EC 826380			PN 2597105
27MAY83			

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0105	A	1	001
0199	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
This is the entry point to the work station subsystem MAPS. Directions will be provided to assist in isolating local work station problems.

ASSUMPTIONS:
- Customer Problem Determination completed.
  1. System Problem Determination procedures.
  2. On-Line Problem Determination (OLPD).
  3. Problem Summary Form filled out.

- CSR PD
  1. Procedures available.:

     A. MDIs:
        1. Work station controller (36 w/s).
           GENERAL MIM 01-510
        2. 2nd work station controller (72 w/s).
           GENERAL MIM 01-510
     B. Network Analysis:
        1. GENERAL MIM 01-530
     C. Work Station Cable Check:
        1. GENERAL MIM 01-525
     D. Cable Signal Quality Check:
        1. Work Station MIM 70-330
     E. W/S Intermittent MAP:
        1. MAP 0370

No Trouble Found:
Either the problem is not in this area or more analysis is needed using the tools above.

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ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	AA	1	001
0105	AA	1	001
7080	AA	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	009	7002	AA
2	014	7002	AA
2	016	7002	AA
2	017	7080	AA

001
(Entry Point AA)

MAP DESCRIPTION:
This is the entry point to the work station subsystem MAPS.

START CONDITIONS:
None

FRUs PARTIALLY TESTED:
None

Is there information displayed on the system console?
Y N

002
Is the console power on?
Y N

003
- Turn the console power on.

004
Is the console set to normal mode?
Y N

005
- Set the console to normal mode.

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2 2
A B

006

An obvious console problem could be a blank screen (no cursor), rolling screen, terminal check indicator, bound key, and so on. If the console does not have an obvious problem it should be in the normal power up condition.

Is the console in the normal power up condition?

Y N

007

Go to the console and perform the repairs using the display station maintenance procedures.

008

Does the console have the cable through feature (see display station manuals)?

Y N

009

Go To Map 7002, Entry Point AA.

010

Is the address of the console set to 0?

Y N

011

- Set the console address to 0.

012

Is the cable through switch on the last work station of port 0 set to the off (1) position (see display station manuals)?

Y N

013

- Set the cable through switch to the off position.

014

Go To Map 7002, Entry Point AA.

015

Is the problem, with a work station(s) other than the system console?

Y N

016

Go To Map 7002, Entry Point AA.

017

Go To Map 7080, Entry Point AA.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0199	AA	1	001
7001	AA	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	7099	AA

001
(Entry Point AA)

Note 1: The work station attachment MDIs are accessible only through the system unit control panel.

- Run the work station attachment MDIs:
- Insert the DIAG21 diskette.
- Select mode E.
- Enter F0C2.
- Press the Load key on the control panel. The system will run for approximately 1 minute and then stop with b421 in the display. The DIAG21 diskette will be ejected when the system stops if the system has a 72MD diskette attachment.
- Press the CSP Start key on the control panel. The system will start displaying messages on the console after approximately 2 minutes. The system will stop without displaying a message on the console if an error is detected.

Has the system stopped (CSP Run light off)?
Y N

002
Is there a message displayed on the console?
Y N

003
The system will run for approximately 2 minutes until it stops or displays a message on the console. Return to the question in step 001.

MAP DESCRIPTION:
This MAP contains the instructions for running anc interpreting the work station attachment MDIs.

START CONDITIONS:
MAP 7001 has been used.

FRUs PARTIALLY TESTED:
None

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2 2
A B

004

The message in note 2 will be displayed on the console.

The work station attachment MDIs have not detected any errors. MAP 7099 will describe your options.

Go To Map 7099, Entry Point AA.

005

The work station attachment MDIs have detected an error.

Is there more work stations on port 0 other than the system console?

Y N

006

(Entry Point BB)

The work station attachment MDIs have detected an error.

- Display and record the contents of LSR4 and LSR5.

- Select mode 1.
- Enter 0004.
- Press the Display Output key.
- Record the contents of the display lights (LSR4).
- Enter 0005.
- Press the Display Output key.
- Record the contents of the hex display lights (LSR5).

Go to the MAP and entry point indicated through LSR4 and LSR5.

Note 2: The work station MDIs (MDI MAPs) have completed. No trouble found.

LSR4 contains the number of the map. LSR5 contains the entry point in the map. You must use the map and entry point to continue diagnosing the problem.

Example: If LSR4 contains 7050 and LSR5 contains 00bb then you would go to MAP 7050, Entry Point BB.

007

- Set the cable through switch to the off position on the console and remove the cable from port 2 of the console (This will isolate all port 0 work stations except the system console from the system).
- Rerun the work station attachment MDIs.
- Insert the DIAG21 diskette.
- Select mode E.
- Enter F0C2.
- Press the Load key on the control panel. The system will run for approximately 1 minute and then stop with b421 in the display. The DIAG21 diskette will be ejected when the system stops if the system has a 72MD diskette attachment.
- Press the CSP Start key on the control panel. The system will start displaying messages on the system console after approximately 2 minutes. The system will stop without displaying a message on the system console if an error is detected.

(Entry Point CC)
Has the system stopped (CSP Run light off)?
Y N

008
Is there a message displayed on the console?
Y N

009
The system will run for approximately 2 minutes unitl it stops or displays a message on the console.
Go to Step 007, Entry Point CC.

010

The message in Note 3 will be displayed on the console.

You have a problem with a work station on port 0 other than the system console.

- Run the twinaxial cable MDI MAP.
- To run the twinaxial cable MDI MAP:
- Insert the DIAG21 diskette.
- Select mode E.
- Press the Load key.

The system will run for approximately 2 minutes and then display a menu on the console.

- Select the MDI MAPs option. The system will display a second menu on the console.
- Select the system console option. The system will display more instructions on the console. Follow those instructions to run the twinaxial cable MDI MAP.

Note 3: The work station MDIs (MDI MAPs) have completed. No trouble found.

011

Go to Page 2, Step 006, Entry Point BB.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C201	AA	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	0121	A
2	010	0121	A
2	012	0121	A
3	013	0121	A

001

(Entry Point AA)

- Loop on the System Cycle Steal Interface Test (T6104).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then stop with b421 in the display.

- Enter 6104.
- Press the CSP Start key.

The system will continuously loop on the test.

- Probe the following pin:

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

A-A1H2G12 (I/O TBI bit 1).

Are the lights correct?

Y N

2 2
A B

MAP DESCRIPTION:

This MAP supplies FRU isolation when a failure occurs on the System Cycle Steal Interface Test.

START CONDITIONS:

Entry Point AA - A failure has occurred in the work station attachment Good Machine Path MAP C201 during the System Cycle Steal Interface Test (T6104).

FRUs PARTIALLY TESTED:

A-A1J2 (work station adapter card)
A-A1H2 (work station controller card)

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T6104 FRU Isolation MAP

5360 Systems Unit

002
- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the following:

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

A-A1H2G12 (I/O TBI bit 1).

Are the lights correct?

Y N

003
Bad card:
A-A1H2 (work station controller card).

004
Bad card:
A-A1J2 (work station adapter card).

005
- Probe the following pins for possible open nets and record any failing pins with wrong readings:

```
Up    Light: On
Down  Light: On

A-A1H2M06 (system ARS bit C)
      S05 (system base cycle
           steal request)
      S07 (system ARS bit B)
      S09 (system TBI bit 6)
      S13 (system TBI bit 0)
      U10 (system ARS bit A)
      U13 (system burst cycle
           request).
```

Are the lights correct?

Y N

C D

006
- Probe the failing pin recorded in the preceeding step:

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

Are the lights correct?

Y N

007
Go To Map 0121, Entry Point A.

008
Bad card:
A-A1H2 (work station controller card).

009
- Probe the following pin for possible open net:

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

A-A1H2M09 (system channel busy).

Are the lights correct?

Y N

010
Go To Map 0121, Entry Point A.

011
- Probe the following pins:

```
Up    Light: On
Down  Light: Off

A-A1H2P13 (system TBI bit 4)
      U11 (system TBI bit 3).
```

Are the lights correct?

Y N

012
Go To Map 0121, Entry Point A.

013

Bad card:
A-A1H2 (work station controller card).

Note: If this card does not fix the failure,
Go To Map 0121, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	AA	1	001

001
(Entry Point AA)
- Loop on the controller set up test (TC246).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then stop with b421 in the display.
- Enter C246.
- Press the CSP Start key.

The system will continuously loop on the test.
- Probe the following:

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

A-A1J2M13 (16 mhz in).

Are the lights correct?

Y N

002
Bad card:
A-A1J2 (work station adapter card).

MAP DESCRIPTION:
This MAP supplies FRU isolation when a failure occurs on the control set up test. It finds the failing FRU.

START CONDITIONS:
Entry Point AA - A failure has occurred in the work station adapter Good Machine Path MAP C202 during the controller set up test (TC246).

FRUs PARTIALLY TESTED:
A-A1J2 (work station adapter card)
A-A1H2 (work station controller card)

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003

- Probe the following:

```
Up    Light: On
Down  Light: On

A-A1J2M02 (S1 clock in)
      M10 (S2 clock in).
```

Are the lights correct?

Y N

004

Bad card:

A-A1J2 (work station adapter card).

005

- Probe the following:

```
Up    Light: On
Down  Light: Off

A-A1J2Y11 (J LSSD)
      Y12 (clear LSSD)
      Y30 (K LSSD)
      Y32 (set LSSD).
```

Are the lights correct?

Y N

006

Bad card:

A-A1J2 (work station adapter card).

007

- Probe the following:

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

A-A1J2P13 (tieup A).

Are the lights correct?

Y N

B C

008

Bad card:

A-A1J2 (work station adapter card).

009

- Probe the following:

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

A-A1H2J11 (I/O base cycle steal request).

Are the lights correct?

Y N

010

- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the following:

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

A-A1H2J11 (I/O base cycle steal request).

Are the lights correct?

Y N

011

Bad card:

A-A1H2 (work station controller card).

012

Bad card:

A-A1J2 (work station adapter card).

013

Bad card:

A-A1J2 (work station adapter card).

TC235 FRU Isolation MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	AA	1	001

001
(Entry Point AA)
- Run the I/O channel lines test (TC235).
- Insert diskette DIAG21.
- Select Mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.
- Press the MSP Stop key (the Stop light appears).
- Enter C235.
- Press the CSP Start key. The system will run the test and then halt.
- Press the MSP Stop key (the Stop light disappears and the MSP is able to continue processing).
- Display the contents of LSR6.
- Select Mode 1.
- Enter 0006.
- Press the Display Output key. Contents of LSR6 will be displayed in the display.

Is the contents of LSR6 Cxxx or X8xxx?
Y N

002
Go to Page 3, Step 012, Entry Point BB.

MAP DESCRIPTION:
This MAP supplies FRU isolation when a failure occurs on the I/O channel control lines. It finds the failing FRU.

START CONDITIONS:
Entry Point AA - A failure has occurred in the work station adapter good machine path MAP C202 during the I/O channel lines test (TC235).

FRUs PARTIALLY TESTED:
A-A1J2 (work station adapter card)
A-A1H2 (work station controller card)

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A
1

TC235 FRU Isolation MAP

5360 Systems Unit

PAGE 2 OF 6

003

- Loop on the I/O channel lines test (TC235).
- Select mode E.
- Enter C235.
- Press the CSP Start key. The system will continuously loop on the test.
- Probe the following and record any pin with wrong readings:

```
Up   Light: On
Down Light: On

A-A1J2B02 (I/O control out)
       B07 (I/O DB0 bit P)
       B10 (I/O service out)
       B12 (I/O DB0 bit 1)
       B13 (I/O DB0 bit 7)
       D04 (I/O DB0 bit 0)
       D06 (I/O DB0 bit 3)
       D07 (I/O DB0 bit 4)
       D09 (I/O strobe)
       D10 (I/O DB0 bit 6)
       D11 (I/O DB0 bit 2)
       D12 (I/O DB0 bit 5).
```

Are the lights correct?

Y N

004

- Probe the failing pin that was recorded in the preceeding step.

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

Are the lights correct?

Y N

005

Bad card:
A-A1H2 (work station controller card).

B C

B C

MAP 7010-2

006

- Select mode 6.
- Press the power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the failing pin that was recorded in the preceeding step.

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

Are the lights correct?

Y N

007

Bad card:
A-A1H2 (work station controller card).

008

Bad card:
A-A1J2 (work station adapter card).

009

- Probe the following:

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

A-A1H2D05 (I/O service in).

Are the lights correct?

Y N

010

Bad card:
A-A1H2 (work station controller card)
---or---
A-A1J2 (work station adapter card).

011

Bad card:
A-A1J2 (work station adapter card).

012
(Entry Point BB)
Is the contents of LSR6 6000?
Y N

013
Go to Page 4, Step 019, Entry Point CC.

014
- Loop on the I/O Adapter Wrap test (TC236).
- Select mode E.
- Enter C236.
- Press the CSP Start key.

The system will continuously loop on the test.
- Probe the following and record any pin with wrong readings:

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

```
A-A1H2G02 (I/O DBI bit 0)
        G03 (I/O DBI bit 2)
        G04 (I/O DBI bit 3)
        G10 (I/O DBI bit 5)
        J02 (I/O DBI bit 1)
        J04 (I/O DBI bit 4)
        J05 (I/O DBI bit 6)
        J06 (I/O DBI bit 7).
```

Are the lights correct?
Y N

015
- Select mode 6.
- Press the power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the failing pin or pins that was/were recorded in the preceeding step.

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

(Step 015 continues)

D

(Step 015 continued)
Are the lights correct?
Y N

016
Bad card:
A-A1H2 (work station controller card).

017
Bad card:
A-A1J2 (work station adapter card).

018
Bad card:
A-A1J2 (work station adapter card)
---or---
A-A1H2 (work station controller card).

019
(Entry Point CC)
Is the contents of LSR6 2000?
Y N

020
Go to Page 5, Step 030, Entry Point DD.

021
- Loop on the I/O channel lines test (TC235).
- Select mode E.
- Enter C235.
- Press the CSP Start key.

The system will continuously loop on the test.
- Probe the following:

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

A-A1J2B03 (I/O CBO bit 1).
Are the lights correct?
Y N

022
- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the following:

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

A-A1J2B03.
Are the lights correct?
Y N

023
Bad card:
A-A1H2 (work station controller card).

024
Bad card:
A-A1J2 (work station adapter card).

E

E

025
- Probe the following:

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

A-A1J2B04 (I/O CBO bit 2).
Are the lights correct?
Y N

026
Bad card:
A-A1H2 (work station controller card).

027
- Probe the following:

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

A-A1H2J07 (I/O DBI bit P).
Are the lights correct?
Y N

028
Bad card:
A-A1H2 (work station controller card).

029
Bad card:
A-A1H2 (work station controller card)
---or---
A-A1J2 (work station adapter card).

030

(Entry Point DD)

- Loop on the I/O adapter wrap test (TC235).
- Select mode E.
- Enter C235.
- Press the CSP Start key.

The system will continuously loop on the test.

- Probe the following and record any pin with wrong readings:

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

A-A1H2D13 (I/O tag bit 4)
A-A1H2J07 (I/O DBI bit P).

Are the lights correct?

Y N

031

- Select mode 6.
- Press the power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the failing pin that was recorded in the preceeding step.

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

Are the lights correct?

Y N

032

Bad card:
A-A1H2 (work station controller card).

033

Bad card:
A-A1J2 (work station adapter card).

F

F

034

- Probe the following and record any pin with wrong readings:

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

A-A1J2B03 (I/O CBO bit 1)
A-A1J2B07 (I/O DBO bit P)
A-A1J2D02 (I/O CBO bit 0).

Are the lights correct?

Y N

035

- Probe the failing pin.

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

Are the lights correct?

Y N

036

Bad card:
A-A1H2 (work station controller card).

037

- Select mode 6.
- Press the power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the failing pin that was recorded in the preceeding step.

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

Are the lights correct?

Y N

038

Bad card:
A-A1H2 (work station controller card).

039
Bad card:
A-A1J2 (work station adapter card).

040
Bad card:
A-A1J2 (work station adapter card).

TC236 FRU Isolation MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	AA	1	001

001
(Entry Point AA)
- Loop on the adapter wrap test (TC236).
- Insert diskette DIAG21.
- Select Mode E.
- Enter F1C2.
- Press the Load key.
- Press the MSP Stop key (the Stop light appears).
- Enter C236.
- Press the CSP Start key.

The system will run the test and stop.
- Press the MSP Stop key (the Stop light disappears and the MSP is able to continue processing).

- Display the contents of LSR6.
- Select mode 1.
- Enter 0006.
- Press the Display Output key. Contents of LSR6 will be displayed in the display.

Is the contents of LSR6 4000?
Y N

002
Go to Page 3, Step 010, Entry Point BB.

MAP DESCRIPTION:
This MAP supplies FRU isolation when a failure occurs on the adapter wrap test. It finds the failing FRU.

START CONDITIONS:
Entry Point AA - A failure has occurred in the work station good machine path MAP C202 during the adapter wrap test (TC236).

FRUs PARTIALLY TESTED:
A-A1H2 (work station controller card)
A-A1J2 (work station adapter card)

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003

- Loop on the adapter wrap test (TC236).
- Select mode E.
- Enter C236.
- Press the CSP Start key.

The system will continuously loop on the test.

- Probe the following and record any pin with wrong readings:

```
Up    Light: On
Down  Light: On

A-A1J2B12 (I/O DB0 bit 1)
      D04 (I/O DB0 bit 0).
```

Are the lights correct?

Y N

004

- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the failing pin that was recorded in the preceeding step.

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

Are the lights correct?

Y N

005

Bad card:
A-A1H2 (work station controller card).

006

Bad card:
A-A1J2 (work station adapter card).

007

- Probe the following and record any pin with wrong readings:

```
Up    Light: On
Down  Light: On

A-A1J2D06 (I/O DB0 bit 3)
      D11 (I/O DB0 bit 2).
```

Are the lights correct?

Y N

008

Bad card:
A-A1H2 (work station controller card).

009

Bad card:
A-A1J2 (work station adapter card).

010
(Entry Point BB)
- Loop on the adapter wrap test (TC236).
- Select mode E.
- Enter C236.
- Press the CSP Start key.

The system will continuously loop on the test.
- Probe the following:

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

A-A1J2P06 (mod isolate in).
Are the lights correct?
Y N

011
Bad card:
A-A1J2 (work station adapter card).

012
- Probe the following and record any pin with wrong readings:

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

A-A1J2B02 (I/O control out)
A-A1J2B04 (I/O CBO bit 2)
A-A1J2D09 (I/O strobe).
Are the lights correct?
Y N

013
- Probe the failing pin that was recorded in the preceeding step.

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

Are the lights correct?
Y N

C D E

C D E

014
Bad card:
A-A1H2 (work station controller card).

015
- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the failing pin or pins that was recorded in the preceeding step:

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

Are the lights correct?
Y N

016
Bad card:
A-A1H2 (work station controller card).

017
Bad card:
A-A1J2 (work station adapter card).

018
- Probe the following and record any pin with wrong readings:

```
Up   Light: On
Down Light: On

A-A1H2G02 (I/O DBI bit 0)
       G03 (I/O DBI bit 2)
       G04 (I/O DBI bit 3)
       G10 (I/O DBI bit 5)
       J02 (I/O DBI bit 1)
       J04 (I/O DBI bit 4)
       J05 (I/O DBI bit 6)
       J06 (I/O DBI bit 7).
```

Are the lights correct?
Y N

4 4
F G

019

- Probe the failing pin or pins that was/were recorded in the preceeding step.

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

Are the lights correct?

Y N

020

Bad card:

A-A1H2 (work station controller card).

021

Bad card:

A-A1J2 (work station adapter card).

022

Bad card:

A-A1H2 (work station controller card)

---or---

A-A1J2 (work station adapter card).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	AA	1	001

001
(Entry Point AA)
- Loop on the cycle steal SICB test (TC23b).
- Insert diskette DIAG21.
- Select Mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.
- Enter C23b.
- Press the CSP Start key. The system will continuously loop on the test.

- Probe the following:

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

A-A1J2D02 (I/O CBO bit 0).
Are the lights correct?
Y N

002
- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the failing pin or pins that was recorded in the preceeding step:

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

(Step 002 continues)

MAP DESCRIPTION:
This MAP supplies FRU isolation when a failure occurs on the cycle steal SICB test (TC23b). It finds the failing FRU.

START CONDITIONS:
Entry Point AA - A failure has occurred in the work station adapter good machine path MAP C202, during the cycle steal SICB test (TC23b).

FRUs PARTIALLY TESTED:
A-A1H2 (work station controller card)
A-A1J2 (work station adapter card)

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

003
Bad card:
A-A1H2 (work station controller card).

004
Bad card:
A-A1J2 (work station adapter card).

005
- Probe the following:

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

A-A1J2X08 (tieup C).
Are the lights correct?
Y N

006
Bad card:
A-A1J2 (work station adapter card).

007
- Probe the following:

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

A-A1H2J11 (I/O base cycle steal request).
Are the lights correct?
Y N

B C

008
- Probe the following:

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

A-A1H2J11 (I/O base cycle steal request).
Are the lights correct?
Y N

009
Bad card:
A-A1H2 (work station controller card).

010
Bad card:
A-A1J2 (work station adapter card).

011
- Probe the following pins on the A-A1H2 card and record any pin with wrong readings:

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

A-A1H2D13 (I/O TBI bit 4)
G12 (I/O TBI bit 1)
G13 (I/O TBI bit 0).
Are the lights correct?
Y N

012
- Probe the failing pin or pins that was/were recorded in the preceeding step.

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

Are the lights correct?
Y N

013
Bad card:
A-A1J2 (work station adapter card).

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3 3
D E

014
- Select mode 6.
- Press the power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the failing pin or pins that was/were recorded in the preceeding step.

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

Are the lights correct?
Y N

015
Bad card:
A-A1H2 (work station controller card).

016
Bad card:
A-A1J2 (work station adapter card).

017
- Probe the following:

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

A-A1H2G07 (I/O ARS bit 7).
Are the lights correct?
Y N

018
- Select mode 6.
- Press the Power key (power off).
- Remove the A-A1J2.
- Press the Power key (power on).
- Probe the following:

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

A-A1H2G07 (I/O ARS bit 7).
(Step 018 continues)

F

F

(Step 018 continued)
Are the lights correct?
Y N

019
Bad card:
A-A1H2 (work station controller card).

020
Bad card:
A-A1J2 (work station adapter card).

021
- Probe the following:

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

A-A1H2B06 (-I/O ARS bit 5).
Are the lights correct?
Y N

022
Bad card:
A-A1H2 (work station controller card).

023
- Probe the following:

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

A-A1J2M04 (xmit data in).
Are the lights correct?
Y N

024
Bad card:
A-A1J2 (work station adapter card).

025
Bad card:
A-A1H2 (work station controller card)
---or---
A-A1J2 (work station adapter card).

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EC 826487 PEC 826380

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	AA	1	001

001
(Entry Point AA)
- Run the program interrupt structure test (TC23A).
- Insert diskette DIAG21.
- Select Mode E.
- Enter F1C2.
- Press the Load key.
- Press the MSP Stop key (the Stop light appears).
- Enter C23A.
- Press the CSP Start key. The system will run the test and then halt.
- Press the MSP Stop key (the Stop light disappears and the MSP is able to continue processing).
- Record the contents of LSR6.
- Select Mode 1.
- Enter 0006.
- Press the Display Output key. Contents of LSR6 will be displayed in the display.

Are the contents of LSR: 09xx?

Y **N**

2A 2B

MAP DESCRIPTION:
This MAP supplies FRU isolation when a failure occurs on the program interrupt structure test (TC23A). It finds the failing FRU.

START CONDITIONS:
Entry Point AA - A failure has occurred in the work station adapter good machine path MAP C202, during the Program interrupt structure test (TC23A).

FRUs PARTIALLY TESTED:
A-A1H2 (work station controller card)
A-A1J2 (work station adapter card)

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TC23A FRU Isolation MAP

5360 Systems Unit

002

- Loop on the program interrupt structure test (TC23A).
- Select mode E.
- Enter C23A.
- Press the CSP Start key.

The system will continuously loop on the test.

- Probe the following pins on the A1H2 card and record any pin with wrong readings:

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

A-A1H2G11 (I/O interrupt request level 3)
A-A1H2J09 (I/O interrupt request level 4).

Are the lights correct?

Y N

003

- Probe the failing pin or pins that was/were recorded in the preceeding step:

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

Are the lights correct?

Y N

004
Bad card:
A-A1H2 (work station controller card).

005
Bad card:
A-A1J2 (work station adapter card).

006
Bad card:
A-A1H2 (work station controller card).

007

- Select mode 6.
- Press the power key (power off).
- Remove the A-A1J2 (work station adapter card).
- Press the Power key (power on).
- Probe the following:

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

A-A1H2G11 (I/O interrupt request level 3)
A-A1H2J09 (I/O interrupt request level 4).

Are the lights correct?

Y N

008
Bad card:
A-A1H2 (work station controller card).

009
Bad card:
A-A1J2 (work station adapter card).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	AA	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	003	7070	AA

001

(Entry Point AA)

- Run the Poll System Console test (TC240).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then stop with b421 in the display.

- Enter C240.
- Press the CSP Start key.

The system will loop on the test.

Note: The logic probe must be reset before each pin is probed by placing the latch switch in the 'none' position and then back to the desired position.

- Place the 'latch' switch on the logic probe to the 'up' position.
- Probe the following signals on the A-A1J2 card:
- Probe each pin at least 10 seconds.

```
Up   Light: On
Down Light: On

A-A1J2M04 (Transmit data in)
A-A1J2W30 (Q0 (LCM))
A-A1J2X33 (Xmit binary data)
A-A1J2Y02 (Receive clock).
```

Wait at least 10 seconds.

Are the lights correct?

Y N

2 2
A B

MAP DESCRIPTION:

This MAP supplies FRU isolation when a failure occurs on the poll system console test (TC240). It finds the failing FRU.

START CONDITIONS:

Entry Point AA - A failure has occurred in the work station adapter good machine path MAP C202 during the poll system console test (TC240).

FRUs PARTIALLY TESTED:

A-A1J2 (work station adapter card)

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002

Bad card:

A-A1J2 (work station adapter card).

003

Go To Map 7070, Entry Point AA.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	AA	1	001
C202	BB	2	007
C202	CC	2	007
C204	CC	2	007

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	XXXX	A
2	006	XXXX	A

001
(Entry Point AA)
- Display and record the contents of LSR3 high.
- Select mode 1.
- Enter 0003.
- Press the Display Output key.
- Record the contents of the hex display lights (LSR3).

MAP DESCRIPTION:
This MAP calls out a FRU for failures during good machine path MAP.

START CONDITIONS:
A failure has occurred during one of the tests in a good machine path MAP.

FRUs PARTIALLY TESTED:
A-A1H2 (work station controller card)
A-A1J2 (work station adapter card)

Is the contents of LSR3 = 10xx?
Y N

002
Bad card:
A-A1H2 (work station controller card).

003
- Measure the following pin for correct voltage reading (see chart 1 for correct reading):
  A-A1H2S06 (- 5 volts).

Chart 1

Voltage	Board pin	Voltage Tolerance Min	Voltage Tolerance Max
-5V	A-A1H2S06	-5.5V	-4.55V
+8.5V	A-A1H2M11	+7.68V	+9.35V

(Step 003 continues)

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(Step 003 continued)
Is the reading within the specified range?
Y N

004
Go To Map XXXX, Entry Point A.

005
- Measure the following pin for correct voltage reading (see chart 1 for correct reading):
A-A1H2M11 (+ 8.5 volts).

Chart 1

Voltage	Board pin	Voltage Tolerance Min	Voltage Tolerance Max
-5V	A-A1H2S06	-5.5V	-4.55V
+8.5V	A-A1H2M11	+7.68V	+9.35V

Is the reading within the specified range?
Y N

006
Go To Map XXXX, Entry Point A.

007
Bad card:
A-A1H2 (work station controller card).

(Entry Point BB)
Bad card:
A-A1J2 (work station adapter card).

(Entry Point CC)
Bad card:
A-A1H2 (work station controller card)
---or---
A-A1J2 (work station adapter card).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C201	AA	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	002	0121	A
2	004	0121	A
2	006	0121	A
2	008	0121	A
2	009	0121	A

001

(Entry Point AA)

- Loop on the Bus Coupler Initial Address Load test (T6101).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.

- Enter 6101.
- Press the CSP Start key. The system will continuously loop on the test.
- Probe the following pins:

```
Up   Light: On
Down Light: On

A-A1H2M02 (system control out)
      M03 (system CB0 bit 1)
      M04 (system CB0 bit 2)
      M07 (system DB0 parity bit)
      M12 (system DB0 bit 1)
      M13 (system DB0 bit 7)
      P04 (system DB0 bit 0)
      P06 (system DB0 bit 3)
      P09 (system strobe)
      P10 (system DB0 bit 6)
      P11 (system DB0 bit 2).
```

(Step 001 continues)

MAP DESCRIPTION:
This MAP supplies FRU isolation when a failure occurs on the Bus Coupler Initial Address Load test.

START CONDITIONS:
Entry Point AA - A failure has occurred in the work station adapter good machine path MAP C201 during the Bus Coupler Initial Address Load test (T6101).

FRUs PARTIALLY TESTED:
A-A1H2 (work station controller card)

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(Step 001 continued)
Are the lights correct?
Y N

002
Go To Map 0121, Entry Point A.

003
- Probe the following pins:

```
Up   Light: On
Down Light: Off

A-A1H2P07 (system DB0 bit 4)
      P12 (system DB0 bit 5).
```

Are the lights correct?
Y N

004
Go To Map 0121, Entry Point A.

005
- Probe the following pins:

```
Up   Light: On
Down Light: Off

A-A1H2U02 (system DB1 bit 1)
      S12 (system TB1 bit 1).
```

Are the lights correct?
Y N

006
Go To Map 0121, Entry Point A.

A

A MAP 7041-2

007
- Probe the following pins for possible open nets and record any failing pins with wrong readings:

```
Up   Light: On
Down Light: Off

A-A1H2P05 (system service in)
      U07 (system DB1 parity bit).
```

Are the lights correct?
Y N

008
Go To Map 0121, Entry Point A.

009
Bad card:
A-A1H2 (work station controller card).
Note: If this card does not fix the failure,
Go To Map 0121, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C201	AA	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	0121	A

001
(Entry Point AA)
- Loop on the Bus Coupler Data Buffer and CS Counter test (T6102).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.
- Enter 6102.
- Press the CSP Start key. The system will continuously loop on the test.

- Probe the following pins:

```
Up   Light: On
Down Light: Off

A-A1H2S02 (system DBI bit 0)
       S03 (system DBI bit 2)
       S04 (system DBI bit 3)
       S10 (system DBI bit 5)
       U04 (system DBI bit 4)
       U05 (system DBI bit 6)
       U06 (system DBI bit 7).
```

Are the lights correct?
Y N

002
Go To Map 0121, Entry Point A.

MAP DESCRIPTION:
This MAP supplies FRU isolation when a failure occurs on the Bus Coupler Data Buffer and CS Counter test.

START CONDITIONS:
Entry Point AA - A failure has occurred in the work station adapter good machine path MAP C202 during the Bus Coupler Data Buffer and CS Counter test (T6102).

FRUs PARTIALLY TESTED:
A-A1H2 (work station controller card)

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003

Bad card:

A-A1H2 (work station controller card).

T6103 FRU Isolation MAP

5360 Systems Unit

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C201	AA	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	0121	A

001
(Entry Point AA)
- Loop on the Bus Coupler/CSP Interrupt test (T6103).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.
- Enter 6103.
- Press the CSP Start key. The system will continuously loop on the test.

- Probe the following pin:

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

A-A1H2U09 (system interrupt request).
Are the lights correct?
Y N

002
Go To Map 0121, Entry Point A.

003
Bad card:
A-A1H2 (work station controller card).

MAP DESCRIPTION:
This MAP supplies FRU isolation when a failure occurs on the Bus Coupler/CSP Interrupt test.

START CONDITIONS:
Entry Point AA - A failure has occurred in the work station adapter good machine path MAP C201 during the Bus Coupler/CSP Interrupt test (T6103).

FRUs PARTIALLY TESTED:
A-A1H2 (work station controller card)

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ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	AA	1	001
7020	AA	1	001

001
(Entry Point AA)

Note: The system and all devices must be powered off when measuring resistance on a particular twinax cable.
- Select mode 6.
- Press the Power key (power off).
- Disconnect the A-A1V4 cable.
- Press the Power key (power on).
- Loop on the Driver and Receiver test (TC23F).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Insert diskette DIAG21.
- Select Mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.
- Enter C23F.
- Press the CSP Start key.

The system will loop on the test.

Note: The logic probe must be reset before each pin is probed by placing the latch switch in the 'none' position and then back to the desired position.

- Place the 'latch' switch on the logic probe to the 'up' position.

- Probe the following pins on the A-A1J2 card.
- Probe each pin at least 10 seconds.

(Step 001 continues)

MAP DESCRIPTION:
This MAP isolates the failure when the poll System console test (TC240) fails.

START CONDITIONS:
The work station attachment MDIs have been run.

FRUs PARTIALLY TESTED:
A-A1J2 (work station adapter card)
A-A1V4 cable
Cable tower port 0
A-A1 board
Terminating resistors in the console (display station)

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(Step 001 continued)

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

A-A1J2Y23 (receive data 0)
Z22 (select driver 0).

Are the lights correct?

Y N

002
Bad card:
A-A1J2 (work station adapter card).
- Replug cable.

003
- Place the 'latch' switch on the logic probe to the 'none' position.

- Select mode 6.
- Press the Power key (power off).
- Connect the A-A1V4 cable.
- Measure the resistance between A-A1J2S02 (port 0 phase B) and A-A1J2U02 (port 0 phase A).

Is the resistance between 45 and 65 ohms?

Y N

004
- Measure the resistance between A-A1J2S02 (port 0 phase B) and A-A1J2U02 (port 0 phase A).

Is the resistance greater than 65 ohms?

Y N

005
- Disconnect the twinaxial cable from cable tower port 0.
- Measure the resistance between A-A1J2S02 (port 0 phase B) and A-A1J2U02 (port 0 phase A).

Is the resistance between 100 and 130 ohms?

Y N

1
0 7 4
A B C D

D

006
- Disconnect the A-A1V4 cable.
- Measure the resistance between A-A1J2S02 (port 0 phase B) and A-A1J2U02 (port 0 phase A).

Is the resistance between 100 and 130 ohms?

Y N

007
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S02 (port 0 phase B) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

008
- Measure the resistance between A-A1J2S02 (port 0 phase A) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

009
- Measure the resistance between A-A1J2S02 (port 0 phase B) and A-A1J2U02 (port 0 phase A).

Is the resistance less than 130 ohms?

Y N

010
There is a short on the work station adapter card.
Bad card:
A-A1J2 (work station adapter card).
- Reinstall all the cards and cables.

011
There is a short between phase 0B and phase 0A on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

3 3 3
E F G

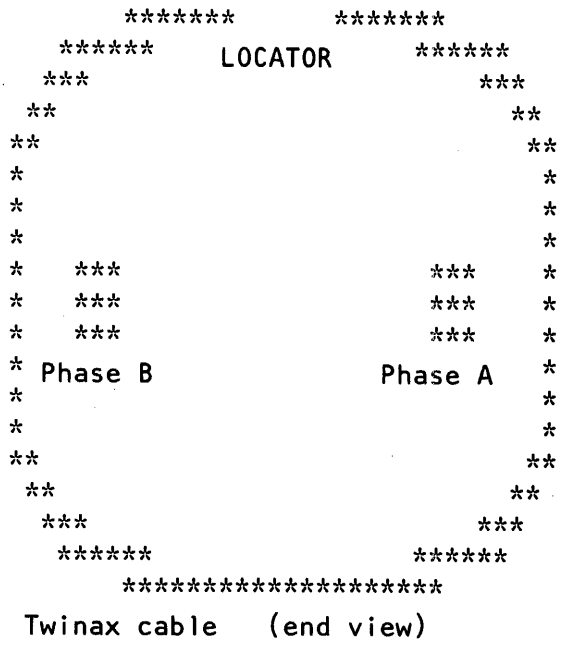
012
There is a short between phase 0A and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

013
There is a short between phase 0B and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

014
There is a short in the A-A1V4 cable.
Bad cable:
A-A1V4.
- Reinstall all the cards and cables.

015

- Measure the resistance between phase B and the ground shield of the twinaxial cable (see figure).



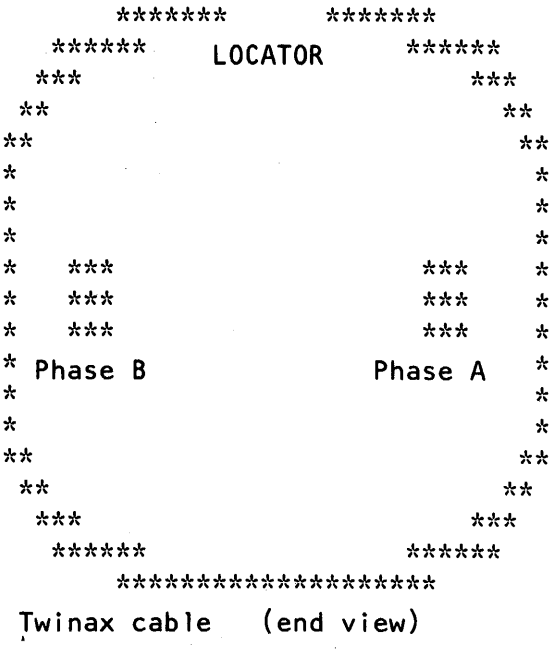
Is the resistance between 45 and 65 ohms?

Y **N**

7 5
H J

016

- Disconnect the twinaxial cable from the console.
- Measure the resistance between phase B and the ground shield of the twinaxial cable (see figure).



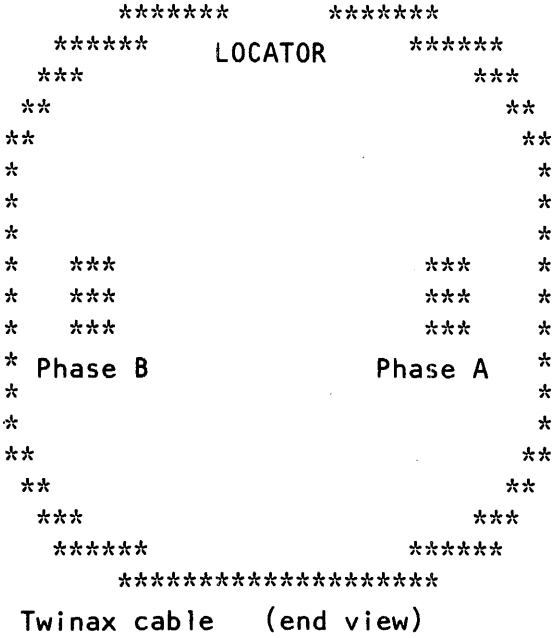
Is the resistance less than 130 ohms?

Y N

6 6
K L

017

- Measure the resistance between phase B and phase A of the twinaxail cable (see figure).



Twinax cable (end view)

Is the resistance less than 130 ohms?

Y N

018

There is a short between phase B and ground in the console. Go to the display station maintenance procedures.

- Reinstall all the cards and cables.

019

There is a short between phase B and phase A of the twinaxial cable.

- Repair or replace the cable.

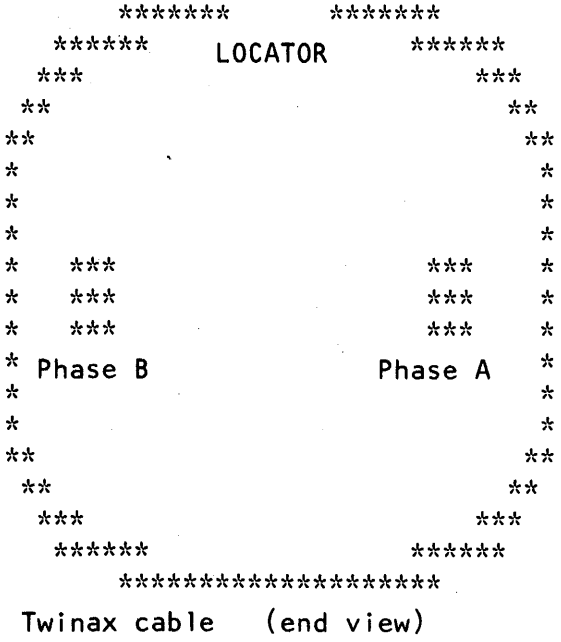
020

There is a short between phase B and the ground shield of the twinaxial cable.

- Repair or replace the cable.

021

- Disconnect the twinaxial cable from the console.
- Measure the resistance between phase A and the ground shield of the twinaxial cable (see figure).



Twinax cable (end view)

Is the resistance less than 130 ohms?

Y N

022

There is a short between phase A and ground in the console. Go to the display station maintenance procedure.

- Reinstall all the cards and cables.

023

There is a short between phase B and the ground shield of the twinaxial cable.

- Repair or replace the cable.
- Reinstall all the cards and cables.

024

- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S02 (port 0 phase B) and A-A1J2U02 (port 0 phase A).

Is the resistance between 100 and 130 ohms?

Y N

025

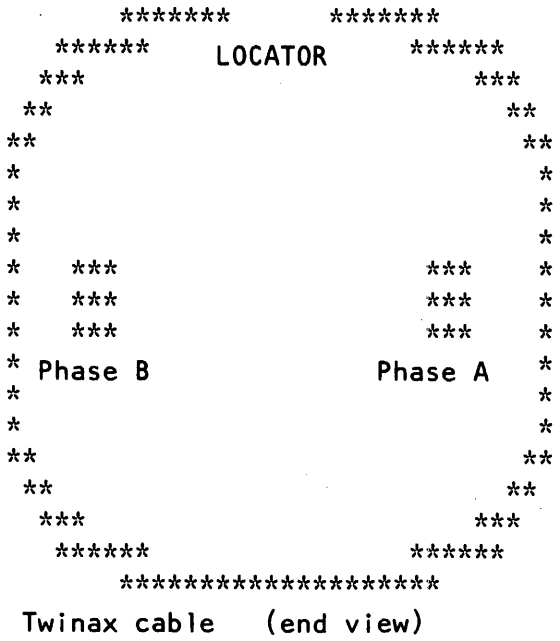
- Measure the resistance between A-A1V4B02 (port 0 phase B) and A-A1V4D02 (port 0 phase A).

Is the resistance between 100 and 130 ohms?

Y N

026

- Disconnect the twinaxial cable from cable tower port 0.
- Measure the resistance between phase B and phase A of the twinaxial cable (see figure).



Twinax cable (end view)

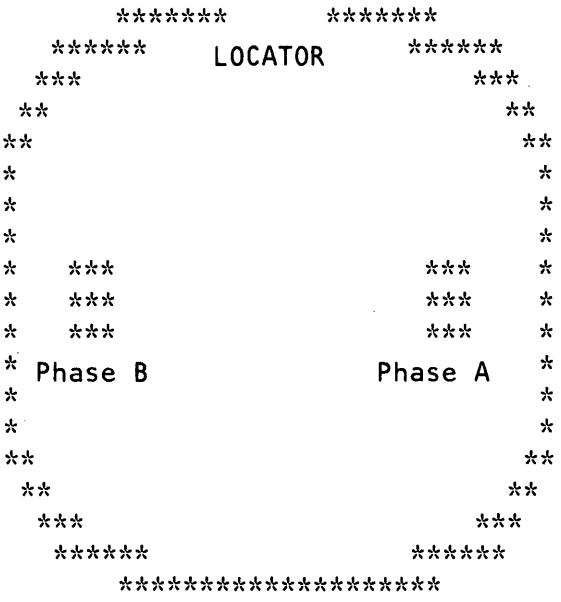
Is the resistance between 100 and 130 ohms?

Y N

10P 10Q 9R

027

- Disconnect the twinaxial cable from the console.
- Measure the resistance between phase B at the system end of the twinaxial cable and phase B at the console end of the cable (see figure).



Twinax cable (end view)

Is the resistance greater than 10 ohms?

Y N

028

- Measure the resistance between Phase A at the system end of the twinaxial cable and Phase A at the console end of the cable (see figure).

Is the resistance greater than 10 ohms?

Y N

029

There is an open in Phase B or Phase A internal to the console. Go to the display station maintenance procedures.

- Reinstall all the cards and cables.

030

There is an open in Phase A of the twinaxial cable.

- Repair or replace the cable.
- Reinstall all the cards and cables.

031
There is an open in Phase B of the twinaxial cable.
- Repair or replace the cable.
- Reinstall all the cards and cables.

032
There is an open in the A-A1V4 cable.
Bad cable:
A-A1V4.
- Reinstall all the cards and cables.

033
There is an open on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

034
There is an open on the work station adapter card.
Bad card:
A-A1J2.
- Reinstall all the cards and cables.

035
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S02 (port 0 phase B) and A-A1J2D08 (ground).

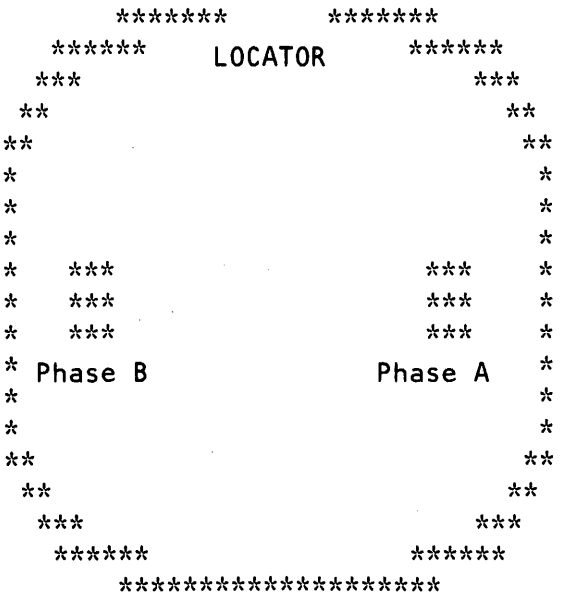
Is the resistance between 45 and 65 ohms?

Y N

036
There is an open in the ground shield of the twinaxial cable.
- Repair or replace the cable.
- Reinstall all the cards and cables.

037

- Disconnect the twinaxial cable from the console.
- Measure the resistance between A-A1J2S02 (port 0 phase B) and phase B at the console end of the twinaxial cable (see figure).



Twinax cable (end view)

Is the resistance less than 10 ohms?

Y N

038

- Disconnect the twinaxial cable from cable tower port 0.
- Measure the resistance between phase B at the console end of the twinaxial cable and phase B at the system end of the cable.

Is the resistance less than 10 ohms?

Y N

039

Phase B and phase A are crossed in the twinaxial cable.

- Repair or replace the cable.
- Reinstall all the cards and cables.

040

Phase B and phase A are crossed in the A-A1V4.

- Repair or replace the cable.
- Reinstall all the cards and cables.

041

The problem is in the console or the work station adapter card You will be sent to the display station maintenance procedures. Record this MAP and step number. If the display station maintenance procedure does not correct the problem, return to this MAP and step number. Go to the display station maintenance procedure.

Did the display station maintenance procedure correct the problem?

Y N

042

Bad card:
A-A1J2 (work station adapter card).
- Reinstall all the cards and cables.

043

- Run the work station attachment MDIs to verify the corrected problem.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	CC	7	028

001
(Entry Point AA)

Note: The system and all devices must be powered off when measuring resistance on a particular twinax cable.
- Select mode 6.
- Press the Power key (power off).
- Disconnect the A-A1V4 cable.
- Press the Power key (power on).
- Loop on the Driver and Receiver test (TC23F).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.
- Enter C23F.
- Press the CSP Start key.

The system will loop on the test.

Note: The logic probe must be reset before each pin is probed by placing the latch switch in the 'none' position and then back to the desired position.

- Place the 'latch' switch on the logic probe to the 'up' position.

- Probe the following pins on the A-A1J2 card:
- Probe each pin at least 10 seconds.

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

(Step 001 continues)

MAP DESCRIPTION:
This MAP checks the twinaxial interface hardware inside the system unit for port 1.

START CONDITIONS:
MAP 7080 has been used or the work station MDIs have been run.

FRUs PARTIALLY TESTED:
A-A1J2 (work station adapter card).
A-A1V4 cable
A-A1 board

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(Step 001 continued)
A-A1J2Y03 (receive data 1)
Y31 (select driver 1).

Are the lights correct?

Y N

002
Bad card:
A-A1J2 (work station adapter card).
- Replug cable.

003
- Place the 'latch' switch on the logic probe to the 'none' position.

- Select mode 6.
- Press the Power key (power off).
- Connect the A-A1V4 cable.
- Measure the resistance between A-A1J2S03 (port 1 phase B) and A-A1J2U05 (port 1 phase A).

Is the resistance between 45 and 65 ohms?

Y N

004
- Measure the resistance between A-A1J2S03 (port 1 phase B) and A-A1J2U05 (port 1 phase A).

Is the resistance greater than 65 ohms?

Y N

005
- Disconnect the twinaxial cable from cable tower port 1.
- Measure the resistance between A-A1J2S03 (port 1 phase B) and A-A1J2U05 (port 1 phase A).

Is the resistance between 100 and 130 ohms?

Y N

5 3 3
A B C D

D

006
- Disconnect the A-A1V4 cable.
- Measure the resistance between A-A1J2S03 (port 1 phase B) and A-A1J2U05 (port 1 phase A).

Is the resistance between 100 and 130 ohms?

Y N

007
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S03 (port 1 phase B) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

008
- Measure the resistance between A-A1J2U05 (port 1 phase A) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

009
- Measure the resistance between A-A1J2S03 (port 1 phase B) and A-A1J2U05 (port 1 phase A).

Is the resistance less than 130 ohms?

Y N

010
There is a short on the work station adapter card.
Bad card:
A-A1J2 (work station adapter card).
- Reinstall all the cards and cables.

011
There is a short between phase B and phase A on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

3 3 3
E F G

012

There is a short between phase A and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

013

There is a short between phase B and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

014

There is a short in the A-A1V4 cable.
Bad cable:
A-A1V4.

015

(Entry Point BB)

There is a problem in the twinaxial cable. You will be sent to the twinaxial cable MDI map. To run the twinaxial cable MDI map:
- Press the Power key (power on).
- Insert the DIAG21 diskette.
- Select mode E.
- Press the Load key.

The system will run for approximately 2 minutes and then display a menu on the console.
- Select the MDI MAPs option. The system will display a second menu on the console.
- Select the System Console option. The system will display more instructions on the console. Follow those instructions to run the twinaxial cable MDI map.

016

- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S03 (port 1 phase B) and A-A1J2U05 (port 1 phase A).

Is the resistance between 100 and 130 ohms?

Y **N**

5 4
H J

017

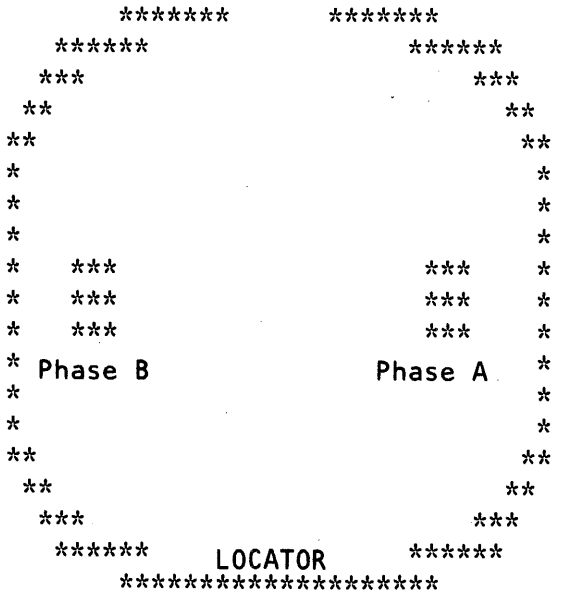
- Measure the resistance between A-A1V4B04 (port 1 phase B) and A-A1V4D04 (port 1 phase A).

Is the resistance between 100 and 130 ohms?

Y N

018

- Reinstall the A-A1J2 (work station adapter card).
- Disconnect the cable from cable tower port 1.
- Measure the resistance between phase B and phase A of connector cable tower port 1 (see figure).



Connector cable tower (end view)
port 1

Is the resistance greater than 130 ohms?

Y N

019

There is an open in the twinaxial cable.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

020

There is an open in the A-A1V4 cable.

Bad cable:

A-A1V4.

- Reinstall all the cards and cables.

021

There is an open in the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

022

There is an open on the work station adapter card.
Bad card:
A-A1J2.
- Reinstall all the cards and cables.

023

- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S03 (port 1 phase B) and A-A1J2D08 (ground).

Is the resistance between 45 and 65 ohms?

Y N

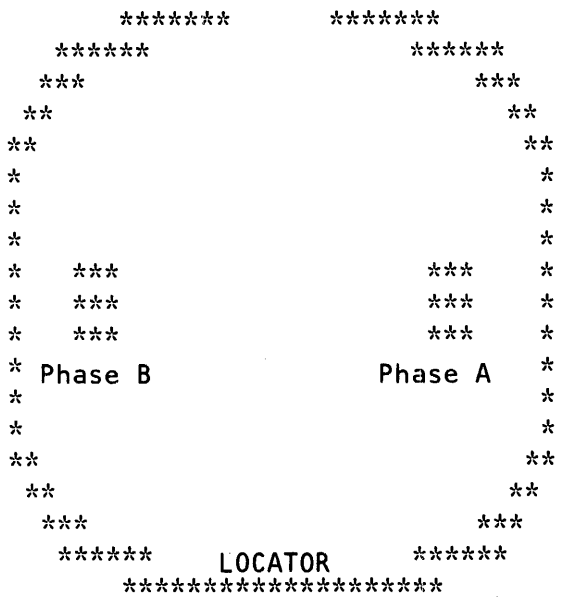
024

There is an open in the ground shield of the twinaxial cable.
- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

025

- Disconnect the twinaxial cable from cable tower port 1.
- Measure the resistance between A-A1J2S03 (port 1 phase B) and phase B of connector cable tower port 1 (see figure).



Connector cable tower (end view)
port 1

Is the resistance less than 10 ohms?

Y N

026

Phase B and phase A are crossed in the A-A1V4 cable.

Bad cable:
A-A1V4.

- Reinstall all the cards and cables.

027

The twinaxial interface hardware inside the system is working properly. phase B and phase A of the twinaxial cable may be crossed.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

028
(Entry Point CC)

Note: Every resistance measurement must be made with power off.

- Set the meter to ohms X 10.
- Measure the resistance between A-A1J2S03 (port 1 phase B) and A-A1J2U05 (port 1 phase A).

Is the resistance less than 45 ohms?
Y N

029
Bad card:
A-A1J2.

030
You should not have come to this step. Go to the beginning of this MAP and diagnose the problem again.
Go to Page 1, Step 001, Entry Point AA.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	CC	7	028

001
(Entry Point AA)

Note: The system and all devices must be powered off when measuring resistance on a particular twinax cable.
- Select mode 6.
- Press the Power key (power off).
- Disconnect the A-A1V4 cable.
- Press the Power key (power on).
- Loop on the Driver and Receiver test (TC23F).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.
- Enter C23F.
- Press the CSP Start key.

The system will loop on the test.

Note: The logic probe must be reset before each pin is probed by placing the latch switch in the 'none' position and then back to the desired position.

- Place the 'latch' switch on the logic probe to the 'up' position.

- Probe the following pins on the A-A1J2 card:
- Probe each pin at least 10 seconds.

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

(Step 001 continues)

MAP DESCRIPTION:
This MAP checks the twinaxial interface hardware inside the system unit for port 2.

START CONDITIONS:
MAP 7080 has been used or the work station MDIs have been run.

FRUs PARTIALLY TESTED:
A-A1J2 (work station adapter card)
A-A1V4 cable
A-A1 board

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(Step 001 continued)
A-A1J2Y24 (select driver 2)
Y28 (receive data 2).

Are the lights correct?

Y N

002
Bad card:
A-A1J2 (work station adapter card).
- Replug cable.

003
- Place the 'latch' switch on the logic probe to the 'none' position.

- Select mode 6.
- Press the Power key (power off).
- Connect the A-A1V4 cable.
- Measure the resistance between A-A1J2S04 (port 2 phase B) and A-A1J2U06 (port 2 phase A).

Is the resistance between 45 and 65 ohms?

Y N

004
- Measure the resistance between A-A1J2S04 (port 2 phase B) and A-A1J2U06 (port 2 phase A).

Is the resistance greater than 65 ohms?

Y N

005
- Disconnect the twinaxial cable from cable tower port 2.
- Measure the resistance between A-A1J2S04 (port 2 phase B) and A-A1J2U06 (port 2 phase A).

Is the resistance between 100 and 130 ohms?

Y N

5 3 3
A B C D

D

006
- Disconnect the A-A1V4 cable.
- Measure the resistance between A-A1J2S04 (port 2 phase B) and A-A1J2U06 (port 2 phase A).

Is the resistance between 100 and 130 ohms?

Y N

007
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S04 (port 2 phase B) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

008
- Measure the resistance between A-A1J2U06 (port 2 phase A) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

009
- Measure the resistance between A-A1J2S04 (port 2 phase B) and A-A1J2U06 (port 2 phase A).

Is the resistance less than 130 ohms?

Y N

010
There is a short on the work station adapter card.
Bad card:
A-A1J2 (work station adapter card).
- Reinstall all the cards and cables.

011
There is a short between phase B and phase A on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

3 3 3
E F G

012
There is a short between phase A and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

013
There is a short between phase B and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

014
There is a short in the A-A1V4 cable.
Bad cable:
A-A1V4.
- Reinstall all the cards and cables.

015
(Entry Point BB)
There is a problem in the twinaxial cable. You will be sent to the twinaxial cable MDI map. To run the twinaxial cable MDI map:
- Insert the DIAG21 diskette.
- Select mode E.
- Press the Load key.

The system will run for approximately 2 minutes and then display a menu on the console.
- Select the MDI MAPs option. The system will display a second menu on the console.
- Select the System Console option. The system will display more instructions on the console. Follow those instructions to run the twinaxial cable MDI map.

016
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S04 (port 2 phase B) and A-A1J2U06 (port 2 phase A).

Is the resistance between 100 and 130 ohms?

Y **N**

5 4
H J

017

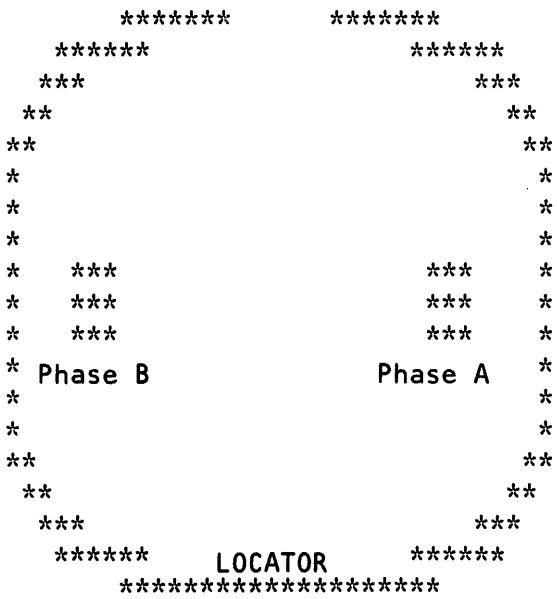
- Measure the resistance between A-A1V4B05 (port 2 phase B) and A-A1V4D05 (port 2 phase A).

Is the resistance between 100 and 130 ohms?

Y N

018

- Reinstall the A-A1J2 (work station adapter card).
- Disconnect the cable from cable tower port 2.
- Measure the resistance between phase B and phase A of connector cable tower port 2 (see figure).



Connector cable tower (end view)
port 2

Is the resistance greater than 130 ohms?

Y N

019

There is an open in the twinaxial cable.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

020

There is an open in the A-A1V4 cable.

Bad cable:

A-A1V4.

- Reinstall all the cards and cables.

021

There is an open in the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

022

There is an open on the work station adapter card.
Bad card:
A-A1J2.
- Reinstall all the cards and cables.

023

- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S04 (port 2 phase B) and A-A1J2D08 (ground).

Is the resistance between 45 and 65 ohms?

Y N

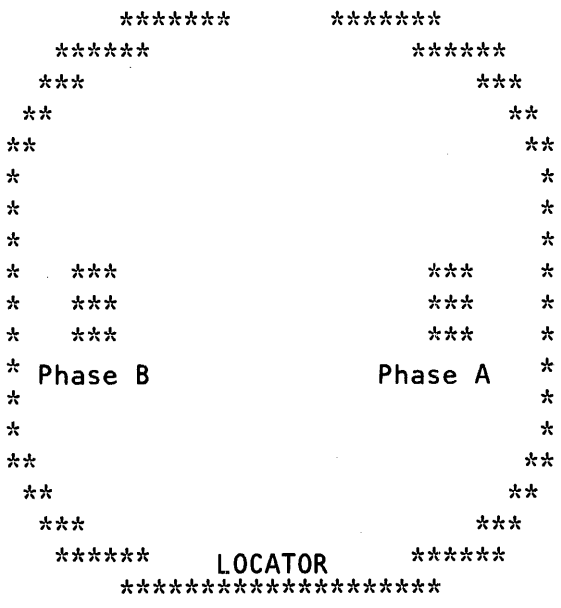
024

There is an open in the ground shield of the twinaxial cable.
- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

025

- Disconnect the twinaxial cable from cable tower port 2.
- Measure the resistance between A-A1J2S04 (port 2 phase B) and phase B of connector cable tower port 2 (see figure).



Connector cable tower (end view)
port 2

Is the resistance less than 10 ohms?

Y N

026

Phase B and Phase A are crossed in the A-A1V4 cable.

Bad cable:
A-A1V4.

- Reinstall all the cards and cables.

027

The twinaxial interface hardware inside the system is working properly. Phase B and phase A of the twinaxial cable may be crossed.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

028
(Entry Point CC)

Note: Every resistance measurement must be made with power off.

- Set the meter to ohms X 10.
- Measure the resistance between A-A1J2S04 (port 2 phase B) and A-A1J2U06 (port 2 phase A).

Is the resistance less than 45 ohms?
Y N

029
Bad card:
A-A1J2.

030
You should not have come to this step. Go to the beginning of this MAP and diagnose the problem again.
Go to Page 1, Step 001, Entry Point AA.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	CC	7	028

001
(Entry Point AA)

Note: The system and all devices must be powered off when measuring resistance on a particular twinax cable.
- Select mode 6.
- Press the Power key (power off).
- Disconnect the A-A1V4 cable.
- Press the Power key (power on).
- Loop on the Driver and Receiver test (TC23F).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.
- Enter C23F.
- Press the CSP Start key.

The system will loop on the test.

Note: The logic probe must be reset before each pin is probed by placing the latch switch in the 'none' position and then back to the desired position.

- Place the 'latch' switch on the logic probe to the 'up' position.

- Probe the following pins on the A-A1J2 card:

- Probe each pin at least 10 seconds.

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

(Step 001 continues)

MAP DESCRIPTION:
This MAP checks the twinaxial interface hardware inside the system unit for port 3.

START CONDITIONS:
MAP 7080 has been used or the work station MDIs have been run.

FRUs PARTIALLY TESTED:
A-A1J2 (work station adapter card)
A-A1V4 cable
A-A1 board

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(Step 001 continued)

A-A1J2Y27 (receive data 3)
Y29 (select driver 3).

Are the lights correct?

Y N

002
Bad card:
A-A1J2 (work station adapter card).
- Reinstall all the cards and cables.

003
- Place the 'latch' switch on the logic probe to the 'none' position.

- Select mode 6.
- Press the Power key (power off).
- Connect the A-A1V4 cable.
- Measure the resistance between A-A1J2S07 (port 3 phase B) and A-A1J2U07 (port 3 phase A).

Is the resistance between 45 and 65 ohms?

Y N

004
- Measure the resistance between A-A1J2S07 (port 3 phase B) and A-A1J2U07 (port 3 phase A).

Is the resistance greater than 65 ohms?

Y N

005
- Disconnect the twinaxial cable from cable tower port 3.
- Measure the resistance between A-A1J2S07 (port 3 phase B) and A-A1J2U07 (port 3 phase A).

Is the resistance between 100 and 130 ohms?

Y N

5 4 3
A B C D

D

006
- Disconnect the A-A1V4 cable.
- Measure the resistance between A-A1J2S07 (port 3 phase B) and A-A1J2U07 (port 3 phase A).

Is the resistance between 100 and 130 ohms?

Y N

007
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S07 (port 3 phase B) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

008
- Measure the resistance between A-A1J2U07 (port 3 phase A) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

009
- Measure the resistance between A-A1J2S07 (port 3 phase B) and A-A1J2U07 (port 3 phase A).

Is the resistance less than 130 ohms?

Y N

010
There is a short on the work station adapter card.
Bad card:
A-A1J2 (work station adapter card).
- Reinstall all the cards and cables.

011
There is a short between phase B and phase A on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

3 3 3
E F G

012
There is a short between phase A and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

013
There is a short between phase B and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

014
There is a short in the A-A1V4 cable.
Bad cable:
A-A1V4.
- Reinstall all the cards and cables.

015
(Entry Point BB)
There is a problem in the twinaxial cable. You will be sent to the twinaxial cable MDI map. To run the twinaxial cable MDI map:
- Press the Power key (power on).
- Insert the DIAG21 diskette.
- Select mode E.
- Press the Load key.

The system will run for approximately 2 minutes and then display a menu on the console.
- Select the MDI MAPs option. The system will display a second menu on the console.
- Select the System Console option. The system will display more instructions on the console. Follow those instructions to run the twinaxial cable MDI map.

016

- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S07 (port 3 phase B) and A-A1J2U07 (port 3 phase A).

Is the resistance between 100 and 130 ohms?

Y N

017

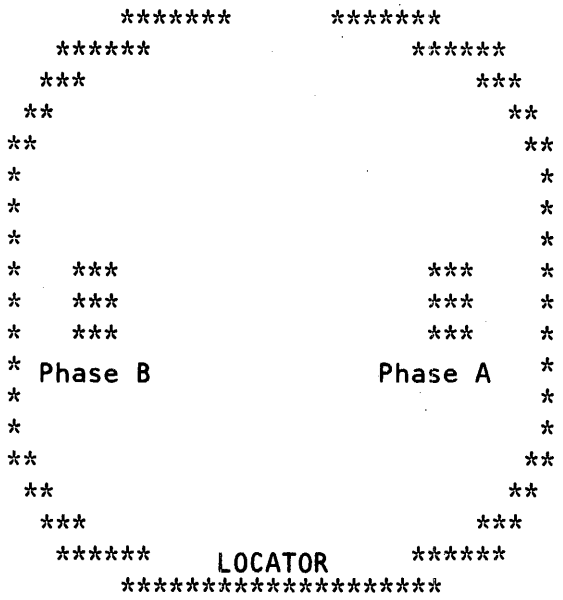
- Measure the resistance between A-A1V4B07 (port 3 phase B) and A-A1V4D07 (port 3 phase A).

Is the resistance between 100 and 130 ohms?

Y N

018

- Reinstall the A1J2 (work station adapter card).
- Disconnect the cable from cable tower port 3.
- Measure the resistance between phase B and phase A of connector cable tower port 3 (see figure).



Connector cable tower (end view)
port 3

Is the resistance greater than 130 ohms?

Y N

019

There is an open in the twinaxil cable.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

020
There is an open in the A-A1V4 cable.
Bad cable:
A-A1V4.
- Reinstall all the cards and cables.

021
There is an open in the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

022
There is an open on the work station adapter card.
Bad card:
A-A1J2.
- Reinstall all the cards and cables.

023
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S07 (port 3 phase B) and A-A1J2D08 (ground).

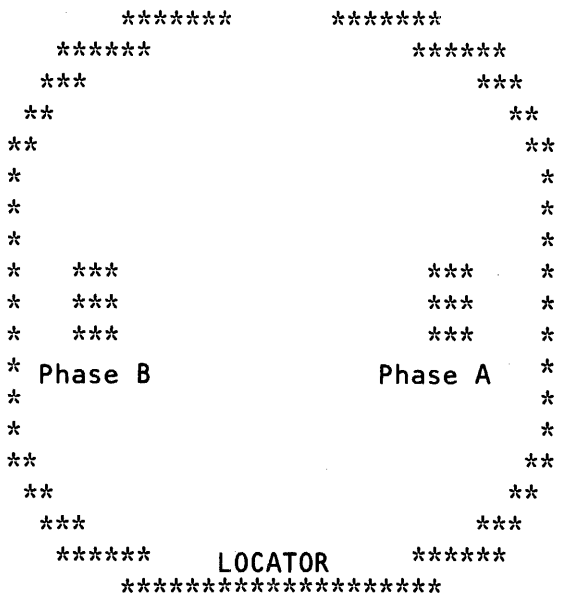
Is the resistance between 45 and 65 ohms?
Y N

024
There is an open in the ground shield of the twinaxial cable.
- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

025

- Disconnect the twinaxial cable from cable tower port 3.
- Measure the resistance between A-A1J2S07 (port 3 phase B) and phase B of connector cable tower port 3 (see figure).



Connector cable tower (end view)
port 3

Is the resistance less than 10 ohms?

Y N

026

Phase B and phase A are crossed in the A-A1V4 cable.

Bad cable:
A-A1V4.

027

The twinaxial interface hardware inside the system is working properly. Phase B and phase A of the twinaxial cable may be crossed.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

028
(Entry Point CC)

Note: Every resistance measurement must be made with power off.

- Set the meter to ohms X 10.
- Measure the resistance between A-A1J2S07 (port 3 phase B) and A-A1J2U07 (port 3 phase A).

Is the resistance less than 45 ohms?
Y N

029
Bad card:
A-A1J2.

030
You should not have come to this step. Go to the beginning of this MAP and diagnose the problem again.
Go to Page 1, Step 001, Entry Point AA.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	CC	7	028

001
(Entry Point AA)

Note: The system and all devices must be powered off when measuring resistance on a particular twinax cable.
- Select mode 6.
- Press the Power key (power off).
- Disconnect the A-A1V4 cable.
- Press the Power key (power on).
- Loop on the Driver and Receiver test (TC23F).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.
- Enter C23F.
- Press the CSP Start key.

The system will loop on the test.

Note: The logic probe must be reset before each pin is probed by placing the latch switch in the 'none' position and then back to the desired position.

- Place the 'latch' switch on the logic probe to the 'up' position.

- Probe the following pins the A-A1J2 card:

- Probe each pin at least 10 seconds.

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

(Step 001 continues)

MAP DESCRIPTION:
This MAP checks the twinaxial interface hardware inside the system unit for port 4.

START CONDITIONS:
MAP 7080 has been used or the work station MDIs have bee run.

FRUs PARTIALLY TESTED:
A-A1J2 (work station adapter card)
A-A1V4 cable
A-A1 board

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(Step 001 continued)

A-A1J2Y07 (select driver 4)
Y26 (receive data 4).

Are the lights correct?

Y N

002
Bad card:
A-A1J2 (work station adapter card).
- Reinstall all the cards and cables.

003
- Place the 'latch' switch on the logic probe to the 'none' position.

- Select mode 6.
- Press the Power key (power off).
- Connect the A-A1V4 cable.
- Measure the resistance between A-A1J2S10 (port 4 phase B) and A-A1J2U09 (port 4 phase A).

Is the resistance between 45 and 65 ohms?

Y N

004
- Measure the resistance between A-A1J2S10 (port 4 phase B) and A-A1J2U09 (port 5 phase A).

Is the resistance greater than 65 ohms?

Y N

005
- Disconnect the twinaxial cable from cable tower port 4.
- Measure the resistance between A-A1J2S10 (port 4 phase B) and A-A1J2U09 (port 4 phase A).

Is the resistance between 100 and 130 ohms?

Y N

5 4 3
A B C D

D

006
- Disconnect the A-A1V4 cable.
- Measure the resistance between A-A1J2S10 (port 4 phase B) and A-A1J2U09 (port 4 phase A).

Is the resistance between 100 and 130 ohms?

Y N

007
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S10 (port 4 phase B) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

008
- Measure the resistance between A-A1J2U09 (port 4 phase A) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

009
- Measure the resistance between A-A1J2S10 (port 4 phase B) and A-A1J2U09 (port 4 phase A).

Is the resistance less than 130 ohms?

Y N

010
There is a short on the work station adapter card.
Bad card:
A-A1J2 (work station adapter card).
- Reinstall all the cards and cables.

011
There is a short between phase B and phase A on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

3 3 3
E F G

012
There is a short between phase A and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

013
There is a short between phase B and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

014
There is a short in the A-A1V4 cable.
Bad cable:
A-A1V4.
- Reinstall all the cards and cables.

015
(Entry Point BB)
There is a problem in the twinaxial cable. You will be sent to the twinaxial cable MDI map. To run the twinaxial cable MDI map:
- Press the Power key (power on).
- Insert the DIAG21 diskette.
- Select mode E.
- Press the Load key.

The system will run for approximately 2 minutes and then display a menu on the console.
- Select the MDI MAPs option. The system will display a second menu on the console.
- Select the System Console option. The system will display more instructions on the console. Follow those instructions to run the twinaxial cable MDI map.

016

- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S10 (port 4 phase B) and A-A1J2U09 (port 4 phase A).

Is the resistance between 100 and 130 ohms?

Y N

017

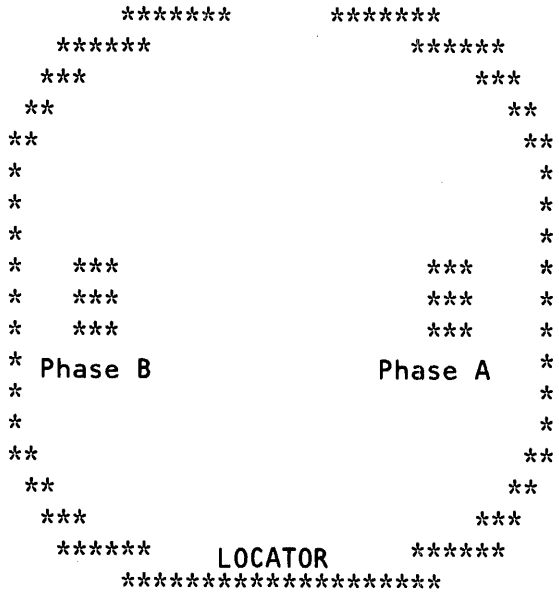
- Measure the resistance between A-A1V4B09 (port 4 phase B) and A-A1V4D09 (port 4 phase A).

Is the resistance between 100 and 130 ohms?

Y N

018

- Reinstall the A1J2 (work station adapter card).
- Disconnect the cable from cable tower port 4.
- Measure the resistance between phase B and phase A of connector cable tower port 4 (see figure).



Connector cable tower (end view)
port 4

Is the resistance greater than 130 ohms?

Y N

019

There is an open in the twinaxial cable.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

020
There is an open in the A-A1V4 cable.
Bad cable:
A-A1V4.
- Reinstall all the cards and cables.

021
There is an open in the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

022
There is an open on the work station adapter card.
Bad card:
A-A1J2.
- Reinstall all the cards and cables.

023
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S10 (port 4 phase B) and A-A1J2D08 (ground).

Is the resistance between 45 and 65 ohms?
Y N

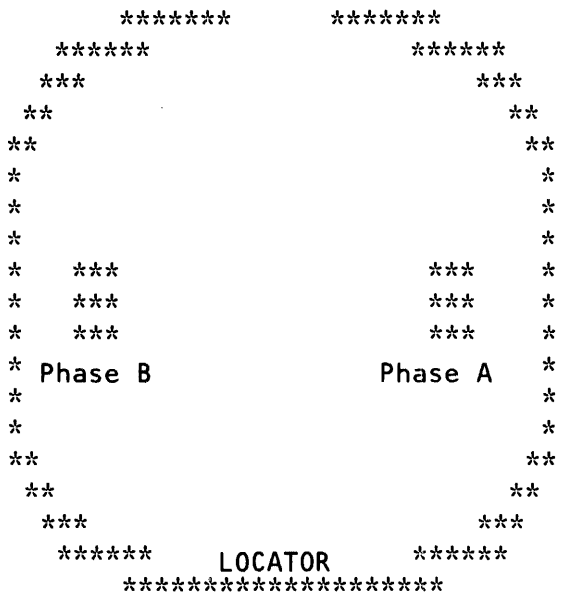
024
There is an open in the ground shield of the twinaxial cable.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

025

- Disconnect the twinaxial cable from cable tower port 4.
- Measure the resistance between A-A1J2S10 (port 4 phase B) and phase B of connector cable tower port 4 (see figure).



Connector cable tower (end view)
port 4

Is the resistance less than 10 ohms?

Y N

026

Phase B and phase A are crossed in the A-A1V4 cable.

Bad cable:
A-A1V4.

027

The twinaxial interface hardware inside the system is working properly. Phase B and phase A of the twinaxial cable may be crossed.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

028
(Entry Point CC)

Note: Every resistance measurement must be made with power off.

- Set the meter to ohms X 10.
- Measure the resistance between A-A1J2S10 (port 4 phase B) and A-A1J2U09 (port 4 phase A).

Is the resistance less than 45 ohms?
Y N

029
Bad card:
A-A1J2.

030
You should not have come to this step. Go to the beginning of this MAP and diagnose the problem again.
Go to Page 1, Step 001, Entry Point AA.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C202	CC	7	028

001
(Entry Point AA)

Note: The system and all devices must be powered off when measuring resistance on a particular twinax cable.
- Select mode 6.
- Press the Power key (power off).
- Disconnect the A-A1V4 cable.
- Press the Power key (power on).
- Loop on the Driver and Receiver test (TC23F).
- Insert diskette DIAG21.
- Select mode E.
- Enter F1C2.
- Press the Load key.

The system will run for approximately 1 minute and then halt with b421 in the display.
- Enter C23F.
- Press the CSP Start key.

The system will loop on the test.

Note: The logic probe must be reset before each pin is probed by placing the latch switch in the 'none' position and then back to the desired position.

- Place the 'latch' switch on the logic probe to the 'up' position.

- Probe the following signals on the A1J2 card:

- Probe each pin at least 10 seconds.

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

(Step 001 continues)

MAP DESCRIPTION:
This MAP checks the twinaxial interface hardware inside the system unit for port 5.

START CONDITIONS:
MAP 7080 has been used or the work station MDIs have been run.

FRUs PARTIALLY TESTED:
A-A1J2 (work station adapter card)
A-A1V4 cable
A-A1 board

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(Step 001 continued)

A-A1J2Y08 (select driver 5)
Y25 (receive data 5).

Are the lights correct?

Y N

002
Bad card:
A-A1J2 (work station adapter card).
- Reinstall all the cards and cables.

003
- Place the 'latch' switch on the logic probe to the 'none' position.

- Select mode 6.
- Press the Power key (power off).
- Connect the A-A1V4 cable.
- Measure the resistance between A-A1J2S12 (port 5 phase B) and A-A1J2U10 (port 5 phase A).

Is the resistance between 45 and 65 ohms?

Y N

004
- Measure the resistance between A-A1J2S12 (port 5 phase B) and A-A1J2U10 (port 5 phase A).

Is the resistance greater than 65 ohms?

Y N

005
- Disconnect the twinaxial cable from cable tower port 5.
- Measure the resistance between A-A1J2S12 (port 5 phase B) and A-A1J2U10 (port 5 phase A).

Is the resistance between 100 and 130 ohms?

Y N

5 3 3
A B C D

D

006
- Disconnect the A-A1V4 cable.
- Measure the resistance between A-A1J2S12 (port 5 phase B) and A-A1J2U10 (port 5 phase A).

Is the resistance between 100 and 130 ohms?

Y N

007
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S12 (port 5 phase B) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

008
- Measure the resistance between A-A1J2U10 (port 5 phase A) and A-A1J2D08 (ground).

Is the resistance less than 130 ohms?

Y N

009
- Measure the resistance between A-A1J2S12 (port 5 phase B) and A-A1J2U10 (port 5 phase A).

Is the resistance less than 130 ohms?

Y N

010
There is a short on the work station adapter card.
Bad card:
A-A1J2 (work station adapter card).
- Reinstall all the cards and cables.

011
There is a short between phase B and phase A on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

3 3 3
E F G

012
There is a short between phase A and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

013
There is a short between phase B and ground on the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

014
There is a short in the A-A1V4 cable.
Bad cable:
A-A1V4.

015
(Entry Point BB)
There is a problem in the twinaxial cable. You will be sent to the twinaxial cable MDI map. To run the twinaxial cable MDI map:
- Press the Power key (power on).
- Insert the DIAG21 diskette.
- Select mode E.
- Press the Load key.

The system will run for approximately 2 minutes and then display a menu on the console.
- Select the MDI MAPs option. The system will display a second menu on the console.
- Select the System Console option. The system will display more instructions on the console. Follow those instructions to run the twinaxial cable MDI map.

016
- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S12 (port 5 phase B) and A-A1J2U10 (port 5 phase A).

Is the resistance between 100 and 130 ohms?

Y **N**

5 4
H J

017

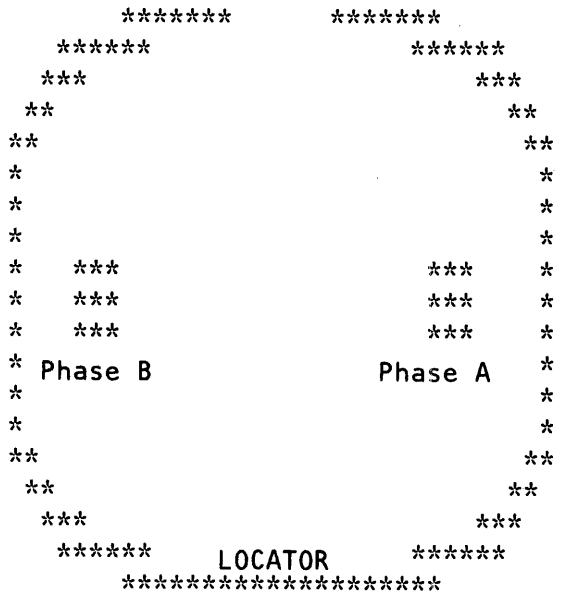
- Measure the resistance between A-A1V4B10 (port 5 phase B) and A-A1V4D10 (port 5 phase A).

Is the resistance between 100 and 130 ohms?

Y N

018

- Reinstall the A-A1J2 (work station adapter card).
- Disconnect the cable from cable tower port 5.
- Measure the resistance between phase B and phase A of connector cable tower port 5 (see figure).



Connector cable tower (end view)
port 5

Is the resistance greater than 130 ohms?

Y N

019

There is an open in the twinaxial cable.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

020

There is an open in the A-A1V4 cable.

Bad cable:

A-A1V4.

- Reinstall all the cards and cables.

021

There is an open in the A-A1 board.
Bad board:
A-A1.
- Reinstall all the cards and cables.

022

There is an open on the work station adapter card.
Bad card:
A-A1J2.
- Reinstall all the cards and cables.

023

- Remove the A-A1J2 (work station adapter card).
- Measure the resistance between A-A1J2S12 (port 5 phase B) and A-A1J2D08 (ground).

Is the resistance between 45 and 65 ohms?

Y N

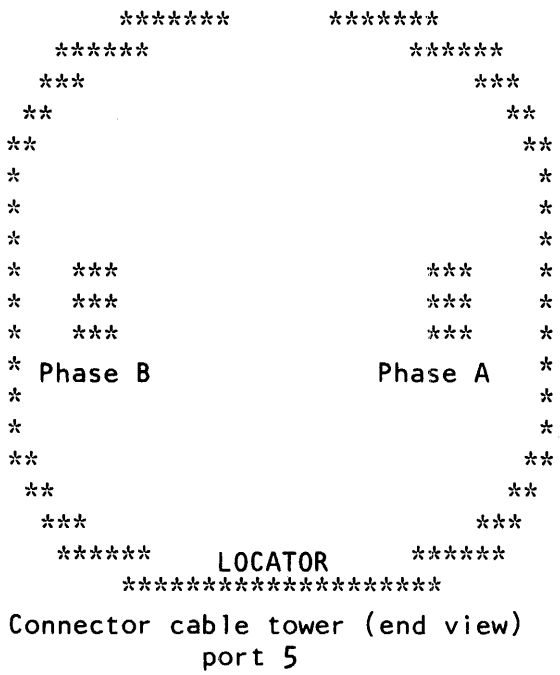
024

There is an open in the ground shield of the twinaxial cable.
- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

025

- Disconnect the twinaxial cable from cable tower port 5.
- Measure the resistance between A-A1J2S12 (port 5 phase B) and phase B of connector cable tower port 5 (see figure).



Connector cable tower (end view)
port 5

Is the resistance less than 10 ohms?

Y N

026

Phase B and phase A are crossed in the A-A1V4 cable.

Bad cable:
A-A1V4.

027

The twinaxial interface hardware inside the system is working properly. Phase B and Phase A of the twinaxial cable may be crossed.

- Run the twin-ax cable softmap.
- Reinstall all the cards and cables.

Go to Page 3, Step 015, Entry Point BB.

028
(Entry Point CC)

Note: Every resistance measurement must be made with power off.

- Set the meter to ohms X 1.
- Measure the resistance between A-A1J2S12 (port 5 phase B) and A-A1J2U10 (port 5 phase A).

Is the resistance less than 45 ohms?
Y N

029
Bad card:
A-A1J2.

030
You should not have come to this step. Go to the beginning of this MAP and diagnose the problem again.
Go to Page 1, Step 001, Entry Point AA.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7001	AA	1	001
7099	AA	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	004	7001	A
1	002	7001	AA

001
(Entry Point AA)
The network analysis program uses the system console to display results.

MAP DESCRIPTION:
This MAP will aid you in correcting problems with work stations that are not the system console. You will be instructed on how to run the network analysis program and on how to use the results from that program.

START CONDITIONS:
MAP 7001 has been used.

FRUs PARTIALLY TESTED:
A-A1J2 (work station adapter card)
A-A1V4 cable
A-A1 board
twinaxial cables
work stations

Has the system displayed information on the system console?
Y N

002
The console must work properly before the network analysis program may be used.
Go To Map 7001, Entry Point AA.

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003

The network analysis program will display a matrix on the system console. Along the horizontal axis of the matrix will be all the possible cable and station addresses of the local work stations. Along the vertical axis will be the various conditions that can be sensed at the work stations.

When a condition is sensed at a work station, an X is placed at the intersection of the work station address and the appropriate condition.

- To receive an accurate picture of the work station status, power on all system work stations/printers. Ref to MIM 01-535 (test request menu 3) and 01-544 (displaying configuration data) for procedures to display the system configurations.

The correct response for a work station display is the single frame condition. A work station printer should respond with the single frame condition for the first sense and the multi-frame condition after that. No response is the correct condition for an address where there is no work station.

(Step 003 continues)

(Step 003 continued)

To run the network analysis program:
- Insert the DIAG21 diskette.
- Select mode F.
- Enter F1C2.
- Press the Load key on the control panel.

The system will run for approximately 1 minute and then stop with b421 in the display. The DIAG21 diskette will be ejected when the system stops if the system has a 72MD Diskette attachment.
- Enter C245.
- Press the CSP Start key on the control panel.

The system will start displaying a status matrix on the console after approximately 30 seconds. See the example below.

```
-------------------------------------------------------------
Cable address       0       1       2       3       4       5
Station address  0123456 0123456 0123456 0123456 0123456 0123456

-------------------------------------------------------------
Single frame     X       X X     X                       X  X
Multi-frame                       X                     X
No response       XXXXXX  X XXXX   XXXXX XXXXXXX XXXXXX    XX XX
RCV buffer overrun
Serial parity check
Driver active check
```

Network analysis program.

Is the information matrix displayed on the system console?

Y N

004
There is a problem with the system console.
Go To Map 7001, Entry Point A.

005

Has the rcv buffer overrun condition been sensed at any of the addresses?

Y N

006

Has the single frame or the multi-frame condition been sensed at an address where there is no work station?

Y N

007

Has the no response condition been sensed at an address where there is a work station?

Y N

008

Has the serial parity check condition been sensed at any of the addresses?

Y N

009

Has the driver activity check condition been sensed at any of the addresses?

Y N

6 6 5 5 5
C D E F G H

010

Have any of the work station displays responded with the multi-frame condition?

Y N

011

Have any of the work station printers failed to respond with the multi-frame condition?

Y N

012

The Network Analysis Program has not detected any errors. The following tools are available for more analysis:

The work station verifications tests (see printer manuals).

The work station error history log (ERAP 70-500)

The work station intermittent failure replacement MAP 0370.

013

The work station printer is failing to execute the modeset command. Go to the work station maintenance procedures.

014

Work station displays should reset automatically after three seconds. Go to the display station maintenance procedures.

015

Either the work station adapter card is bad or there is a short in one of the work station cables. You will be sent to the work station cable MAPs.

- Record this MAP and step number.
- If the work station cable MAPs do not find the problem, return to this MAP and step number.
- Go to the correct cable MAP.

Port 0 - MAP7070
Port 1 - MAP7071
Port 2 - MAP7072
Port 3 - MAP7073
Port 4 - MAP7074
Port 5 - MAP7075

Did the work station cable MAPs find the problem?

Y N

016

Bad card:
A-A1J2.

017

You have fixed the problem.

018

You will be sent to a work station twinaxial MAP to attempt to find the problem.

- Record this MAP and step number.
- If the work station cable MAPs do not find the problem, return to this MAP and step number.
- Go to the correct cable MAP.

Port 0 - MAP7070
Port 1 - MAP7071
Port 2 - MAP7072
Port 3 - MAP7073
Port 4 - MAP7074
Port 5 - MAP7075

Did the work station cable MAPs find the problem?

Y N

J K

019

Has the serial parity check condition been indicated on less than 3 work stations?

Y N

020

Bad card:
A-A1J2.

021

You will be sent to the work station maintenance procedures. Record this MAP and step number.

- If the work station maintenance procedure does not find the problem, return to this MAP and step number.
- Go to the work station maintenance procedures of the failing work station(s).

Did the work station maintenance procedures find the problem?

Y N

022

Bad card:
A-A1J2.

023

You have fixed the problem.

024

You have fixed the problem.

025

Has the power been set to On at the work station that is not responding?

Y N

026

- Set the power to On at that work station.

027

- Verify the following:

That the work station address switches are set correctly on all the work stations.

That the terminator switch is set correctly on all the work stations.

You will be sent to the work station cable MAPs to attempt to find the problem.

- Record this MAP and step number.
- If the work station cable MAPs do not find the problem, return to this MAP and step number.
- Go to the correct cable MAP.

  Port 0 - MAP7070
  Port 1 - MAP7071
  Port 2 - MAP7072
  Port 3 - MAP7073
  Port 4 - MAP7074
  Port 5 - MAP7075

Did the work station cable MAPs find the problem?

Y N

028

Did 3 or more work stations respond with the no response condition?

Y N

M N P

C 4 D 4 M N P

029

You will be sent to the work station maintenance procedures.

- Record this MAP and step number. If the work station maintenance procedures does not find the problem, return to this MAP and step number.
- Go to the work station maintenance procedures for the failing work station(s).

Did the work station maintenance procedures find the problem?

Y N

030

Bad card:
A-A1J2.

031

You have fixed the problem.

032

Bad card:
A-A1J2.

033

You have fixed the problem.

034

- Verify the following:

That the work station cable is connected to the correct connector on the system cable tower.
That the station address switches are set correctly on the work station. See the work station manuals.
That the terminator switch is set correctly on the work station. See the work station manuals.

035

Bad card:
A-A1J2
---or---
A-A1H2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7002	AA	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	7080	AA

001
(Entry Point AA)

MAP DESCRIPTION:
This is the no trouble found exit point from the work station subsystem MAPs. The available options are described.

START CONDITIONS:
The work station attachment MDIs have been run and have not found a problem.

FRUs PARTIALLY TESTED:
None

Is your problem with the system console?
Y N

002
Is your problem with a work station other than the system console?
Y N

003
This is the no trouble found end of the good machine path.

The following areas have been tested:

Work station controller
Work station controller storage
Channel interface
Serial interface
External cable to system console.

The following tools are available for more analysis:
(Step 003 continues)

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2 A 2 B

(Step 003 continued)

Network Analysis Map (7030)
Intermittent failure list (0370)
Line quality test.

IF you are verifying a corrected problem, it is correct.

If you are attempting to diagnose a problem, either the problem is not in this area or more diagnosis is needed using the tools described above.

004
- Use the network MAPs for problems with more than one work station.

Go to their entry point.
Go To Map 7080, Entry Point AA.

005
Have you used the 5250 maintenance procedures to run the diagnostic routines on the system console?
Y N

006
Go to the system console and use the maintenance procedures to correct the problem.

007
Does the system console have a display on it now?
Y N

008
- Turn the Intensity switch on the system console up.

Does the system console have a display on it now?
Y N

009
Is a cursor displayed on the system console screen?
Y N

010
The system console has a problem.
- Return to the terminal MAPs.

011
Is the cursor in the upper right of the screen?
Y N

012
The terminal diagnostic routines have found an error.
Go to the terminal MAPs and perform the repair.

013
Is the system console Ready light On?
Y N

014
The system console has a check.
Go to the terminal MAPs and perform the repair.

015
The system console is not displaying data correctly.

Your options are:

- Return to the terminal MAPs again.
- Use another terminal as the console.
- Use the line quality test procedure to check for impaired cables.

016
The repair is completed.

017

This is the no trouble found end of the good machine path.

The following areas have been tested:

Work station controller
Work station controller storage
Channel interface
Serial interface
External cable to system console.

The following tools are available for more analysis:

Network Analysis Map (7080)
Intermittent failure list, MAP 0370
Line quality test.

If you are verifying a correct problem, it is correct.

If you are attempting to diagnose a problem, either the problem is not in this area or more analysis is needed using the tools described above.