z26 (- alt mode reg).
Are the lights correct?
Y N
  019
  Bad card:
  A-A1Q2.
```

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

> 20Mar84 PN 4177351 EC 826487A PEC 826487 MAP 1106-4

```
E H
2 4
              MSP Time Out MAP
                                                                                     MAP 1106-5
              5360 Systems Unit
              PAGE 5 OF 6
  020
  Bad card:
  A-A102
  ---or---
  A-A1P2.
021
- Probe the following:
                                                    If the MSP fails to stop for CSP access, a time out
                                                    occurs.
  Up
        Light: Off
  Down Light: On
 A-A1P2Z25 (- MSP clk stop/sel proc mode 1).
Are the lights correct?
YN
  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:
           Light: Off
       Up
       Down Light: On
      A-A1Q2U10 (+ allow MSP run (S2)).
    Are the lights correct?
     ΥN
       024
       Was system reference code dCxx?
       Y N
         025
         Bad card:
         A-A1N2.
                                                                                             .
                                                                        20Mar84
                                                                                     PN 4177351
                                                                        EC 826487A PEC 826487
6666
JKLM
                                                                                     MAP 1106-5
```

MAP 1106-6

MSP MSAR Parity Check MAP 1

5360 Systems Unit

PAGE 1 OF 4

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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.

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	Signal to Probe	L Up	ight Down	
8000	A-A1Q2MO2 (+Ext System Bus Low Parity)	0n	On	
8001 	 A-A1Q2M08 A-A1Q2P02 (+Ext Bus High Parity)	 0n 0n	0n 0n	

(Step 001 continues)

04NOV85 PN 4177352 EC 842350 PEC 826487A MAP 1107-1

(Step 001 continues)

© Copyright IBM Corp. 1983

MSAR Parity MAP 1

5360 Systems Unit

PAGE 2 OF 4

(Step 001 continued)

(Step 001 cont 	inued) (Ext Bus 15) 	 	
8002	A-A1Q2M03 (+Ext Bus 14)	0n	0n
8004	A-A1Q2P13 (+Ext Bus 13)	0n	0n
8008	 A-A1Q2MO4 (+Ext Bus 12)	0n	0n
8010	 A-A1Q2M05 (+Ext Bus 11)	0n	0n
8020	A-A1Q2M06 (+Ext Bus 10)	0n	0n
8040	A-A1Q2M07 (+Ext Bus 9)	0n	0n
8080	A-A1Q2P05 (+Ext Bus 8)	0n	0n

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 V

3 3 3 A B C 04NOV85 PN 4177352 EC 842350 PEC 826487A MAP 1107-2

B C 2 **MSAR Parity MAP 1**

5360 Systems Unit

PAGE 3 OF 4

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?
  ΥN
     004
     Was system reference code dCxx?
     ΥN
       005
       Bad card:
       A-A1N2.
     006
     Bad card:
     A-A1M2.
  007
  Bad card:
  A-A1Q2.
008
Was system reference code dCxx?
ΥN
  009
  Bad card:
  A-A1N2.
010
Bad card:
A-A1M2.
```

MAP 1107-3

Ö11

A 2

- 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 continuina.
- Probe the following:

Up Light: On Down Light: On

A-A102S11 (- sns/load MSP regs). Are the lights correct? ΥN 012 - Select mode 1. - Probe the following: Light: Off Up Down Light: Off A-A1Q2S11 (- sns/load MSP regs). Are the lights correct? YN 013 Was system reference code dCxx? Y N 014 Bad card: A-A1N2. 015 Bad card: A-A1M2. 016 Bad card: A-A1Q2. 04NOV85 PN 4177352 EC 842350 PEC 826487A MAP 1107-3

4 D

```
D
3
               MSAR Parity MAP 1
              5360 Systems Unit
               PAGE 4 OF 4
017
Was system reference code dCxx?
Y N
  018
  Bad card:
  A-A102
  ---or---
  A-A1P2.
019
- Select mode 1.
- Probe the following:
        Light: On
  Up
  Down Light: Off
 A-A1N2M04 (- read buffer gated).
Are the lights correct?
YN
  020
  Use the procedure 10-305 to find the bad card.
021
Bad card:
A-A1Q2
---or---
A-A1P2.
```

MAP 1107-4

04NOV85 PN 4177352 EC 842350 PEC 826487A MAP 1107-4

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	Α	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?

002 - Probe the following:

ΥN

Up Light: Ignore Down Light: On

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

2 2 2 2 2 A B C D

003 Was system reference code dCxx? Y N

© Copyright IBM Corp. 1983

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 MAP 1108-1

20Mar84 PN 4177353 EC 826487A PEC 826487 MAP 1108-1



```
H J
2 2
               MSAR Parity MAP 2
               5360 Systems Unit
               PAGE 3 OF 4
  018
   - Probe the following:
     Up
           Light: Ignore
     Down Light: On
   A-A102S10 (- MSP check).
  Are the lights correct?
   ΥN
     019
     Was system reference code dCxx?
     ΥN
       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-A102Z02 (- LSR bus control bit 0)
 A-A1Q2Z04 (- destination control bit 2)
 A-A102Z08 (- source control bit 0)
 A-A1Q2Z09 (- source control bit 1).
Are the lights correct?
  N
4 4
K L
```

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

```
20Mar84 PN 4177353
EC 826487A PEC 826487
MAP 1108-3
```

```
K L MSAR Parity MAP 2

5360 Systems Unit

PAGE 4 OF 4

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?

ΥN

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?

ΥN

```
028
Bad card:
A-A1P2.
```

029

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

20Mar84 PN 4177353 EC 826487A PEC 826487 MAP 1108-4

MSP MSAR Parity Check MAP 3

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	,
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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

OO2

- Probe the following:

Up Light: Off

Down Light: Ignore

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

Are the lights correct?

Y N

OO3

Was system reference code dCxx?

Y N

OO3

Was system reference code dCxx?

Y N

© Copyright IBM Corp. 1983

2 2 2 2 2

A B C D
```

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

> 20Mar84 PN 4177354 EC 826487A PEC 826487 MAP 1109-1



20Mar84 PN 4177354 EC 826487A PEC 826487 MAP 1109-2

MAP 1109-2

Cause MSAR Parity Check

5360 Systems Unit

PAGE 1 OF 5

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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.

2 A

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

© Copyright IBM Corp. 1983

```
A
1
               Cause MSAR Parity Check
               5360 Systems Unit
               PAGE 2 OF 5
005
- Probe the following:
  Up
        Light: On
  Down Light: On
 A-A1Q2U11 (- MSP data available).
Are the lights correct?
Y N
  006
  - Probe the following:
    Up
           Light: On
    Down Light: On
   A-A1P2Z30 (+ s1).
  Are the lights correct?
  Y N
    007
    Bad card:
    A-A1P2.
  800
  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.
3
B
```

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

MAP 1110-2

```
В
2
               Cause MSAR Parity Check
                                                                                      MAP 1110-3
               5360 Systems Unit
               PAGE 3 OF 5
011
- Probe the following:
                                                    The MSP may not be reset or may not recognize the
                                                     CSP register access.
  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
  012
  - Probe the following:
          Light: On
    Up
    Down Light: On
   A-A1Q2S11 (- sns/load MSP regs (S2))
   A-A102U04 (- reset MSP (S2)).
  Are the lights correct?
  Y N
    013
    Was system reference code dCxx?
     ΥN
       014
       Bad card:
       A-A1N2.
    015
    Bad card:
    A-A1M2.
  016
  Bad card:
  A-A1Q2.
                                                                          20Mar84
```

20Mar84 PN 4177355 EC 826487A PEC 826487 MAP 1110-3

```
С
З
               Cause MSAR Parity Check
               5360 Systems Unit
               PAGE 4 OF 5
017
- Probe the following:
  Up
        Light: Ignore
  Down Light: On
 A-A1P2Y28 (- op reg bit 1/temp stop req).
Are the lights correct?
ΥN
  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?
ΥN
  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.
5
D
```

MAP 1110-4

```
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.
```

```
20Mar84 PN 4177355
EC 826487A PEC 826487
MAP 1110-4
```

D 4 023 Bad card: A-A1Q2. Cause MSAR Parity Check 5360 Systems Unit PAGE 5 OF 5

> 20Mar84 PN 4177355 EC 826487A PEC 826487 MAP 1110-5

MAP 1110-5

Checks During Sense MSP Registers

5360 Systems Unit

PAGE 1 OF 12

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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		Step	Entry
Display	Page	Number	Point
'	5	l	I
8000	4	008	<u>B</u>
8001	5	011	l C
8002	6	014	l D
8004	7	017	Ε
8008	8	020	l F
8010	9	023	G
8020	10	026	н
8040	11	l 029	J
8080	12	032	Ιĸ
•		-	

(Step 001 continues)

© Copyright IBM Corp. 1983

EC 826487A PEC 826487

20Mar84

MAP 1112-1

MAP 1112-1

PN 4177356
5360 Systems Unit

PAGE 2 OF 12

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

ΥN

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?
```

```
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.

5360 Systems Unit

PAGE 3 OF 12

007

A 2

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

Table 1

•			
Control			
Pane1		Step	Entry
Display	Page	Number	Point
i í			
8000	4	008	B
8001	5	011	I C
8002	6	014	D
8004	7	017	E
8008	8	020	I F
8010	9	023	G
8020	10	026	ΙН
8040	11	029	J
8080	12	032	Ιĸ
•		-	

5360 Systems Unit

PAGE 4 OF 12

800

(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?

ΥN

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.

20Mar84 PN 4177356 EC 826487A PEC 826487 MAP 1112-4

MAP 1112-4

5360 Systems Unit

PAGE 5 OF 12

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?

YN

012 Bad card: A-A1P2.

013

Bad card: A-A1Q2. MAP 1112-5

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.

5360 Systems Unit

PAGE 6 OF 12

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.

5360 Systems Unit

PAGE 7 OF 12

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?

YN

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.

5360 Systems Unit

PAGE 8 OF 12

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.

20Mar84 PN 4177356 EC 826487A PEC 826487 MAP 1112-8

MAP 1112-8

5360 Systems Unit

PAGE 9 OF 12

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?

ΥN

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.

5360 Systems Unit

PAGE 10 OF 12

026

(Entry Point H)

- Press the System Reset key.
- Select mode E.
- Enter EE71.

A-A102.

- 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: 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.

20Mar84 PN 4177356 EC 826487A PEC 826487 MAP 1112-10

MAP 1112-10

5360 Systems Unit

PAGE 11 OF 12

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?

ΥN

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.

5360 Systems Unit

PAGE 12 OF 12

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?

ΥN

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.

20Mar84 PN 4177356 EC 826487A PEC 826487 MAP 1112-12

MAP 1112-12

Sense Status Bytes 0, 2 and PSR MAP 3

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 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)).



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

© Copyright IBM Corp. 1983

```
A
1
               Status 0, 2 and PSR MAP 3
                                                                                        MAP 1114-2
               5360 Systems Unit
               PAGE 2 OF 4
005
- Probe the following:
                                                      The MSP should not execute instructions now. The
                                                      MSP clocks should start and stop only in response to
      Light: Off
  Up
                                                      the CSP register senses.
  Down Light: On
 A-A1P2Y13 (+ allow MSP run internal).
Are the lights correct?
Y N
  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?
ΥN
  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?
 YN
   010
   Bad card:
   A-A1P2.
                                                                            20Mar84
                                                                                         PN 4177357
```

```
EC 826487A PEC 826487
MAP 1114-2
```

```
B
2
               Status 0, 2 and PSR MAP 3
                                                                                          MAP 1114-3
               5360 Systems Unit
               PAGE 3 OF 4
Ö11
- Probe the following:
  Up
         Light: Off
  Down Light: On
 A-A1P2X33 (- allow alt reg).
Are the lights correct?
ΥN
  012
  Bad card:
  A-A1P2.
013
- Probe the following:
                                                       The MSP data flow card uses the MSP control lines to
                                                       select the byte of data on the x gate control, y gate
         Light: On
  Up
                                                       control, and ALU control lines and to move it to the
  Down Light: Ignore
                                                       external system bus.
 A-A1Q2Z07 (- destination control bit 1)
 A-A1Q2Z09 (- source control bit 1).
Are the lights correct?
YN
  014
  Bad card:
  A-A1P2.
015
- Probe the following:
                                                       In response to the (- allow alt req) signal, the MSP
                                                       data flow should indicate that this CSP access is a
         Light: On
                                                       read. This is the first register read.
  Up
  Down Light: On
 A-A1P2Y31 (- op reg bit 6/(- read/+write)).
Are the lights correct?
ΥN
  016
   Bad card:
   A-A1Q2.
                                                                              20Mar84
                                                                                           PN 4177357
                                                                              EC 826487A PEC 826487
4
C
                                                                                           MAP 1114-3
```

Status 0, 2 and PSR MAP 3 5360 Systems Unit PAGE 4 OF 4

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

С 3

MAP 1114-4

Sense Status Byte 2

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

ΥN

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

© Copyright IBM Corp. 1983

2 A Status Byte 2

5360 Systems Unit

PAGE 2 OF 2

003

A 1

```
- 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?

ΥN

004 Bad card: A-A1Q2.

005

Bad card: A-A1P2. MAP 1116-2

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.

15Feb84 PN 4177358 EC 826487 PEC 826380 MAP 1116-2

Sense Status Byte 0 and PSR

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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-A102X10 (- op reg bit 14/q reg bit 6). Are the lights correct?

ΥN

002 Bad card: A-A1Q2.

003

- Probe the following:

Up Light: Off Down Light: On

A-A1P2X33 (- allow alt reg). Are the lights correct?

```
VN
  2
R
```

© Copyright IBM Corp. 1983

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

15Feb84 PN 4177359 EC 826487 PEC 826380 MAP 1118-1



A-A1Q2.

MAP 1118-2

Sense Status Byte 0, 2 and PSR MAP 1

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

N

002 Bad card: A-A1Q2.

003

- Probe the following:

Up Light: On Down Light: On

A-A1Q2Y05 (- extend C2). Are the lights correct?

© Copyright IBM Corp. 1983

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

15Feb84 PN 4177360 EC 826487 PEC 826380 MAP 1120-1



---or---A-A1Q2.

MAP 1120-2

15Feb84 PN 4177360 EC 826487 PEC 826380 MAP 1120-2

Sense Status Bytes 0, 2 and PSR MAP 2

5360 Systems Unit

PAGE 1 OF 4

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	А	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?

Are the lights correct? Y N Copyright IBM Corp. 1983

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

> 20Mar84 PN 4177361 EC 826487A PEC 826487 MAP 1122-1

MAP 1122-1

```
A B
1 1
              Status 0, 2 and PSR MAP 2
                                                    CD
                                                                                     MAP 1122-2
              5360 Systems Unit
              PAGE 2 OF 4
  002
                                                      008
  - Select mode 1.
                                                      - Probe the following:
  - Probe the following:
                                                         Up
                                                               Light: Ignore
     Up Light: Off
                                                         Down Light: On
     Down Light: Off
                                                       A-A1Q2U04 (- reset MSP (S2)).
   A-A102S11 (- sns/load MSP regs (S2)).
                                                      Are the lights correct?
  Are the lights correct?
                                                       YN
  Y N
                                                         009
     003
                                                         Was system reference code dCxx?
     Was system reference code dCxx?
                                                         Y N
     ΥN
                                                           010
       004
                                                           Bad card:
       Bad card:
                                                           A-A1N2.
       A-A1N2
       ---or---
                                                         011
       A-A1Q2.
                                                         Bad card:
                                                         A-A1M2.
     005
     Bad card:
                                                      012
     A-A1M2
                                                      Bad card:
     ---or---
                                                      A-A1Q2.
     A-A1Q2.
                                                    013
  006
                                                    - Probe the following:
  Bad card:
  A-A1Q2.
                                                      Up
                                                           Light: Ignore
                                                      Down Light: On
007
- Probe the following:
                                                     A-A1P2X33 (- allow alt req).
                                                    Are the lights correct?
      Light: On
  Up
                                                    Y N
  Down Light: On
                                                      014
 A-A1Q2Y10 (- system reset latched).
                                                      Bad card:
Are the lights correct?
                                                      A-A1P2.
  N
                                                                         20Mar84
                                                                                     PN 4177361
                                                                         EC 826487A PEC 826487
                                                    3
E
C D
                                                                                     MAP 1122-2
```

E2

Status 0, 2 and PSR MAP 2

5360 Systems Unit

PAGE 3 OF 4

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?

Are the lights corre

ΥN

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?

ΥN

018 Bad card: A-A1Q2.

019

F

- 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

ΥN

4 4 G H

- Probe the following:

Up Light: On Down Light: On

A-A1P2Y25 (- main storage control bit 1). Are the lights correct?

> 20Mar84 PN 4177361 EC 826487A PEC 826487 MAP 1122-3

F

```
G H
3 3
              Status 0, 2 and PSR MAP 2
              5360 Systems Unit
              PAGE 4 OF 4
  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.

20Mar84 PN 4177361 EC 826487A PEC 826487 MAP 1122-4

MAP 1122-4

Load and Sense PSR MAP 1

5360 Systems Unit

PAGE 1 OF 2

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.

FRU⁸ PARTIALLY TESTED: A-A1M2, N2, P2, Q2

© Copyright IBM Corp. 1983

```
A
1
              PSR MAP 1
              5360 Systems Unit
               PAGE 2 OF 2
005
- Probe the following:
        Light: On
  Up
  Down Light: On
 A-A1Q2Y10 (- system reset latched).
Are the lights correct?
ΥN
  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
  800
  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	А	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?

ΥN

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

MAP 1126-1

© Copyright IBM Corp. 1983

MSP LSR Load and Sense MAP

5360 Systems Unit

PAGE 1 OF 9

ENTRY POINTS

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

001

(Entry Point A)

- Display LSR 07.
- Select mode 1.
- Enter 0007.
- Press the Display Output key.
- See table 1.

Y N

3 2 A B

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

Ta	b 1	е	1
		•	•

control panel display	Page	Step Number	entry point
8000	4	012	В
4000	5	i 017	l C
2000	6	022	l D
1000	7	027	ΙE
0800	8	032	F
0400	8	032	F
•			

Is the display value in table 1?

© Copyright IBM Corp. 1983

20Mar84 PN 4177364 EC 826487A PEC 826487 MAP 1128-1

MAP 1128-1

5360 Systems Unit

PAGE 2 OF 9

002

B 1

- 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
| |
| |
3 3
C D
```

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

> 20Mar84 PN 4177364 EC 826487A PEC 826487 MAP 1128-2

MAP 1128-2

```
A C D
1 2 2
               MSP LSR MAP
               5360 Systems Unit
               PAGE 3 OF 9
     007
     Bad card:
     A-A1Q2.
  800
  - 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?
   YN
     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		Sten	 entry
paner I		i step	
display	Page	Number	point
8000 l	4	012	B
4000	5	017	l C
2000	6	022	D
1000	7	027	ΙE
0800	8	032	l F
0400	8	032	F
	Ū	. • • • • •	• •

5360 Systems Unit

PAGE 4 OF 9

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?

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.

5360 Systems Unit

PAGE 5 OF 9

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?

ΥN

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?

YN

020 Bad card: A-A1P2.

021

Bad card: A-A1Q2. MAP 1128-5

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

5360 Systems Unit

PAGE 6 OF 9

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?

γN

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. MAP 1128-6

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

5360 Systems Unit

PAGE 7 OF 9

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?

YN

1.1

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?

ΥN

030

Bad card: A-A1P2.

031

Bad card: A-A1Q2. MAP 1128-7

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

5360 Systems Unit

PAGE 8 OF 9

032

99 EF

(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? ΥN 033

```
Was system reference code dCxx?
  ΥN
    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?
  Ν
```

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.
```
E F
8 8
               MSP LSR MAP
              5360 Systems Unit
               PAGE 9 OF 9
  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?
ΥN
  039
  Bad card:
  A-A1Q2.
040
```

- Probe the following:

Are the lights correct?

Light: On Down Light: On

A-A1P2Z27 (- source control bit 3) A-A1P2Z31 (- destination control bit 4).

Up

ΥN

042 Bad card: A-A102 ---or---A-A1P2.

041 Bad card: A-A1P2.

> 20Mar84 PN 4177364 EC 826487A PEC 826487 MAP 1128-9

-

MAP 1128-9

MSP Two Byte Sense/Load MAP

5360 Systems Unit

PAGE 1 OF 2

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?

ΥN

002 Was system reference code dCxx? Y N 003 Bad card:

A-A1N2.

004

2 A 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

```
A
1
              MSP Two Byte Sense/Load
              5360 Systems Unit
              PAGE 2 OF 2
005
- Connect - gating to A-A1Q2U11 (- MSP data
 available).
- Probe the following:
  Up
      Light: On
  Down Light: On
 A-A102Z03 (- 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.

20Mar84 PN 4177365 EC 826487A PEC 826487 MAP 1129-2

MSP Interrupt Level 5 MAP

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

(N

002 Bad card: A-A1P2.

003

Was system reference code dCxx?

ΥN

004

Bad card: A-A1N2.

005

Bad card: A-A1M2.

© Copyright IBM Corp. 1983

MAP 1130-1

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

20Mar84 PN 4177366 EC 826487A PEC 826487 MAP 1130-1

MSP CCR MAP

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

ΥN

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

15Feb84 PN 4177367 EC 826487 PEC 826380 MAP 1131-1

MSP PMR and CMR Load and Sense

5360 Systems Unit

PAGE 1 OF 2

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?

ΥN

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 | | | 2 A B

© Copyright IBM Corp. 1983

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-A102 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

15Feb84 PN 4177368 EC 826487 PEC 826380 MAP 1132-1

A B PMR and CMR 1 1

5360 Systems Unit

PAGE 2 OF 2

004

Bad card: A-A1P2.

005

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

15Feb84 PN 4177368 EC 826487 PEC 826380 MAP 1132-2

MSP Control Parity MAP

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

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

001

(Entry Point A)

- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter FE60.
- Insert diskette DIAG21.
- Press the Load key.
- Wait until the System In Use light is on or flashing before continuing.
- Probe the following:

Light: On Up 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 R

© Copyright IBM Corp. 1983

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

> 20Mar84 PN 4177369 EC 826487A PEC 826487

MAP 1133-1

MAP 1133-1

```
A B
1 1
              MSP Control Parity MAP
              5360 Systems Unit
              PAGE 2 OF 2
  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:

Light: On Up Down Light: On

A-A1Q2Y04 (- op reg bit 2/checks detected). Are the lights correct? ΥN 800

Bad card: A-A1Q2.

009

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

MAP 1133-2

20Mar84 PN 4177369 EC 826487A PEC 826487 MAP 1133-2

Invalid Address Check

5360 Systems Unit

PAGE 1 OF 3

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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)).

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

Are the lights correct?

Ν

© Copyright IBM Corp. 1983

20Mar84 PN 4177370 EC 826487A PEC 826487 MAP 1134-1

MAP 1134-1

MSP Interrupt 5 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 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.

© Copyright IBM Corp. 1983

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

20Mar84 PN 4177371 EC 826487A PEC 826487 MAP 1135-1

MSP Time Out MAP

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

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

001

(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?

у N | | © С 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

© Copyright IBM Corp. 1983

20Mar84 PN 4177373 EC 826487A PEC 826487 MAP 1137-1

MAP 1137-1

```
A B
1 1
              MSP Time Out MAP
              5360 Systems Unit
              PAGE 2 OF 2
  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?
     ΥN
       004
       Bad card:
       A-A1N2.
    005
    Bad card:
    A-A1M2.
  006
  Bad card:
  A-A1Q2.
007
Bad card:
A-A1Q2
---or---
```

A-A1P2.

20Mar84 PN 4177373 EC 826487A PEC 826487 MAP 1137-2

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?

YN

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

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

YN

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

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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.

© Copyright

2 2

A B
```

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

A B MSP SVC MAP 3 1 1 5360 Systems Unit

PAGE 2 OF 2

004

Bad card: A-A1Q2.

005

Bad card: A-A1U2.

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

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.

Is the MSP Run light on?

ΥN

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?

ΥN

5222 ABCD

003 Was the system reference code dCxx or D4xx or D1xx? Y N © Copyright IBM Corp. 1983

EXIT POINTS

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

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

The CSP might not have started the MSP.

04NOV85 PN 4177377 EC 842350 PEC 826487A MAP 1146-1

```
B C D
1 1 1
              MSP SVC MAP 4
              5360 Systems Unit
              PAGE 2 OF 5
    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?
ΥN
  007
  Was the system reference code dCxx or D4xx or
  D1xx?
  Y N
    800
    Bad card:
    A-A1N2
    A-A1Q2.
  009
  Bad card:
  A-A1M2
  A-A1Q2.
```

3 E

```
04NOV85 PN 4177377
EC 842350 PEC 826487A
MAP 1146-2
```

MAP 1146-2

```
MSP SVC MAP 4
```

5360 Systems Unit

PAGE 3 OF 5

010

E 2

```
- 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?

ΥN

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?

Ϋ́Ν

013 Bad card: A-A1P2. The MSP might not have started to execute any instructions. Observing status byte 0 and the IAR will show if this is the problem.

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

MAP 1146-3

04NOV85 PN 4177377 EC 842350 PEC 826487A MAP 1146-3 MSP SVC MAP 4

5360 Systems Unit

PAGE 4 OF 5

014

F 3

```
- Probe the following:
```

Up Light: On Down Light: Off

```
A-A1P2M05 (- LSR address select)
A-A1Q2X07 (+ MSAR increment control bit 0).
Are the lights correct?
Y N
015
```

. 016

- Probe the following:

Bad card: A-A1P2.

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?
```

ΥN

017 Bad card: A-A1P2.

018

```
- Probe the following:
```

Up Light: On Down Light: On

A-A1U2M02 (- load buffer). Are the lights correct?

ΥŅ

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

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

04NOV85 PN 4177377 EC 842350 PEC 826487A MAP 1146-4



MSP Load Register Instruction MAP

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

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?

Ϋ́Ν

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

© Copyright IBM Corp. 1983

2 A

```
A
1
               MSP Load Register MAP
                                                                                      MAP 1148-2
               5360 Systems Unit
               PAGE 2 OF 5
005
- Probe the following:
                                                    The storage buffer should only be used during the
                                                    instruction fetch and not while executing the
        Light: On or flashing
  Up
                                                    instruction.
  Down Light: On or flashing
 A-A1P2Z23 (- buffer).
Are the lights correct?
ΥN
  006
  Bad card:
  A-A1P2.
007
- Probe the following:
                                                    The instruction operation code and q byte will be
                                                    verified.
  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?
  Ν
  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?
 V N
                                                                          04NOV85
                                                                                       PN 4177378
                                                                          EC 842350
                                                                                       PEC 826487A
MAP 1148-2
```

```
B C 2
               MSP Load Register MAP
               5360 Systems Unit
               PAGE 3 OF 5
  010
  Bad card:
  A-A1P2.
011
- Remove + Gating.
- Probe the following:
        Light: On
  Up
  Down Light: On
 A-A1P2X22 (+ MSAR increment control bit 1)
 A-A102X13 (+ MSAR increment control bit 2).
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)
```

4 D

```
04NOV85 PN 4177378
EC 842350 PEC 826487A
MAP 1148-3
```

This is the first time an address is decreased.

```
D
3
               MSP Load Register MAP
                                                                                        MAP 1148-4
               5360 Systems Unit
               PAGE 4 OF 5
  (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.
                                                      (+ q numeric zero) will not change in TU 2025 if the
- Press the System Reset key.
                                                      complete test is not executed because of an error.
- 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?
  N
                                                                           04NOV85
                                                                                        PN 4177378
                                                                           EC 842350
                                                                                        PEC 826487A
5
E
 5
F
                                                                                        MAP 1148-4
```



A-A1P2

A-A1Q2.

MAP 1148-5

04NOV85 PN 4177378 EC 842350 PEC 826487A MAP 1148-5

MSP Branch On Condition MAP

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

ΥN

002 Bad card:

A-A1P2.

003

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

© Copyright IBM Corp. 1983

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

> 15Feb84 PN 4177379 EC 826487 PEC 826380 MAP 1150-1

MSP Jump Backward MAP

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

'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	Α	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?

ΥN

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

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 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?

YN

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

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

YN

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?

Ϋ́Ν

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

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 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?

ΥN

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	Α	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?

ΥN

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

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 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?

YN

..

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

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	А	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?

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

© Copyright IBM Corp. 1983

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	Α	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 l2). Are the lights correct?

ΥN

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

MSP Pact 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 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?

ΥN

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

15Feb84 PN 4177390 EC 826487 PEC 826380 MAP 1167-1

MAP 1167-1

© Copyright IBM Corp. 1983

MSP Alternate Mode MAP

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

ΥN

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

© Copyright IBM Corp. 1983

MSP Alternate Mode

5360 Systems Unit

PAGE 2 OF 2

003

A 1

- 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.

15Feb84 PN 4177391 EC 826487 PEC 826380 MAP 1168-2 4

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	Α	1	001

001

ΥN

(Entry Point A)

Is there a card in A-A1R2?

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)

 002

 Is there a card in A-A1S2?

 Y

 003

 Is there a card in A-A1T2?

 Y

 N

 004

 Bad card:

 A-A1U2

 ---or--

 A-A1P2.

 © Copyright IBM Corp. 1983

 5
 3

 2

 A

 B

 C

30Jun86 PN 2596822 EC 842375 PEC -----MAP 1170-1

MAP 1170-1

5360 Systems Unit

PAGE 2 OF 6

005

С 1

- 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?

```
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?

ΥN

007 Bad card:

A-A1P2.

800

Bad card: labeled 'T2'.

	MAP 1170-2
EC 842375	PEC
30Jun86	PN 2596822

B D Main Storage MAP 1 1 2

5360 Systems Unit

PAGE 3 OF 6

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?

ΥN

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?



30Jun86	PN 2596822
EC 842375	PEC
	MAP 1170-3

Main Storage MAP 1 5360 Systems Unit

PAGE 4 OF 6

013

F 3

- 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?

ΥN

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?

ΥN

015 Bad card: A-A1P2.

016

```
Bad card:
labeled 'S2'.
```

017

```
Bad card:
labeled 'T2'.
```

 30Jun86
 PN 2596822

 EC 842375
 PEC -----

MAP 1170-4

5360 Systems Unit

PAGE 5 OF 6

Ó18

A E 1 3

- 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?

ΥN

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?



30Jun86	PN 2596822
EC 842375	PEC
	MAP 1170-5

Main Storage MAP 1 5360 Systems Unit PAGE 6 OF 6

022

H 5

- 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?

(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?

ΥN

- 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)

MAP 1170-6

(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

G J K

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?

ΥN

030 Bad card: labeled 'U2'.

031

Bad card: A-A1P2.

> 30Jun86 PN 2596822 EC 842375 PEC -----MAP 1170-6

MS Parity MAP

5360 Systems Unit

PAGE 1 OF 2

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 EEAO.
- 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?

ΥN

2 A

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 EEAO.
- 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)

© Copyright IBM Corp. 1983

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

30Jun86 PN 2596216 EC 842375 PEC 842350 MAP 1175-1

MAP 1175-1

```
A
1
               MS Parity MAP
               5360 Systems Unit
               PAGE 2 OF 2
  (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?
YN
  006
  Bad card:
  A-A1U2.
007
Bad card:
A-A1Q2.
```

30Jun86 PN 2596216 EC 842375 PEC 842350 MAP 1175-2

MAP 1175-2

Address Bit 6 Error

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

Ϋ́Ν

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

MAP 1176-1

© Copyright IBM Corp. 1983

30Jun86 PN 4177280 EC 842375 PEC 826487 MAP 1176-1

Write and Read Main Storage MAP 1

5360 Systems Unit

PAGE 1 OF 8

ENTRY POINTS

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

001 (Entry Point A)

MAP 1177-1

EXIT POINTS

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

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?



Main Storage MAP 1 5360 Systems Unit

PAGE 2 OF 8

003

С 1

- 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.
- / / / / L
- 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?

ΥN

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?

ΥN

33 DE

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.

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.

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

30Jun86 PN 4177281 EC 842375 PEC 826487 MAP 1177-2

```
B D E
1 2 2
                Main Storage MAP 1
                5360 Systems Unit
                PAGE 3 OF 8
     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?
     Ν
   v
     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.
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)
```

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

30Jun86	PN 4177281
EC 842375	PEC 826487
	MAP 1177-3

5360 Systems Unit

PAGE 4 OF 8

(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?

- YN 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?



5555 FGHJ

30Jun86 PN 4177281 EC 842375 PEC 826487 MAP 1177-4

F G H J 4 4 4 4 Main Storage MAP 1 MAP 1177-5 5360 Systems Unit PAGE 5 OF 8 **013** - Select mode 6. The 2 main store cards that were just tested could both be bad. - 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. 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?

ΥN

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.

> 30Jun86 PN 4177281 EC 842375 PEC 826487 MAP 1177-5

5360 Systems Unit

PAGE 6 OF 8

019

A 1

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?

ΥN

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?

ΥŅ

5360 Systems Unit

PAGE 7 OF 8

021

M 6

- 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?

ΥN

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?

ΥN

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.

024

```
Bad card:
labeled 'R2'.
```

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

MAP 1177-7

8 N

```
      K
      L
      N
      Main Storage MAP 1

      5360 Systems Unit
      5360 Systems Unit

      PAGE
      8 OF
      8

      025
      Bad card:
      Iabeled 'S2'.

      026
      Bad card:
      Iabeled 'S2'.
```

I

027

- Select mode 6.

labeled 'T2'.

. .

- 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?

ΥN

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.

30Jun86 PN 4177281 EC 842375 PEC 826487

MAP 1177-8

Write and Read Main Storage MAP 2

5360 Systems Unit

PAGE 1 OF 3

ENTRY POINTS

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

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.

007 | 1191

003

STEP

NUMBER

T0

MAP

NUMBER

1191

MAP DESCRIPTION:

EXIT POINTS

PAGE

NUMBER

2

3

EXIT THIS MAP

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?



© Copyright IBM Corp. 1983

30Jun86 PN 4177282 EC 842375 PEC 826487 MAP 1178-1

ENTRY

POINT

А

А



5360 Systems Unit

.

PAGE 3 OF 3

007

ç

- 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

PAGE 1 OF 7

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	A	1	001
110/	1 A		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

532 ABC © Copyright IBM Corp. 1983

30Jun86 PN 4177392 EC 842375 PEC 842350 MAP 1179-1

MAP 1179-1

5360 Systems Unit

PAGE 2 OF 7

003

С 1

- 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?

```
Ν
```

005 Bad card: A-A1Q2

```
---or---
A-A1P2.
```

006

3 D

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.

30Jun86 PN 4177392 EC 842375 PEC 842350 MAP 1179-2 B D Main Storage MAP 1 1 2

5360 Systems Unit

PAGE 3 OF 7

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?

YN

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.
```

- A-AISZ. Bomombor u
- 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)

5360 Systems Unit

PAGE 4 OF 7

(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?

```
ΥN
```

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?

ΥN

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

014

55 EF Bad card: labeled 'S2'. MAP 1179-4

```
A E F
1 4 4
                Main Storage MAP 1
                5360 Systems Unit
                PAGE 5 OF 7
     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)

5360 Systems Unit PAGE 6 OF 7 (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 Y N Page 1 Page 2 Page 2 Page 3 Page 3 Page 4 Page 4 Page 5 Page 5 Page 5 Page 6 Page 7 Page 7 <th></th> <th></th> <th></th> <th>5</th>				5
PAGE 6 OF 7 (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 V N V N V N V N V N V N V N V N V N V		1 1		5360 Systems Unit
 (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 O22 Select mode 6. Press the Power key (power off). Reinstall the R2 card which has not yet been tested into location A1U2. 				PAGE 6 OF 7
020 - Press the Power key (power off). - Press the Power key (power off). - Enter FA03. - Reinstall the T2 card which has not yet been tested into location A1U2. - Press the Power key (power on). - Press the Power key (power on). - Wait until the Load light, MSP Run light ar the CSP Run light are off. - Enter FA03. - Wait until the Load light, MSP Run light are off. - Press the Load key. - Wait until the Load light, MSP Run light are off. - Press the Load key. - Wait until the CSP Run light are off. - Press the Load key. - Y N	een and	 O22 Select mode 6. Press the Power key (power off). Reinstall the R2 card which has not yet it 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 the CSP Run light are off. Is the Processor Check light on? Y N 		PAGE 6 OF 7 (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 O21 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. National and the O23 Bad card: A-A1Q2 or A-A1P2. O24 Bad card: Iabeled 'R2'. 		023 Bad card: A-A1Q2 or A-A1P2. 024 Bad card: labeled 'R2'. 025 Bad card: labeled 'S2'.		 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.				- Press the Load key.
026 - Wait until the Load light, MSP Run light and the CSP Run light are off. labeled 'T2'. Is the Processor Check light on? Y N 30Jun86 PN 4177392		026 Bad card: labeled 'T2'. 30Jun86 PN 4177392	026 Bao Iab	- Wait until the Load light, MSP Run light and the CSP Run light are off. Is the Processor Check light on? Y N
FC 842375 PEC 842350		EC 842375 PEC 842350		

7 | | | G H J K

MAP 1179-6

5360 Systems Unit

PAGE 7 OF 7

027

G

- 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?

ΥN

028

Bad card: labeled 'U2'.

. 029

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

MAP 1179-7

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	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

© Copyright IBM Corp. 1983

30Jun86 PN 4177283 EC 842375 PEC 826487A MAP 1180-1

5360 Systems Unit

PAGE 2 OF 2

 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.

MAP 1180-2

30Jun86 PN 4177283 EC 842375 PEC 826487A MAP 1180-2

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

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

(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).

© Copyright IBM Corp. 1983

30Jun86 PN 4177394 EC 842375 PEC 826487A MAP 1181-1

5360 Systems Unit

PAGE 2 OF 2

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.

30Jun86 PN 4177394 EC 842375 PEC 826487A MAP 1181-2
Isolate Main Storage Error MAP 1

5360 Systems Unit

PAGE 1 OF 3

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 EEAO.
- 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.

2 A © Copyright IBM Corp. 1983

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

> 20Mar84 PN 4177395 EC 826487A PEC 826487 MAP 1182-1

A Isolate Error: MAP 1 5360 Systems Unit PAGE 2 OF 3

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?

ΥN

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

3 3 C

The MSP data card controls the main storage card signals to do storage accesses without using the storage buffer.

20Mar84 PN 4177395 EC 826487A PEC 826487 MAP 1182-2

MAP 1182-2

```
B C
2 2
              Isolate Error: MAP 1
              5360 Systems Unit
              PAGE 3 OF 3
  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

PAGE 1 OF 3

ENTRY POINTS

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

001 (Entry Boi

(Entry Point A)

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	Α

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
Ø Copyright IBM Corp. 1983

04NOV85 PN 4177396 EC 842350 PEC 826487 MAP 1183-1

3 2 A B В 1 Card Select MAP DE MAP 1183-2 5360 Systems Unit PAGE 2 OF 3 004 **010** Is the display = xxx1?- Press the System Reset key. Y N - Select mode E. - Enter EE79. 005 - Insert diskette DIAG21. Is the display = xxx2?- Press the Load key. Y N - Wait until the System In Use light is on or flashing before continuing. 006 - Probe the following: Is the display = xxx4?Y N Light: On or flashing Up Down Light: On or flashing 007 - Press the System Reset key. A-A1S2G07 (- MS card select 3). - Select mode E. Are the lights correct? - Enter EE79. ΥN - Insert diskette DIAG21. - Press the Load key. 011 - Wait until the System In Use light is on or Bad card: flashing before continuing. A-A1Q2. - Probe the following: 012 Up Light: On or flashing Bad card: Down Light: On or flashing A-A1S2. A-A1R2G07 (- MS card select 4). 013 Are the lights correct? - Press the System Reset key. YN - Select mode E. - Enter EE79. 008 - Insert diskette DIAG21. Bad card: - Press the Load key. A-A1Q2. - Wait until the System In Use light is on or flashing before continuing. 009 - Probe the following: Bad card: A-A1R2. Up Light: On or flashing Down Light: On or flashing A-A1T2G07 (- MS card select 2). Are the lights correct? N 04NOV85 PN 4177396 PEC 826487 EC 842350 3 G 3 DΕ MAP 1183-2

```
A C E G
               Card Select MAP
               5360 Systems Unit
               PAGE 3 OF 3
       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.
```

MAP 1183-3

Main Storage SBME MAP

5360 Systems Unit

PAGE 1 OF 3

ENTRY POINTS

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

001 (Entrus Da

(Entry Point A)

EXIT POINTS

EXIT THIS MAP		то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	Α

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?

ΥN

2 A 002 Go To Map 1100, Entry Point A.

© Copyright IBM Corp. 1983

30Jun86 PN 4177397 EC 842375 PEC 842350 MAP 1184-1 SBME MAP

5360 Systems Unit

PAGE 2 OF 3

003

A 1

- 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:

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

A-A1U2P13 (- disable ECC).

Are the lights correct?

YN

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).

Is one of the following values on the display: x1xx,

- Select mode 1.

x3xx, x5xx, or x7xx ?

- Enter 0007.

N

3 B

- Press the Display Output key.

- 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.

30Jun86	PN 4177397
EC 842375	PEC 842350
	MAP 1184-2

| **012** Bad card: A-A1T2.

013

DE

Bad card: A-A1U2.



PAGE 3 OF 3

006

Bad card: A-A1Q2.

- Remove the jumper.

007

B C 2 2

- 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?
- ΥN

800

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.

> 30Jun86 PN 4177397 EC 842375 PEC 842350 MAP 1184-3

MAP 1184-3

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)

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	Α

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?

ΥN

002

Go To Map 1100, Entry Point A.

© Copyright IBM Corp. 1983

04NOV85 PN 4177398 EC 842350 PEC 826487 MAP 1185-1

2 A

5360 Systems Unit

PAGE 2 OF 6

003

A 1

- Select mode 1.
- Enter 0007.
- Press the Display Output key.
- See table 1.

Control Panel Step | Entry |Display| Page | Number | Point 006 xxx1 3 B 4 | xxx2 009 | С | xxx4 5 012 | D

1

015 |

Ε

Table 1

6

L

| xxx8

Is the value on the display also in table 1?

ΥN

004

Bad card: A-A1Q2.

005

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

MAP 1185-2

04NOV85 PN 4177398 EC 842350 PEC 826487 MAP 1185-2

5360 Systems Unit

PAGE 3 OF 6

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?

ΥN

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.

04NOV85 PN 4177398 EC 842350 PEC 826487 MAP 1185-3

5360 Systems Unit

PAGE 4 OF 6

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?

ΥN

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.

MAP 1185-4

04NOV85 PN 4177398 EC 842350 PEC 826487 MAP 1185-4

5360 Systems Unit

PAGE 5 OF 6

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?

ΥN

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.

04NOV85 PN 4177398 EC 842350 PEC 826487 MAP 1185-5

5360 Systems Unit

PAGE 6 OF 6

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?
```

ΥN

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.

> 04NOV85 PN 4177398 EC 842350 PEC 826487 MAP 1185-6

MAP 1185-6

Main Storage Time Out Check

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

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

001

(Entry Point A)

EXIT POINTS

EXIT THIS MAP		то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	А

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

ls the display = dxxx? Y N

002 Go To Map 1100, Entry Point A.

© Copyright IBM Corp. 1983

2 A MS Time Out Check 5360 Systems Unit

PAGE 2 OF 2

003

A 1

- 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.
```

15Feb84 PN 4177399 EC 826487 PEC 826380 MAP 1186-2

Main Storage Access Time 1

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

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

001

(Entry Point A)

EXIT POINTS

EXIT THIS MAP		то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	1179	Α

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?

ΥN

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)

© Copyright IBM Corp. 1983

04NOV85 PN 4177400 EC 842350 PEC 826487 MAP 1187-1

2 A



Go To Map 1179, Entry Point A.

MAP 1187-2

04NOV85 PN 4177400 EC 842350 PEC 826487 MAP 1187-2

Main Storage Parity Error

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

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

001 (Entry Point A)

EXIT POINTS

EXIT THIS MAP		то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	Α

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? ΥN

002 Go To Map 1100, Entry Point A.

© Copyright IBM Corp. 1983

A MS Parity Error 5360 Systems Unit

PAGE 2 OF 2

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.

15Feb84 PN 4177401 EC 826487 PEC 826380 MAP 1188-2

R/W, Byte Select MAP

5360 Systems Unit

PAGE 1 OF 2

5

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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?

Ϋ́Ν

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

© Copyright IBM Corp. 1983

a t t

A R/W, Byte Select MAP 5360 Systems Unit PAGE 2 OF 2

003

```
- Probe the following:
```

Up Light: On Down Light: On

A-A1Q2Y07 (- MS address bit 23).

Are the lights correct?

ΥN

004 Bad card: A-A1Q2.

005

Bad card: A-A1U2 ---or---A-A1Q2. MAP 1189-2

30Jun86 PN 2596217 EC 842375 PEC 826487 MAP 1189-2

Write and Read Main Storage MAP 4

5360 Systems Unit

PAGE 1 OF 8

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1146	A	1	001

001

(Entry Point A)

Is there a card in A-A1R2?

v Ν 002 Is there a card in A-A1S2? N

© Copyright IBM Corp. 1983

.

MAP 1190-1

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.

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)

> 30Jun86 PN 4177402 EC 842375 PEC 826487 MAP 1190-1

532 ABC

Main Storage MAP 4

5360 Systems Unit

PAGE 2 OF 8

003

C 1

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

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?

ΥN

005

- Reinstall all cards to their original locations.
 Bad card:
 A-A1P2
 --or---
- A-A1Q2.

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.

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

30Jun86	PN 4177402	
EC 842375	PEC 826487	
	MAP 1190-2	

```
B D E
1 2 2
                Main Storage MAP 4
                5360 Systems Unit
                PAGE 3 OF 8
     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?
     Ν
   Y
     800
     Bad card:
     labeled 'U2'.
   009
   Bad card:
   A-A1P2
   ---or---
   A-A102.
   - Reinstall all cards to their original locations.
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',
```

- 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)

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

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.

5360 Systems Unit

PAGE 4 OF 8

(Step 010 continued)

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

Is the Processor Check light on?

YN

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?

ΥN

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?
- YN

```
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

55 FG Bad card: labeled 'S2'.

30Jun86	PN 4177402
EC 842375	PEC 826487
	MAP 1190-4

```
A F G
1 4 4
                Main Storage MAP 4
                5360 Systems Unit
                PAGE 5 OF 8
     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-A102.
   - Reinstall all cards to their original locations.
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 E901. (Step 019 continues)

- Insert diskette DIAG21.

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

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.

30Jun86	PN 4177402	
EC 842375	PEC 826487	
	MAP 1190-5	

MAP 1190-5

Main Storage MAP 4

5360 Systems Unit

PAGE 6 OF 8

(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?

```
ΥN
```

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?





026

Bad card:

labeled 'T2'.

Main Storage MAP 4 5360 Systems Unit PAGE 8 OF 8

027

H 6

- 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?

ΥN

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.

MAP 1190-8

Isolate Main Storage Error MAP 2

5360 Systems Unit

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1177	A	1	001
1179	A	1	001

EXIT POINTS

EXIT THIS MAP		то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1182	А

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?

ΥN

002

Go To Map 1182, Entry Point A.

003

Bad card: A-A102

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

© Copyright IBM Corp. 1983

Storage Swap MAP 3

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116 1146	A	 1 1	001 001

(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-A102 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 configuration 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).

> 30Jun86 PN 4177404 EC 842375 PEC 826487A MAP 1192-1

© Copyright IBM Corp. 1983

Storage Swap MAP 3

5360 Systems Unit

PAGE 2 OF 2

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).

Read Buffer Always Down

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

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

001

(Entry Point A)

EXIT POINTS

EXIT THIS MAP		то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1100	Α

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

11

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)

© Copyright IBM Corp. 1983

15Feb84 PN 4177405 EC 826487 PEC 826380 MAP 1193-1

Read Buffer

5360 Systems Unit

PAGE 2 OF 2

(Step 003 continued)

A-A1U2M04 (- read buffer). Are the lights correct?

ΥN

004 Bad card: A-A1Q2.

005

Bad card: A-A1U2.

15Feb84 PN 4177405 EC 826487 PEC 826380 MAP 1193-2
Main Storage Access Time 2

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

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

001 (Entry Point A)

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	1177	А

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?

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)

© Copyright IBM Corp. 1983

30Jun86 PN 4177284 EC 842375 PEC 826487 MAP 1194-1

2 A

```
A
1
              Storage Access Time 2
              5360 Systems Unit
              PAGE 2 OF 2
  (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.
```

MAP 1194-2

Main Storage Access Time 3

5360 Systems Unit

PAGE 1 OF 2

ENTRY POINTS

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

001 (Entry Point A)

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
1	002	1100	A
2	004	1178	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?

Ϋ́Ν

002

Go To Map 1100, Entry Point A.

© Copyright IBM Corp. 1983

30Jun86 PN 4177285 EC 842375 PEC 826487 MAP 1195-1

Storage Access Time 3

5360 Systems Unit

PAGE 2 OF 2

003

A 1

- 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?

ΥN

004 Go To Map 1178, Entry Point A.

. 005

Bad card: A-A1Q2.

30Jun86 PN 4177285 EC 842375 PEC 826487 MAP 1195-2

MS Multiple Bit Error MAP 2

5360 Systems Unit

PAGE 1 OF 2

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?

ΥN

002

Bad card: A-A1U2.

© Copyright IBM Corp. 1983

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

30Jun86 PN 2596239 EC 842375 PEC 826487 MAP 1197-1

MS Multiple Bit Error MAP 2 5360 Systems Unit

PAGE 2 OF 2 ·

003 Bad card: A-A1Q2.

A 1

30Jun86 PN 2596239 EC 842375 PEC 826487 MAP 1197-2

MS Address MAP

5360 Systems Unit

PAGE 1 OF 2

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.

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

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-A102 card or the A-A102 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 e
××06		 A-A1U2S0	4
xx07	1 7	A-A1U2J1	1
xx08	18	A-A1U2J1	2
xx09	9	A-A1U2G0	4
XX0A	10	A-A1U2J0	5
xx0b	11	A-A1U2DO	2
xx0C	12	A-A1U2B0	3
xx0d	13	A-A1U2DO	5
xx0E	14	A-A1U2D0	7
xx0F	15	A-A1U2B0	7
xx10	16	A-A1U2DO	9
xx11	17	A-A1U2D1	0
xx12	18	A-A1U2D1	1
xx13	19	A-A1U2D1:	2
xx14	20	A-A1U2B1	3
(Step 001 co	ntinues)		
	:	30Jun86	PN 2596242

EC 842375 PEC 826487

MAP 1198-1

(Step 001 continues)

© Copyright IBM Corp. 1983

MS Address MAP

5360 Systems Unit

PAGE 2 OF 2

Step 001 continued)	(Step 001 continued)		
······································	xx15 21 A-A1U2B04		
	xx16 22 A-A1U2G03		
Are the lights correct?			
Y N			

002

Bad card: A-A1Q2.

003

Bad card: A-A1U2.

MAP 1198-2

30Jun86 PN 2596242 EC 842375 PEC 826487 MAP 1198-2

MS Data MAP

5360 Systems Unit

PAGE 1 OF 3

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0116	Α	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 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-A102 card or the A-A102 card. This MAP determines which card is bad.

START CONDITIONS:

None

FRUs PARTIALLY TESTED: A-A1Q2, U2

. 1	Table 1	
Displayed Hex Value	Data Bit	Failing Data Line
8000 4000 2000 1000 0800 0400 0200 0100 0080 0040 0020 0010 0008 0004 0002 0001	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	A-A1U2J13 A-A1U2G12 A-A1U2G09 A-A1U2G09 A-A1U2G08 A-A1U2G08 A-A1U2G05 A-A1U2G05 A-A1U2G05 A-A1U2D13 A-A1U2D13 A-A1U2B10 A-A1U2B09 A-A1U2B08 A-A1U2D06 A-A1U2D05 A-A1U2D04

(Step 001 continues)

© Copyright IBM Corp. 1983

30Jun86 PN 2596243

EC 842375 PEC 826487

MAP 1199-1

5360 Systems Unit

PAGE 2 OF 3

(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 4000 2000 1000 0800 0400 0200	0 1 2 3 4 5 6	 A-A1U2J13 A-A1U2G12 A-A1U2G10 A-A1U2G09 A-A1U2G08 A-A1U2J06 A-A1U2J06	
0080 0040 0020 0010 0008 0004 0002	/ 8 9 10 11 12 13 14	A-A1U2J04 A-A1U2D13 A-A1U2B12 A-A1U2B10 A-A1U2B09 A-A1U2B08 A-A1U2B08 A-A1U2D06	
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?



3333 ABCD 30Jun86 PN 2596243 EC 842375 PEC 826487 MAP 1199-2



5360 Systems Unit

PAGE 3 OF 3

004

Bad card: A-A1Q2.

005

Bad card: A-A1U2.

006

Bad card: A-A1Q2.

007

Bad card: A-A1U2.

30Jun86 PN 2596243 EC 842375 PEC 826487 MAP 1199-3 5360 MAPS

READER'S COMMENT FORM

Please use this form only to identify publication errors or to request changes in publications. Direct any requests for additional publications, technical questions about IBM systems, changes in IBM programming support, and so on, to your IBM representative or to your nearest IBM branch office. You may use this form to communicate your comments about this publication, its organization, or subject matter with the understanding that IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

Possible topics for comment are:

	Page No(s).		Page No(s).
Accuracy		Figure/Diagram	
Adjustments / Procedures		Index/Table of Contents	······
Completeness		Organization	·····
Cross-references		Other	
Comment's:			

Please provide the information requested below; we will contact you. Thank you for your cooperation.

Name:	Telephone:		
Job Title:	(IBM Tie Line)	(Extension)	
Zip Code	(Area Code)	(Local Number)	
	F	EC 842350	P∕N 2596250

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

Fold and tape. Please do not staple.

BUSINESS REPLY MAIL

FIRST CLASS / PERMIT NO. 40 / ARMONK, NEW YORK

POSTAGE WILL BE PAID BY ADDRESSEE

International Business Machines Corporation D 49Q/030-2 Rochester, Minnesota, U.S.A. 55901

Fold and tape. Please do not staple.



Cut Along Line