

**Lucent Technologies**  
Bell Labs Innovations



***WaveStar*<sup>™</sup> DACS 4/4/1**  
**Digital Access and**  
**Cross-Connect System**  
**Release 2.1**

Installation Testing Manual

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## General Test Procedures

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### Scope

This chapter contains various procedures that are common in nature which may be used multiple times throughout the test process of the *WaveStar™* DACS 4/4/1 System. In order to eliminate the need to reproduce these procedures many times within the manual, the system test process chapters will just make reference to individual GTP procedures by referencing the procedure number, when a particular test is designated to be performed. Each procedure in this chapter will list the requirements and precautions before starting the particular procedure. After completing a specific procedure in this chapter, return back to the point from which this procedure was referenced.



## **GTP 1 - Station Power Check**

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### **Description**

---

The following voltage check will verify that the -48 volt customer supplied power cables are properly installed and operating correctly from the Customer's Power Distribution Bay (PDB) to the *WaveStar*<sup>TM</sup> DACS 4/4/1 System Power and Alarm Distribution Panels of a specific Rack Assembly for Power Feeder A and Power Feeder B . Shorts and voltage level checks will be performed on each power feeder.

### **Assumptions**

---

1. The Power and Alarm Distribution Panel is supplied by **two** independant station power feeders (A & B).
2. The station power feeders supply only **one** Power Distribution Panel. If the station power feeders supply more than one power panel, than this procedure needs to be performed on each connected power panel at the same time.

### **recautions**

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- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the specific Power Distribution Panel to be tested does **not** connect to any **in-service** subracks.

**⚠ CAUTION:**

Do **not** perform this test procedure on any power panels within a rack assembly containing **in-service** subracks, or a service interruption will occur when power is removed. This should have already been performed for the rack assembly during initial installation.

- Step 2:** Verify that **both** station power feeders (**Feeder A** and **Feeder B**) are **only** connected to the specific Power Distribution Panel under test, and individually fused at the Customer's Power Distribution Bay (PDB).

**⚠ CAUTION:**

If the station power feeders connect to other power panels within the system, this test must be performed on all connected power panels, or inadvertant power to equipment could occur.

- Step 3:** At the Customer's Power Distribution Bay (PDB), verify that **Power Feeder A** and **Power Feeder B** are turned **OFF** (fuses removed or circuit breakers disengaged) for the specific Power Distribution Panel under test.

- Step 4:** At the Power Distribution Panel under test, verify that **Power Feeders A** and **Power Feeder B** are properly connected as shown below:

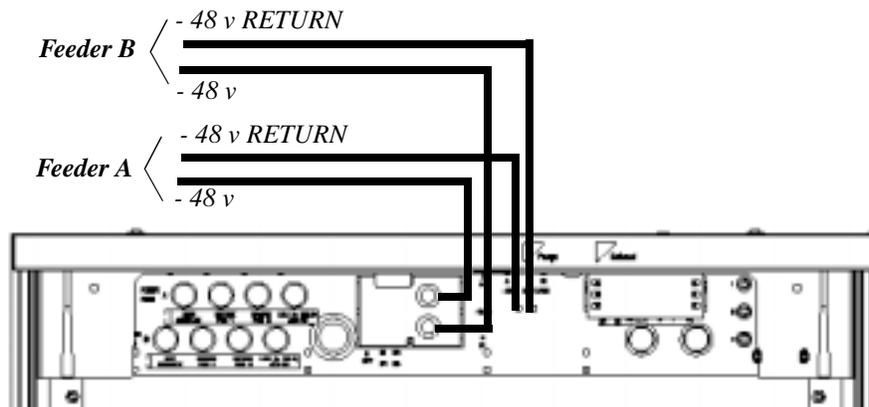
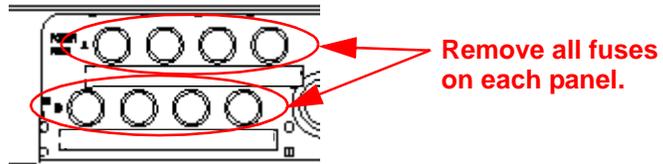


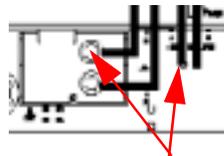
Figure 1. Customer Station Power Feeder Connections (A & B)

- Step 5:* At the specific Power Distribution Panel under test, **remove all** the supplied fuses from each of the fuseholder positions (8 or 10 fuses).

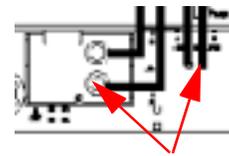


**⚠ CAUTION:**  
*Failure to remove fuses could result in possible damage to connected subracks/units if power is reversed when turning on station power to the power panel.*

- Step 6:* At the Power Distribution Panel under test, verify that **no** short exists between the - 48 v and **Return** lead for **Power Feeder A** and **Power Feeder B** using a volt-ohm-meter (VOM).



Test Points for Feeder A



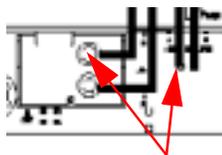
Test Points for Feeder B

- Step 7:* At the Power Distribution Panel under test, verify that **no** short exists between the - 48v leads for **Power Feeder A** and **Power Feeder B** using a volt-ohm-meter (VOM).



- Step 8:** At the *Customer's Power Distribution Bay (PDB)*, turn **ON** **Power Feeder A** (install fuse or actuate circuit breaker) for the specific *Power Distribution Panel under test*.

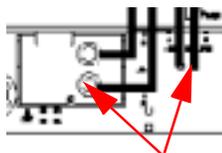
- Step 9:** At the *Power Distribution Panel under test*, measure the voltage between the - **48 V** and **Return** lead associated with **Power Feeder A** using a volt-ohm-meter (VOM), and verify that the voltage falls within the range below:



Test Points for Feeder A

Voltage Range Requirement:  
**-40.5 Volts D.C. to -57 Volts D.C.**

- Step 10:** At the *Power Distribution Panel under test*, measure the voltage between the - **48 V** and **Return** lead associated with **Power Feeder B** using a volt-ohm-meter (VOM), and verify that **zero** voltage is present.

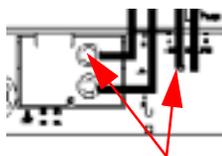


Test Points for Feeder B

Voltage Range Requirement:  
**0 Volts D.C.**

- Step 11:** At the *Customer's Power Distribution Bay (PDB)*, turn **ON** **Power Feeder B** (install fuse or actuate circuit breaker) for the specific *Power Distribution Panel under test*.

- Step 12:** At the *Power Distribution Panel under test*, measure the voltage between the - **48 V** and **Return** lead associated with **Power Feeder B** using a volt-ohm-meter (VOM), and verify that the voltage falls within the range below:



Test Points for Feeder B

Voltage Range Requirement:  
**-40.5 Volts D.C. to -57 Volts D.C.**

- Step 13:** For the *Power Distribution Panel under test*, verify that the difference between the *measured* voltage readings for **Power Feeder A** and **Power Feeder B** of is *not greater* than **6 volts**.

Voltage Difference Requirement:  
**6 volts or less**

**⚠ CAUTION:**  
*Running the system with power feeders at greater than 6 volt difference will adversely affect system operation.*



**CAUTION:**

*Do **not** re-install any fuses into the selected Power Distribution Panel at this time, or damage or injury could occur. Fuses will be installed as part of the startup procedures for each subrack/unit.*

---

*Step 14:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

*Step 15:* This completes the "Station Power Voltage Check" procedure for the specific Power Distribution Panel under test.

---

**STOP-Return to Calling Procedure**



## **GTP 2 - Workstation Computer Setup**

---

### **Description**

---

The following procedure will explain how to setup the workstation computer running Windows NT 4.0 in order to be used to control the *WaveStar*<sup>™</sup> DACS 4/4/1 System.

### **Assumptions:**

---

1. Computer pre-loaded with Windows NT 4.0 operating system software.

### **Precautions**

---

- When working on the *WaveStar*<sup>™</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

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Use the  boxes to check off the steps as they are completed.

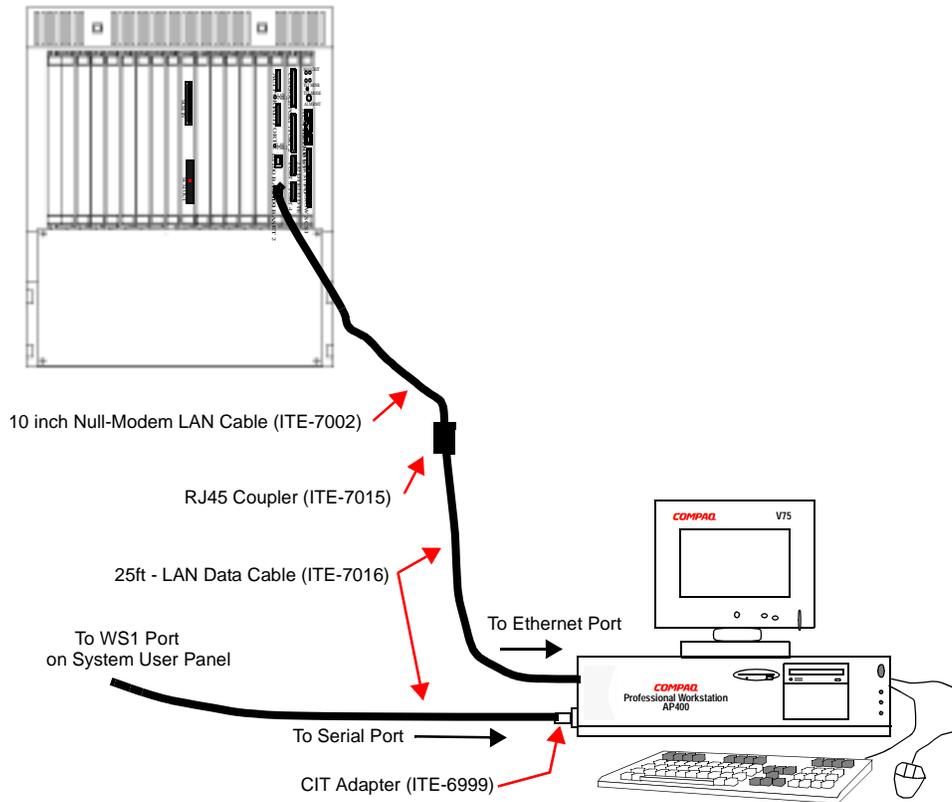
- Step 1:** Setup the workstation computer according to the desired TCP/IP network configuration. If currently unavailable, use the following temporary testing configuration using equipment in the Test Accessory Kit (ITE-7110) to connect to the *WaveStar™* DACS 4/4/1 System.

### TCP/IP Cabling Information:

- Null-modem cable required if going directly from workstation ethernet card to system EXLAN port (See temporary setup below).
- Straight cable required if going directly from workstation ethernet card to a LAN Hub unit.
- Straight cable required if going directly from system EXLAN port to a LAN Hub unit.

### Temporary Test Setup Configuration

Motorola Controller (rear view)



- Step 2:** Turn on and boot the workstation computer, and verify the operating system is **Windows NT 4.0 w/ Service Pack 4**.

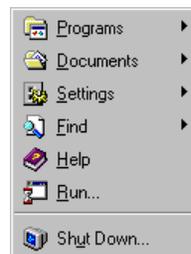


**NOTE:**

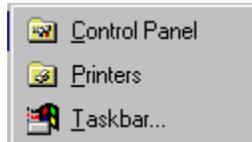
If Windows NT 4.0 and/or Service Pack 4 are not loaded on the computer, do not proceed until loading indicated operating system. XC-CIT software will not load under any other OS. Follow installation instructions provided with computer to load operating system.

- Step 3:** Open the **Control Panel** application on the workstation computer.

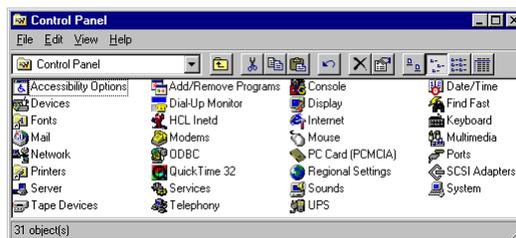
- Step 3-a:** Press the  **Start** button in the lower left of the screen, and verify that the start menu appears.



- Step 3-b:** Select the  **Settings** menu item and obtain the list below of all the Settings Menu items.

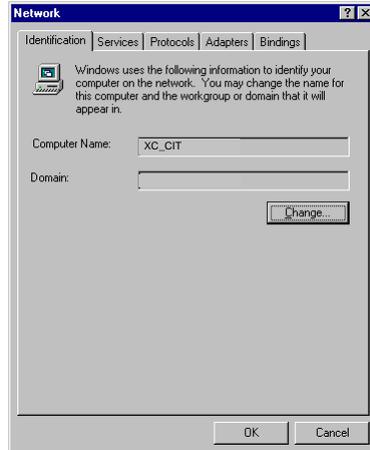


- Step 3-c:** Open the Control Panel by double-clicking on  **Control Panel** icon verify the following window appears:

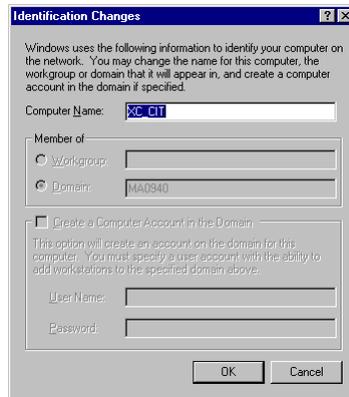


- ❑ **Step 4:** Check the **Network Settings** for the workstation computer to verify the setting are correct for communicating with the *WaveStar™* DACS 4/4/1 System.

- ❑ **Step 4-a:** In the Control Panel, locate and open the **Network** program by double-clicking on the  Network icon, and verify that the **Identification Tab Window** is selected.



- ❑ **Step 4-b:** From the **Identification Tab Window**, select the  button, and verify the following window appears.

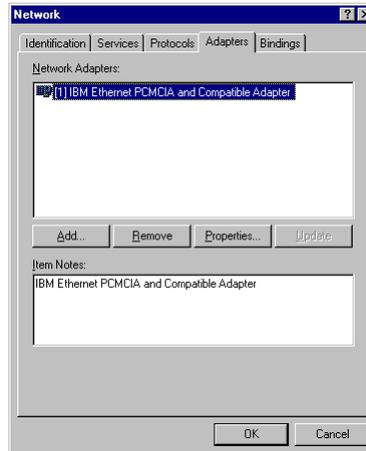


- ❑ **Step 4-c:** Enter the customers supplied computer name or the default name of **XC\_CIT**, then press the  button.



- ❑ **Step 4-d:** For a “Stand-Alone” network, a Workgroup Identification is not required, but the Workgroup Name can be changed by repeating the above procedures.

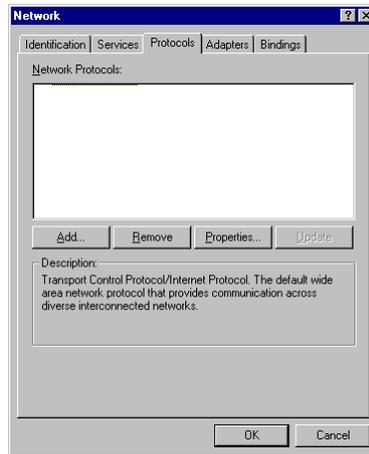
- ❑ **Step 5:** Check if the **Network Adapter Card** (10 Base T ethernet) in the workstation computer has been installed and pre-configured.
  - ❑ **Step 5-a:** From the **Network Window**, select the **Adapter Tab**, and verify the following window appears.



- ❑ **Step 5-b:** Perform **one** of the procedural options below:
  - If the Network Adapter Card does not appear in the window, then proceed to install the network card using the instructions provided with network card.
  - If the Network Adapter Card appears enabled, then proceed to next step.

□ **Step 6:** Check if the **TCP/IP Protocol** has been enabled and pre-configured.

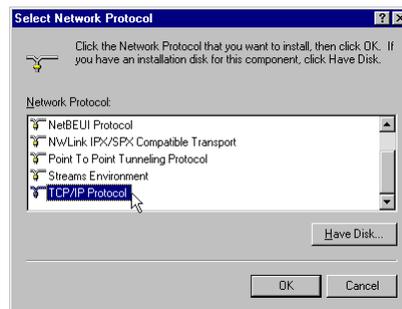
□ **Step 6-a:** From the **Network Window**, select the **Protocol Tab**, and verify the following window appears.



□ **Step 6-b:** Perform **one** of the procedural options below:

- If TCP/IP Protocol already appears enabled, then proceed directly to **Step 7**.
- If the TCP/IP Protocol does not appear in the window, then proceed to **Step 6-C**.

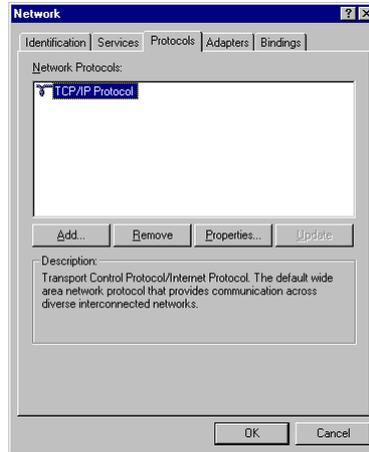
□ **Step 6-c:** Press the  button, select the TCP/IP Protocol, and enable protocol by pressing the  button.



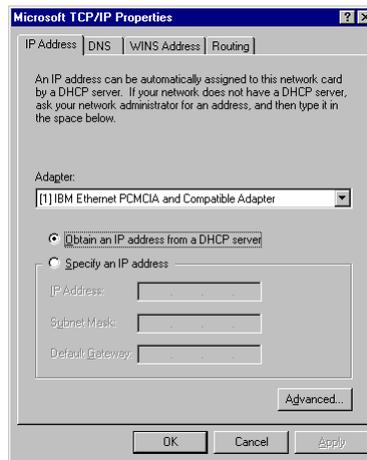
□ **Step 6-d:** Close the **Network Window** by pressing the  button. This will then take you directly to the setup of the TCP/IP properties window, proceed to next step.

□ **Step 7:** Configure the **TCP/IP Properties** for the workstation computer.

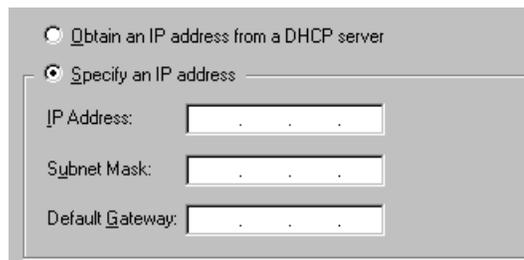
□ **Step 7-a:** From the **Network Window**, select the **Protocol Tab**, and verify the following window appears.



□ **Step 7-b:** From the **Protocol Tab Window**, highlight the **TCP/IP Protocol** option, and press the **Properties** button, and verify the **TCP/IP Properties Window** appears.



□ **Step 7-c:** Select the "Specify an IP Address" option as shown below.



- Step 7-d:** Select the **IP Address Box**, and enter the customer supplied IP address for the Workstation Computer or the default IP address shown below.



**NOTE:**

The workstation IP Address must be in the same domain as the WaveStar™ DACS 4/4/1 System IP Address.

IP Address:

- Step 7-e:** Select the **Subnet Mask Address Box**, and enter the Subnet Mask address for the workstation computer.

(Shown below with default address of 255.255.255.0)

Subnet Mask:

- Step 7-f:** Select the **Default Gateway Address Box**, and enter any gateway address for the workstation computer.



**NOTE:**

The default “stand-alone” network contains no gateway address.

Default Gateway:

- Step 7-g:** Enter the address selections by pressing the  button.

- Step 7-h:** Close the **Network Window** by pressing the  button.

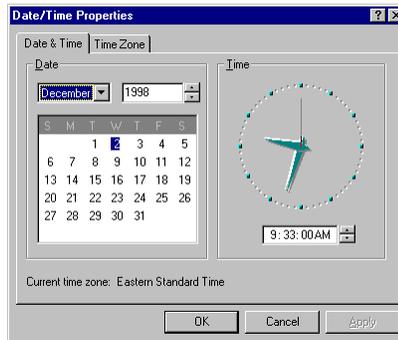


**NOTE:**

If any network options were “added” for the workstation, then the operating system will instruct the rebooting of the computer. Please reboot the computer at this time, before continuing on with setup procedure.

**Step 8:** Set the correct **Date** and **Time** (GMT) for the workstation computer.

**Step 8-a:** In the Control Panel, locate and open the **Date/Time** program by double-clicking on the  Date/Time icon, and verify that the **Date/Time Properties Window** appears.



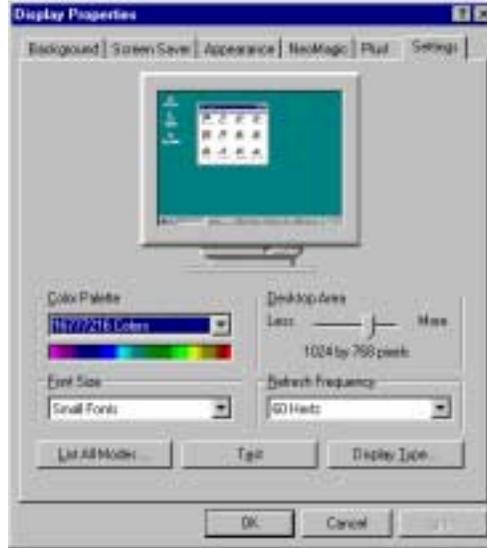
**Step 8-b:** Select the **Date & Time Tab**, and enter the current date and current time (GMT).

**Step 8-c:** Select the **Time Zone Tab**, and select only **GMT** (Greenwich Mean Time), since that is what will be set in the *WaveStar*<sup>TM</sup> DACS 4/4/1 System.

**Step 8-d:** Verify that the check box "Automatically adjust clock for daylight savings changes" is left unchecked.

**Step 8-e:** Press the  button, then press the  button.

- **Step 9:** Set the **Graphics Resolution** of the workstation display to a screen resolution of **1152 x 864**, which is the recommended graphics resolution for the XC-CIT software application.
- **Step 9-a:** In the Control Panel, locate and open the **Display** program by double-clicking on the  Display icon, and select the **Settings Tab** for the following window to appear.



- **Step 9-b:** From the **Desktop Area** option, slide the scale until the setting indicates **1152 x 864**.



**NOTE:**

If the graphics card will not support 1152 x 864 resolution, then select another setting, but 800 x 600 is the minimum graphics resolution required by the XC-CIT software application.

- **Step 9-c:** Press the  button, then press the  button.



**NOTE:**

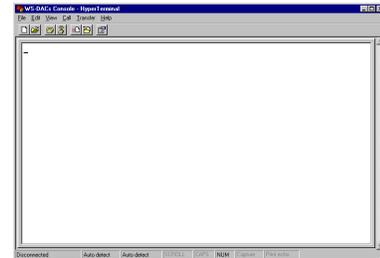
If the display options were “changed” for the workstation, then the operating system will instruct the rebooting of the computer. Please reboot the computer at this time, before continuing on with setup procedure.

- Step 10:* Execute the **Hyperterminal** windows application in the Accessory Menu, and create console access to the *WaveStar™* DACS 4/4/1 System via the terminal emulation application.

Hyperterminal New Connection Name = WS-DACS Console

Communication Settings:

- COM Port = COM1
- Baud = 9600
- Parity = None
- Data Bits = 8
- Stop Bits = 1
- Terminal Type = VT100
- Flow Control = Hardware



- Step 11:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- Step 12:* This completes the "*Setting up the Workstation Computer*" procedure.

---

**STOP-Return to Calling Procedure**



## **GTP 3 - XC-CIT Software Installation**

---

### **Description**

---

The following procedure will explain how to install and setup the XC-CIT application software onto a computer running Windows NT 4.0 which will be used to control the *WaveStar*<sup>TM</sup> DACS 4/4/1 System.

### **Assumptions:**

---

1. Computer pre-loaded with Windows NT 4.0 operating system software
2. Minimum graphic requirements:
  - Color Palette set to 256 colors or higher.
  - Desktop Area set to 800 x 600 resolution or higher

### **Precautions**

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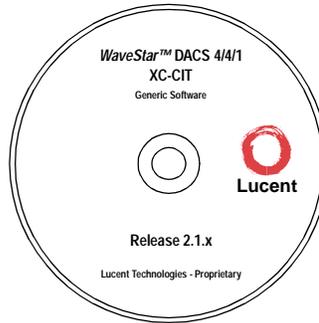
- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

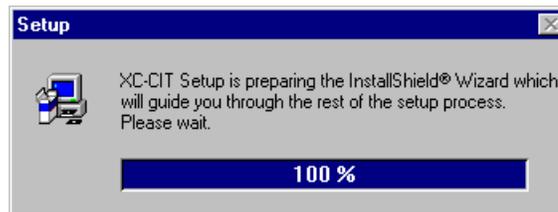
Use the  boxes to check off the steps as they are completed.

- Step 1:** Locate the **XC-CIT CDROM disc** for the *WaveStar™* DACS 4/4/1 System shown below:



- Step 2:** Insert the **XC-CIT CDROM Disc** that was provided with the software order into the CDROM drive of the workstation computer.

- Step 3:** The CDROM should autoplay upon insertion into the CDROM Drive, and the **XC-CIT Setup Window** should automatically appear on the workstation screen as shown below. Proceed to the next Step to continue with setup process.



However, if after a few seconds the setup window does not automatically appear, perform the following substeps first, before proceeding to next step.

- Step 3-a:** Press the  **Start** button in the lower left of the screen.
- Step 3-b:** Select  **Run...** and enter "D:\setup" (where D is the CD drive CD).



- Step 3-c:** Press the  button to execute the XC-CIT setup program.

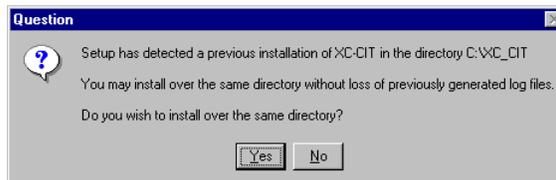
- **Step 4:** If the graphics resolution is not set to 1152 x 864 or higher, the following screen resolution message is reported. Although a recommendation, as long as the current screen resolution is set for 800 x 600 or higher, it is alright to press the  button to continue.



- **Step 5:** Verify the following **XC-CIT Setup Welcome Screen** is displayed in the screen, then press the  button.



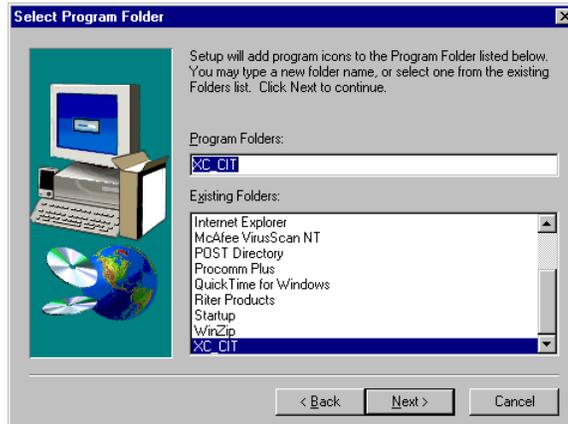
- **Step 6:** Perform **one** of the following options, based on the existence of the XC-CIT Software currently loaded on the workstation hard drive.
- If this is the **first** installation of the XC-CIT Software onto the workstation, proceed immediately to the next step.
  - If the XC-CIT Software was previously installed on the workstation computer, the following Question Window will appear:.



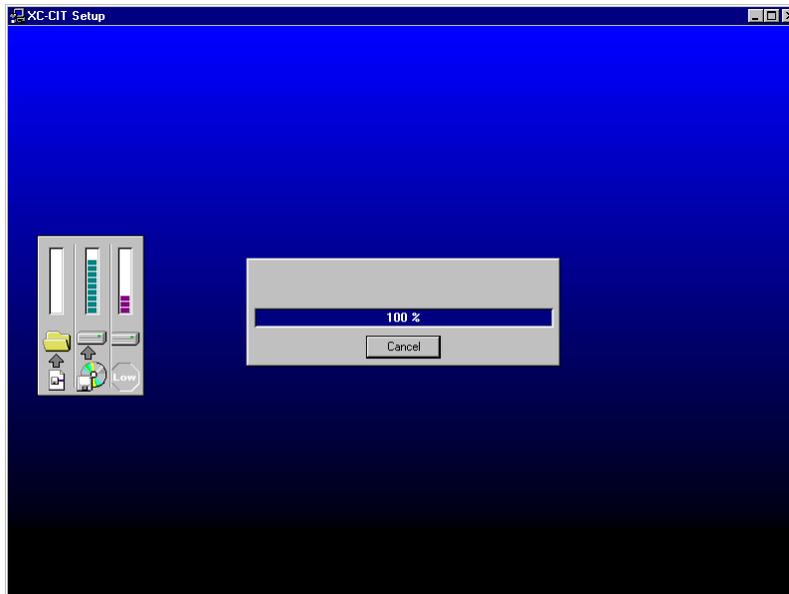
If this window appears, press the  button, in order to load the latest release of XC-CIT Software.

- ❑ **Step 7:** The step program will now allow the user to change the name of the folder used to store the program icons within the Program Folder of the Start Menu.

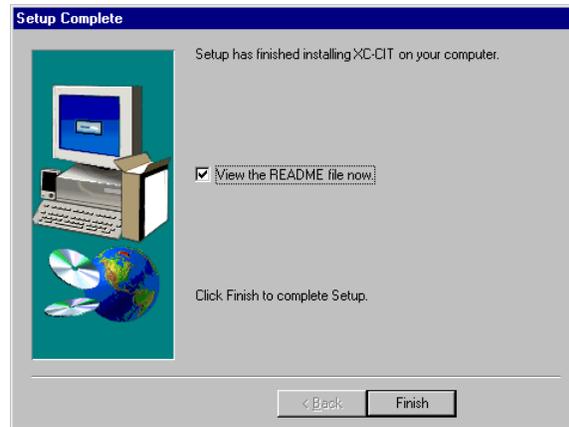
However, keep the default folder name of "XC\_CIT" and press the  button.



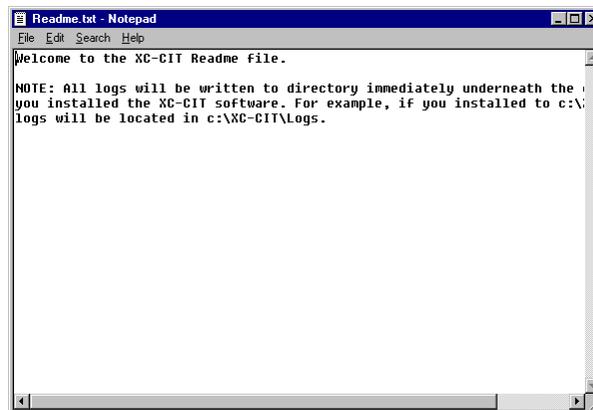
- ❑ **Step 8:** The setup program will then begin to copy all of the program files to the hard disk on the workstation computer. Proceed to next step after 100% of the files have been copied.



- Step 9:** The step program will now allow the user to read the program **README File**. Leave the option checked and press the **FINISH** button



- Step 10:** The following is a sample of the **XC-CIT Readme file**. After reading the file, close the Notepad Window.



- Step 11:** Remove the **XC-CIT CDROM Disc** from the CDROM drive of the workstation computer.

- Step 12:** Check-off the appropriate  box corresponding to this procedure on the *“Main Controller Verification Checklist”*.

- Step 13:** This completes the *“XC-CIT Software Installation”* procedure.
- 

**STOP-Return to Calling Procedure**



## **GTP 4 - Simplex Main Controller Setup Check**

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### **Description**

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The following procedure will explain the steps to verify the correct configuration/setup of the simplex Motorola Controller in the *WaveStar*<sup>TM</sup> DACS 4/4/1 System.

### **Assumptions**

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1. Motorola Controller Subrack is currently powered-off.
2. Fuses corresponding to the Motorola Controller Subrack are currently removed from the Front MC Power Distribution Panel in the MC rack.

### **Precautions**

---

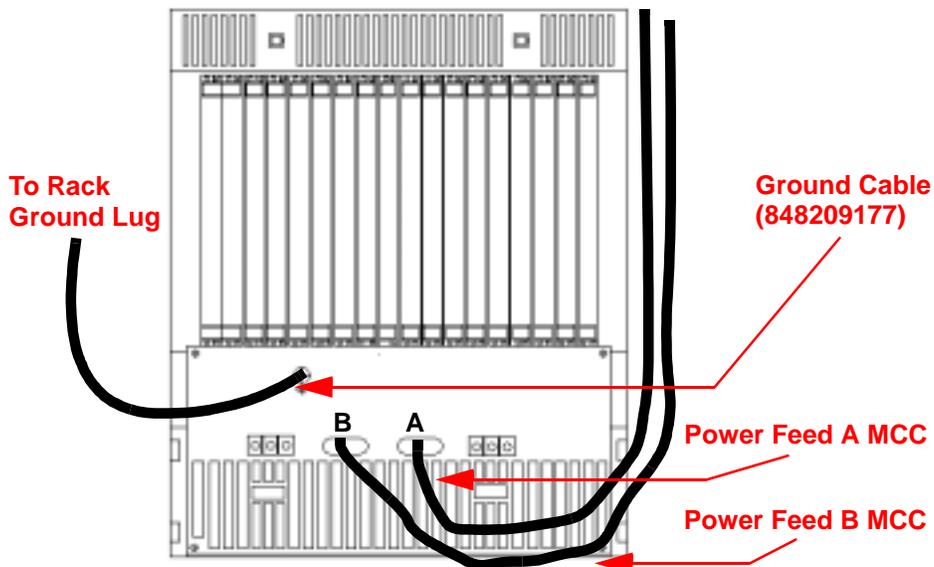
- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

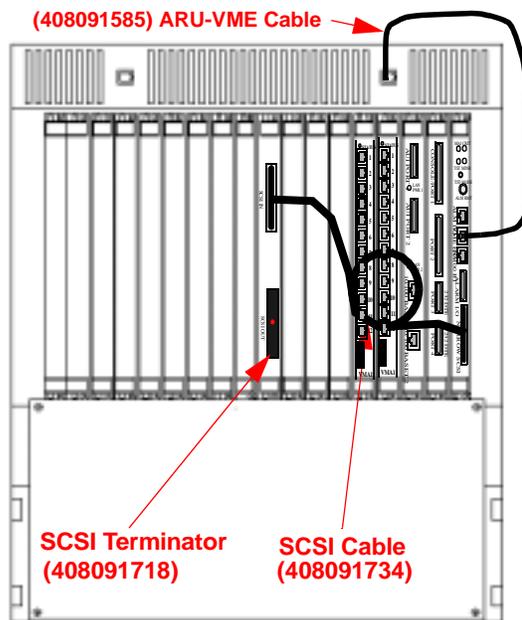
Use the  boxes to check off the steps as they are completed.

- Step 1:** At the **rear** of the Motorola Controller Subrack, verify that the following power cables labeled “Feeder A MCC” and “Feeder B MCC” and ground cable are installed.



**Rear View of Motorola Controller**

- Step 2:** In the **rear** of the Motorola Controller, verify that the following internal controller cables/adapters are installed.

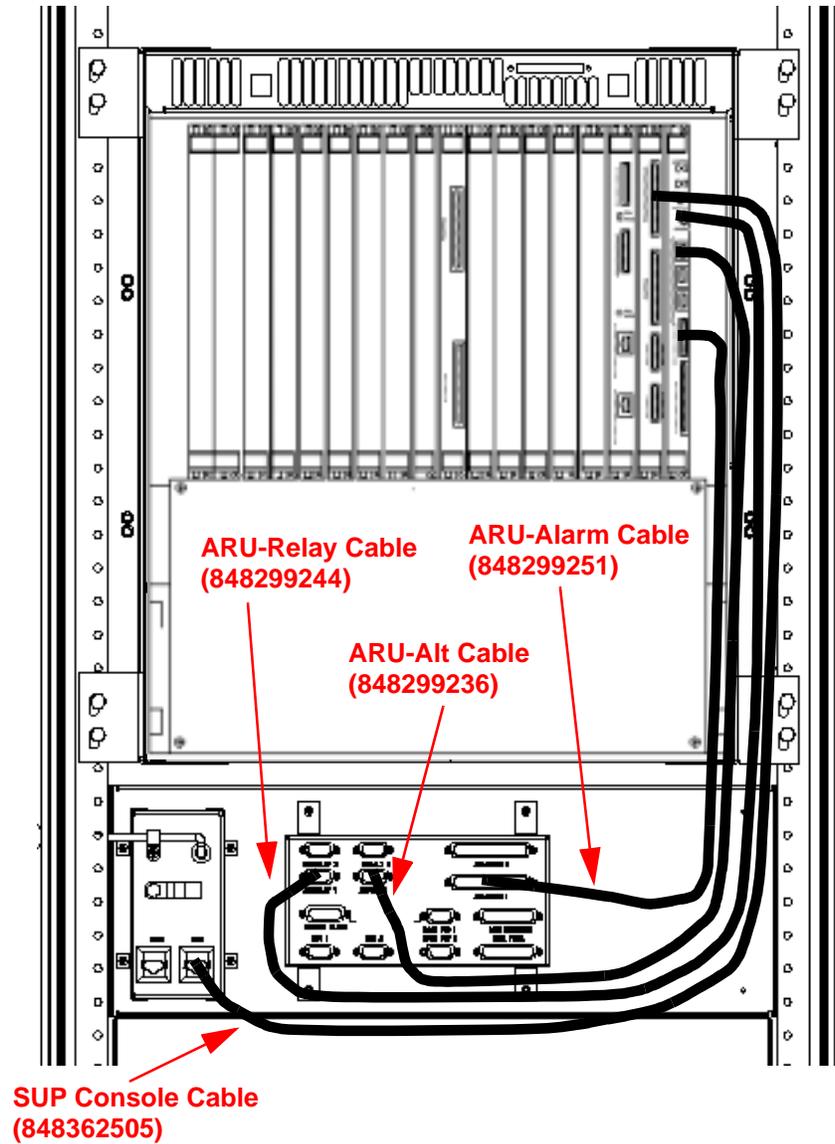


**Rear View of Motorola Controller**



- ❑ *Step 4:* From the **rear** of the MC Rack Assembly, verify that the following alarm cables from the ACP to the Motorola Controller are installed.

**Rear View of MC Rack Assembly**



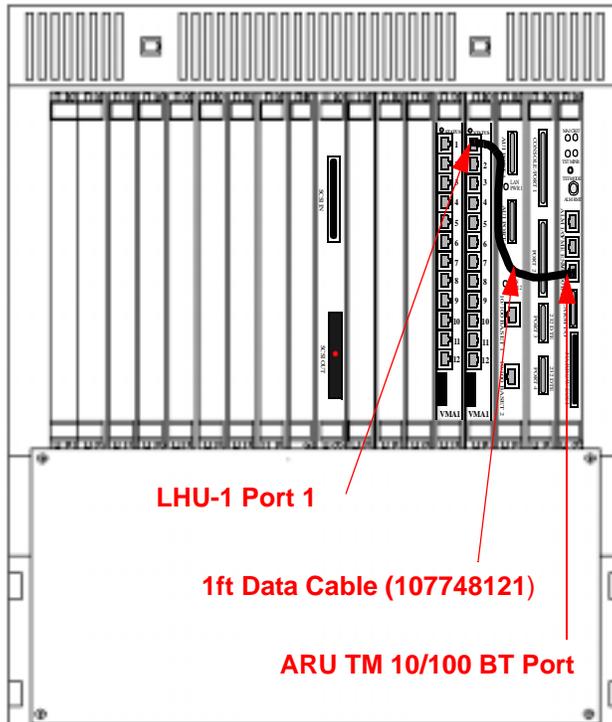
- ☐ **Step 5:** From the **rear** of the Motorola Controller, verify that the **LHU to ARU MCLAN** data connection is installed between **LHU-1 Port 1** and **ARU-TM 10/100 BT Port**. Also, verify that the cable is labeled with “MC-W” labels.



**NOTE:**

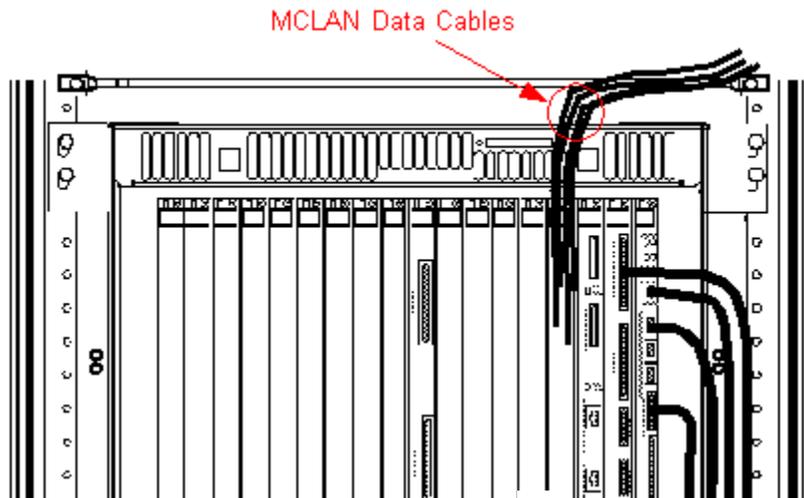
Labels provided from the **MCLAN label Kit (408346831)** which ships loose with the core rack assembly.

**Rear View of Motorola Controller**



- Step 6:* In the **rear** of the MC Rack Assembly, verify that all the existing MCLAN data cables to the **working** Main Controller (MC-1) are routed from the **right-side** of the rack (when viewed from the rear) onto the cable tie bar above the Motorola Controller Subrack, and down to the LHU units (1 & 2).

**Rear View of MC Rack Assembly**

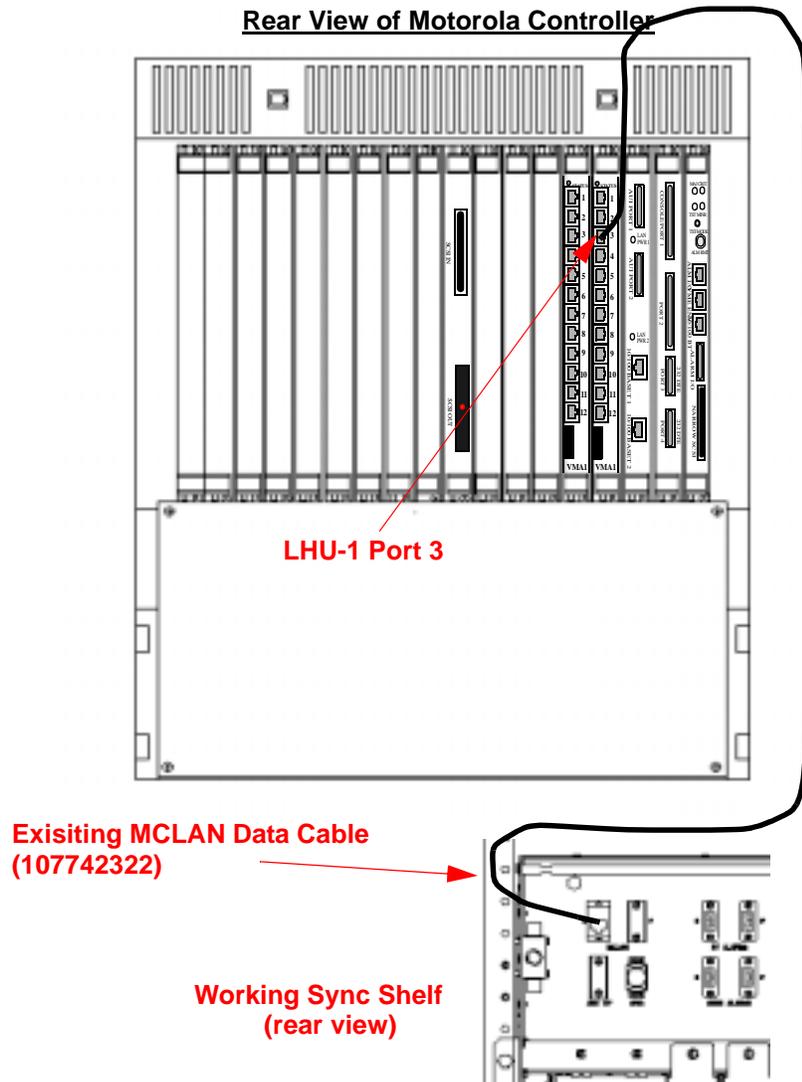


- **Step 7:** From the **rear** of the Motorola Controller, verify that the **Working MCLAN** data cable for Working Sync Shelf is installed from **MCLAN-W** of **Working Sync Shelf** to **LHU-1 Port 3**. Also, verify that the cable is labeled with **"MSW-W"** labels.



**NOTE:**

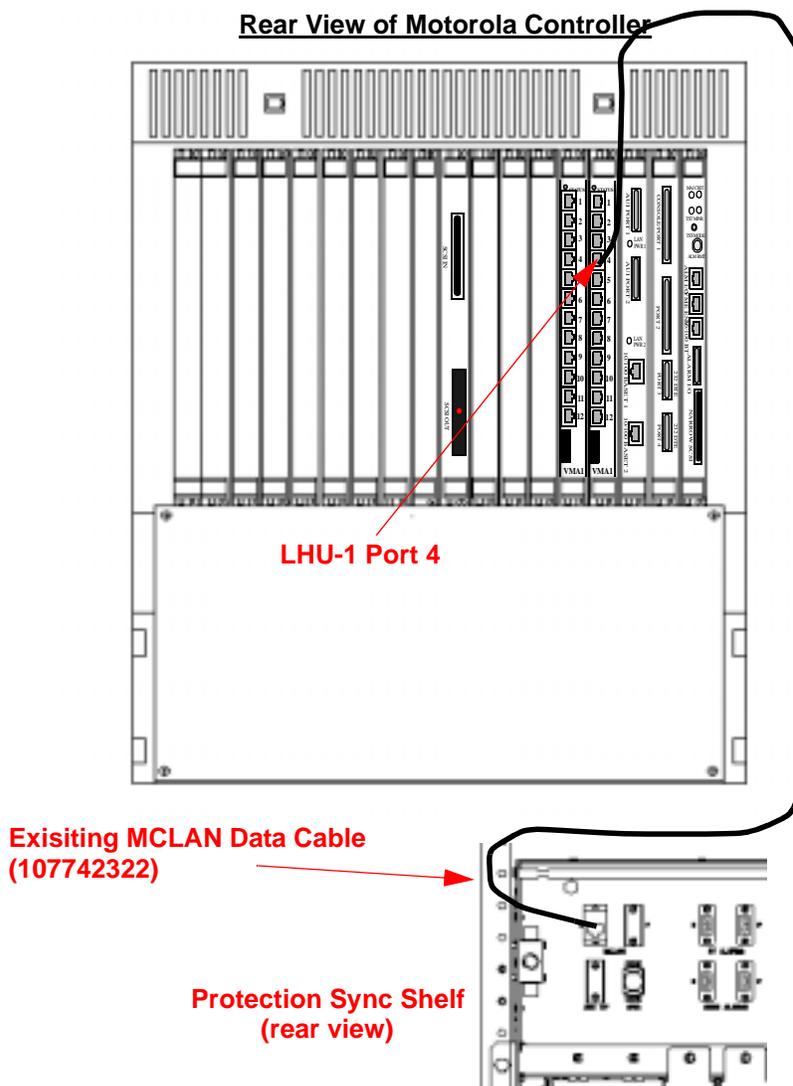
Labels provided from the **MCLAN label Kit (408346831)** which ships loose with the core rack assembly.



- ☐ *Step 8:* From the **rear** of the Motorola Controller, verify that the **Working MCLAN** data cable for Protection Sync Shelf is installed from **MCLAN-W** of **Protection Sync Shelf** to **LHU-1 Port 4**. Also, verify that the cable is labeled with **“MSP-W”** labels.



**NOTE:**  
Labels provided from the **MCLAN label Kit (408346831)** which ships loose with the core rack assembly.



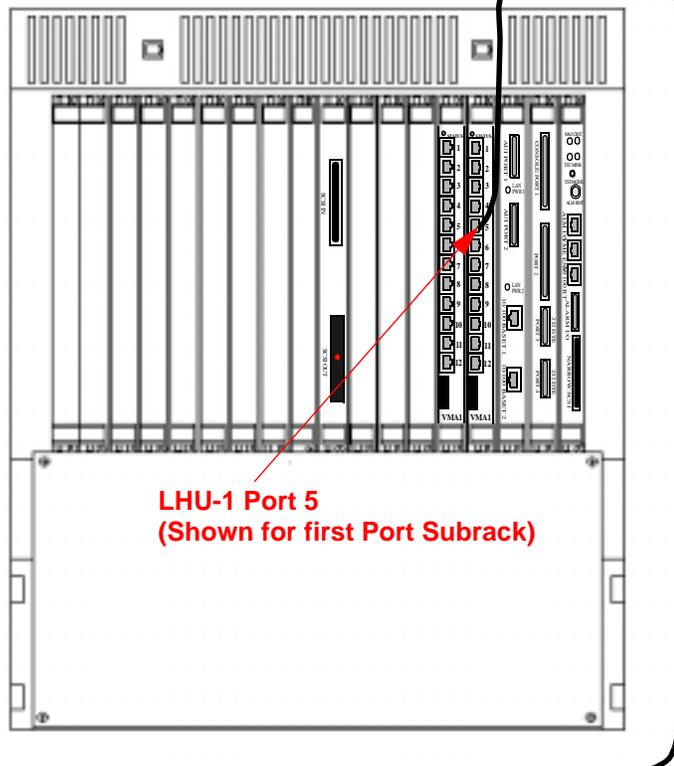
- **Step 9:** From the **rear** of the Motorola Controller, verify that the **Working MCLAN** data cable for **each** of the existing Port Subracks in the system are installed from **MCLAN-W** of Port Subrack to appropriate ports on LHU-1 and LHU-2 (see table below). Also, verify that the cables are labeled with appropriate "**Port{1-16}-W**" labels.



**NOTE:**

Labels provided from the **MCLAN label Kit (408346831)** which ships loose with the core rack assembly.

**Rear View of Motorola Controller**



**LHU-1 Port 5  
(Shown for first Port Subrack)**

**Existing Working MCLAN Data Cable**

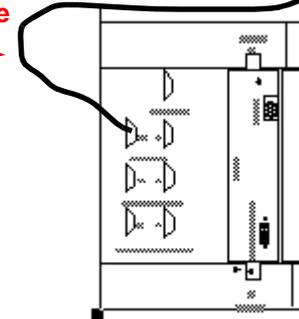


**LHU-1**

Port Subrack 1 to Port 5  
Port Subrack 2 to Port 6  
Port Subrack 3 to Port 7  
Port Subrack 4 to Port 8  
Port Subrack 5 to Port 9  
Port Subrack 6 to Port 10  
Port Subrack 7 to Port 11  
Port Subrack 8 to Port 12

**LHU-2**

Port Subrack 09 to Port 1  
Port Subrack 10 to Port 2  
Port Subrack 11 to Port 3  
Port Subrack 12 to Port 4  
Port Subrack 13 to Port 5  
Port Subrack 14 to Port 6  
Port Subrack 15 to Port 7  
Port Subrack 16 to Port 8



**(Rear View of Port Subrack)**

- 
- Step 10:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.
- 
- Step 11:* This completes the "Simplex Main Controller Setup Check" for the Motorola Controller Subrack.
- 

**STOP-Return to Calling Procedure**

## **GTP 5 - Motorola Controller Subrack Start-up (Simplex)**

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### **Description**

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The following procedure will explain the steps to verify unit equippage, and to power-up the Motorola Main Controller Subrack in a simplex controller configuration.

### **Assumptions**

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1. All fuses in the front Power Distribution Panel are currently removed from the panel.
2. **Power Feeder A** and **Power Feeder B** are turned **ON** at the Customer's Power Distribution Bay (PDB) for the Front MC Power Panel.

### **Precautions**

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- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

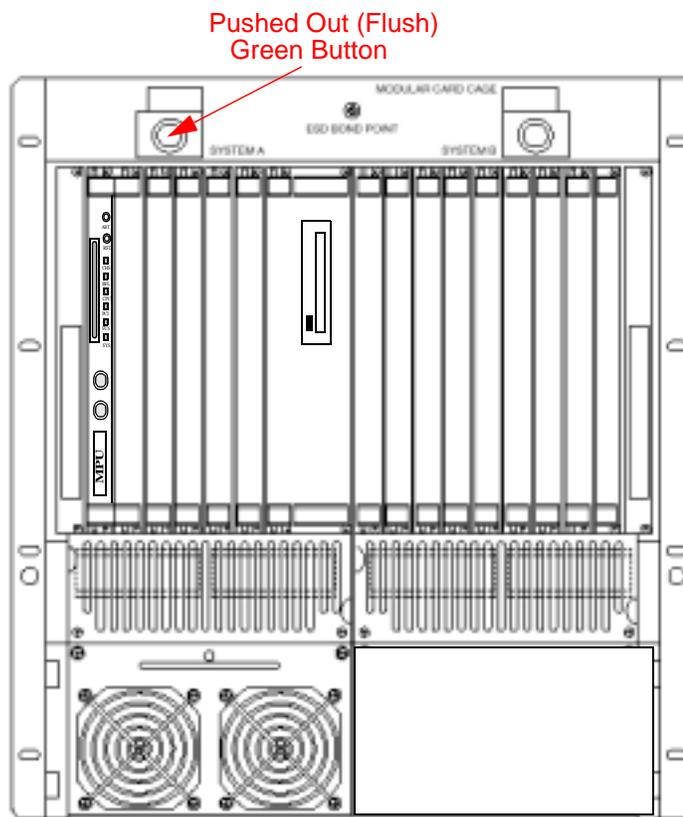
---

Use the  boxes to check off the steps as they are completed.

- Step 1:** At the *Customer's Power Distribution Bay (PDB)*, verify that **Power Feeder A** and **Power Feeder B** are turned **ON** (fuses installed or circuit breakers engaged) for the following power distribution panels:

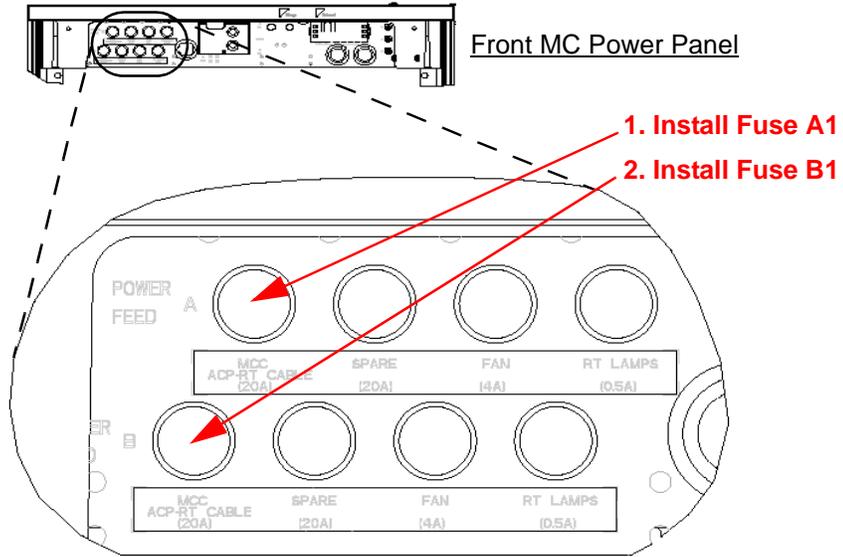
- Front MC Power Distribution Panel

- Step 2:** Verify that the working Main Controller (MC-1) in the Motorola Controller Subrack is **OFF** by checking that the green power button on the front of the subrack is in the pushed-out or flush position.

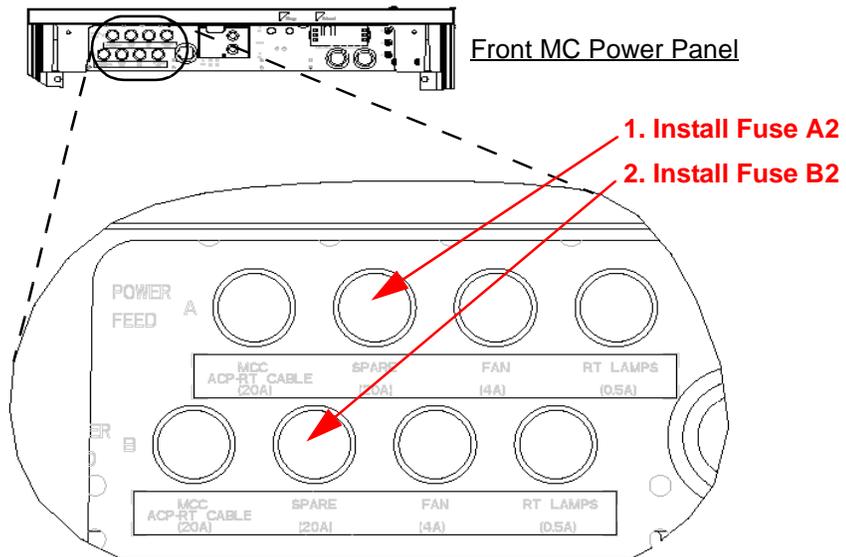


**Front View of Motorola Controller**

- **Step 3:** At the *Front MC Power Distribution Panel*, install the supplied **20 Amp** fuses into fuseholders **A1** and **B1** labeled **MCC/ACP-RT Cable** which will supply power to the Motorola Controller Subrack and Alarm Control Panel.



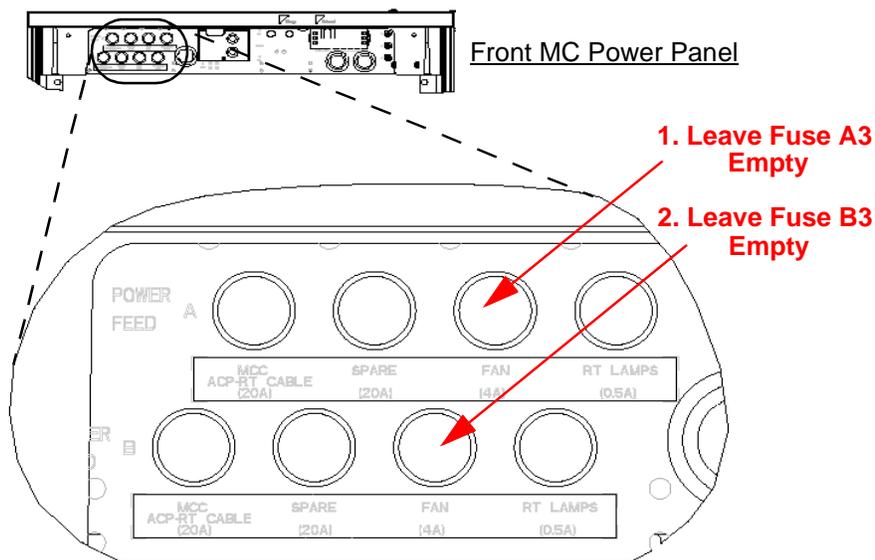
- **Step 4:** At the *Front MC Power Distribution Panel*, install the supplied **20 Amp** fuses into fuseholders **A2** and **B2** labeled **SPARE**.



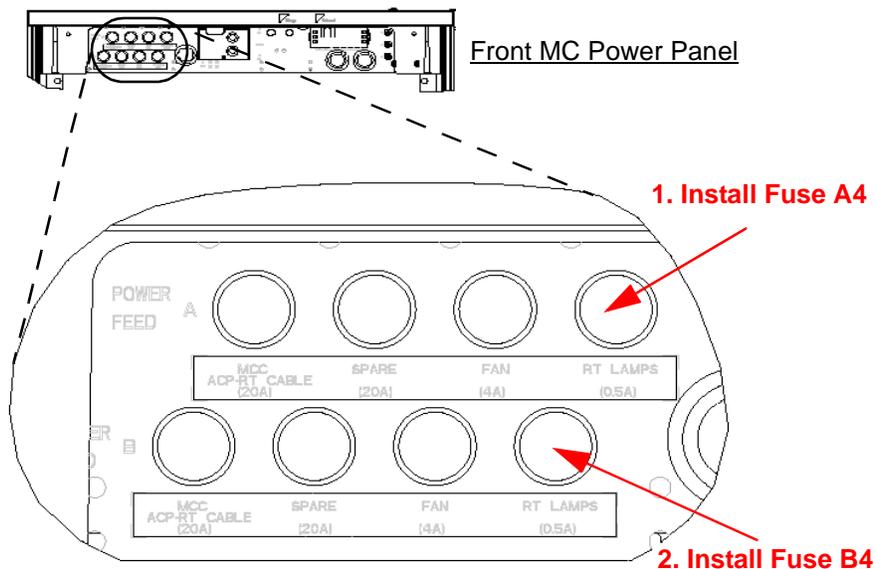
- **Step 5:** At the *Front MC Power Distribution Panel*, do **NOT** install any supplied fuses into fuseholders **A3** and **B3** (just install fuse covers) labeled **FAN** which will supply power to Fan Assembly if required in future. These fuse positions connect to loose power cables labeled “**Fan PWR & Ground**” and are currently not used in the system, and should be left hanging on the side of the rack assembly for potential future use.

**⚠ CAUTION:**

*If fuses are left installed in the fuse holders, potential shorting could occur on the un-installed power connector, which could cause a service interruption due to system loss of power.*



- **Step 6:** At the *Front MC Power Distribution Panel*, install the supplied **.5 Amp** fuses into fuseholders **A4** and **B4** labeled **RT Lamps** which will supply power to the racktop alarm indicators.



- Step 7:** Verify that the following units are already properly installed (and screwed down) into the front of the Motorola Main Controller Subrack.

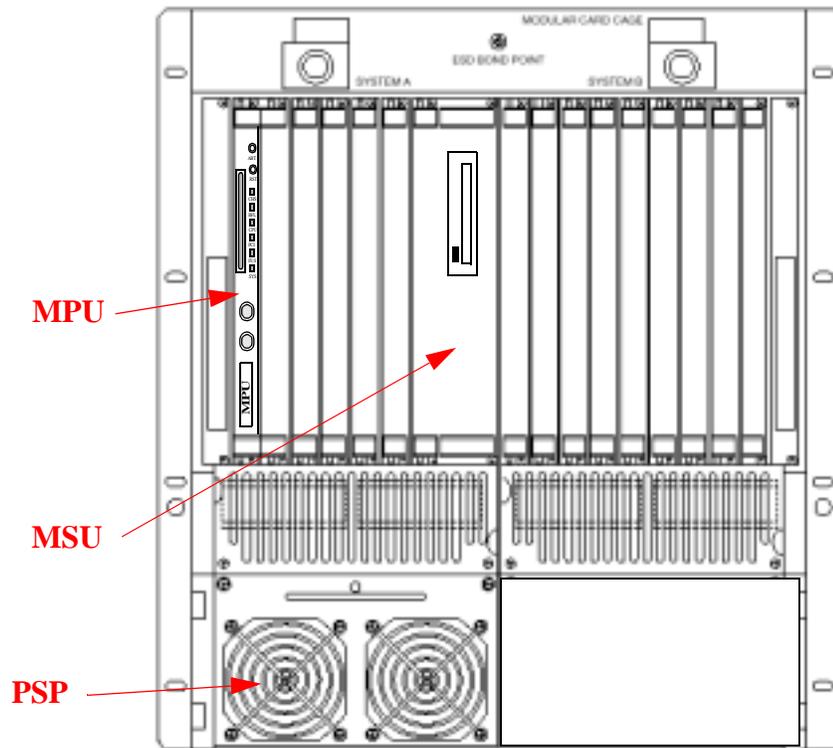


**NOTE:**

All the units and modules come pre-installed in the Motorola Main Controller Subrack.

Unit	Description	COMCODE	Label
MPU	2 Slot Card w/ 2700 CPU, 512MB DRAM & Dual NIC-PMC	408420313	MVME 2700 761 I/O
MSU	3 Slot Card w/ MO & HD	408151421 or 408346724	VME DRIVE MOD
PSP	Power Supply	408091742	-

**Front View of Motorola Controller**

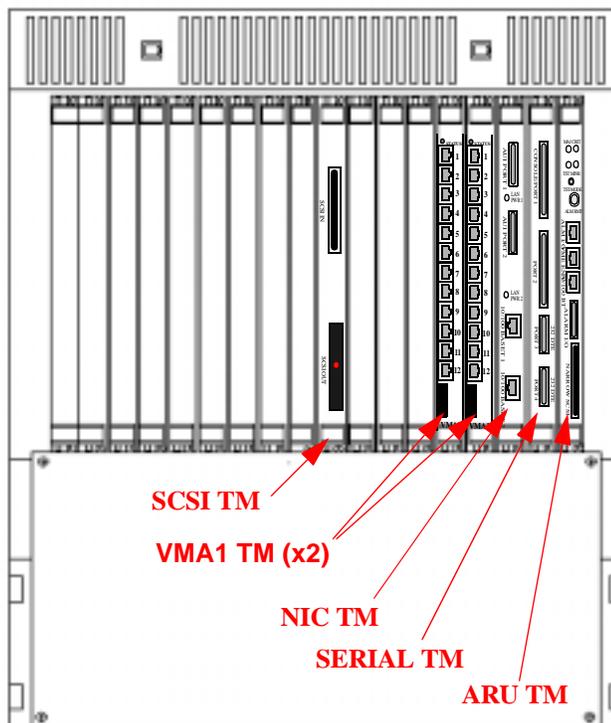


- ☐ *Step 8:* Verify that the following transition modules are already properly installed (and screwed down) into the rear of the Motorola Main Controller Subrack.

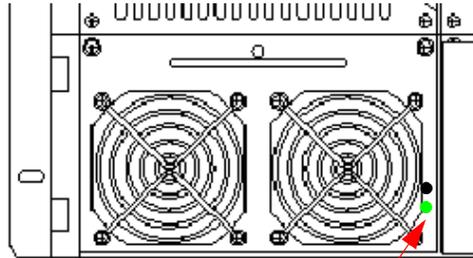
 **NOTE:**  
 All the units and modules come pre-installed in the Motorola Main Controller Subrack.

Unit	Description	COMCODE	Label
ARU TM	Alarm Transition Module	408091668	SMM712-129
SERIAL TM	V.28 Transition Module	408091650	XR712-121
NIC TM	Dual Ethernet Transition Module	408091643	XR2X 100BTM
VMA1 TM	LAN HUB Transition Module (x2)	108371535	VMA1
SCSI TM	SCSI Transition Module	408091676	MVME 712-104

**Rear View of Motorola Controller**

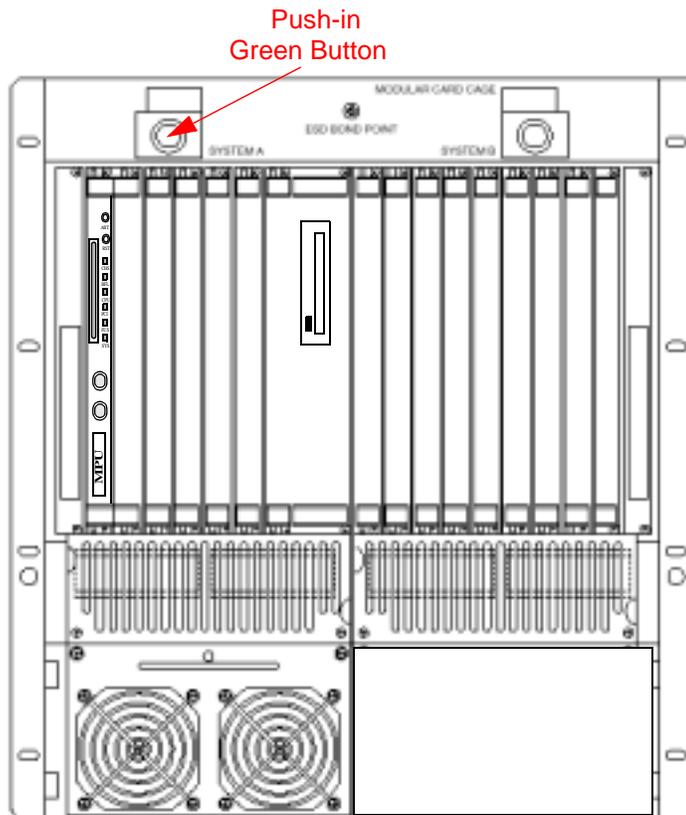


- Step 9:** In the front of the Motorola Controller Subrack, verify incoming power to the Power Supply Plug-in (PSP) by performing the following substeps:
  - Step 9-a:** Remove the bottom grille cover using supplied allen wrench.
  - Step 9-b:** Verify on the Power Supply Plug-in (PSP) that the **POWER GOOD** green LED is **ON** (means that PSP is receiving -48v input power).



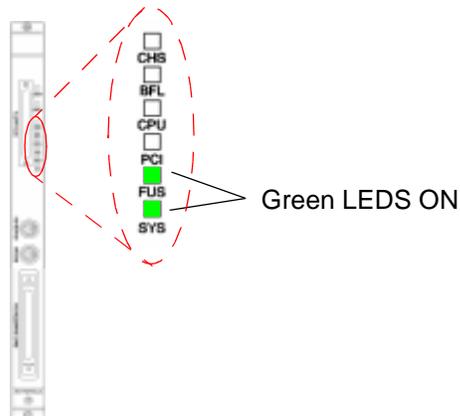
**Check POWER GOOD LED is ON.**

- Step 9-a:** Re-install the bottom grille cover using supplied allen wrench.
- 
- Step 10:** Turn **on** the working Main Controller (MC-1) in the Motorola Controller Subrack by pushing in the green power button on the front of the subrack.



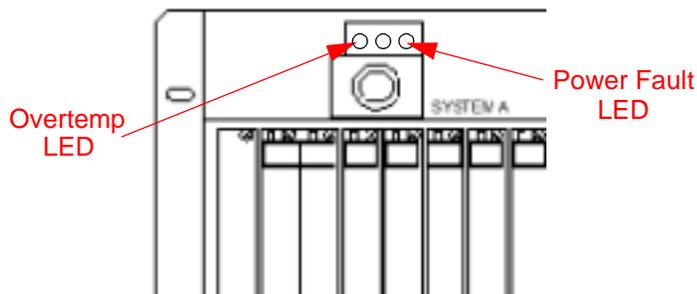
**Front View of Motorola Controller**

- Step 11:* Verify that the working Main Controller (MC-1) in the Motorola Controller Subrack is **ON**, by verifying that the **FUS** and **SYS** green leds on the MPU Unit are illuminated.



MPU VME Card

- Step 12:* Above the green power button, verify that the **Overtemp LED** (left-side), and Input **Power Fault LED** (right-side) are both **off**.
- The Overtemp LED illuminates in the event of excessive heat buildup within the controller chassis.
  - The Power Fault LED illuminates when +5 Vdc, +12 Vdc, or -12 Vdc system power is defective.



- Step 13:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- Step 14:* This completes the “*Motorola Controller Start-up (Simplex)*” procedure.

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**STOP-Return to Calling Procedure**









## GTP 6 - Matrix/Sync Subrack Start-up

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### Description

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The following procedure will explain the steps to verify the configuration and unit equipment of the MS Subrack. This procedure will also provide steps to power-up both of the Sync Shelves, and all ten Matrix Units (BSSU).

### Assumptions

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1. All fuses in the rear MC Power Distribution Panel are currently removed from the panel.
2. All fuses in the rear MS Power Distribution Panel are currently removed from the panel.
3. All fuses in the front MS Power Distribution Panel are currently removed from the panel.
4. **Power Feeder A** and **Power Feeder B** are turned **ON** at the Customer's Power Distribution Bay (PDB) for the Front MS Power Panel.
5. **Power Feeder A** and **Power Feeder B** are turned **ON** at the Customer's Power Distribution Bay (PDB) for the Rear MS Power Panel.
6. **Power Feeder A** and **Power Feeder B** are turned **ON** at the Customer's Power Distribution Bay (PDB) for the Rear MC Power Panel.

### Precautions

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- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

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Use the  boxes to check off the steps as they are completed.

- Step 1:** At the Customer's Power Distribution Bay (PDB), verify that **Power Feeder A** and **Power Feeder B** are turned **ON** (fuses installed or circuit breakers engaged) for the following power distribution panels:

- Front MS Power Distribution Panel
- Rear MS Power Distribution Panel
- Rear MC Power Distribution Panel

- Step 2:** Disengage **all** units from the **front** of the Working Sync Shelf and Protection Sync Shelf.



**NOTE:**

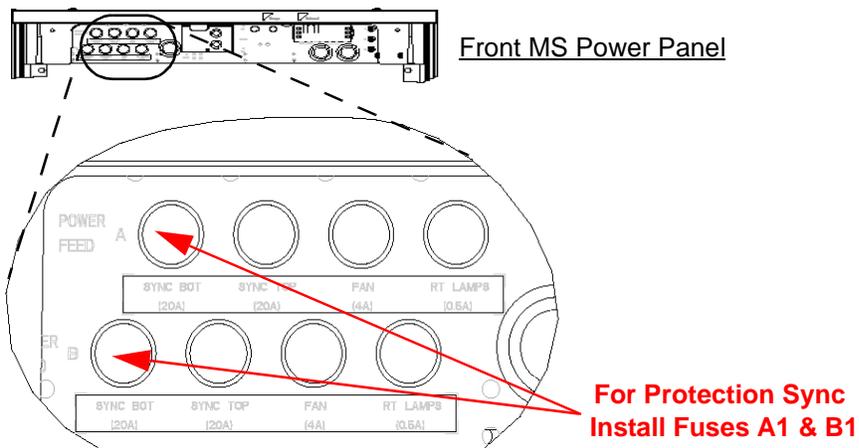
Do **not** need to remove any equipped rear modules.



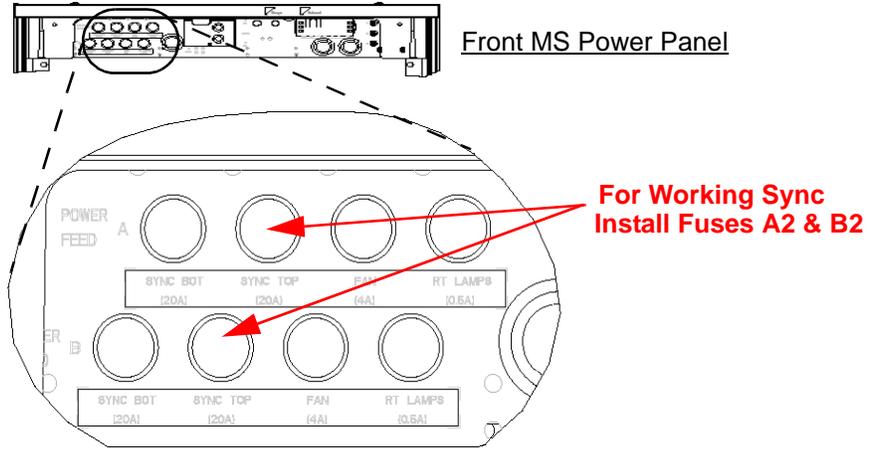
**CAUTION:**

*Failure to remove all front units may cause system damage or improper unit booting while performing this procedure.*

- Step 3:** At the Front MS Power Distribution Panel, install the supplied **20 Amp** fuses into fuseholders **A1** and **B1** labeled **SYNC BOT** which will supply power to the Protection Sync Subrack.

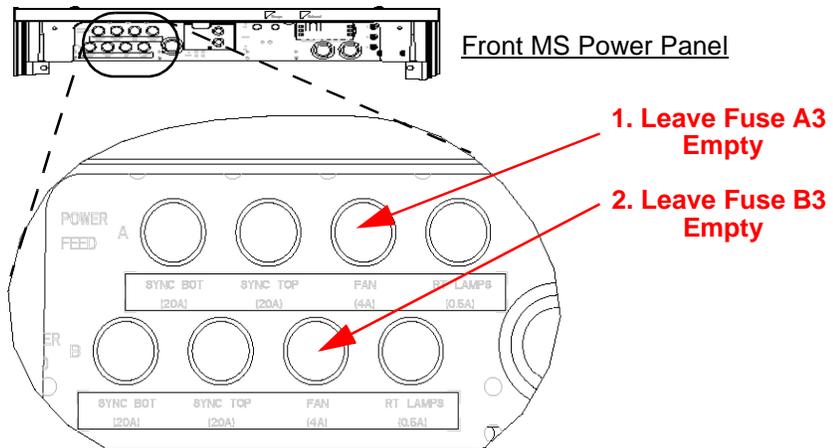


- **Step 4:** At the *Front MS Power Distribution Panel*, install the supplied **20 Amp** fuses into fuseholders **A2** and **B2** labeled **SYNC TOP** which will supply power to the Working Sync Subrack.

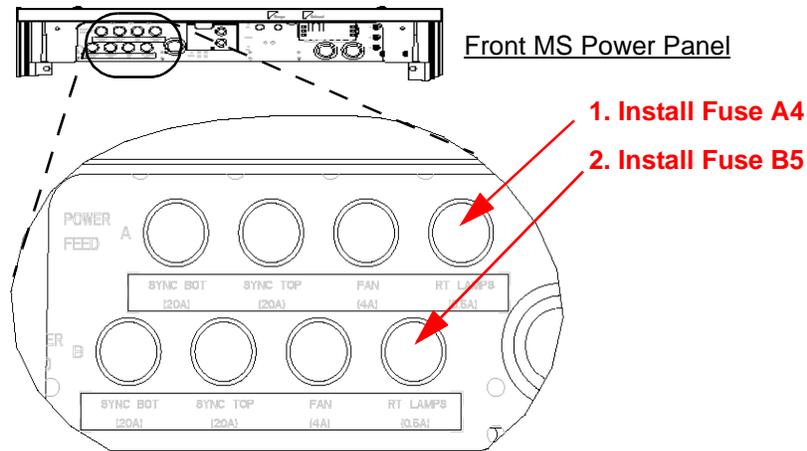


- **Step 5:** At the *Front MS Power Distribution Panel*, do **NOT** install any supplied fuses into fuseholders **A3** and **B3** labeled **FAN** which will supply power to Fan Assembly if required in future. These fuse positions connect to loose power cables labeled "**Fan PWR & Ground**" and are currently not used in the system, and should be left hanging on the side of the rack assembly for potential future use.

**⚠ CAUTION:**  
If fuses are left installed in the ifuse holders, potential shorting could occur on the un-installed power connector, which could cause a service interruption due to system loss of power.

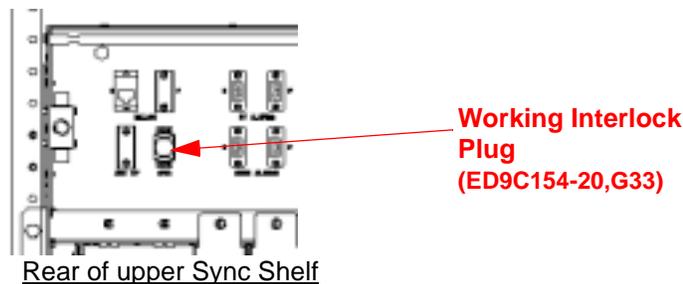


- ❑ **Step 6:** At the Front MS Power Distribution Panel, install the supplied **.5 Amp** fuses into fuseholders **A4** and **B4** labeled **RT Lamps** which will supply power to the racktop alarm indicators.

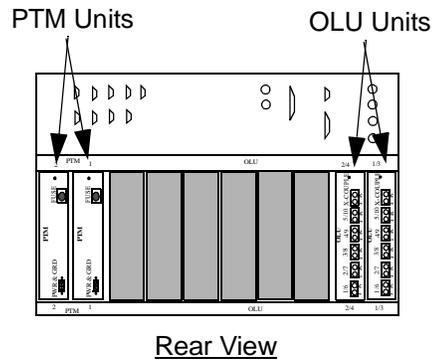


- ❑ **Step 7:** In the rear of the Working Sync Shelf (upper) of the MS Subrack, check the physical installation of the **Working Interlock Plug (ED9C154-20,G33)** on the **SRID** connector interface.

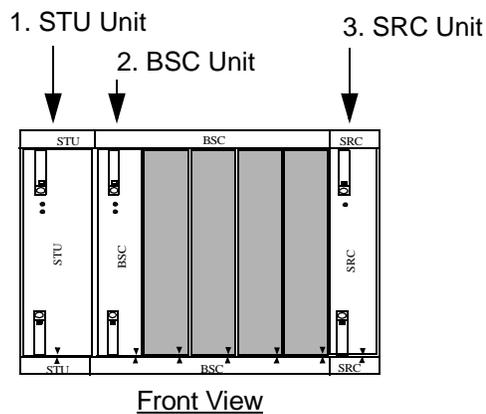
**⚠ CAUTION:**  
*The MS Subrack will not boot correctly if the working interlock plug is not installed on the working Sync Shelf (upper).*



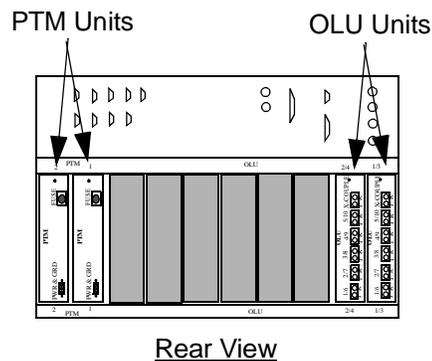
- Step 8:** In the rear of **both** Sync Shelves (working/protection) of the MS Subrack, verify that two PTM modules (x2) are installed (and screwed down), and verify that the red LED on the faceplate is off.



- Step 9:** In the front of **both** Sync Shelves (working/protection) of the MS Subrack, **install** the STU, BSC, and SRC units in that order (upper Sync Shelf first), and verify that the red LED on the faceplate of the unit turns ON.



- Step 10:** In the rear of **both** Sync Shelves (working/protection) of the MS Subrack, verify that two OTU modules (x2) are installed (and screwed down), and verify that the red LED on the faceplate of the module is ON.



- Step 11:* Check the usable series for each of the Units/Modules in the MS Subracks against the following table. If the series number is lower than what is shown in the table, then the unit/modules is not usable.

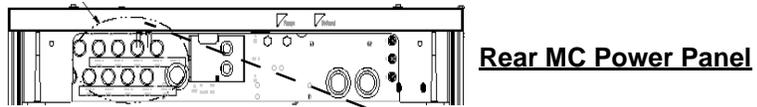
SRC	LAH49	1:2, 1:3, 1:4	
	LAH50	1:1, 1:2	Requires 1.0.2 or higher
STU	LAH102	1:2, 1:3, 1:4	
	LAH105	1:1	Requires 1.0.2 or higher
	LAH105B	1:1	Requires 1.0.2 or higher
STU-64	LAH103	1:2, 1:3, 1:4	
	LAH106	1:1	Requires 1.0.2 or higher
BSC-512	LAH101B	1:2	Required for Rel 2.0
	LAH107	1:1	Requires 1.0.2 or higher
OLU	IMO4	1:1, 1:2	
BSSU	LAC4	5:5 - 5:15	
BSSU-512	LAC5	1:1	Requires 2.0.2 or higher , for 512 matrix
PTM	IME2	1:2, 1:3	
ACP	IME3	1:3, 1:4	

- Step 12:** Perform the following sub-steps for each of the matrix units **one at a time**, in order to power-up each of the ten BSSU Units individually to verify the proper power cable connection to each of the BSSU units.
  - Step 12-a:** Determine proper fuseholders (A & B) associated with the BSSU.
  - Step 12-b:** Install the supplied fuses into the fuseholders for the BSSU.
  - Step 12-c:** Verify that the correct BSSU unit turns on, by checking that the LED Display on the rear of the BSSU unit shows "**FP 0**". (correct BSSU number will not display until software has been loaded on system)

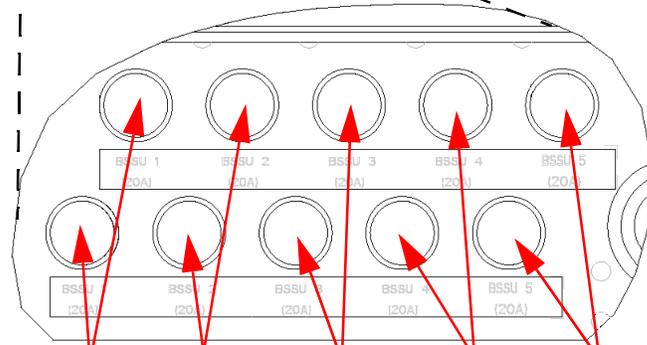


**NOTE:**

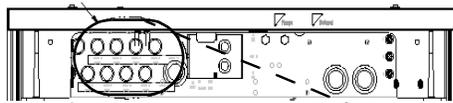
If the wrong BSSU unit turns on, then the power cabling is incorrectly cabled to the unit that turned on. Remove fuses to power-down BSSU, and correct power cable connections.



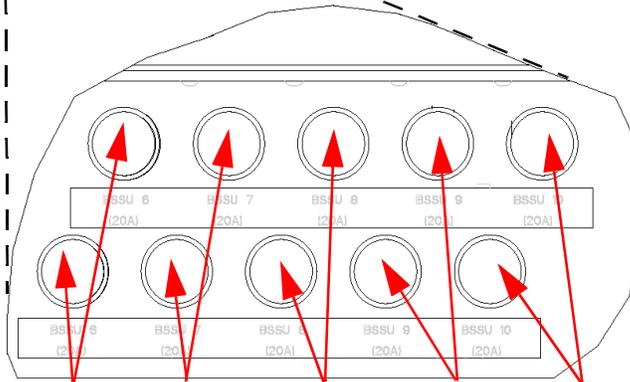
**Rear MC Power Panel**



**BSSU #1 BSSU #2 BSSU #3 BSSU #4 BSSU #5**



**Rear MS Power Panel**



**BSSU #6 BSSU #7 BSSU #8 BSSU #9 BSSU #10**

---

*Step 13:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

*Step 14:* This completes the "*Matrix/Sync Subrack Start-up*" procedure for the Core Complex.

---

**STOP-Return to Calling Procedure**

## GTP 7 - MPU Firmware Self-Tests

---

### Description

---

The following procedure will explain the necessary steps to execute all the firmware diagnostic self-tests for a Main Processor Unit (MPU) in the Motorola Controller Subrack of the *WaveStar*<sup>TM</sup> DACS 4/4/1 System.

#### Firmware Self-Tests:

- **RAM** - Random Access Memory Tests
- **L2CACHE** - Level 2 Cache Tests
- **Z8536** - Counter/Timer Tests
- **RTC** - Real Time Clock Tests
- **PCIBUS** - PCI Bus Register Test
- **ISABRDGE** - PCI/ISA Bus Bridge Tests
- **VME3** - VME Channel Tests
- **NCR** - SCSI2 I/O Processor Tests
- **SCC** - Serial Communication Controller Tests
- **UART** - Serial Input/Output Tests
- **DEC** - Ethernet Controller Tests
- **XR712LUC** - Lucent Alarm Transition Module Tests

#### Required Equipment:

- 1 → Workstation with Terminal VT100 Emulation (HyperTerminal)
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → CIT Adapter (9 pin-female) (ITE-6999)

### Assumptions

---

1. The Motorola Controller Subrack is powered-up.
2. MPU Unit is at the firmware level, and the PPC1-DIAG> firmware prompt is present on the system.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the serial port of the Workstation Computer is connected to the system workstation port labeled **WS1** on the System User Panel (SUP).
- Step 2:** Verify that the Workstation Computer is currently running the Hyperterminal Application (VT100 terminal emulation) and connected to the *WaveStar*<sup>TM</sup> DACS 4/4/1 System Console.
- Step 3:** Perform the following steps to reset the MPU unit of the specific Motorola Controller.

- Step 3-a:** Press the reset button on the front of the MPU Unit.

*Output Response:*

```
-----ATTENTION-----  
PPC1 Debugger/Diagnostics INTERNAL Release - XR712-129LUC FAT  
-----  
COLD Start  
  
Local Memory Found =20000000 (&536870912)  
  
MPU Clock Speed =367Mhz  
BUS Clock Speed =67Mhz  
  
WARNING: Keyboard Not Connected  
  
Reset Vector Location : ROM Bank B  
Mezzanine Configuration: Single-MPU  
Current 60X-Bus Master : MPU0  
Idle MPU(s) : NONE  
  
System Memory: 512MB, ECC Enabled (ECC-Memory Detected)  
L2Cache: 1024KB, 147Mhz  
  
SelfTest/Boots about to Begin... Press <BREAK> at anytime to Abort ALL  
SelfTest about to Begin... Press <ESC> to Bypass, <SPC> to Continue
```

- Step 3-b:** *Immediately* press **[ESC]** key to bypass Self-Test.

*Output Response:*

```
AutoBoot about to Begin... Press <ESC> to Bypass, <SPC> to Continue
```

- Step 3-c:** *Immediately* press **[ESC]** key again to bypass Auto Boot.

*Output Response:*

```
PPC1-Diag>
```



### **NOTE:**

1. If you did not press **[ESC]** key twice soon enough to stop at the firmware system prompt (PPC1-Diag>), repeat step.
2. If **PPC1-Bug>** prompt appears, change to **PPC1-Diag>** menu prompt by entering **SD** then press the **[RETURN]** key.
3. If **#** prompt appears, reboot controller by entering **sync;reboot - aDh** then press the **[RETURN]** key.

- **Step 4:** From the `PPC1-Diag>` prompt, determine which firmware self-tests for the Motorola Controller are currently masked during normal MPU reset, by entering **mask** then pressing the `(RETURN)` key.

*Input Command:*

```
PPC1-Diag> mask
```

*Output Response:*

```
PAR8730X/REG  
DEC/SPACK  
DEC/CLOAD
```

```
PPC1-Diag>
```

- **Step 5:** Verify that only the **PAR8730X/REG**, **DEC/SPACK**, and **DEC/CLOAD** self tests are *masked*, then proceed directly to next step.

Otherwise, perform the following command to *mask* the appropriate missing firmware tests and *unmask* any firmware test which should not be masked.



**NOTE:**

Each time the mask command is entered, the specified test is toggled between “masked” and “un-masked” status.

*Input Command:*

```
PPC1-Diag> mask <testdir> <test>
```

Where:

PAR8730X or DEC

SPACK, CLOAD, CINIT ...

<testdir> =

<test> = REG,

*Output Response:*

```
Update Non-Volatile RAM (Y/N)? Y <- Enter Y
```

```
{lists currently masked tests}
```

- **Step 6:** From the PPC1-Diag> prompt, verify the **Controller Environment Settings** are programmed correctly, by entering **env** then pressing the **(RETURN)** key.



**NOTE:**

If the option setting is correct as indicated below, step to the next option by pressing the **(RETURN)** key.

If option setting is incorrect, enter correct value then press the **(RETURN)** key.

When finished, type a "." (dot or period) and hit the **(RETURN)** key to exit environment mode.

The setting values most likely to change are shown in **Bold**.

*Input Command:*

```
PPC1-Diag> env
```

*Output Response:*

```
Bug or System environment [B/S] = S?  
Field Service Menu Enable [Y/N] = N?  
Remote Start Method Switch [G/M/B/N] = B?  
Probe System for Supported I/O Controllers [Y/N] = Y?  
Auto-Initialize of NVRAM Header Enable [Y/N] = Y?  
Network PReP-Boot Mode Enable [Y/N] = N?  
Negate VMEbus SYSFAIL* Always [Y/N] = N?  
SCSI Bus Reset on Debugger Startup [Y/N] = Y?  
Primary SCSI Bus Negotiations Type [A/S/N] = A?  
Primary SCSI Data Bus Width [W/N] = N?  
Secondary SCSI Identifier = "07"?  
NVRAM Bootlist (GEV.fw-boot-path) Boot Enable [Y/N] = N?  
NVRAM Bootlist (GEV.fw-boot-path) Boot at power-up only [Y/N] = N?  
NVRAM Bootlist (GEV.fw-boot-path) Boot Abort Delay = 5?  
Auto Boot Enable [Y/N] = Y?  
Auto Boot at power-up only [Y/N] = N?  
Auto Boot Scan Enable [Y/N] = N?  
Auto Boot Scan Device Type List = FDISK/CDROM/TAPE/HDISK/?  
Auto Boot Controller LUN = 00?  
Auto Boot Device LUN = 00?  
Auto Boot Partition Number = 00?  
Auto Boot Abort Delay = 7? . (RETURN)  
PPC1-Diag>
```

If any of the above environment options were changed the following output message will appear to save new values after exiting:

*Output Response:*

```
Update Non-Volatile RAM (Y/N)? y (RETURN)
```

```
Reset Local System (CPU) (Y/N)? n (RETURN)
```

```
WARNING: Updates will not be in effect until a RESET is performed.
```

- Step 7:** From the PPC1-Diag> prompt, run the **Level 2 Cache** firmware self-tests on the Motorola Controller by entering **l2cache** then pressing the **(RETURN)** key, and verify that each of the tests below have “passed” (except DISUPD test which is set for “bypass”).

*Input Command:*

```
PPC1-Diag> l2cache
```

*Output Response:*

```
L2CACHE WBFL: L2-Cache WriteBack w/ Flush..... Running ---> PASSED
L2CACHE WBINV: L2-Cache WriteBack w/ Invalidate.... Running ---> PASSED
L2CACHE WRTHRU: L2-Cache WriteThru..... Running ---> PASSED
L2CACHE DISUPD: L2-Cache Disable Updating..... Running ---> BYPASS
L2CACHE ENUPD: L2-Cache Enable Updating..... Running ---> PASSED
L2CACHE PATTERN: L2-Cache WriteThru Pattern..... Running ---> PASSED
```

- Step 8:** From the PPC1-Diag> prompt, run the **Counter/Timer** firmware self-tests on the Motorola Controller by entering **z8536** then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.

*Input Command:*

```
PPC1-Diag> z8536
```

*Output Response:*

```
Z8536 CNT: Counter..... Running ---> PASSED
Z8536 LNK: Linked Counter..... Running ---> PASSED
Z8536 IRQ: Interrupt..... Running ---> PASSED
Z8536 REG: Register..... Running ---> PASSED
```

- Step 9:** From the PPC1-Diag> prompt, run the **PCI/PMC Bus Register** firmware self-tests on the Motorola Controller by entering **pcibus** then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.

*Input Command:*

```
PPC1-Diag> pcibus
```

*Output Response:*

```
PCIBUS REG: PCI/PMC Slot Register Access..... Running ---> PASSED
```

- Step 10:** From the PPC1-Diag> prompt, run the **PCI/ISA Bridge** firmware self-tests on the Motorola Controller by entering **isabrdge** then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.

*Input Command:*

```
PPC1-Diag> isabrdge
```

*Output Response:*

```
ISABRDGE REG: i82378 Register Access..... Running ---> PASSED
ISABRDGE IRQ: Interrupt Request..... Running ---> PASSED
```

- Step 11:** From the PPC1-Diag> prompt, run the **VME Channel** firmware self-tests on the Motorola Controller by entering **vme3** then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.

*Input Command:*

```
PPC1-Diag> vme3
```

*Output Response:*

```
VME3 REGR: Register Read..... Running ---> PASSED
VME3 REGW: Register Walking Bit..... Running ---> PASSED
```

- Step 12:** From the PPC1-Diag> prompt, run the **SCSI2 I/O Processor** firmware self-tests on the Motorola Controller by entering **ncr** then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.

*Input Command:*

```
PPC1-Diag> ncr
```

*Output Response:*

```
NCR PCI: 6000 NCR 53c8xx PCI Access..... Running ---> PASSED
NCR ACC1: 6000 NCR 53c8xx Device Access..... Running ---> PASSED
NCR ACC2: 6000 NCR 53c8xx Register Access..... Running ---> PASSED
NCR SFIFO: 6000 NCR 53c8xx SCSI FIFO..... Running ---> PASSED
NCR DFIFO: 6000 NCR 53c8xx DMA FIFO..... Running ---> PASSED
NCR IRQ: 6000 NCR 53c8xx Interrupts..... Running ---> PASSED
NCR SCRIPTS: 6000 NCR 53c8xx SCRIPTs Processor.. Running ---> PASSED
```

- Step 13:** From the PPC1-Diag> prompt, run the **Serial Communication Controller** firmware self-tests on the Motorola Controller by entering **scc** then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.

*Input Command:*

```
PPC1-Diag> scc
```

*Output Response:*

```
SCC ACCESS: Device/Register Access..... Running ---> PASSED
SCC IRQ: Interrupt Request..... Running ---> PASSED
```

- Step 14:** From the PPC1-Diag> prompt, run the **Serial I/O** firmware self-tests on the Motorola Controller by entering **uart** then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.

*Input Command:*

```
PPC1-Diag> uart
```

*Output Response:*

```
UART REGA: Register Access..... Running ---> PASSED
UART IRQ: Interrupt..... Running ---> PASSED
UART BAUD: Baud Rate..... Running ---> PASSED
UART LPBK: Internal Loopback..... Running ---> PASSED
```

- Step 15:** From the PPC1-Diag> prompt, run the **Alarm Transition Module (XR712-129LUC)** firmware self-tests on the Motorola Controller by entering `xr712luc wd_timer wrt_reg` then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.

*Input Command:*

```
PPC1-Diag> xr712luc wd_timer wrt_reg
```

*Output Response:*

```
XR712LUC WD_TIMER: XR712-129LUC Test Watch Dog Timer. Running ---> PASSED  
XR712LUC WRT_REG: XR712-129LUC Write Control Regs.... Running ---> PASSED
```

- Step 16:** From the PPC1-Diag> prompt, run the **Real Time Clock** firmware self-tests on the Motorola Controller by entering `rtc` then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.

*Input Command:*

```
PPC1-Diag> rtc ram adr
```

*Output Response:*

```
RTC      RAM: MK48T0x Battery Backed Up RAM..... Running ---> PASSED  
RTC      ADR: MK48T0x RAM Addressing..... Running ---> PASSED
```

- Step 17:** From the PPC1-Diag> prompt, run the **Ethernet Controller** firmware self-tests on the Motorola Controller by entering `dec` then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.



**Time Estimate:**

These self-tests take approximately 8-10 minutes to complete.

*Input Command:*

```
PPC1-Diag> dec
```

*Output Response:*

```
DEC      REGA: 7000 PCI Register Access..... Running ---> PASSED  
DEC      XREGA: 7000 Extended PCI Register Access... Running ---> PASSED  
DEC      ILR: 7000 Interrupt Line Register Access... Running ---> PASSED  
DEC      ERREN: 7000 ERREN and SERREN Bit Toggle.... Running ---> PASSED  
DEC      IOR: 7000 I/O Resource Register Access..... Running ---> PASSED  
DEC      SPACK: 7000 Single Packet Xmit/Recv..... Running ---> PASSED  
DEC      CINIT: 7000 Chip Initialization..... Running ---> PASSED  
DEC      CLOAD: 7000 Continuous Load..... Running ---> PASSED  
DEC      REGA: 11000 PCI Register Access..... Running ---> PASSED  
DEC      XREGA: 11000 Extended PCI Register Access... Running ---> PASSED  
DEC      ILR: 11000 Interrupt Line Register Access... Running ---> PASSED  
DEC      ERREN: 11000 ERREN and SERREN Bit Toggle.... Running ---> PASSED  
DEC      IOR: 11000 I/O Resource Register Access.... Running ---> PASSED  
DEC      SPACK: 11000 Single Packet Xmit/Recv..... Running ---> PASSED  
DEC      CINIT: 11000 Chip Initialization..... Running ---> PASSED  
DEC      CLOAD: 11000 Continuous Load..... Running ---> PASSED  
DEC      REGA: 11800 PCI Register Access..... Running ---> PASSED  
DEC      XREGA: 11800 Extended PCI Register Access... Running ---> PASSED  
DEC      ILR: 11800 Interrupt Line Register Access... Running ---> PASSED  
DEC      ERREN: 11800 ERREN and SERREN Bit Toggle.... Running ---> PASSED  
DEC      IOR: 11800 I/O Resource Register Access.... Running ---> PASSED  
DEC      SPACK: 11800 Single Packet Xmit/Recv..... Running ---> PASSED  
DEC      CINIT: 11800 Chip Initialization..... Running ---> PASSED  
DEC      CLOAD: 11800 Continuous Load..... Running ---> PASSED
```

- Step 18:** From the PPC1-Diag> prompt, run the **RAM Memory** firmware self-tests on the Motorola Controller by entering **ram** then pressing the **(RETURN)** key, and verify that each of the tests below have “passed”.



**Time Estimate:**

These self-tests take approximately 10-12 minutes to complete.

**Input Command:**

```
PPC1-Diag> ram
```

**Output Response:**

```
RAM      QUIK: Quick Write/Read..... Running ---> PASSED
RAM      ALTS: Alternating Ones/Zeroes..... Running ---> PASSED
RAM      PATS: Patterns..... Running ---> PASSED
RAM      ADR: Addressability..... Running ---> PASSED
RAM      CODE: Code Execution/Copy..... Running ---> PASSED
RAM      PERM: Permutations..... Running ---> PASSED
RAM      RNDM: Random Data..... Running ---> PASSED
RAM      BTOG: Bit Toggle..... Running ---> PASSED
RAM      REF: Memory Refresh Test..... Running ---> PASSED
```

- Step 19:** Determine the status of the firmware self-tests of the specific MPU unit (acceptable or unacceptable) based on the reported self-test results, and perform **one** of the procedural options below:
- The firmware self-tests are considered **acceptable** only if the individual test results reported by the system do **not** include any failures. In this case, proceed to the next step.
  - The firmware self-tests are considered **unacceptable** if the individual test results reported by the system contain **any** failures. In this case, do **not** continue with this procedure until fixing failures. Try resetting power for the controller, and performing a retest of failed test. If failure continues, then contact next level of support, or replace identified unit and repeat firmware self-tests.

- Step 20:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- Step 21:** This completes the “*MPU Firmware Self-Tests*” procedure.

---

**STOP-Return to Calling Procedure**

## **GTP 8 - Core Software Installation**

---

### **Description**

---

The following procedures will explain how to load the *WaveStar*<sup>TM</sup> DACS 4/4/1 System **Core Software Release 2.1** onto the hard disk of the MSU unit in the MC Subrack. This procedure will load the Operating System (OS) software, and the Network Element Function (NEF) software.

#### **Required Equipment:**

- 1 → System Core Software MO Disk Set (customer supplied)
- 1 → Workstation with Terminal VT100 Emulation (HyperTerminal)
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → CIT Adapter (9 pin-female) (ITE-6999)

### **Assumptions:**

---

1. Terminal is connected to the CIT connector on the Main Controller Subrack.
2. The system is currently at the MPU firmware level and the <Options> menu prompt is currently visible.

### **Precautions**

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

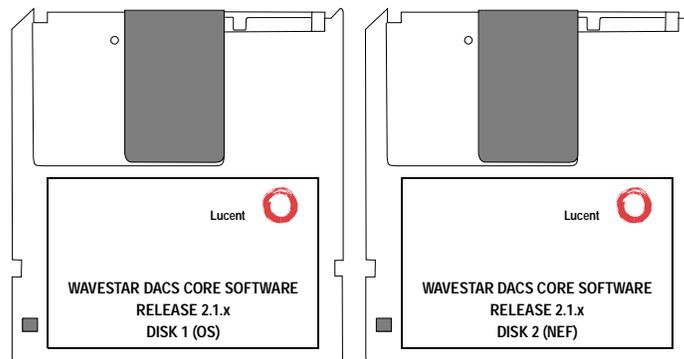
- Step 1:** Verify that the serial port of the Workstation Computer is connected to the system workstation port labeled **WS1** on the System User Panel (SUP).

Use:

- 25ft 10 Base T Data Cable (ITE-7016)
- CIT Adapter (9 pin-female) (ITE-6999)

- Step 2:** Verify that the Workstation Computer is currently running the Hyperterminal Application (VT100 terminal emulation) and connected to the *WaveStar*<sup>TM</sup> DACS 4/4/1 System Console.

- Step 3:** Obtain the *WaveStar*<sup>TM</sup> DACS 4/4/1 System **Core Software Release 2.1.x** magneto optic (MO) disk set, and locate **Disk 1** and **Disk 2** as shown:



- ❑ **Step 4:** Perform the following steps to reset the controller and obtain the firmware system prompt.

- ❑ **Step 4-a:** Press the reset button on the MPU of the Motorola Controller.

*Output Response:*

```
-----ATTENTION-----  
PPC1 Debugger/Diagnostics INTERNAL Release - XR712-129LUC FAT  
-----  
COLD Start  
  
Local Memory Found =20000000 (&536870912)  
  
MPU Clock Speed =367Mhz  
  
BUS Clock Speed =67Mhz  
  
WARNING: Keyboard Not Connected  
  
Reset Vector Location : ROM Bank B  
Mezzanine Configuration: Single-MPU  
Current 60X-Bus Master : MPU0  
Idle MPU(s) : NONE  
  
System Memory: 512MB, ECC Enabled (ECC-Memory Detected)  
L2Cache: 1024KB, 147Mhz  
  
SelfTest/Boots about to Begin... Press <BREAK> at anytime to Abort ALL  
SelfTest about to Begin... Press <ESC> to Bypass, <SPC> to Continue
```

- ❑ **Step 4-a:** *Immediately* press **[ESC]** key to bypass Self-Test.

*Output Response:*

```
AutoBoot about to Begin... Press <ESC> to Bypass, <SPC> to Continue
```

- ❑ **Step 4-b:** *Immediately* press **[ESC]** key again to bypass Auto Boot.

*Output Response:*

```
PPC1-Diag>
```



**NOTE:**

If you did not press **[ESC]** key twice soon enough to stop at the firmware system prompt (PPC1-Diag>), repeat **Step 4** and try again.



**NOTE:**

If **PPC1-Bug>** prompt appears, change to **PPC1-Diag>** menu prompt by entering **SD** then press the **[RETURN]** key.



**NOTE:**

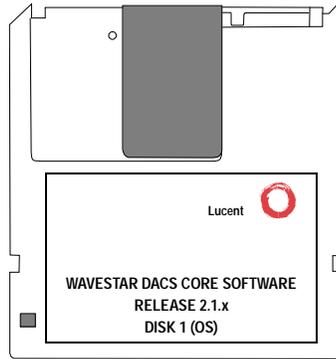
If **#** prompt appears, reboot controller by entering **sync;reboot -aDh** then press the **[RETURN]** key.

- ❑ **Step 5:** *Insert* the **Operating System (OS) MO disk (DISK 1)** into the MO disk drive of the MSU unit in the MC Subrack.



**NOTE:**

See "Appendix A - Units" for MO disk installation procedure.



- ❑ **Step 6:** Enter `pboot 0 20` then press the **RETURN** key to boot the MPU from the MO Drive instead of the Hard Disk Drive (default).

*Input Command:*

```
PPC1-Diag> pboot 0 20 RETURN
```

*Output Response:*

```
Booting from: NCR53C825, Controller 0, Drive 20
Device Name : /pci@80000000/pci1000,3@c,0/opticalmemory@2,0
Loading: Operating System

IPL Loaded at: $1F7EA000
Residual-Data Located at: $1FEF8000
CPU: MPC750 G3 (8), revision 0x8202 RAM Size: 512 Mb

Universe Driver Installed
mccInstall: info; mccInstall() Called.
sanityInstall: info; sanityInstall(0xb0117ca8) Called.
aruInstall: info; aruInstall() Called.
SKDB kernel debugger installed.
init: info; transitioning to OS Run Level 'Boot pass 2'.
init: info; transitioning to OS Run Level '2'.
Sat May 13 14:53:16 GMT 2000
/net/rc.network: info; performing network configuration...
lo0: flags=9<UP,LOOPBACK>
    inet 127.0.0.1 netmask 0xff000000
dec0: flags=8863<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST>
    inet 128.0.0.1 netmask 0xffff0000 broadcast 128.0.255.255
/net/rc.network: info; network interfaces configured.
init: info; transitioning to OS Run Level '3'.

user name:
```

- Step 7:** Enter the following installation user name at the `user name :` prompt, then press `(RETURN)`



**NOTE:**

If the output stops with the prompt `#` , then enter **exit** and press `(RETURN)`.

*Input Command:*

```
user name: install
```

*Output Response:*

```
password:
```

- Step 8:** Enter the following installation password after the `password :` prompt, then press `(RETURN)`.

*Input Command:*

```
password: dacs6install
```

*Output Response:*

```
/*
|* LynxOS S2R2_1_20000421
|* Wavestar Digital Access Cross Connect
|* Copyright (c) Lucent Technologies
|* Copyright (c) Lynx Realtime Systems, Inc.
|* Compiled by lonniev
|* On Fri Apr 21 11:13:17 MDT 2000
|* ++ Ramdisk Kernel for Installation Only ++
\*****

install: welcome; Press ENTER to begin.../
```

- Step 9:** Begin the software installation procedure by pressing the `(RETURN)` key.

*Output Response:*

```
System Base Installation Procedure
-----
```

```
Caution !
```

```
The "install" installation will erase System Hard Disk sd0.
This implies that everything presently stored on the
Hard Disk will be deleted.
```

```
Continue with "install" installation? [yes/no]
```

**Step 10:** Continue the installation by entering **Y**, then press **RETURN**.



**Time Estimate:**

The step will take approximately 5 minutes.

**Input Command:**

```
Continue with "install" installation? [yes/no] Y
```

**Output Response:**

```
... Hard Disk Partition, and Install: (install)

repartition_install: info; repartitioning 4339 Mbyte drive /dev/sd0

Space Available      total blocks (mb)  largest hole blocks (mb)
base partitions:      604 ( 0.29)        604 ( 0.29)
extended partition d:  0 ( 0.00)         0 ( 0.00)
Partition  Boot      Megabytes      Id  Symbolic Name
a          0.00          65 (PowerPC boot partition)
b          599.98        64 (LynxOS)
c          800.00        64 (LynxOS)
d          2940.00*      5 (DOS Extended)
e          499.98        64 (LynxOS)
f          199.98        64 (LynxOS)
g          199.98        64 (LynxOS)
h          199.98        64 (LynxOS)
i          199.98        64 (LynxOS)
j          199.98        64 (LynxOS)
k          199.98        64 (LynxOS)
l          199.98        64 (LynxOS)
m          525.98        64 (LynxOS)
n          513.98        64 (LynxOS)
repartition_install: info; making filesystem /dev/sd0b...
repartition_install: info; making filesystem /dev/sd0c...
repartition_install: info; making filesystem /dev/sd0e...
repartition_install: info; making filesystem /dev/sd0m...
mkdir_mount_fstab: info; making and mounting /dev/sd0
directories...
common_install: info; installing dot files...
common_install: info; installing bin utilities...
common_install: info; installing library files...
common_install: info; installing net files...
common_install: info; installing etc files...
common_install: info; installing TimesTen messages files...
common_install: info; installing usr/local (Perl) files...
common_install: info; installing SRC bin files...
common_install: info; installing SRC net files...
common_install: info; installing SRC boot image...
common_install: info; linking nodetab...
common_install: info; making device nodes...
common_install: info; making lynx.os bootable...

Current System Time      -- Sat May 13 14:57:09 GMT 2000 --

Would you like to change the System Time? [ yes | no ]
```

- Step 11:** Enter the System Time Parameters setup menu by entering **(Y)**, then press **(RETURN)** at the setup prompt.

*Input Command:*

Would you like to change the System Time? [yes | no] **Y**

*Output Response:*

```
Current System Time      -- <day> <date> <time> <TZ> <Year> --
```

The Current System Time Parameters are:

1. Year..... <Year>
2. Month..... <month>
3. Day..... <day>
4. Time..... <time>

Note: In order for changes to take affect, you must 'Set' after changing

Change Which Parameter? [1 - 4 | Set | Quit]

- Step 12:** Change the year, month, day, and time parameters, by entering the corresponding number, **(1)**, **(2)**, **(3)**, or **(4)**, respectively, and then press **(RETURN)**. Then you will be prompted to enter the number for the year, month, day, or time. Enter the appropriate value and then press **(RETURN)**. Repeat this step for each parameter (regardless if parameter is set correctly) until all parameters have been set.



**NOTE:**

Enter the time in **UTC** (i.e. GMT), not local time.

- Step 13:** After accepting all the System Time Parameter entries, update the system memory by entering **SET**, then press **(RETURN)**.

*Input Command:*

Change Which Parameter? [1 - 4 | Set | Quit] **set**

*Output Response:*

```
Current System Time      -- <day> <date> <time> <TZ> <Year> --
```

The Current System Time Parameters are:

1. Year..... <Year>
2. Month..... <month>
3. Day..... <day>
4. Time..... <time>

Note: In order for changes to take affect, you must 'Set' after changing

Change Which Parameter? [1 - 4 | Set | Quit]

- ❑ **Step 14:** Exit the System Time Setup menu by entering **QUIT**, then press **(RETURN)**, and the system will automatically reset the Main Controller and the MPU firmware will begin to boot.

*Input Command:*

```
Change Which Parameter? [1 - 4 | Set | Quit] quit
```

*Output Response:*

```
common_install: info; Installation Complete.

common_install: info; rebooting the main controller.

reboot(0x108) called from pid 206, tid 26 ("/bin/reboot")

*** system rebooting... ***
An application called reboot.

recover: reason: Apps called reboot(0x108)
Waiting...
Syncing disk... done.
dcintr_st: info; abnormal interrupt on interface dec (media MII)
        Perhaps the cable disconnected...

**** LynxOS is down ****

Resetting CPU...
-----ATTENTION-----

PPC1 Debugger/Diagnostics  INTERNAL Release -  XR712-129LUC FAT
-----

COLD Start

Local Memory Found =20000000 (&536870912)

MPU Clock Speed =367Mhz

BUS Clock Speed =67Mhz

WARNING: Keyboard Not Connected

Reset Vector Location  : ROM Bank B
Mezzanine Configuration: Single-MPU
Current 60X-Bus Master  : MPU0
Idle MPU(s)             : NONE

System Memory: 512MB, ECC Enabled (ECC-Memory Detected)
L2Cache:           1024KB, 147Mhz

SelfTest/Boots about to Begin... Press <BREAK> at anytime to Abort ALL

SelfTest about to Begin... Press <ESC> to Bypass, <SPC> to Continue
```



**NOTE:**

Do **NOT** press **(ESC)** key or the **(SPACE)** bar during boot sequence, let the boot continue. Proceed immediately to next step for continuation of output.

- **Step 15:** After the MPU firmware boot is complete, the system will *automatically* start booting from the hard disk drive.

*Output Response: {Continued...}*

```
Booting from: NCR53C825, Controller 0, Drive 0
Device Name : /pci@80000000/pci1000,3@c,0/harddisk@0,0
Loading: Operating System

IPL Loaded at: $1FC79000
Residual-Data Located at: $1FEF8000
CPU: MPC750 G3 (8), revision 0x8202 RAM Size: 512 Mb

Universe Driver Installed
mccInstall: info; mccInstall() Called.
sanityInstall: info; sanityInstall(0xb0117ca8) Called.
aruInstall: info; aruInstall() Called.
SKDB kernel debugger installed.
init: info; transitioning to OS Run Level 'Boot pass 1'.
init: info; transitioning to OS Run Level '1'.

LynxOS Reboot Flags:      [ma]

KDB is disabled (skdb_on = 0)
Sat May 13 14:59:28 GMT 2000

(all sizes and block numbers in decimal)
(block size is 512)
(file system creation time is Sat May 13 14:53:48 2000)
(file system contains 1228768 blocks and 76796 inodes)
checking used files
checking for orphaned files
making bit map free block list
making free inode list
787856 free blocks 75701 free inodes
Filesystem Ok

Starting System Log Daemon:
Syncing token controller ID...
Token set to [WAUS]
```



**NOTE:**  
Proceed *immediately* to next step for continuation of output.

- **Step 16:** The system will then *automatically* start system network initialization steps.

*Output Response: {Continued...}*

```
Beginning Network Initialization... (/net/rc.network)

dec0: Configuring Network Interface
dec0: Network Interface Configured (w001)

decb0: Configuring Network Interface
decb0: Network Interface Configured (p001)

dec0: Configuring Network Interface
dec0: Network Interface Configured (whub)

System Hostname is: w001

decc0:
flags=8863<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST>
    inet 192.168.0.1 netmask 0xfffff00 broadcast 192.168.0.255
decc0 1500 <Link>8.0.3e.2a.94.12          0 0 1 0 0
decc0 1500 192.168 192.168.0.1          0 0 1 0 0
add net default: gateway 192.168.0.254

Adding BCLAN Routes...
add net BCLANnet3: gateway w003
add net BCLANnet4: gateway w004
add net BCLANnet5: gateway w005
add net BCLANnet6: gateway w006
add net BCLANnet7: gateway w007
add net BCLANnet8: gateway w008
add net BCLANnet9: gateway w009
add net BCLANnet10: gateway w010
add net BCLANnet11: gateway w011
add net BCLANnet12: gateway w012
add net BCLANnet13: gateway w013
add net BCLANnet14: gateway w014
add net BCLANnet15: gateway w015
add net BCLANnet16: gateway w016
add net BCLANnet17: gateway w017
add net BCLANnet18: gateway w018
add net BCLANnet19: gateway w019
add net BCLANnet20: gateway w020
Routes Added.

Network Initialization Complete
```



**NOTE:**

Proceed *immediately* to next step for continuation of output.

- Step 17:** The system will then *automatically* start file system checks on the hard drive.

*Output Response: {Continued...}*

```
fsck /dev/sd0c
(all sizes and block numbers in decimal)
(block size is 512)
(file system creation time is Sat May 13 14:53:49 2000)
(file system contains 1638400 blocks and 102400 inodes)
checking used files
checking for orphaned files
making bit map free block list
making free inode list
1593716 free blocks 101835 free inodes
Filesystem Ok
```

```
fsck /dev/sd0e
(all sizes and block numbers in decimal)
(block size is 512)
(file system creation time is Sat May 13 14:53:52 2000)
(file system contains 1023968 blocks and 63996 inodes)
checking used files
checking for orphaned files
making bit map free block list
making free inode list
1007716 free blocks 63995 free inodes
Filesystem Ok
```

```
fsck /dev/sd0m
(all sizes and block numbers in decimal)
(block size is 512)
(file system creation time is Sat May 13 14:53:53 2000)
(file system contains 1077216 blocks and 67324 inodes)
checking used files
checking for orphaned files
making bit map free block list
making free inode list
1060119 free blocks 67323 free inodes
Filesystem Ok
```



**NOTE:**

Proceed *immediately* to next step for continuation of output.

- Step 18:** The system will then *automatically* start mounting the file systems from the hard drive.

*Output Response: {Continued...}*

```
Mounting all Filesystems ...
Reading boot log...

Prior Reboot/Crash Reason from NVRAM:
    05/13/2000 09:59:16 /usr/ldacs6/bin/grandma
    Apps called reboot(0x20088)
Application's Log from NVRAM:
    grandma called reboot (reason=0)

Checking for recover dump directory ("/wlo/recover_dumps")...done.
Dump directory ("/wlo/recover_dumps") not found, attempting to
create it...done.

Checking for unsaved recover dump...done.
No unsaved recover dump found.

Create System RamDisk: (Complete)

Exporting directories for remote mount
exported: /
exported: /srcboot
exported: /net
exported: /net/mips
exported: /bin
exported: /bin/mips
exported: /home
exported: /usr/spool
exported: /usr/spool/console
exported: /MRAM
exported: /usr/dacs6
exported: /usr/add-on
/bin/keepsan: info; sanity timer enabled.
/usr/cron: File or directory doesn't exist
/usr/cron: created
tabs: File or directory doesn't exist
tabs: created
KDB is disabled (skdb_on = 0)
```



**NOTE:**

Proceed *immediately* to next step for continuation of output.

- Step 19:** After mounting the file system, the system will then *automatically* start the WaveStar™ DACS 4/4/1 System applications, and prompt to load the Network Element Software (NEF Software).

*Output Response: {Continued...}*

```
Starting Millennia DACS Applications:...

Would you like to Install the Network Element System Software? (yes)
```

- Step 20:** Start the NEF Installation Procedure by entering **(Y)**, then press **(RETURN)** at the following system prompt:

*Input Command:*

```
Would you like to Install the Network Element System Software? Y
```

*Output Response:*

```
Network Element - System Software Installation  
    <day> <month> <day> <time> <TZ> <year>
```

```
Insert the NEF MO disk into the MO drive  
    ('<return>' when MO has been inserted, 'q' to quit)
```

- Step 21:** Remove the **Operating System (OS) MO disk** from the MO Disk Drive in the MSU unit of the MC Subrack.



**NOTE:**

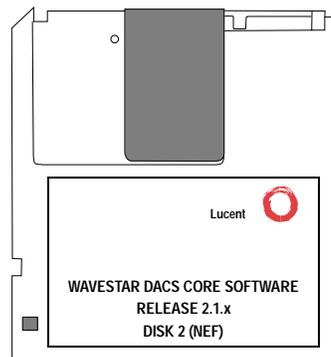
See "Appendix A - Units" for MO disk removal procedure.

- Step 22:** Install the **Network Element Function (NEF) MO disk (DISK 2)** into the MO disk drive of the MSU unit in the MC Subrack



**NOTE:**

See "Appendix A - Units" for MO disk installation procedure.



- ☐ **Step 23:** After inserting the **Network Element Function (NEF) MO disk** into the MO Drive, enter a **RETURN** to begin the NEF Installation Procedure.



**Time Estimate:**

The NEF software install will take approximately 2 minutes.

**Output Response:**

```
Proceeding with NEF Installation:
  1. Validate NEF Installation MO: ....mount..install. (Completed)
  2. Prepare for NEF Installation: ...
```

```
bin/d6install.nef
3022 blocks
```

```
Verifying MO checksums
OK
```

```
Installing from /MO/addon.cpio.gz
18914 blocks
```

```
Installing from /MO/dacs6.cpio.gz
145384 blocks
```

```
Installing from /MO/root.cpio.gz
3022 blocks
```

```
Installing from /MO/wlo.cpio.gz
5 blocks
```

```
Installing miscellaneous files
3022 blocks
```

```
*****
*****
***** The NEF software has been successfully installed *****
*****
*****
```

```
Entering software administration menu...
```

```
Option specified to break into software administration menu.
```

```
DACS                               System Administration
```

```
Pre-NEF Services
```

- 1. - Database/System Backup
- 2. - Database/System Restore
- 3. - Database Upgrade from 2.0
- ? - Help
- c - Continue Booting
- q - Quit Without Booting

```
Enter choice:
```

---

- Step 24:** Remove the **Network Element Function (NEF) MO disk** from the MO Disk Drive of the MSU unit.



**NOTE:**

See “*Appendix A - Units*” for MO disk removal procedure.

- Step 25:** Select the **Continue booting** option by entering (C), then press (RETURN). **Watch** the terminal screen for the appropriate output response below for error messages.



**NOTE:**

The “user name” prompt may appear before the output response is fully completed. Do **NOT** enter a login at the “user name” prompt, until after the appropriate response appears as shown in next step.

*Input Command:*

Enter choice: **c**

*Output Response:*

```
Creating /usr/add-on/scs/bin/mips/.sum_list
init: info; transitioning to OS Run Level '2'.
CSD daemon, Version "20000426", starting (Process 194)...
```

```
user name:FSM ready for events.
init: info; transitioning to OS Run Level '3'.
```

```
Networks Going Active... (/net/rc.network)
```

```
•
•
•
```

```
Networks Active
```

```
init: info; transitioning to OS Run Level '4'.
Grandma: w001 Mom (256) started at Sat May 13 15:07:45 2000
Booting NEF Software Release B2.1.2 2000/05/04 12:53:28
w001 Run Level: SYSTEM
w001 Run Level: SYSTEM_ACTIVE
w001 Run Level: BOOT
w001 Run Level: ACTIVE_NEF
```

- Verify following lines reported for working Sync Shelf:

```
Grandma: w003 Mom (xxx) started at <current date-time>
w003 Run Level: SYSTEM
w003 Run Level: BOOT
w003 Run Level: ACTIVE_NEF
<current date-time> GEN002 dacs6: w003 Software Initialisation Complete
```

- Verify following lines reported for protection Sync Shelf:

```
Grandma: w004 Mom (xxx) started at <current date-time>
w004 Run Level: SYSTEM
w004 Run Level: BOOT
w004 Run Level: STANDBY_NEF
<current date-time> GEN002 dacs6: w004 Software Initialisation Complete
```

- Verify following lines reported for working MC Subrack:

```
user name:

w001 Run Level: ACTIVE_ALL
Sat May 13 15:19:41 2000 GEN002 dacs6: w001 Software Initialisation Complete
```

- 
- Step 26:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.
- 
- Step 27:* This successfully completes the "Core Software Installation" procedure for the **Core Software Release 2.1.x**.
- 

**STOP-Return to Calling Procedure**

## **GTP 9 - Loading Special Configuration Disk**

---

### **Description**

---

The following procedure will explain how to load a special configuration MO Disk for the *WaveStar*<sup>TM</sup> DACS 4/4/1 System. (For example: 512 matrix option).

#### **Required Equipment:**

- 1 → Special Configuration MO Disk (customer supplied)
- 1 → Workstation with Terminal VT100 Emulation (HyperTerminal)
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → CIT Adapter (9 pin-female) (ITE-6999)

### **Assumptions:**

---

1. A special support User Identification (User ID) and Password are required to perform this procedure.
  - Administrator User ID is **admin**
  - Default password is: *(Leave blank, no password)*
1. Terminal is connected to the CIT connector on the Main Controller Subrack.
2. The terminal is currently at the "user name:" prompt.

### **Precautions**

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

---

**Step 1:** Verify that the serial port of the Workstation Computer is connected to the system workstation port labeled **WS1** on the System User Panel (SUP).

---

**Step 2:** Verify that the Workstation Computer is currently running the Hyperterminal Application (VT100 terminal emulation) and connected to the *WaveStar*<sup>TM</sup> DACS 4/4/1 System Console.

---

**Step 3:** Obtain the user name: prompt by entering a **(RETURN)**.

*Output Response:*

user name:

---

**Step 4:** Enter the special administration user identification **admin** after the user name: prompt, then press a **(RETURN)**.



**NOTE:**

There is no password set for the admin user id as the default.

*Input Command:*

user name: **admin**

*Output Response:*

```
/******  
|* LynxOS S2R2_1_20000421  
|* Wavestar Digital Access Cross Connect  
|* Copyright (c) Lucent Technologies  
|* Copyright (c) Lynx Realtime Systems, Inc.  
|* On Fri Apr 21 11:13:06 MDT 2000  
\*****
```

DACS

System Administration

Main Menu

```
1 - EXLAN IP Assignment  
2 - Database Backup  
3 - Special MO functions  
4 - Reboot the MC  
5 - Reboot the System  
6 - Change admin Password  
7 - MC Duplication Functions  
? - Help  
q - Quit
```

Enter choice:

- Step 5:** Select the **Special MO functions** option from the System Administration Main Menu by entering (3), then press (RETURN).

*Input Command:*

Enter choice:3

*Output Response:*

Insert special MO and enter <y,n> to confirm

---

- Step 6:** Locate the **special** configuration magneto optic (MO) disk for the Wave-Star™ DACS 4/4/1 System.:

- Step 7:** **Install** the appropriate **special configuration MO disk** that was provided into the MO disk drive of the MSU unit in the MC Subrack.



**NOTE:**

See "Appendix A - Units" for MO disk installation procedure.

---

- Step 8:** Entering (y) to confirm after MO disk insertion, then press (RETURN).

*Input Command:*

Enter choice: y

*Output Response:*

DACS System Administration

Special MO Functions

1 - View Function of MO  
2 - Execute MO Script File  
? - Help  
p - Return to Previous menu

Enter choice:

---

- Step 9:** Press (1) for **View Function of MO**, and then press (RETURN).

*Input Command:*

Enter choice:1

*Output Response:*

This MO configures the system as ?????

DACS System Administration

Special MO Functions

1 - View Function of MO  
2 - Execute MO Script File  
? - Help  
p - Return to Previous menu

Enter choice:

- Step 10:** If the disk contains the desired system configuration, press **2** for **Execute Script MO File**, and then press **(RETURN)**.

*Input Command:*

Enter choice: **2**

*Output Response:*

This script will configure your system as ????.  
Do you wish to continue? <y,n>

---

- Step 11:** Press **y** to continue, and then press **(RETURN)**.

*Input Command:*

Enter choice: **y**

*Output Response:*

Configuration successful

DACS

System Administration

Special MO Functions

1 - View Function of MO  
2 - Execute MO Script File  
? - Help  
p - Return to Previous menu

Enter choice:

---

- Step 12:** Press **p**, to **Return to Previous menu** and then press **(RETURN)**.

*Input Command:*

Enter choice: **p**

*Output Response:*

DACS

System Administration

Main Menu

1 - EXLAN IP Assignment  
2 - Database Backup  
3 - Special MO functions  
4 - Reboot the MC  
5 - Reboot the System  
6 - Change admin Password  
7 - MC Duplication Functions  
? - Help  
q - Quit

Enter choice:

- 
- Step 13:* Exit the System Administration Main Menu and logoff as administrator by entering **Q** to **Quit**, and then press **RETURN**.

*Input Command:*

Enter choice: **q**

*Output Response:*

user name:

- 
- Step 14:* Remove the **Special Configuration MO Disk** from the MO Disk Drive in the MSU unit of the MC Subrack.



**NOTE:**

See "Appendix A - Units" for MO disk removal procedure.

- 
- Step 15:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- 
- Step 16:* This completes the "Loading Special Configuration MO Disk" procedure
- 

**STOP- Return to Calling Procedure**



## GTP 10 - Setting the EXLAN IP Address

---

### Description

---

The following procedure will explain how to set the Internet Protocol (IP) Address for the EXLAN of the *WaveStar*<sup>TM</sup> DACS 4/4/1 System.

#### Required Equipment:

- 1 → Workstation with Terminal VT100 Emulation (HyperTerminal)
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → CIT Adapter (9 pin-female) (ITE-6999)

### Assumptions:

---

1. A special support User Identification (User ID) and Password are required to perform this procedure.
  - Administrator User ID is **admin**
  - Default password is: *(Leave blank, no password)*
2. Terminal is connected to the CIT connector on the Main Controller Subrack.
3. The terminal is currently at the "user name:" prompt.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- 
- Step 1:** Verify that the serial port of the Workstation Computer is connected to the system workstation port labeled **WS1** on the System User Panel (SUP).
- 
- Step 2:** Verify that the Workstation Computer is currently running the Hyperterminal Application (VT100 terminal emulation) and connected to the *WaveStar*<sup>TM</sup> DACS 4/4/1 System Console.
- 
- Step 3:** Obtain the `user name :` prompt by entering a `(RETURN)`.
- Output Response:*
- `user name :`
- 
- Step 4:** Enter the special administration User Identification **admin** after the `user name :` prompt, then press a `(RETURN)`.



### NOTE:

There is no password set for the admin user id as the default.

*Input Command:*

`user name : admin`

*Output Response:*

```
/******  
* LynxOS S2R2_1_20000421  
* Wavestar Digital Access Cross Connect  
* Copyright (c) Lucent Technologies  
* Copyright (c) Lynx Realtime Systems, Inc.  
* On Fri Apr 21 11:13:06 MDT 2000  
\*****
```

DACS

System Administration

Main Menu

```
1 - EXLAN IP Assignment  
2 - Database Backup  
3 - Special MO functions  
4 - Reboot the MC  
5 - Reboot the System  
6 - Change admin Password  
7 - MC Duplication Functions  
? - Help  
q - Quit
```

Enter choice:

- Step 5:** From the System Administration Main Menu, select the **EXLAN IP Assignment** option by entering (1), then press (RETURN).

*Input Command:*

```
Enter choice:1
```

*Output Response:*

```
DACS                                     System Administration

                                     EXLAN IP Assignment
1 - EXLAN IP Assignment
2 - Restore Default EXLAN IP Assignment
3 - Display EXLAN IP Assignment
? - Help
p - Return to Previous menu

Enter choice:
```

- Step 6:** To view the current IP Assignments settings for the Interface IP Address, Interface Network Mask, and Router IP Address, select the **Display EXLAN IP Assignments** option from the System Administration IP Assignment Menu by entering (3), then press (RETURN).

*Input Command:*

```
Enter choice:3
```

*Output Response:*

```
The EXLAN interface is configured as follows:

Active Controller's IP Address: 192.168.0.1 (default)
Working Controller's IP Address:
Protection Controller's IP Address:
Network Address Mask: 255.255.255.0 (default)
Router IP Address: 192.168.0.254 (default)

DACS                                     System Administration

                                     EXLAN IP Assignment
1 - EXLAN IP Assignment
2 - Restore Default EXLAN IP Assignment
3 - Display EXLAN IP Assignment
? - Help
p - Return to Previous menu

Enter choice:
```

- Step 7:** Choose one of the procedural options below based on how the IP addresses must be setup in the *WaveStar*<sup>TM</sup> DACS 4/4/1 System.
- To restore the factory pre-set default IP assignments, proceed to next step.
  - To change the IP assignments to a specific network value, proceed to the **Step 10**.

- Step 8:** To restore the factory pre-set default IP Assignments for the Interface IP Address (192.168.0.1) and Router IP Address (192.168.0.254), enter **2**, then press **RETURN**.

*Input Command:*

```
Enter choice:2
```

*Output Response:*

```
decc0: flags=8863<UP,BROADCAST,NOTRAILERS,RUNNING>
       inet 192.168.0.1 netmask ffffffff broadcast
       192.168.0.255
```

```
delete net default: gateway 192.168.0.254
add net default: gateway 192.168.0.254
```

```
DACS
```

```
System Administration
```

```
EXLAN IP Assignment
```

```
1 - EXLAN IP Assignment
2 - Restore Default EXLAN IP Assignment
3 - Display EXLAN IP Assignment
? - Help
p - Return to Previous menu
```

```
Enter choice:
```

- 
- Step 9:** Default IP addresses are now currently set into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, proceed to **Step 14**.

- 
- Step 10:** To change the IP assignments for the Interface IP Address, Network Address Mask, and Router IP Address, select the **EXLAN IP Assignments** option from the System Administration IP Assignment Menu by entering **1**, then press **RETURN**.

*Input Command:*

```
Enter choice:1
```

*Output Response:*

```
Enter Active Controller's IP Address [default:192.168.0.1]:
```

- 
- Step 11:** Enter the desired **Active Controller's IP Address** value, and then press `(RETURN)` or just press `(RETURN)` to accept default value.



**NOTE:**

The Active Controller's IP Address is the same address used by the Workstation Controller to log into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System.

*Input Command:*

```
Enter Active Controller's IP Address [default:192.168.0.1]:  
enter value here!
```

*Output Response:*

```
Enter Working Controller's IP address [default:192.168.0.2]:
```

- 
- Step 12:** Enter the desired **Working Controller's IP Address** value, and then press `(RETURN)` or just press `(RETURN)` to accept default value.

*Input Command:*

```
Enter Working Controller's IP Address [default:192.168.0.2]:  
enter value here!
```

*Output Response:*

```
Enter Protection Controller's IP address [default:192.168.0.3]:
```

- 
- Step 13:** Enter the desired **Protection Controller's IP Address** value, and then press `(RETURN)` or just press `(RETURN)` to accept default value.

*Input Command:*

```
Enter Protection Controller's IP Address [default:192.168.0.3]:  
enter value here!
```

*Output Response:*

```
Enter interface network mask [default:255.255.255.0]:
```

- 
- Step 14:** Enter the desired **Interface Network Mask** value, and then press `(RETURN)` or just press `(RETURN)` to accept default value.

*Input Command:*

```
Enter interface network mask [default:255.255.255.0]:  
enter value here!
```

*Output Response:*

```
Enter router IP Address [default:xxx.xxx.xxx.254]:
```

- Step 15:** Enter the desired **Router IP Address** value, and then press **(RETURN)** or just press **(RETURN)** to accept the indicated default value.



**NOTE:**

It is recommended to use the indicated default Router IP address.

**Input Command:**

```
Enter router IP Address [default:192.168.0.254]:
enter value here!

decc0:
flags=8863<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST>
    inet 192.168.0.63 netmask 0xffffffff broadcast 192.168.0.255
decc0 1500 <Link>8.0.3e.2a.e.80          2968    0    175    0    65
decc0 1500 192.168      192.168.0.63      2968    0    175    0    65
decc0 1500 192.168      192.168.0.43      2968    0    175    0    65
delete net default: gateway 192.168.0.254
add net default: gateway 192.168.0.254

DACS                                     System Administration

                                     EXLAN IP Assignment
1 - EXLAN IP Assignment
2 - Restore Default EXLAN IP Assignment
3 - Display EXLAN IP Assignment
? - Help
p - Return to Previous menu

Enter choice:
```

- Step 16:** To view the current IP Assignments settings for the Interface IP Address and Router IP Address, select the **Display IP Assignments** option from the System Administration IP Assignment Menu by entering **(3)**, then press **(RETURN)**.

**Input Command:**

```
Enter choice:3
```

**Output Response:**

```
The EXLAN interface is configured as follows:

Active Controller's IP Address: 192.168.0.1 (default)
Working Controller's IP Address:192.168.0.2 (default)
Protection Controller's IP Address:192.168.0.3 (default)
Network Address Mask: 255.255.255.0 (default)
Router IP Address: 192.168.0.254 (default)

DACS                                     System Administration

                                     EXLAN IP Assignment
1 - EXLAN IP Assignment
2 - Restore Default EXLAN IP Assignment
3 - Display EXLAN IP Assignment
? - Help
p - Return to Previous menu

Enter choice:
```

- 
- Step 17:** Choose **one** of the procedural options below based on current IP address settings in the *WaveStar™* DACS 4/4/1 System.
- If IP Assignments are set correctly, proceed to next step.
  - If IP Assignments need to be changed again, return to the **Step 7**.
- 

- Step 18:** Press **(p)**, to **Return to Previous menu** and then press **(RETURN)**.

*Input Command:*

Enter choice: **p**

*Output Response:*

```
DACS                                     System Administration
                                     Main Menu
1 - EXLAN IP Assignment
2 - Database Backup
3 - Special MO functions
4 - Reboot the MC
5 - Reboot the System
6 - Change admin Password
7 - MC Duplication Functions
? - Help
q - Quit
Enter choice:
```

---

- Step 19:** To exit the System Administration Main Menu and logoff as administrator, enter **(q)**, to **Quit** and then press **(RETURN)**.

*Input Command:*

Enter choice: **q**

*Output Response:*

user name:

---

- Step 20:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.
- 

- Step 21:** This completes the "*Setting the EXLAN IP Address*" procedure
- 

**STOP-Return to Calling Procedure**



## GTP 11 - System Login Procedure

---

### Description

---

The following procedure will explain how to log into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System using the graphical user interface (GUI) on the **XC-CIT** workstation.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### Assumptions:

---

1. A customer supplied **User ID** and **Password** are required to perform this login procedure. (Default values below may no longer be valid)
  - Default User ID is **d6sam**
  - Default password is: **seriesll**
2. Obtain customer authorization prior to logging into an in-service system.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

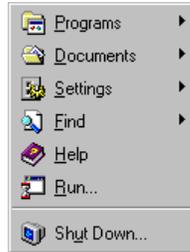
## Procedure

---

Use the  boxes to check off the steps as they are completed.

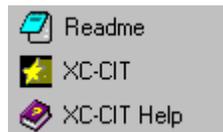
**Step 1:** Execute the **XC-CIT** application on the workstation computer.

**Step 1-a:** Press the  **Start** button in the lower left of the screen, and verify that the start menu appears.

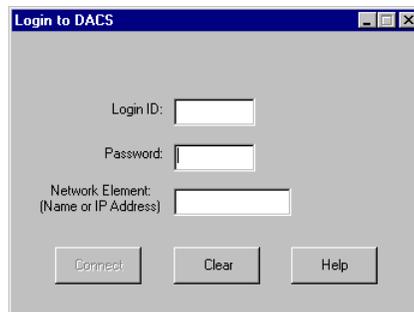


**Step 1-b:** Select the  **Programs** menu item and obtain a list of all the windows programs on the workstation computer.

**Step 1-c:** Locate and select the  **Xc\_cit** menu item and obtain the list below of all the XC\_CIT programs items.



**Step 1-d:** Execute the XC-CIT program by double-clicking on  **XC-CIT** and verify the following login window appears:



- Step 2:** Enter the customer supplied **User\_ID** into the Login Id Box, then press a **(TAB)** key (Shown using default user\_id of **d6sam**).



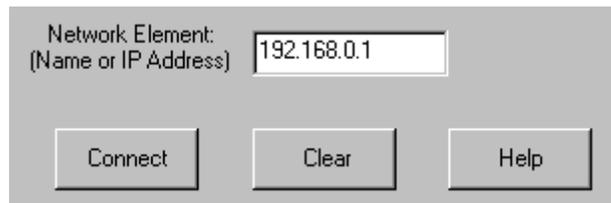
A screenshot of a web form showing a text input field labeled "Login ID:" with the value "d6sam" entered. The field is highlighted with a grey border.

- Step 3:** Enter the customer supplied **password** into the Password Box, and then press **(TAB)** key (default password for user\_id d6sam is **seriesII**).



A screenshot of a web form showing a text input field labeled "Password:" with "xxxxxxxx" entered. The field is highlighted with a grey border.

- Step 4:** Enter the appropriate IP Address of the specific *WaveStar™* DACS 4/4/1 System to connect to in the Network Element Box, and then press the **connect** button (Shown below using default system IP Address).



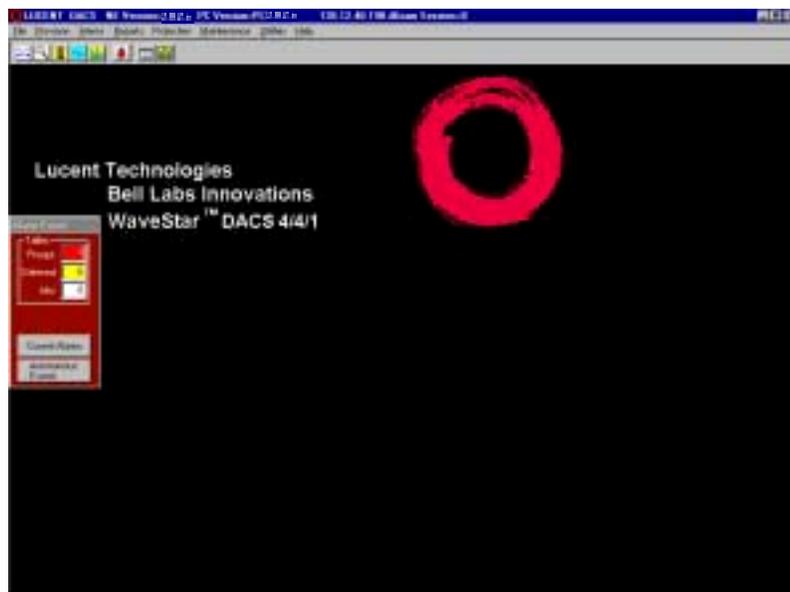
A screenshot of a web form showing a text input field labeled "Network Element: (Name or IP Address)" with the value "192.168.0.1" entered. Below the field are three buttons: "Connect", "Clear", and "Help".

- Step 5:** Verify that the following graphical user interface screen appears on the **XC-CIT Workstation**:



**NOTE:**

Ignore any reported alarms in the alarm panel at this time.



If there is an error connecting to the system, the following error message will be displayed.



Possible Connection Problems Areas:

1. Incorrect IP address selected
2. Computer not properly connected to system EXLAN (null-modem LAN cable required if directly connected to ethernet LAN card)
3. Computer ethernet card problem, try rebooting the computer

---

*Step 6:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

*Step 7:* This completes the "*System Login Procedure*".

---

## **STOP-Return to Calling Procedure**

## **GTP 12 - Database Backup Procedure**

---

### **Description**

---

The following procedure will make a backup copy of the current database of the *WaveStar*<sup>™</sup> DACS 4/4/1 System onto a backup MO database disk.

#### **Required Equipment:**

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter (installed in workstation)
- 1 → Backup MO Disk
- 1 → RJ-45 Coupler (ITE-7015)
- 1 → 10 inch Null-Modem LAN Cable (ITE-7002)

### **Assumptions:**

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>™</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### **Precautions**

---

- When working on the *WaveStar*<sup>™</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the XC-CIT GUI Window is visible on the screen.



**NOTE:**

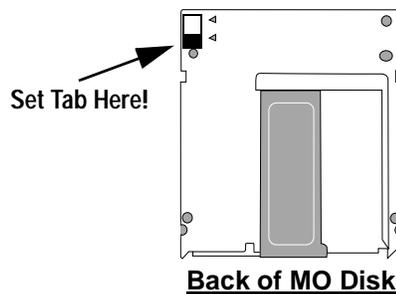
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Obtain a MO disk in order to use for database backup, and make sure the database MO disk is set for **recordable** or **non-protected**.



**NOTE:**

For non-protected, the tab on the MO disk should be placed in the down position (away from edge of disk).



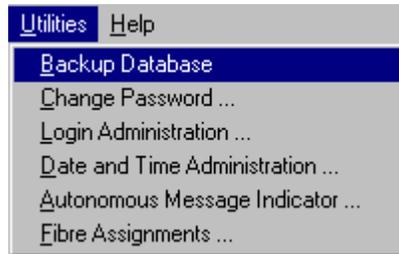
- Step 3:** Install the database backup MO disk into the MO Drive of the MSU unit in the MC Subrack.



**NOTE:**

See "*Appendix A - Units*" for MO disk installation procedure.

- Step 4:** On the main title bar, highlight the **Utilities Menu** selection, and select the **Backup Database** menu item.



- Step 5:** Verify that the **Backup Database Confirmation Window** appears, in order to start the database backup operation.



- Step 6:** Start the system database backup by pressing the  button.
- Step 7:** After the *hour-glass* icon disappears and the *arrow* mouse pointer appears, the database backup has completed.
- If the database backup **was** successful, **no** error message will be reported by the system.
- Otherwise**, if the database backup **was not** successful, do not proceed with this procedure. Contact your next level of support.

- Step 8:** Remove the database backup MO Disk from the MSU unit.



**NOTE:**

See "Appendix A - Units" for MO disk removal procedure.

- Step 9:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.
- Step 10:** This completes the "*Database Back-up*" procedure.

---

**STOP-Return to Calling Procedure**



## **GTP 13 - Database Restoral Procedure**

---

### **Description**

---

The following procedure will restore the *WaveStar*<sup>TM</sup> DACS 4/4/1 System database from a Release 2.1 backup MO database disk.

#### **Required Equipment:**

- 1 → System Database Backup MO Disk
- 1 → XC-CIT Workstation
- 2 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → CIT Adapter (9 pin-female) (ITE-6999)
- 1 → RJ-45 Coupler (ITE-7015)
- 1 → 10 inch Null-Modem LAN Cable (ITE-7002)

### **Assumptions:**

---

1. The Workstation Ethernet Network Port is connected to the EXLAN Ethernet LAN port in the MC Subrack.
2. The Workstation Serial Port is connected to the WS1 port on the System User Panel.
3. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
4. The MC Subrack will be taken Out-of-Service (OOS).

### **Precautions**

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- 
- Step 1:* Verify that the serial port of the Workstation Computer is connected to the system workstation port labeled **WS1** on the System User Panel (SUP).

---

  - Step 2:* Verify that the Workstation Computer is currently running the Hyperterminal Application (VT100 terminal emulation) and connected to the *WaveStar*<sup>TM</sup> DACS 4/4/1 System Console.

---

  - Step 3:* Verify that the Workstation is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System and the XC-CIT GUI Window is visible on the screen.



**NOTE:**

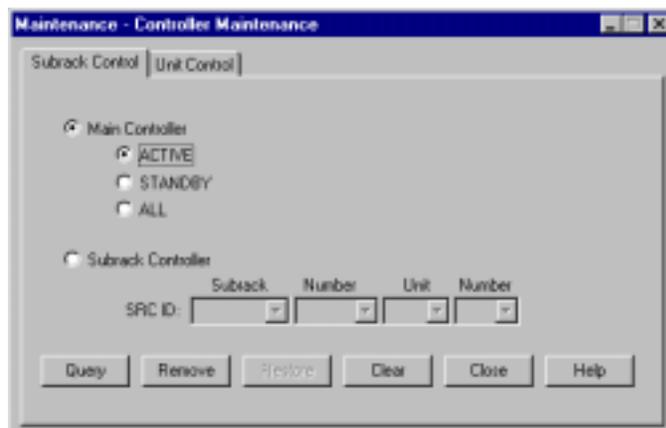
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- ❑ **Step 4:** Remove the Main Controller to the Out-Of-Service State (OOS), in order to power-down the Motorola Controller Subrack.

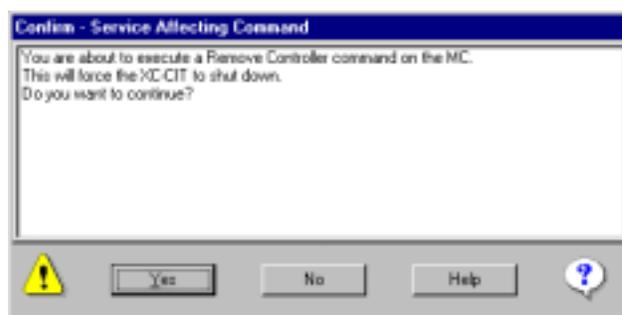
- ❑ **Step 4-a:** On the main title bar, highlight the **Maintenance Menu** selection, and select the **Controller Maintenance ...** menu item.



- ❑ **Step 4-b:** In the **Maintenance-Controller Maintenance Window**, obtain the **Subrack Control Tab**, and select the **Main Controller** radio button, and select the **Active** radio button.



- ❑ **Step 4-c:** Execute the removal command by pressing the **Remove** button, and verify the following **Confirmation Window** appears.



- ❑ **Step 4-d:** Continue the removal process for the Main Controller by pressing the **Yes** button.

- ❑ **Step 4-e:** After approximately 1-3 minutes, verify that the XC-CIT GUI automatically exits, due to the loss of the TCP/IP connection to the system because the MC is rebooting.

- **Step 5:** From the *WaveStar*<sup>™</sup> DACS 4/4/1 System Console connection, verify that the MPU Unit will *automatically* begin to reboot and *automatically* stop at the PPC1-Bug> prompt as shown below:

*Output Response:*

```
user name:grandma: Mom pid 29 exited with value 115
grarnedcmoav: Reerb:o orteiangson: Apps called reboot(0x20088)
(131208) the system!

**** LynxOS is down ****

-----ATTENTION-----

PPC1 Debugger/Diagnostics INTERNAL Release - XR712-129LUC FAT

-----

COLD Start

Local Memory Found =20000000 (&536870912)

MPU Clock Speed =367Mhz

BUS Clock Speed =67Mhz

WARNING: Keyboard Not Connected

Reset Vector Location : ROM Bank B
Mezzanine Configuration: Single-MPU
Current 60X-Bus Master : MPU0
Idle MPU(s)           : NONE

System Memory: 512MB, ECC Enabled (ECC-Memory Detected)
L2Cache:          1024KB, 147Mhz

PPC1-Bug>
```

- **Step 6:** Boot the system software from the hard drive of the MSU unit, by entering `pboot 0 0` then pressing the `(RETURN)` key, then *immediately* stop the boot process at the 10 second software administration menu prompt shown below:

*Input Command:*

```
PPC1-Bug> pboot 0 0 (RETURN)
```

*Output Response:*

```
Booting from: NCR53C825, Controller 0, Drive 0
Device Name : /pci@80000000/pci1000,3@c,0/harddisk@0,0
Loading: Operating System
```

```
IPL Loaded at: $1FC79000
Residual-Data Located at: $1FEF8000
CPU: MPC750 G3 (8), revision 0x8201 RAM Size: 512 Mb
```

```
Universe Driver Installed
mccInstall: info; mccInstall() Called.
sanityInstall: info; sanityInstall(0xb0117ca8) Called.
aruInstall: info; aruInstall() Called.
SKDB kernel debugger installed.
```

```
.
.
.
.
```

```
Starting Millennia DACS Applications:...
```

```
Press any key to enter the software administration menu.
```

```
You have 10 seconds to do this.....
```



**NOTE:**

*Immediately* press the `(SPACE)` bar during boot sequence, to enter the Software Administration Menu.

- 
- Step 7:** Verify the following System Administration Pre-NEF Services Sub-Menu is present on the screen.

*Output Response:*

```
DACS                                     System Administration
```

```
Pre-NEF Services
```

```
1. - Database/System Backup
2. - Database/System Restore
3. - Database Upgrade from 2.0
? - Help
c - Continue Booting
q - Quit Without Booting
```

```
Enter choice:
```

- Step 8:** Select the **Database/System Restore** option by entering (2), then press (RETURN).

*Input Command:*

Enter choice:2

*Output Response:*

Restore copies files from the MO to the MC hard disk.  
Files stored on the MC hard disk will be replaced with the MO version.

ARE YOU SURE <y,n> >

- Step 9:** Continue with the restoral process by entering (y), then press (RETURN).

*Input Command:*

> y

*Output Response:*

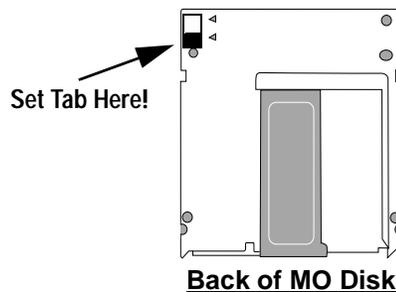
Please insert the MO disk for Restore.  
hit <Return> when complete >

- Step 10:** Obtain the backup MO disk that contains the Release 2.1 system database to be restored, and make sure the MO disk is set for **recordable** or **non-protected**.



**NOTE:**

For non-protected, the tab on the MO disk should be placed in the down position (away from edge of disk).



- Step 11: Install** the system database backup MO disk into the MO Drive of the MSU unit in the MC Subrack, then press **(RETURN)** to start the restoral process.



**NOTE:**

See "Appendix A - Units" for MO disk installation procedure.

**Output Response:**

```
Checking for presence of MO. Please be patient...
MO is present.
Checking to see if the MO has a valid DB backup...
Valid DB on MO.
Checking SYS_CON on MO...

1/1 row copied
Database information on MO disk:
    Frame ID is 1
    Software ID is 4096
    This backup was performed <backup date>
Database information on frame:
    Frame ID is 1
    Software ID is 4096
    Current time is <current date>
Do you want to continue the restore <y,n> >
```

- Step 12: Perform one** of the following options below, based on the reported database information:

- If the database information is correct, press **(y)**, and then press **(RETURN)** to continue the database backup restore.
- If the database information is **not** correct, press **(n)**, and then press **(RETURN)** to quit the database restore. Verify that you have inserted the correct MO. Replace with the correct MO and try again or contact next level of support.



**CAUTION:**

**Watch** the screen output and check for any errors or messages that indicate that the restoral process was **not** successful.

**Output Response:**

```
Copying the following files from MO to hard disk...
./safel/
./safel/cpdbnsys.info
•
• (System Copies multiple database files)
•
RESTORE COMPLETED, you may remove the MO disk.

DACS                                     System Administration

                                           Pre-NEF Services
1. - Database/System Backup
2. - Database/System Restore
3. - Database Upgrade from 2.0
? - Help
c - Continue Booting
q - Quit Without Booting

Enter choice:
```

- Step 13:** If the database restoral **was** successful, the screen will indicate “RESTORE COMPLETED, you may remove the MO disk”, then proceed to next step.

If the database restoral **was not** successful, retry the procedure by returning to **Step 7**. If the restoral fails again, do **not** proceed with this upgrade procedure, and contact your next level of support.

- Step 14:** **Remove** the system database backup MO Disk from the MSU unit.



**NOTE:**

See “Appendix A - Units” for MO disk removal procedure.

- Step 15:** Select the **Continue booting** option by entering **(C)**, then press **(RETURN)**. **Watch** the terminal screen for the appropriate output response below for error messages.

*Input Command:*

```
Enter choice: c
```

*Output Response:*

```
Creating /usr/add-on/scs/bin/mips/.sum_list
init: info; transitioning to OS Run Level '2'.
CSD daemon, Version "20000426", starting (Process 194)...

user name:FSM ready for events.
init: info; transitioning to OS Run Level '3'.

Networks Going Active... (/net/rc.network)
.
.
.
Networks Active

init: info; transitioning to OS Run Level '4'.
Grandma: w001 Mom (256) started at Sat May 13 15:07:45 2000
Booting NEF Software Release B2.1.2 2000/05/04 12:53:28
w001 Run Level: SYSTEM
w001 Run Level: SYSTEM_ACTIVE
w001 Run Level: BOOT
w001 Run Level: ACTIVE_NEF
→ Verify following lines reported for working Sync Shelf:
Grandma: w003 Mom (xxx) started at <current date-time>
w003 Run Level: SYSTEM
w003 Run Level: BOOT
w003 Run Level: ACTIVE_NEF
<current date-time> GEN002 dacs6: w003 Software Initialisation Complete

→ Verify following lines reported for protection Sync Shelf:
Grandma: w004 Mom (xxx) started at <current date-time>
w004 Run Level: SYSTEM
w004 Run Level: BOOT
w004 Run Level: STANDBY_NEF
<current date-time> GEN002 dacs6: w004 Software Initialisation Complete

→ Verify following lines reported for working MC Subrack:
user name:

w001 Run Level: ACTIVE_ALL
Sat May 13 15:19:41 2000 GEN002 dacs6: w001 Software Initialisation Complete
```

---

*Step 16:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

*Step 17:* This completes the "*Database Restoral Procedure*".

---

**STOP-Return to Calling Procedure**



## **GTP 14 - SRC Firmware Download**

---

### **Description**

---

The following procedure will explain how to force a download of the SRC firmware on a Release 2.1 system. It involves communicating with an SRC through its CIT port and issuing special commands to the firmware.

#### **Required Equipment:**

- 1 → Workstation with Terminal VT100 Emulation (HyperTerminal)
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 2 → CIT Adapter (9 pin-female) (ITE-6999)
- 1 → 9 pin female to male gender changer (p/o ITE-7098)

### **Assumptions:**

---

1. Release 2.1 software has been installed. The MC has booted and the user name: prompt appears on the MC's CIT.
2. A physical connection exists between one of the PC's serial (COM) ports and the Protect MS.

### **Precautions**

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

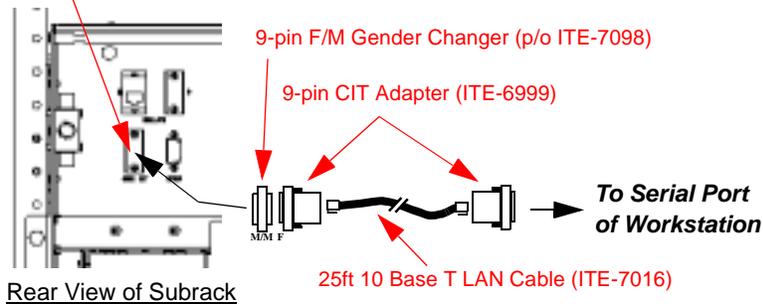
## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Connect a terminal (via workstation serial port) to the **SRC CIT** port on the rear of the appropriate subrack.

### 1. Remove Cover Plate On SRC CIT Connector



### 2. Install Cable Connection

- Step 2:** Reset the SRC firmware by reseating (remove then reinstall) the appropriate SRC Unit in the front of the appropriate subrack.



#### **NOTE:**

When the SRC unit is re-installed, the current firmware diagnostic tests will automatically begin executing.

#### *Output Response:*

```
DACS Subrack Controller (SRC) Bootstrap Program
Version 4.0.34-Upgrade
Copyright 1992-1994 AT&T

Dram BSS memory test (0xa0000000-0xa0025000) - PASSED
  Error Structure Initialization Complete
Memory size: 33554432 (0x02000000) bytes
User Memory Space 0xa0024d44-0xa1fffffc
Icache size: 4096 (0x1000) bytes
Dcache size: 2048 (0x800) bytes
  PULSE interrupt received.
Automatic Diagnostics are running.
Current BOOT LEVEL is COLD Boot
.
.
.
```

- Step 3:** Interrupt the firmware boot sequence by pressing **CONTROL+O** then **SHIFT+P**, and the **<Options>** menu prompt will appear.

*Output Response:*

```
AUTO BOOT HALTED
Options Menu - Enter ? for a list of Options Commands.

<Options>
```

- Step 4:** From the **<Options>** menu, enter the osboot operations level (**osb**), by entering **boot** and then pressing the **RETURN** key.

*Input Command:*

```
<Options> boot
```

*Output Response:*

```
osb>
```

- Step 5:** From the **osb>** prompt, verify the following subrack identification by entering **subid** and then pressing the **RETURN** key. Verify the correct Subrack Type (Port or MS) and SRC Slot (working or protection).

*Input Command:*

```
osb> subid
```

*Output Response:*

```
Subrack Information.
Subrack Type: {Port,MS} Subrack, {Working,Protection}
Subrack Vintage: Vintage x
BCLAN address: xx
```

Where: x = don't care value

Which MC is Active? Enter 1 or 2:

- Step 6:** Enter the **subrack number** for the appropriate subrack containing the SRC Unit to be firmware upgraded, and then press the **RETURN** key.

*Input Command:*

```
3 (For MS Subrack)
4 - 11(For Port Subrack)
```

*Output Response:*

```
Which MC is Active? Enter 1 or 2:
```

- Step 7:** Enter **1** (for working MC) and then press the **(RETURN)** key, to start the SRC firmware download from the selecting Main Controller.

*Input Command:*

Which MC is Active? Enter 1 or 2: **1**

*Output Response:*

```
Updating standby interface... p004 (128.1.0.4) at 8:0:6a:13:0:4
sonic: WARNING: link B down.
Standby interface a4000402 shut down.
Updating active interface... w004 (128.0.0.4) at 8:0:6a:13:0:4
Boot File is /srcboot/lynxdl
```

```
Boot Operations.
sonic: unknown device: 00000000
State: Flash Stim: Flash Check
State: Flash Stim: Flash Success
Flash Startup.
```

```
Leaving BOOT Prom...
```

```
.
.
```

- Step 8:** The SRC unit will automatically reboot after downloading the new Rel 2.1 firmware, and verify the appropriate following output response: The SRC reboot should take approximately 6 - 7 minutes.

*Output Response: (For Working SRC in MS Subrack)*

```
.
.
w003 Run Level: SYSTEM
w003 Run Level: BOOT
w003 Run Level: ACTIVE_NEF
<current date-time> GEN002 dacs6: w003 Software Initialisation Complete
```

*Output Response: (For Protect SRC in MS Subrack)*

```
.
.
w004 Run Level: SYSTEM
w004 Run Level: BOOT
w004 Run Level: STANDBY_NEF
<current date-time> GEN002 dacs6: w004 Software Initialisation Complete
```

*Output Response: (For SRC in a Port Subrack)*

```
.
.
w00? Run Level: SYSTEM
w00? Run Level: BOOT
w00? Run Level: ACTIVE_NEF
<current date-time> GEN002 dacs6: w00? Software Initialisation Complete
```

- Step 9:** Disconnect test cables and re-install protective metal cover back on the **SRC CIT** connector interface in the rear of the subrack.

- Step 10:** This completes the "*SRC Firmware Download*" procedure.
- 

**STOP-Return to Calling Procedure**

## **GTP 15 - Provisioning the Date/Time**

---

### **Description**

---

The following procedures will setup the date and time into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System database and synchronize the setting with the workstation computer.

#### **Required Equipment:**

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### **Assumptions**

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### **Precautions**

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

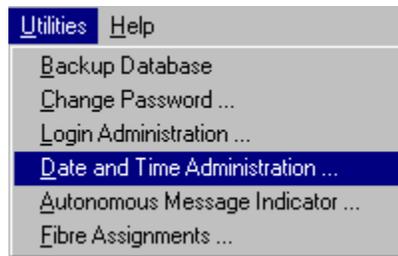
Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

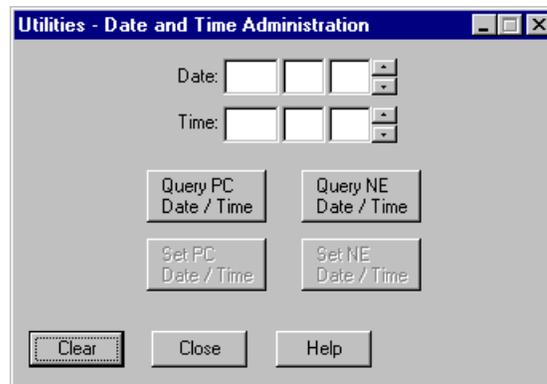
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Open the ***Utilities-Date and Time Administration Window*** in order to query and set the system date and time.

### WINDOW PATH:



### WINDOW:



- Step 3:** Query the current setting of the date and time in the workstation computer by pressing the  button.

- Step 4:** Perform **one** of the procedural options below:
- If the date and time are **not** correct, change the values in the Date and Time boxes to the correct local time, and proceed to next step.
  - If the date and time are correct, proceed to **Step 7**.

- 
- Step 5:** Set the new date and time values into the workstation computer by pressing the  button.
- 
- Step 6:** Query the current setting of the date and time in the workstation computer by pressing the  button.
- 
- Step 7:** Set the new date and time values into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System by pressing the  button.
- 
- Step 8:** Query the current setting of the date and time in the *WaveStar*<sup>TM</sup> DACS 4/4/1 System by pressing the  button.
- 
- Step 9:** Close the ***Utilities-Date and Time Administration Window*** by pressing the  button.
- 
- Step 10:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.
- 
- Step 11:** This completes the "*Provisioning the Date/Time*" procedure.
- 

**STOP-Return to Calling Procedure**



## GTP 16 - Provisioning the Core Rack Location

---

### Description

---

The following procedure will explain the necessary steps to provision the rack location information for the Core Complex Racks (i.e. MC Rack and MS Rack) into the system database.



**NOTE:**

The MC Complex Rack and MS Complex Rack are automatically provisioned by the system when the system software is booted on the MPU unit, and assigned Rack ID's of "1" for MC Rack and "2" for MS Rack. However, the system initially contains no rack location information for the Core Complex Racks

### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

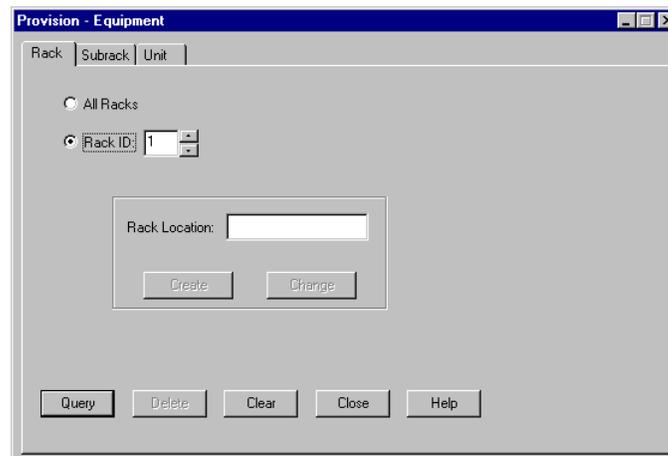
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Open the **Provision-Equipment Window** and select the **Rack Tab** in order to provision the optional “Rack Location” identification.

### WINDOW PATH:



### WINDOW:



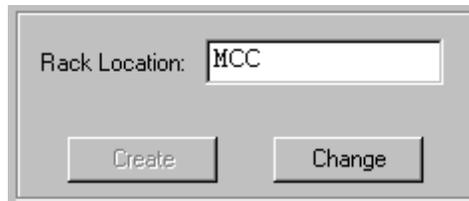
- ❑ **Step 3:** Perform the following steps to provision the **MC Complex Rack** into the system database.

- ❑ **Step 3-a:** In the **Rack ID Box**, select “1” for the **MC Complex Rack**.

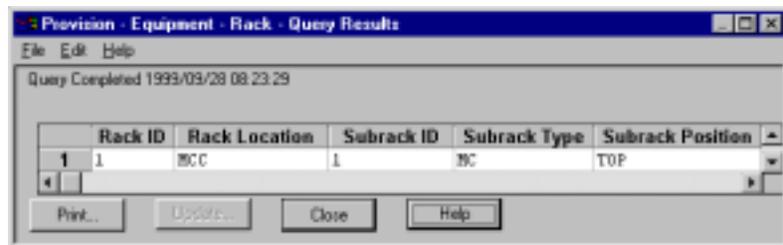


- ❑ **Step 3-b:** In the **Rack Location Box**, enter the appropriate location information (i.e. floor, aisle, rack number) for the **MC Complex Rack**, and press the **Change** button.

For Example: Rack Location = MCC



- ❑ **Step 3-c:** Query the newly provisioned rack information for the MC Complex Rack by pressing the **Query** button, and verify that the entered information has been provisioned correctly into the database.



Rack ID	Rack Location	Subrack ID	Subrack Type	Subrack Position
1	MCC	1	MC	TOP

- ❑ **Step 3-d:** Close the **Provision-Equipment-Query Results Window** by pressing the **Close** button.

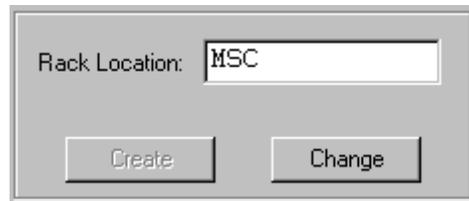
- Step 4:** Perform the following steps to provision the **MS Complex Rack** into the system database.

- Step 4-a:** In the **Rack ID Box**, select “2” for the **MS Complex Rack**.

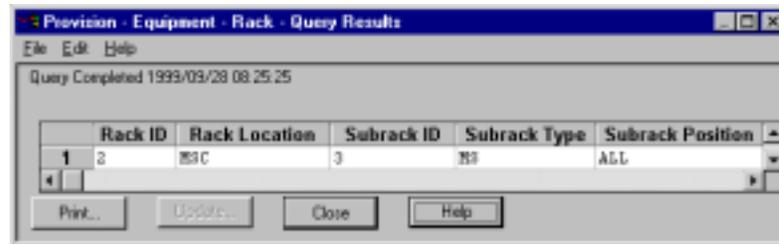


- Step 4-b:** In the **Rack Location Box**, enter the appropriate location information (i.e. floor, aisle, rack number) for the **MS Complex Rack**, and press the **Change** button.

For Example: Rack Location = MSC



- Step 4-c:** Query the newly provisioned rack information for the MS Complex Rack by pressing the **Query** button, and verify that the entered information has been provisioned correctly into the database.



Rack ID	Rack Location	Subrack ID	Subrack Type	Subrack Position
2	MSC	3	MS	ALL

- Step 4-d:** Close the **Provision-Equipment-Query Results Window** by pressing the **Close** button.

- 
- Step 5:** Close the **Provision-Equipment Window** by pressing the **Close** button.

- 
- Step 6:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- 
- Step 7:** This completes the “*Provisioning the Core Rack Location*” procedure.
- 

## STOP-Return to Calling Procedure

## **GTP 17 - Provisioning the System Id**

---

### **Description**

---

The following procedures will setup the general system parameters (System ID, MC Rack ID, Preservice Time, Frame ID, and Alarm Delay) into the system database.

#### **Required Equipment:**

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### **Assumptions**

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### **Precautions**

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

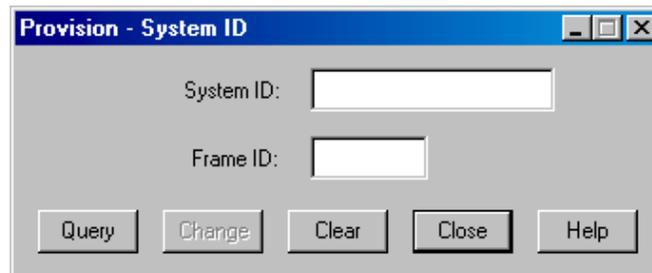
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Open the ***Provision-System ID Window*** in order to query the system identification information.

### WINDOW PATH:



### WINDOW:



- Step 3:** In the **System ID Box**, enter the appropriate **system identification** to be assigned the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, then press the **(TAB)** key
- System ID = identifies the *WaveStar*<sup>TM</sup> DACS 4/4/1 System in the customer network, for instance use station name or location name. (i.e. Boston-1).



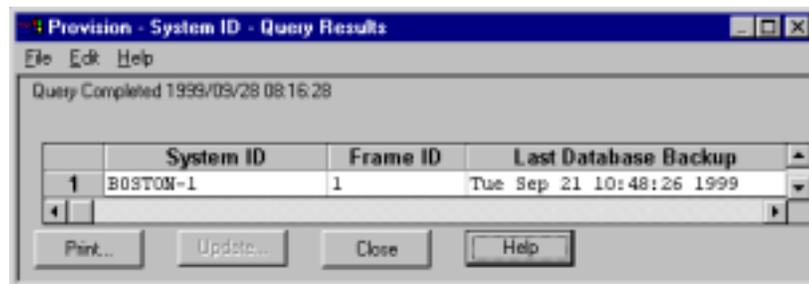
System ID:

- Step 4:** In the **Frame ID Box**, enter the appropriate **frame identification** to be assigned the *WaveStar*<sup>TM</sup> DACS 4/4/1 System.
- Frame ID = identifies which *WaveStar*<sup>TM</sup> DACS 4/4/1 System in the same office



Frame ID:

- Step 5:** Provision the newly entered system and frame identification information into the system database, by pressing the **Change** button.
- Step 6:** Query the system database for the provisioned system and frame identification information by pressing the **Query** button.
- Step 7:** Verify that the entered system and frame identification information has been provisioned correctly into the system database.



- Step 8:** Close the **Provision-System ID-Query Results Window** by pressing the **Close** button.
- Step 9:** Close the **Provision-System ID Window** by pressing the **Close** button.
- Step 10:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.
- Step 11:** This completes the "*Provisioning the System Identification*" procedure.

**STOP-Return to Calling Procedure**



## **GTP 18 - Provisioning a Port Rack**

---

### **Description**

---

The following procedure will contain the steps to provision a port rack into the *WaveStar*<sup>™</sup> DACS 4/4/1 System database.

#### **Required Equipment:**

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### **Assumptions**

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MS Subrack.
2. User is currently logged into the *WaveStar*<sup>™</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### **Precautions**

---

- When working on the *WaveStar*<sup>™</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

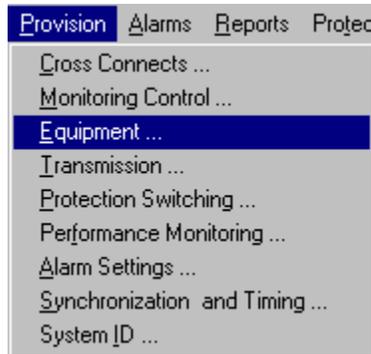
Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

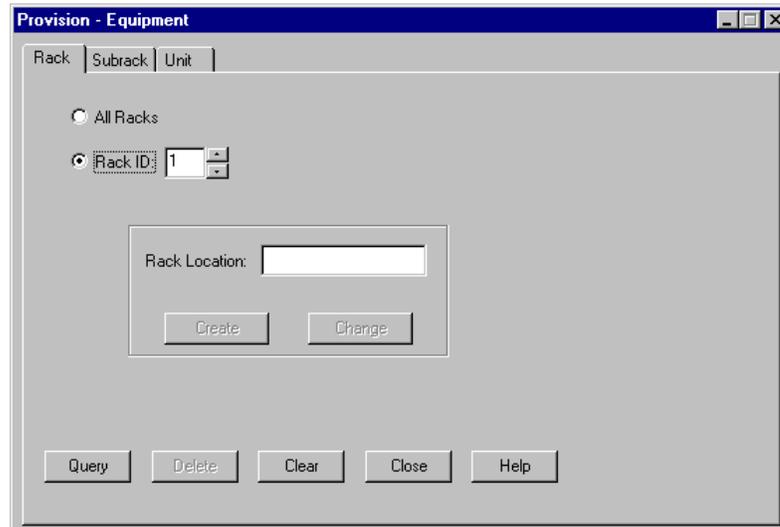
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Open the **Provision-Equipment Window** and select the **Rack Tab** in order to use for provisioning newly installed port racks into the system database.

### WINDOW PATH:



### WINDOW:



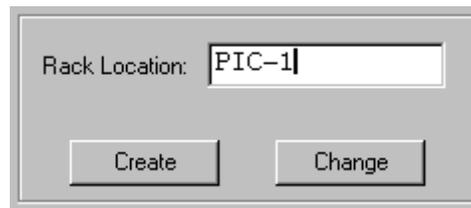
- Step 3:** In the **Rack ID Box**, enter the appropriate rack identification number to provision the rack (first port rack begins with number 3).

**Port Rack Number = 3 - 99**



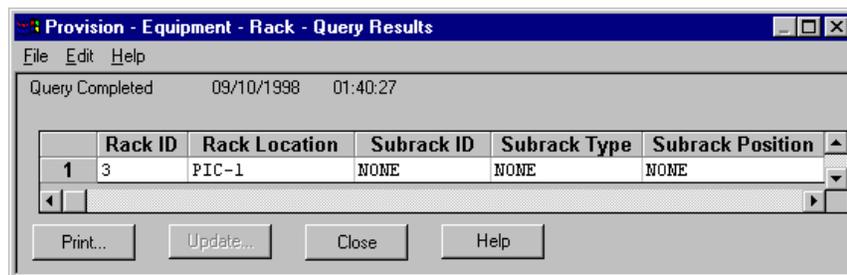
- Step 4:** In the **Rack Location Box**, enter the appropriate rack location information:

**Rack Location = floor, aisle, rack number (i.e. PIC-1)**



- Step 5:** Provision the port rack into the system database by pressing the  button.

- Step 6:** Query the newly provisioned information for the Port Rack Assembly by pressing the  button, and verify that the entered information has been provisioned correctly into the system database.



	Rack ID	Rack Location	Subrack ID	Subrack Type	Subrack Position
1	3	PIC-1	NONE	NONE	NONE

- Step 7:** Close the **Provision-Equipment-Rack-Query Results Window** by pressing the  button.

- Step 8:** Close the **Provision-Equipment Window** by pressing the  button.

- Step 9:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- Step 10:** This completes the "*Provisioning a Port Rack*" procedure.
- 

**STOP-Return to Calling Procedure**



## **GTP 19 - Port Subrack Start-up**

---

### **Description**

---

The following procedure will explain the steps to verify the configuration and unit equipment of a Port Subrack (PSA, PSB, or PSC). This procedure will also provide steps to power-up the Port Subrack.

### **Assumptions**

---

1. All fuses in the front Power Distribution Panel are currently removed from the panel.
2. **Power Feeder A** and **Power Feeder B** are turned **OFF** at the Customer's Power Distribution Bay (PDB) for the Front Port Power Distribution Panel.

### **Precautions**

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

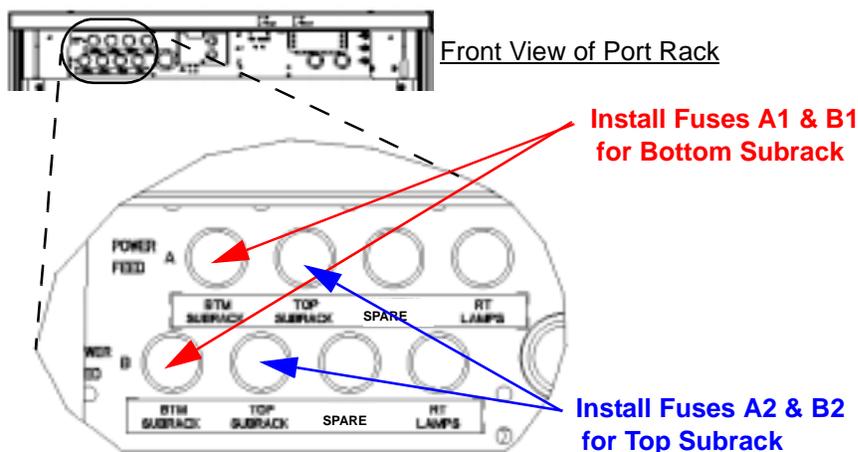
**Step 1:** At the *Customer's Power Distribution Bay (PDB)*, verify that **Power Feeder A** and **Power Feeder B** are turned **ON** (fuses installed or circuit breakers engaged) for the Front Port Power Distribution Panel.

**Step 2:** Disengage **all** units from the **front** of the selected Port Subrack *under test*.

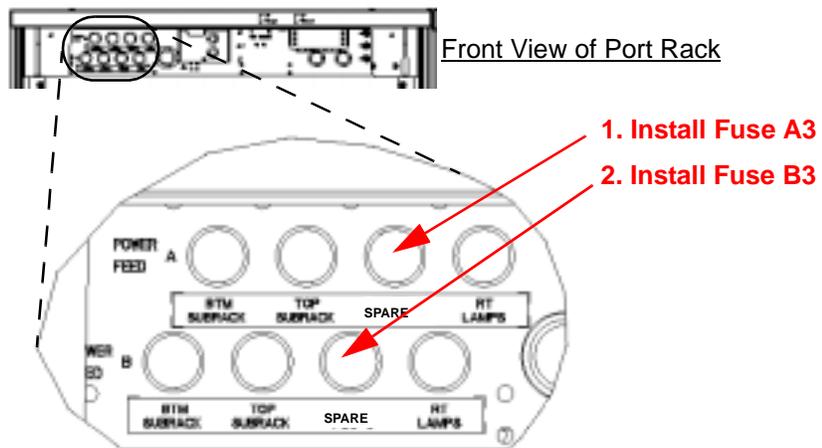
 **NOTE:**  
Do **not** need to remove any equipped **rear** modules.

 **CAUTION:**  
*Failure to remove all front units may cause system damage or improper unit booting while performing this procedure.*

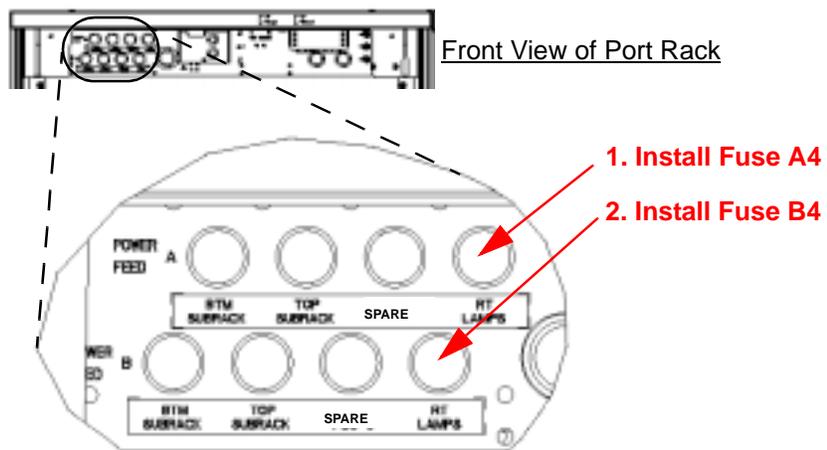
**Step 3:** For the specific Port Subrack *under test*, install the supplied **20 Amp** fuses into the appropriate fuseholders at the *Power Distribution Panel* of the selected Port Rack..



- Step 4:** At the Front Port Power Distribution Panel, install the supplied **20 Amp** fuses into fuseholders **A3** and **B3** labeled **SPARE**.



- Step 5:** At the Front Port Power Distribution Panel, install the supplied **.5 Amp** fuses into fuseholders **A4** and **B4** labeled **RT Lamps** which will supply power to the racktop alarm indicators.



- Step 6:** In the rear of the selected Port Subrack, verify that two **PTM** modules (x2), are installed (and screwed down), and verify that the red LED on the faceplate is OFF.

- Step 7:** In the rear of the selected Port Subrack, verify that all ten **BSIU** modules (x10) are installed (and screwed down), and verify that the red LED on the faceplate is OFF.

- Step 8:** In the front of the selected Port Subrack, install the **SRC** unit and two **DTU** units, and verify that the red LED on the faceplate turns ON.

- Step 9:** In the front of the selected Port Subrack, install all the equipped Port Interface Units according to the allowable configurations indicated below, and verify that the red LED on the faceplate of the unit turns ON.

**STM-0 Configurations**

1-Fiber (32 STM-1 Equiv):

- 32 Simplex (O): odd# slots = W, even# slots not used
- 32 MSP (O): odd# slots = W, even# slots = P
- 32 MSP/Simplex (O): Combination of above

2-Fiber (64 STM-1 Equiv):

- 64 Simplex (O): odd# & even# slots = W
- 33<64 MSP/Simplex (O): Combination of above

**STM-1 Configurations**

1-Fiber (32 STM-1 Equiv):

- 32 Simplex (E/O): odd# slots = W, even# slots not used
- 32 MSP (E/O): odd# slots = W, even# slots = P, (9 & 19 empty)
- 32 MSP/Simplex (E/O): Combination of above

2-Fiber (64 STM-1 Equiv):

- 64 Simplex (E/O): slots 1-8, 11-18 = W, (9 & 19 empty)
- 64 (1:8) EPS (E): slots 1-8, 11-18 = W, slots 9 & 19 = P
- 33<64 MSP/Simplex (E/O): Combination of above

**STM-4/16 Configurations**

1-Fiber (32 STM-1 Equiv):

- 32 Simplex (O): slots 1, 3 = W, slots 2, 4, 5-8 not used
- 32 MSP (O): slots 1, 3 = W, slots 2, 4 = P, slots 5-8 not used
- 32 MSP/Simplex (O): Combination of above

2-Fiber (64 STM-1 Equiv):

- 64 Simplex (O): odd# slots = W, even# slots = not used
- 64 MSP (O): odd# slots = W, even# slots = P
- 33<64 MSP/Simplex (O): Combination of above

4-Fiber (128 STM-1 Equiv):

- 128 Simplex (O): all slots = W
- 64<128 MSP/Simplex (O): Combination of above

- 
- Step 10:** If the selected Port Subrack is a PSA or PSB, verify that the appropriate interface modules per shelf are installed (and screwed down) corresponding to installed port units, and verify that the red LED on the faceplate of the module is ON.

- Step 11:* Check the usable series for each of the Units/Modules in the Port Subrack against the following table. If the series number is lower than what is shown in the table, then the unit/modules is not usable.

SRC	LAH49	1:2, 1:3, 1:4	
	LAH50	1:1, 1:2	Requires 1.0.2 or higher
DTU	LAH100	1:3, 1:4, 1:5, 1:6, 1:7	
	LAH104	1:1	Requires 1.0.2 or higher
	LAH108	1:1	PSC Only, Requires 2.1 or higher
STM0 PU	LAH200	1:4, 1:5, 1:6	
	LAH202	1:1	Requires 1.0.2 or higher
STM1 PU	LAH201	1:4, 1:5, 1:6	
	LAH203	1:1	Requires 1.0.2 or higher
STM4 PU	LAC6	1:1	PSC Only, Requires 2.1 or higher
STM16 PU	LAC8	1:1	PSC Only, Requires 2.1 or higher
BSIU	IMO3	1:3, 1:4, 1:5, 1:6, 1:7, 1:8	PSA or PSB
BSIU-128	LAL65	1:1	PSC Only, Requires 2.1 or higher
STM0 OIM	IMO2	1:2	
	IMO8	1:2	Requires 1.0.2 or higher
STM1 EIM	IME1	1:4, 1:5, 1:6	
STM1 OIM-NTT	IMO1	1:1	
	IMO6	1:1	Requires 1.0.2 or higher
STM1 OIM-ITU	IMO5	1:1	
	IMO7	1:1	Requires 1.0.2 or higher
PTM	IME2	1:2, 1:3	
	IME2B	1:1	

- Step 12:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- Step 13:* This completes the "*Port Subrack Start-up*" procedure.

**STOP-Return to Calling Procedure**







## **GTP 20 - Provisioning a Port Subrack**

---

### **Description**

---

The following procedure will explain the steps to provision either a PSA Port Subrack (STM-1), PSB Port Subrack (STM-0), or PSC Port Subrack (STM-4/16), which will be contained in the specific Port Interface Complex (PIC) in the *WaveStar*<sup>™</sup> DACS 4/4/1 System.

#### **Required Equipment:**

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### **Assumptions**

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MS Subrack.
2. User is currently logged into the *WaveStar*<sup>™</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### **Precautions**

---

- When working on the *WaveStar*<sup>™</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

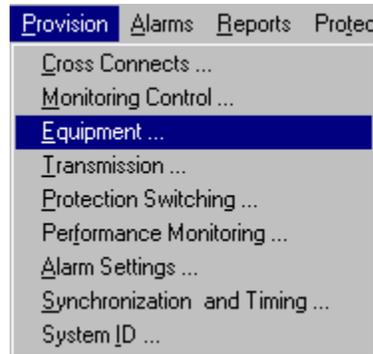
Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

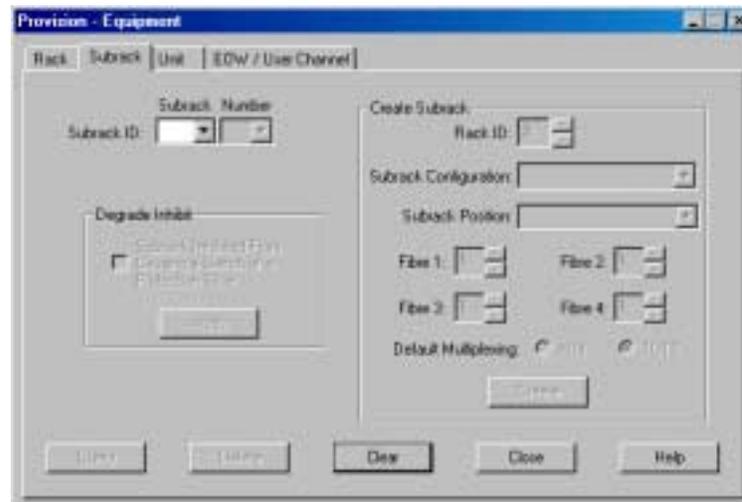
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Open the **Provision-Equipment-Subrack Window** and select the **Subrack Tab** in order to provision the specific port subrack into the system database.

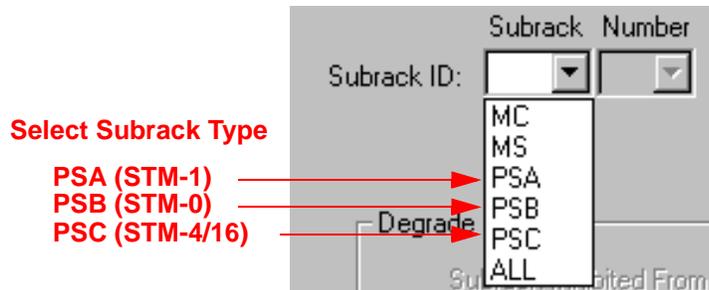
### WINDOW PATH:



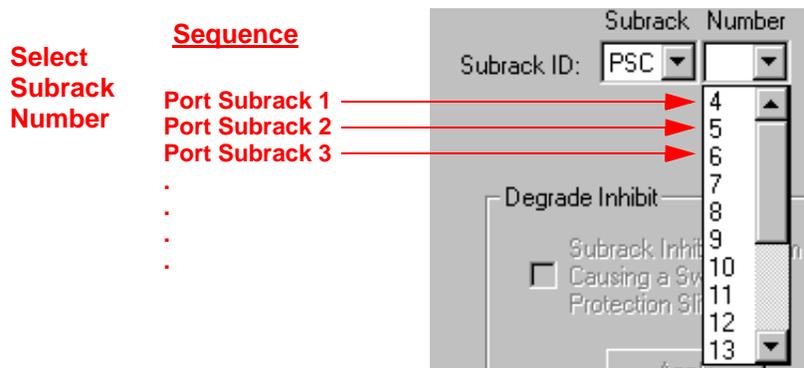
### WINDOW:



- Step 3: In the **Subrack ID Box**, select the appropriate **subrack type** (PSA, PSB, or PSC) corresponding to the selected port subrack.



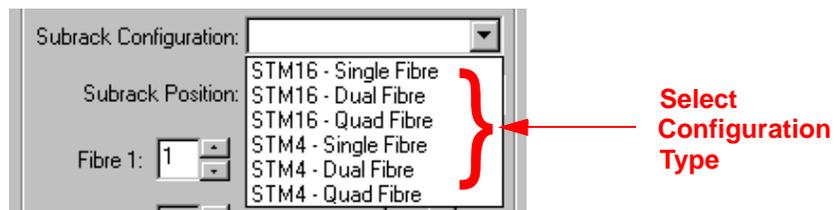
- Step 4: In the **Subrack ID Box**, select the appropriate **subrack number** (Starting from 4) corresponding to the selected port subrack.



- Step 5: In the **Rack ID Box**, select the appropriate **rack number** associated with the subrack to be provisioned.



- Step 6: In the **Subrack Configuration Box**, select the appropriate **subrack configuration** associated with the specific subrack type to be provisioned.

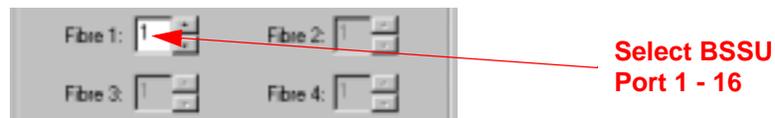


- Step 7:** *For PSA (STM-1) Subrack only*, in the **Subrack Position Box** select the appropriate **subrack position** associated with the subrack to be provisioned.

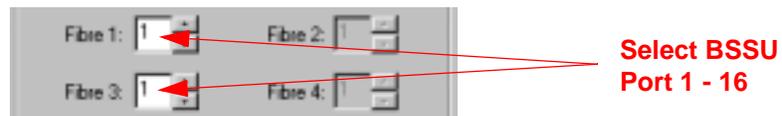


- Step 8:** In the **Fiber Boxes**, select the appropriate **Port Number** on the BSSU unit associated with how the subrack to be provisioned is physically connected.

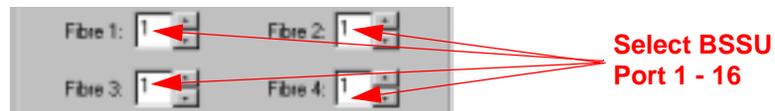
For Single Fiber Subracks (PSA, PSB, or PSC): **Fill-in Fiber Box 1**



For Dual Fiber Subracks (PSA, PSB, or PSC): **Fill-in Fiber Boxes 1 & 3**



For Quad Fiber Subracks (PSC Only): **Fill-in Fiber Boxes 1 - 4**



- Step 9:** In the **Default Multiplexing Box** select the appropriate multiplexing type (AU4 or TU12).



For Broadband Configuration: AU4 is default

For Wideband Configuration: TU12 is default

For Broadband/Wideband Configuration: select AU4 or TU12

- Step 10:** Provision the designated Port Subrack by pressing the  button.



**NOTE:**

When the subrack is created, the SRC will automatically begin to boot and the red LED will remain on while the firmware is executing. After approx 3 minutes, the red LED will begin to cycle at about 1 HZ rate, which means the SRC is loading the Operating System. Querying at this point will show the SRC as "BOOTING". After about 1 minute, the LED will turn off, which means the SRC NEF Software is now booting and a query will still show SRC as "BOOTING". After about another 3-5 minutes, the query of the SRC unit will show as "EQUIPPED" and the subrack has completed boot process.

- Step 11:** Query the newly provisioned information for the Port Subrack by pressing the  button, and verify that the entered information has been provisioned correctly into the system database.

**Sample Output for PSA Subrack (STM-1):**

	Rack ID	Subrack ID	Subrack Type	Subrack Position	Fibre 1	Fibre 2	MCLAN Hub	Inhibit Status	Config
1	3	4	PSA	BOTTOM	1		1	INHIBIT	STM1-Opt Fibre

**Sample Output for PSB Subrack (STM-0):**

	Rack ID	Subrack ID	Subrack Type	Subrack Position	Fibre 1	Fibre 2	MCLAN Hub	Inhibit Status	Config
1	4	5	PSB	ALL	5		3	INHIBIT	STM0-Opt Fibre

- Step 12:** Close the **Provision-Equipment-Query Results Window** by pressing the  button.

- Step 13:** Close the **Provision-Equipment Window** by pressing the  button.

- Step 14:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- Step 15:** This completes the "*Provisioning the Subrack*" procedure.

**STOP-Return to Calling Procedure**



## **GTP 21 - Equipment Alarm Check**

---

### **Description**

---

The purpose of the following is to verify any equipment alarms reported by the system as a result of booting newly provisioned subracks.

### **Assumptions:**

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### **Precautions**

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

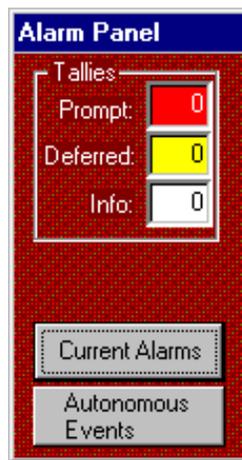


**NOTE:**

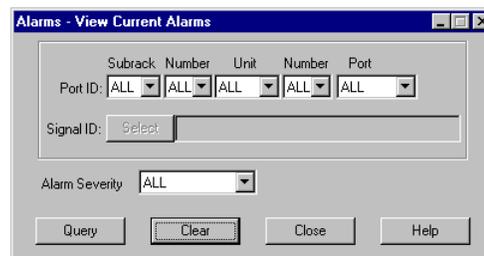
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Open the **Alarms-View Current Alarms Window** in order to use for checking alarm status of the subrack *under test*.

- Step 2-a:** Locate the **Alarm Panel Window** on the screen as shown below:

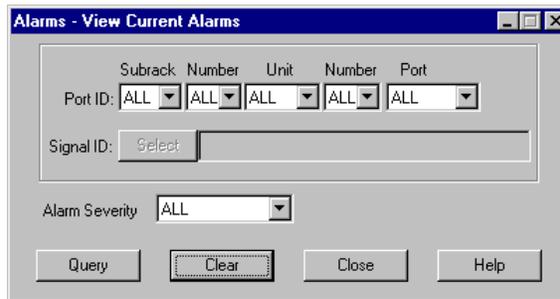


- Step 2-b:** Open the **Alarms-View Current Alarms Window** by pressing the  button.



- ❑ **Step 3:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify **no** alarms are reported (exception of sync alarm mentioned below).

- ❑ **Step 3-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- ❑ **Step 3-b:** Press the **Query** button to execute the alarm query.

- ❑ **Step 3-c:** Perform **one** of the procedural options below:

- See Administration and Maintenance Guide (365-367-413) for more detailed alarm clearing procedures.
- If **no** alarms are reported, proceed to next step.
- If any **unit/module** reports an **INTFcEQ** or **CABLEcEQ** equipment alarm, try checking for mis-wiring and/or cleaning optics for the interconnecting cables/fibers associated with the unit/module. If cable/fiber connections are correct and clean (but alarm still exists), try relocating connecting units (BSSU, BSIU or OLU) one at a time to a different slot (known problem with two connecting optics close to tolerance). If the alarm still does not clear, try replacing the affected unit/module or replace the connecting cable/fiber. Do **not** proceed until alarm is corrected.
- If any **unit/module** reports a **FLTcEQ** or **UNITcEQ** equipment alarm and the Fault LED for the unit is **ON**, first try reseating the unit in order to re-initialize the unit (cold reset). If the unit still does not boot, replace the affected unit/module and verify that the unit boots, and is not a problem with the slot. Do **not** proceed until alarm is corrected.
- If any **SRC unit** reports a **BOOTcSW** equipment alarm and will not boot, then it is possible that the SRC firmware needs to be upgraded to the latest firmware image. Try performing the SRC Firmware Download procedure and reboot the SRC unit. If it still does not boot, then the SRC unit is defective and should be replaced. Do **not** proceed until alarm is corrected.
- If the **active STU unit** reports a **SYNCcSCHO** alarm, that is expected due to system timing currently has no reference provisioned and the system clock is in “holdover” mode. Proceed with verification processes for the system, and at the conclusion of testing, the system timing can be provisioned for actual station timing (station clock or line timing), or a temporary loopback condition can be setup.

---

*Step 4:* Close the **Reports-Current Alarms-Query Results Window** by pressing the  button.

---

*Step 5:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

*Step 6:* This completes the "Equipment Alarm Check" for the subrack.

---

**STOP-Return to Calling Procedure**

## GTP 22 - Subrack LED Test

---

### Description

---

The following test procedure will test all the LEDs on the faceplate of all the available units and modules presently installed in the subrack *under test*. This test is an interactive test, which means the software will prompt the installer to visually verify the status of the leds.



**NOTE:**

This test does **not** need to be repeated for any unequipped unit slots, it is a test of the unit red LED, not the slot.

### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

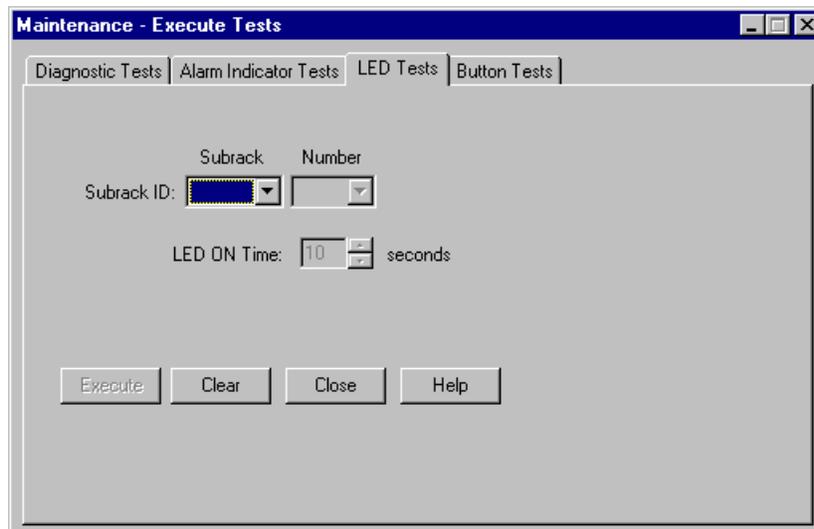
- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

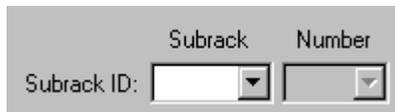
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Verify that **all** the available units and modules (except PTM modules) are currently installed in the subrack *under test*, and that the red LED on the faceplate of all units are **off**.
- Step 3:** Open the ***Maintenance-Execute Tests Window*** and select the ***LED Tests Tab*** in order to setup for subrack LED testing.



**Step 4:** From the **LED Test Window**, execute the **LED Test** for the selected subrack *under test*.

**Step 4-a:** In the **Subrack ID Box**, select the appropriate subrack to be tested.



For MC Subrack: **MC**-{1,2}

For MS Subrack: **MS**-3

For PSA/PSB Subrack: **PSA**-{4-19}, **PSB**-{4-19}, **PSC**-{4-19}

**Step 4-b:** Select the desired **LED ON Time** (default 10 seconds).



**Step 4-c:** Press the  button to start the alarm test, then verify that the appropriate LED's for the selected subrack *under test* indicated below will turn **ON** for the designated LED ON Time then **off**.

Repeat this step, if the LEDs need to be checked again.

**For Motorola Controller Subrack:**

- **FRONT:** BFL LED (amber) on MPU unit

**For MS Subrack:** (both Sync Shelves and All ten Matrix Units)

- **FRONT:** ALM LED (red) on all STU, BSC, and SRC units
- **REAR:** ALM LED (red) on all OLU modules  
(Exception: no alarm on PTM units)
- **REAR:** "F" indicated on top LED display (red) on all BSSUs

**For Port Subrack:** (PSA, PSB, or PSC)

- **FRONT:** ALM LED (red) on all SRC, DTU, and Port Units
- **REAR:** ALM LED (red) on all BSIU and Interface Modules  
(Exception: no alarm on PTM units)

---

**Step 5:** Close the **Maintenance-Execute Tests Window** by pressing the .

**Step 6:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

**Step 7:** This completes the "*Subrack LED Test*" procedure for subrack *under test*.

---

## STOP-Return to Calling Procedure



## GTP 23 - MC Subrack Power Test

---

### Description

---

The purpose of this test procedure is to verify the following power related functions for the Motorola Controller Subrack.

- Verify the proper power cable connection to the Power Supply Plug-in (PSP) dual input connection in the rear of the Motorola Controller Subrack.
- Verify each of the equipped units in the Motorola Controller Subrack can remain operation under each of the supplied power feeds (A& B).
- Verify the ARU Unit (via ACP) can sense the loss of supplied voltage, and indicate the proper power alarm (POWcDEG).

### Assumptions:

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The *WaveStar*<sup>TM</sup> DACS 4/4/1 System is powered by **two** independent customer supplied power feeders (Feeder A and Feeder B).

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

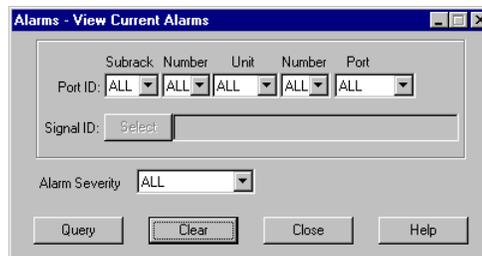
- Step 2:** At the *Customer's Power Distribution Bay (PDB)*, verify that **Power Feeder A** and **Power Feeder B** are turned **ON** for the associated Core Complex Rack (MC).

- Step 3:** From the *Main Tool Bar*, open the **Alarms-View Current Alarms Window**.

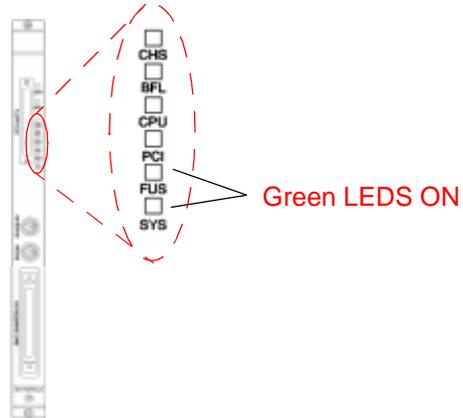
**WINDOW PATH:**



**WINDOW:**

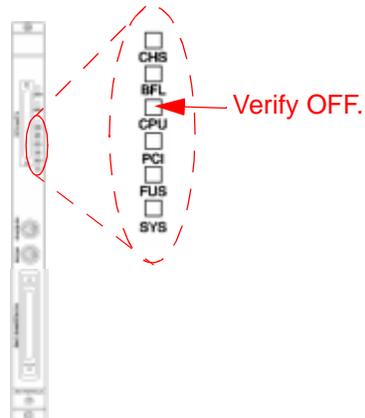


- *Step 4:* Verify that the Motorola Controller Subrack is operating, by verifying that the **FUS** and **SYS** indicators (green) on the MPU Unit in the front of the Motorola Controller Subrack are **on**.



MPU VME Card

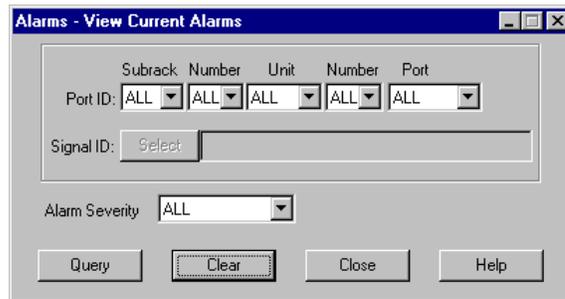
- *Step 5:* Verify that the units in the Motorola Controller Subrack are operating without any faults by verifying that the **BFL** (Board Fault) indicator on the MPU Unit in the front of the Motorola Controller Subrack is **off**.



MPU VME Card

- ❑ **Step 6:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify **no POWcDEG** alarms are reported for the **MC Subrack under test**.

- ❑ **Step 6-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:

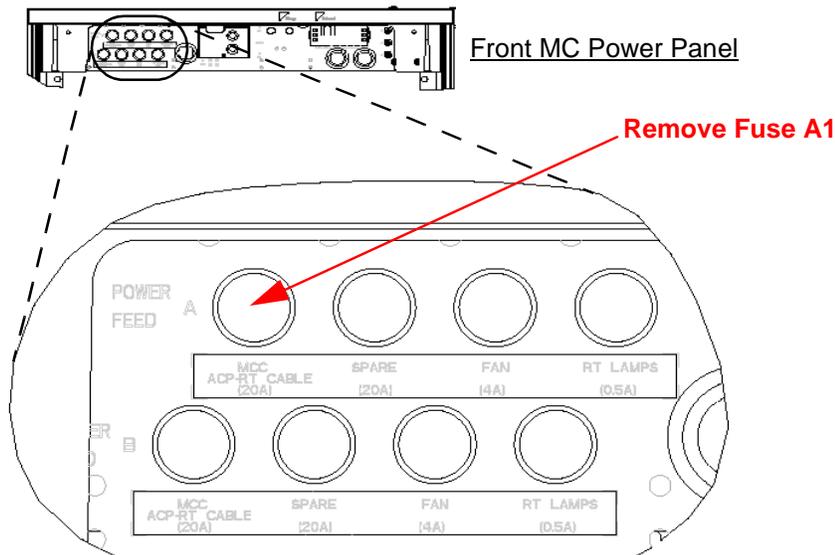


- ❑ **Step 6-b:** Press the **Query** button, and verify that **no POWcDEQ Alarm** is reported for the **MC Subrack under test**.

**CAUTION:**  
*Disregard any other alarms reported at this time!*

- ❑ **Step 6-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

- ❑ **Step 7:** At the **Front MC Power Distribution Panel**, **remove** the 20 Amp fuse from fusholder **A1** which corresponds to **Feeder A** of the **MC Subrack**.

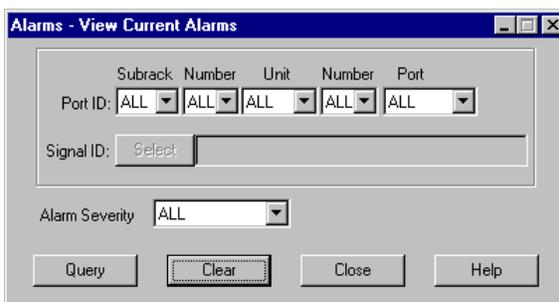


**NOTE:**  
A1 supplies power to MC Subrack, and to the power alarm circuit via the ACP.

- ❑ **Step 8:** The PSP unit in the Motorola Controller Subrack is now being powered solely by **Feeder B**. Verify that the Motorola Controller Subrack remains **ON**, by verifying that the **FUS** and **SYS** indicators (green) on the MPU Unit in the front of the Motorola Controller Subrack are still illuminated.

- ❑ **Step 9:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify the correct **POWcDEG** alarm associated with **Feeder A** is reported for the **MC Subrack**.

- ❑ **Step 9-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- ❑ **Step 9-b:** Press the  button, and verify that a **POWcDEG Alarm** associated with **Feeder A (BATTERY1)** is reported for the **MC Subrack**.

*Output Response:*

MC-1-PSP-**BATTERY1**                      **POWcDEG**



**NOTE:**

If **BATTERY2** is reported on the PSP, then the power cable inputs to the Motorola Controller Subrack may be reversed. Power-down MC Subrack completely (feeder A & B), and check proper cable connection (red/black wires to Input A, white/black wires to Input B), then repeat test.

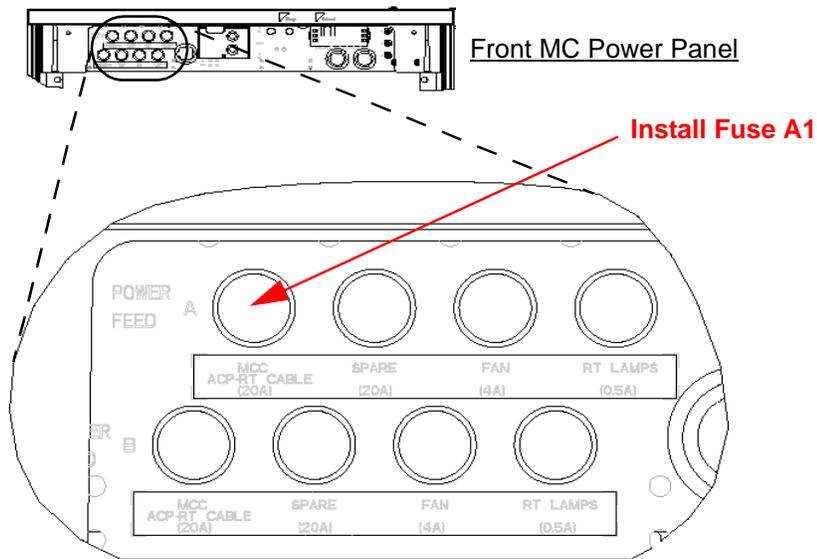


**CAUTION:**

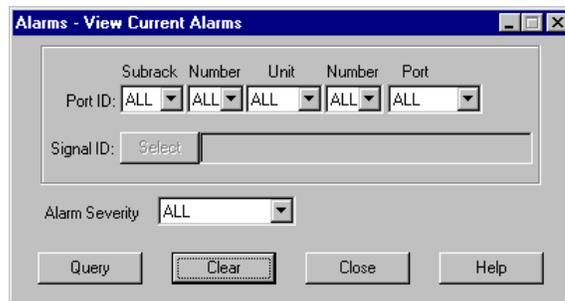
*Disregard any other alarms reported at this time!*

- ❑ **Step 9-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the  button.

- ❑ **Step 10:** At the **Front MC Power Distribution Panel**, **re-install** the 20 Amp fuse into fusholder **A1** which corresponds to **Feeder A** of the **MC Subrack**.



- ❑ **Step 11:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify that the **POWcDEG** alarm has cleared for **Feeder A** of the **MC Subrack**.
- ❑ **Step 11-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



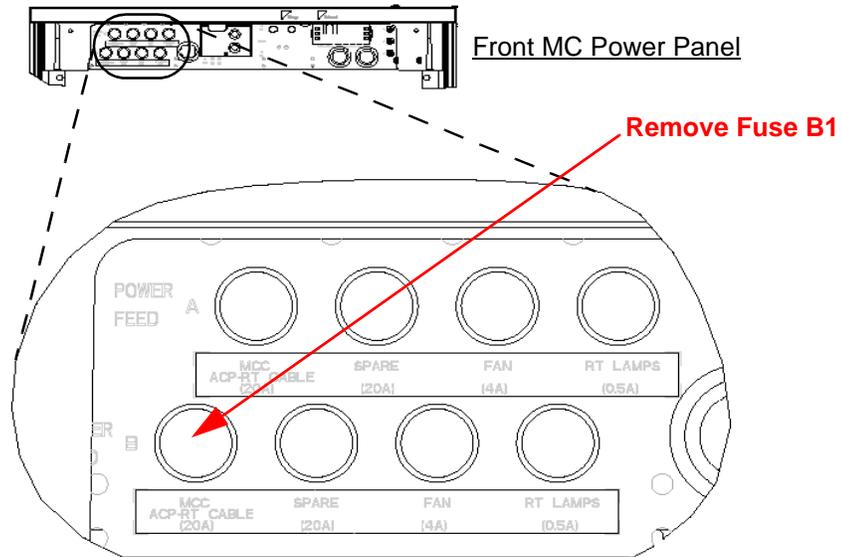
- ❑ **Step 11-b:** Press the **Query** button, and verify that the **POWcDEG** alarm has cleared for **Feeder A** of the **MC Subrack**.

**NOTE:**  
The alarm will not clear immediately, but will take the amount of time set in the Alarm Delay Setting.

**CAUTION:**  
*Disregard any other alarms reported at this time!*

- ❑ **Step 11-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

- Step 12:* At the Front MC Power Distribution Panel, **remove** the 20 Amp fuse from fusholder **B1** which corresponds to **Feeder B** of the **MC Subrack**.



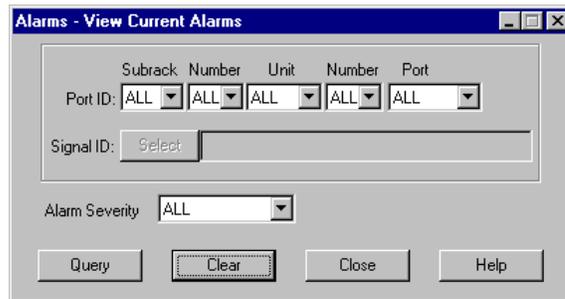
**NOTE:**

B1 supplies power to MC Subrack, and to the power alarm circuit via the ACP.

- Step 13:* The PSP unit in the Motorola Controller Subrack is now being powered solely by **Feeder A**. Verify that the Motorola Controller Subrack remains **ON**, by verifying that the **FUS** and **SYS** indicators (green) on the MPU Unit in the front of the Motorola Controller Subrack are still illuminated.

- ❑ **Step 14:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify the correct **POWcDEG** alarm associated with **Feeder B** is reported for the **MC Subrack**.

- ❑ **Step 14-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- ❑ **Step 14-b:** Press the **Query** button, and verify that a **POWcDEG Alarm** associated with **Feeder B (BATTERY2)** is reported for the **MC Subrack**.

*Output Response:*

MC-1-PSP-**BATTERY2**                      **POWcDEG**



**NOTE:**

If **BATTERY1** is reported on the PSP, then the power cable inputs to the Motorola Controller Subrack may be reversed. Power-down MC Subrack completely (feeder A & B), and check proper cable connection (red/black wires to Input A, white/black wires to Input B), then repeat test.

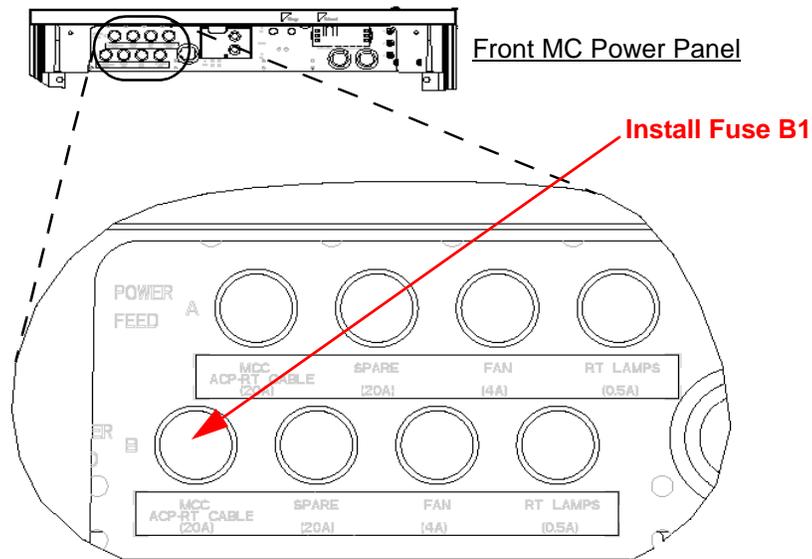


**CAUTION:**

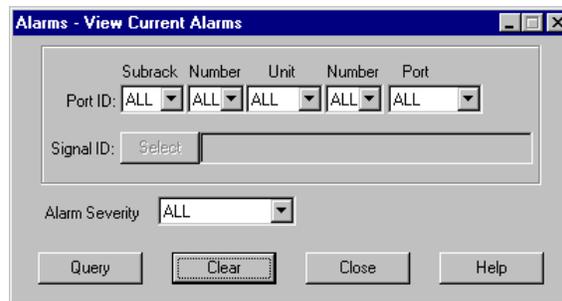
*Disregard any other alarms reported at this time!*

- ❑ **Step 14-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

- ❑ **Step 15:** At the **Front MC Power Distribution Panel**, **re-install** the 20 Amp fuse into fusholder **B1** which corresponds to **Feeder B** of the **MC Subrack**.



- ❑ **Step 16:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify that the **POWcDEG** alarm has **cleared** for **Feeder B** of the **MC Subrack**.
- ❑ **Step 16-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- ❑ **Step 16-b:** Press the **Query** button, and verify that the **POWcDEG** alarm has **cleared** for **Feeder B** of the **MC Subrack**.



**NOTE:**

The alarm will not clear immediately, but will take the amount of time set in the Alarm Delay Setting.



**CAUTION:**

*Disregard any other alarms reported at this time!*

- ❑ **Step 16-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

---

*Step 17:* Close the **Reports-Current Alarms Window** by pressing the .

---

*Step 18:* Check-off the appropriate  box corresponding to this procedure for the selected Port Subrack just tested on the appropriate *verification checklist*.

---

*Step 19:* This completes the "MC Subrack Power Test" for the Motorola Controller.

---

**STOP-Return to Calling Procedure**

## GTP 24 - Sync Shelf Power Test

---

### Description

---

The purpose of this test procedure is to verify the following power related functions for both of the Sync Subracks (working and protection).

- Verify the proper power cable connection to each of the PTM units (1 & 2) in the Sync Subrack.
- Verify each of the equipped units internal dual power feed circuitry in the Sync Subrack, by checking that each unit can remain operation under each of the supplied power feeds (A& B).
- Verify the SRC Unit can sense the loss of supplied voltage, and indicate the proper power alarm (POWcDEG).

### Assumptions:

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The *WaveStar*<sup>TM</sup> DACS 4/4/1 System is powered by two independent customer supplied power feeders (Feeder A and Feeder B).

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

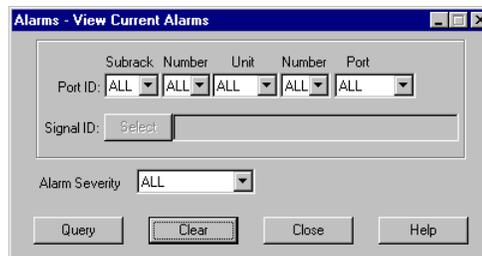
- Step 2:** At the *Customer's Power Distribution Bay (PDB)*, verify that **Power Feeder A** and **Power Feeder B** are turned **ON** for the associated Core Complex Racks (MC & MS).

- Step 3:** From the *Main Tool Bar*, open the **Alarms-View Current Alarms Window**.

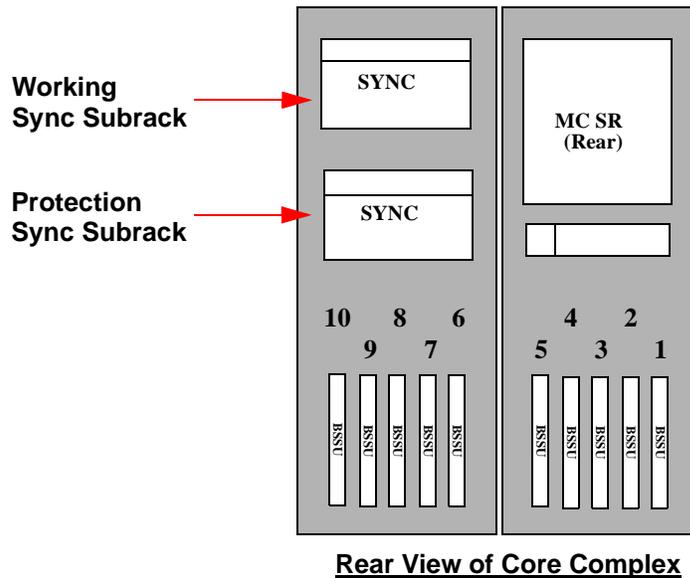
**WINDOW PATH:**



**WINDOW:**



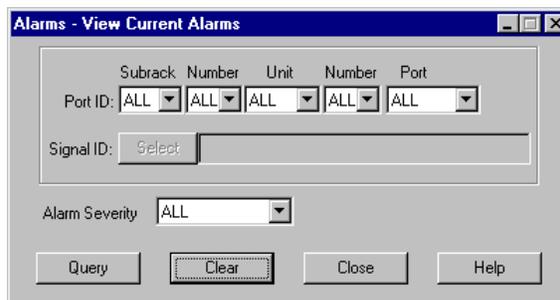
- ❑ **Step 4:** Select the appropriate **Sync Shelf (working or protection)** to be tested.



- ❑ **Step 5:** Verify that the red LEDs on **all** the available units (SRC,BSC,STU) and modules (OLU,PTM) in the selected **Sync Shelf under test** are **off**.

- ❑ **Step 6:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify **no POWcDEG** alarms are reported for the **SRC Unit** in the selected **Sync Shelf under test**.

- ❑ **Step 6-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:

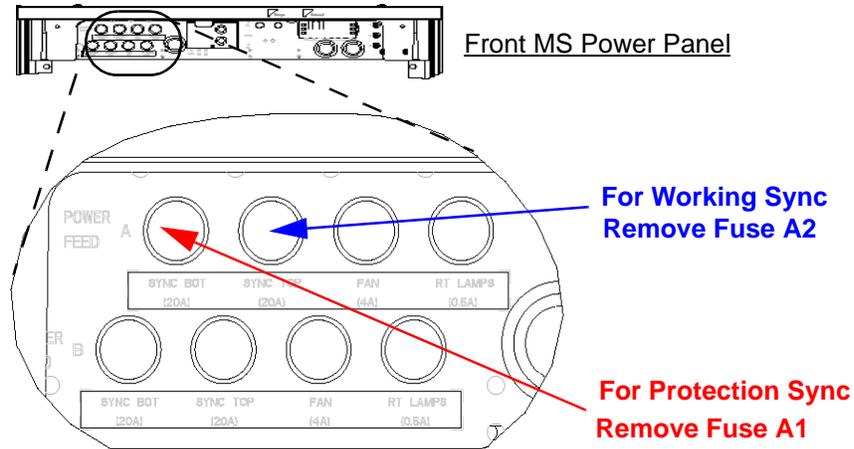


- ❑ **Step 6-b:** Press the **Query** button, and verify that **no POWcDEQ Alarm** is reported for the **SRC Unit** in the selected **Sync Shelf under test**.

**CAUTION:**  
*Disregard any other alarms reported at this time!*

- ❑ **Step 6-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

- ❑ **Step 7:** At the *Front MS Power Distribution Panel*, **remove** the 20 Amp supplied fuse from the appropriate fuseholder indicated below which corresponds to **Feeder A (PTM-1)** of **only** the selected **Sync Shelf** *under test*.



- ❑ **Step 8:** The selected **Sync Shelf** *under test* is now being powered solely by **Feeder B (PTM-2)**. Verify that the red LEDs on the faceplates of **all** the available units (SRC,BSC,STU) and modules (OLU,PTM) remain **off**.

- **Step 9:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify the correct **POWcDEG** alarm associated with **Feeder A (PWR1)** is reported for the **Sync Shelf under test**.

- **Step 9-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:

Subrack	Number	Unit	Number	Port
Port ID:	ALL	ALL	ALL	ALL

Signal ID: Select

Alarm Severity: ALL

Query Clear Close Help

- **Step 9-b:** Press the **Query** button, and verify that a **POWcDEG Alarm** associated with **Feeder A (PWR1)** is reported by the SRC unit in the **Sync Shelf under test**.

*Output Response: {For Working Sync Shelf}*

MS-3-SRC-1-PWR1                      **POWcDEG**

*Output Response: {For Protection Sync Shelf}*

MS-3-SRC-2-PWR1                      **POWcDEG**



**NOTE:**

If **PWR2** is reported by the SRC Unit, then the power cable may be reversed with PTM-1. Power-down Sync Shelf completely (feeder A & B), and check proper cable connection (red/black wires to PTM-1, white/black wires to PTM-2), the repeat test.

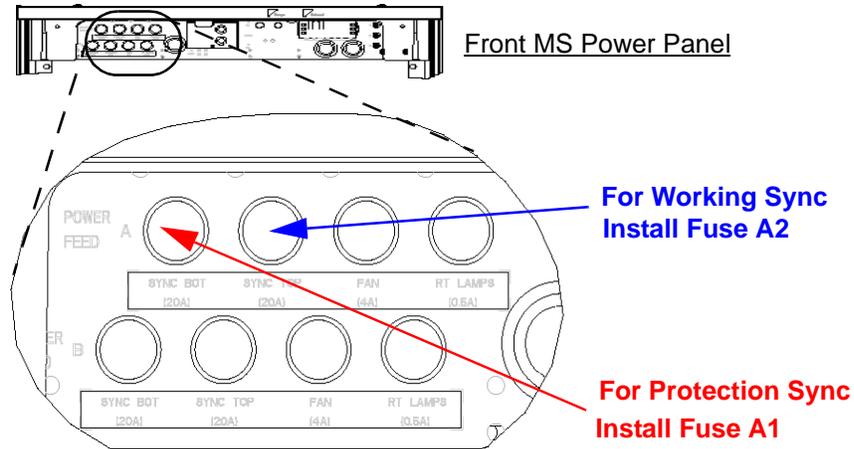


**CAUTION:**

*Disregard any other alarms reported at this time!*

- **Step 9-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

- ❑ **Step 10:** At the *Front MS Power Distribution Panel*, **re-install** the 20 Amp supplied fuse into the appropriate fuseholder indicated below which corresponds to **Feeder A (PTM-1)** of **only** the selected **Sync Shelf** *under test*.



- ❑ **Step 11:** Verify that the red LEDs on the faceplates of **all** the available units (SRC,BSC,STU) and modules (OLU,PTM) of the selected **Sync Shelf** *under test* are **off**.

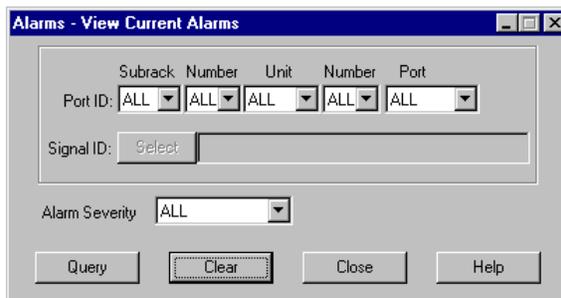


**NOTE:**

If a red LED for **any** unit or module in the subrack turns on, then the unit or module is defective and can not maintain power from the secondary power supply. Replace the defective unit or module, and repeat this test.

If the red LED on **all** the units and modules in the subrack turn on, then PTM-2 module is not supplying voltage and is defective. Replace PTM-2 module, and repeat this test.

- ❑ **Step 12:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify that the **POWcDEG** alarm has cleared for **Feeder A** of the selected **Sync Shelf** under test.
- ❑ **Step 12-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- ❑ **Step 12-b:** Press the  button, and verify that the **POWcDEG** alarm has cleared for **Feeder A** of the selected **Sync Shelf** under test.



**NOTE:**

The alarm will not clear immediately, but will take the amount of time set in the Alarm Delay Setting.

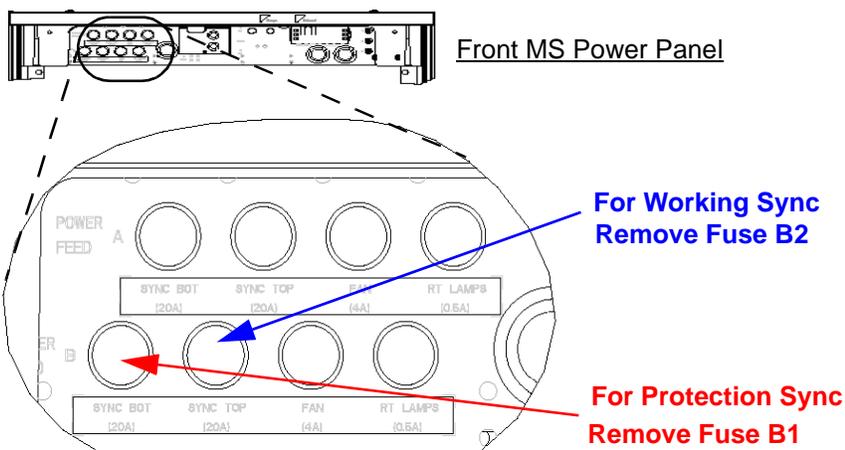


**CAUTION:**

*Disregard any other alarms reported at this time!*

- ❑ **Step 12-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the  button.

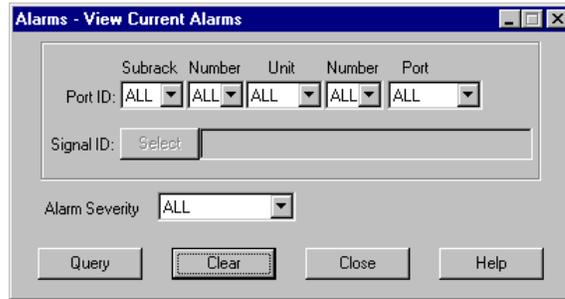
- ❑ **Step 13:** At the **Front MS Power Distribution Panel**, **remove** the 20 Amp supplied fuse from the appropriate fuseholder indicated below which corresponds to **Feeder B (PTM-2)** of **only** the selected **Sync Shelf** under test.



- ❑ **Step 14:** The selected **Sync Shelf** under test is now being powered solely by **Feeder A (PTM-1)**. Verify that the red LEDs on the faceplates of **all** the available units (SRC,BSC,STU) and modules (OLU,PTM) remain off.

- ❑ **Step 15:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify the correct **POWcDEG** alarm associated with **Feeder B (PWR2)** is reported for the **Sync Shelf under test**.

- ❑ **Step 15-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- ❑ **Step 15-b:** Press the **Query** button, and verify that a **POWcDEG Alarm** associated with **Feeder B (PWR2)** is reported by the SRC unit in the **Sync Shelf under test**.

*Output Response: {For Working Sync Shelf}*

MS-3-SRC-1-**PWR2**                      **POWcDEG**

*Output Response: {For Protection Sync Shelf}*

MS-3-SRC-2-**PWR2**                      **POWcDEG**



**NOTE:**

If **PWR1** is reported by the SRC Unit, then the power cable may be reversed with PTM-2. Power-down Sync Shelf completely (feeder A & B), and check proper cable connection (red/black wires to PTM-1, white/black wires to PTM-2), the repeat test.

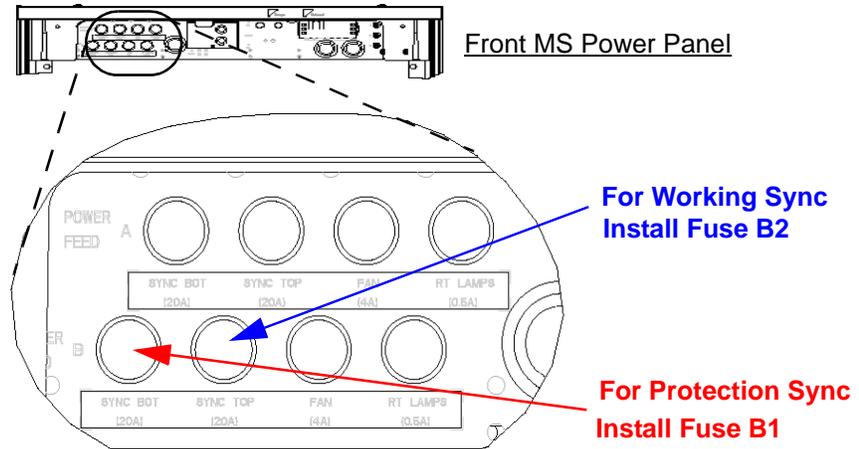


**CAUTION:**

*Disregard any other alarms reported at this time!*

- ❑ **Step 15-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

- ❑ **Step 16:** At the *Front MS Power Distribution Panel*, **re-install** the 20 Amp supplied fuse into the appropriate fuseholder indicated below which corresponds to **Feeder B (PTM-2)** of **only** the selected **Sync Shelf** under test.



- ❑ **Step 17:** Verify that the red LEDs on the faceplates of **all** the available units (SRC,BSC,STU) and modules (OLU,PTM) of the selected **Sync Shelf** under test are **off**.



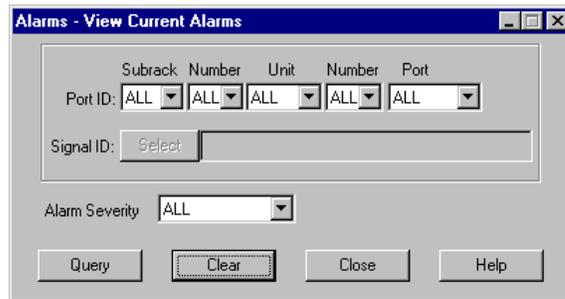
**NOTE:**

If a red LED for **any** unit or module in the subrack turns on, then the unit or module is defective and can not maintain power from the secondary power supply. Replace the defective unit or module, and repeat this test.

If the red LED on **all** the units and modules in the subrack turn on, then PTM-1 module is not supplying voltage and is defective. Replace PTM-1 module, and repeat this test.

- Step 18:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify that the **POWcDEG** alarm has cleared for **Feeder B** of the selected **Sync Shelf** under test.

- Step 18-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- Step 18-b:** Press the  button, and verify that the **POWcDEG** alarm has cleared for **Feeder B** of the selected **Sync Shelf** under test.



**NOTE:**

The alarm will not clear immediately, but will take the amount of time set in the Alarm Delay Setting.



**CAUTION:**

*Disregard any other alarms reported at this time!*

- Step 18-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the  button.

- 
- Step 19:** Check-off the appropriate  box corresponding to this procedure for the selected Sync Shelf just tested on the appropriate *verification checklist*.

- 
- Step 20:** Perform **one** of the procedural options below:

- If the other Sync Shelf needs to be tested, return to **Step 4** and repeat test until both shelves have been tested.
- If **both** Sync Shelves have been tested, proceed to next step.

- 
- Step 21:** Close the **Reports-Current Alarms Window** by pressing the .

- 
- Step 22:** This completes the "Sync Shelf Power Test" for **both** Sync Shelves of the MS Subrack.
- 

**STOP-Return to Calling Procedure**

## GTP 25 - BSSU Unit Power Test

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### Description

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The purpose of this test procedure is to verify the following power related functions for each of the individual Matrix Units (BSSU).

- Verify the power cable to the BSSU unit is installed correctly.
- Verify the unit's internal dual power feed circuitry, by checking that the unit can remain operation under each of the supplied power feeds (A& B).
- Verify the system can sense the loss of supplied voltage, and indicate the proper power alarm (POWcDEG).

### Assumptions:

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The *WaveStar*<sup>TM</sup> DACS 4/4/1 System is powered by **two** independent customer supplied power feeders (Feeder A and Feeder B).

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

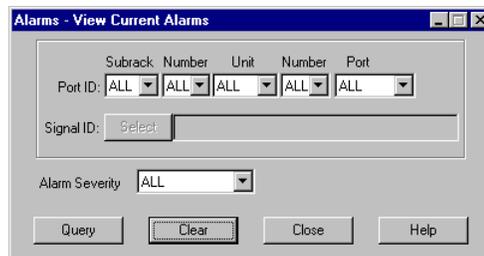
- Step 2:** At the *Customer's Power Distribution Bay (PDB)*, verify that **Power Feeder A** and **Power Feeder B** associated with the Core Complex Racks are turned **ON**.

- Step 3:** From the *Main Tool Bar*, open the **Alarms-View Current Alarms Window**.

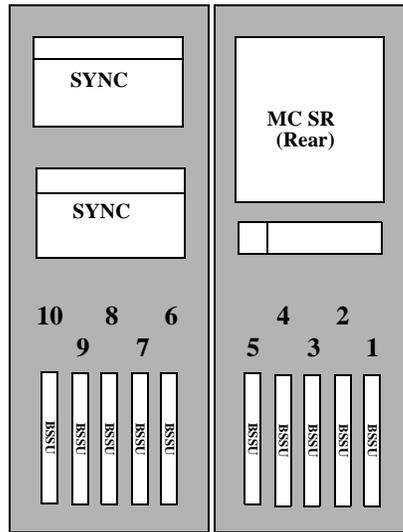
**WINDOW PATH:**



**WINDOW:**

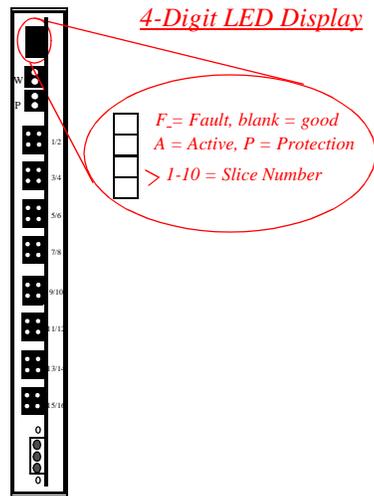


- Step 4: Select the **BSSU Unit (1-10)** to be tested.



**Rear View of Core Complex**

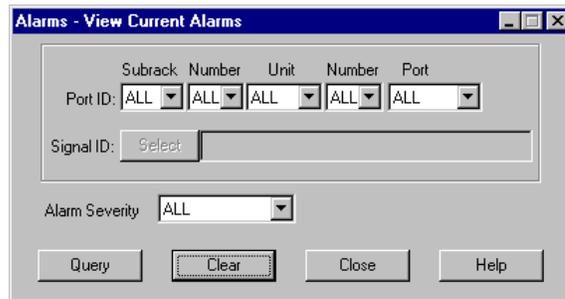
- Step 5: Verify that the top digit of the 4-digit LED display on the selected **BSSU Unit (1-10)** under test is **off** (i.e. not showing an "F").



**Rear View**

- **Step 6:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify **no POWcDEG** alarms are reported for the selected **BSSU under test**.

- **Step 6-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:

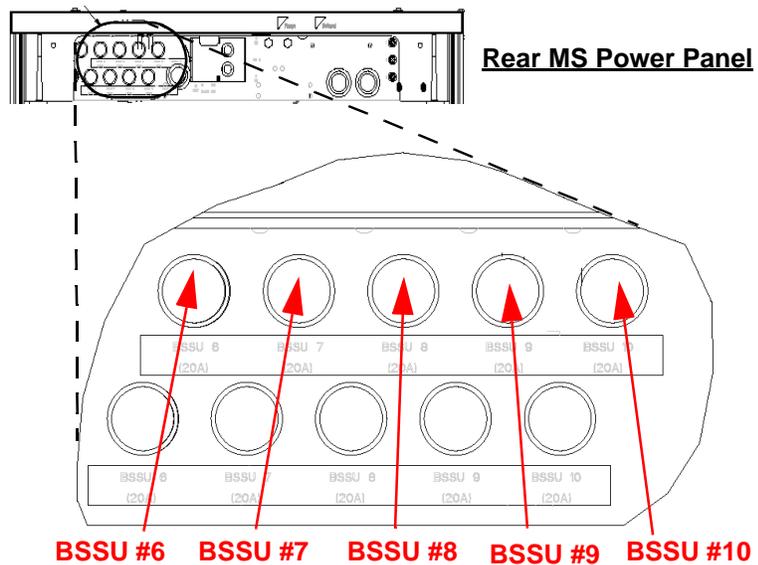
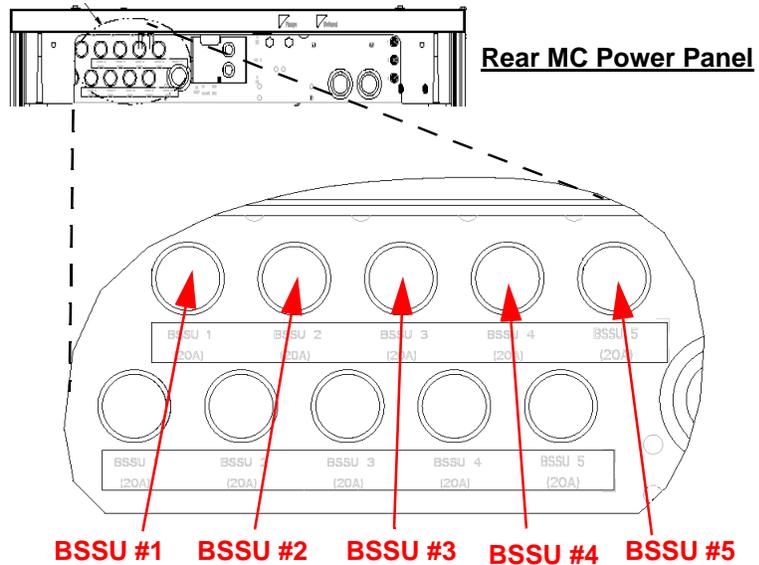


- **Step 6-b:** Press the **Query** button, and verify that **no POWcDEG Alarm** is reported for the selected **BSSU under test**.

**CAUTION:**  
*Disregard any other alarms reported at this time!*

- **Step 6-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

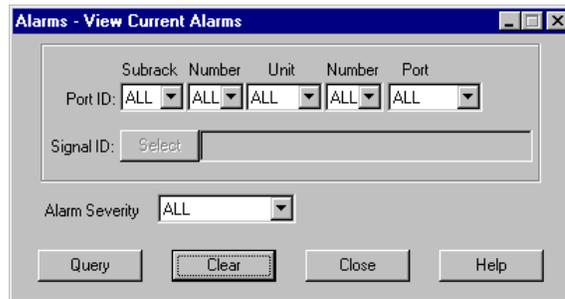
- Step 7:** At the appropriate **rear Power Distribution Panel**, **remove** the appropriate fuse which corresponds to **Feeder A** of the selected **BSSU Unit** *under test*.



- Step 8:** The selected **BSSU** *under test* is now powered solely by **Feeder B**. - rē/ ify that the **top digit** of the 4-digit LED display on the selected BSSU Unit (1-10) *under test* is **off** (i.e. not showing an "F").

- **Step 9:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify the correct **POWcDEG** alarm associated with **Feeder A** is reported for the **BSSU under test**.

- **Step 9-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- **Step 9-b:** Press the **Query** button, and verify that a **POWcDEG Alarm** associated with **Feeder A** (PWR1) is reported for the correct **BSSU under test**.

*Output Response:*

MS-3-BSSU-{1-10}-PWR1                      **POWcDEG**



**NOTE:**

If **PWR2** is reported for the BSSU, then the power cable is probably installed reversed (up-sidedown). Power-down BSSU completely (feeder A & B), and check proper cable connection. It is possible for cable to be forced in the incorrect mounting position.



**NOTE:**

If the alarm is reported on a **different** BSSU unit, then the power cable is probably incorrectly installed to the wrong reported BSSU unit. Power-down both the reported BSSU unit and selected BSSU unit, and rearrange power cabling to the correct BSSU units. Then power-up both BSSU units again, and repeat test.



**CAUTION:**

*Disregard any other alarms reported at this time!*

- **Step 9-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

- Step 10:** At the appropriate *Power Distribution Panel*, **re-install** the fuse which corresponds to **Feeder A** of the **BSSU Unit** *under test*.

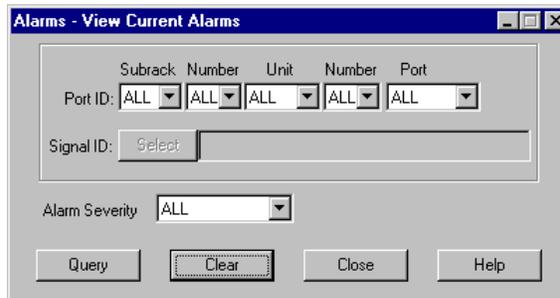
- Step 11:** Verify that the top digit of the 4-digit LED display on the selected BSSU Unit (1-10) *under test* remains **off** (i.e. not showing an "F").



**NOTE:**

If the top digit of the 4-digit LED for the BSSU Unit displays an "F", then the unit's internal dual power circuit is defective, or power supply cable for Feeder B is faulty, or fuse for Feeder B is defective. Replace the defective unit, cable or fuse, and repeat this test.

- Step 12:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify that the **POWcDEG** alarm has cleared for the selected **BSSU** *under test*.
- Step 12-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- Step 12-b:** Press the  button, and verify that the **POWcDEG** alarm has cleared for the selected **BSSU** *under test*.



**NOTE:**

The alarm will not clear immediately, but will take the amount of time set in the Alarm Delay Setting.

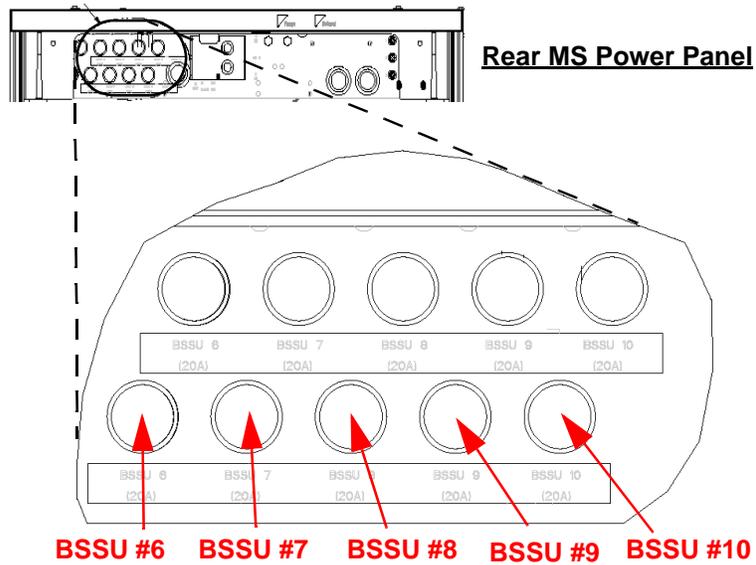
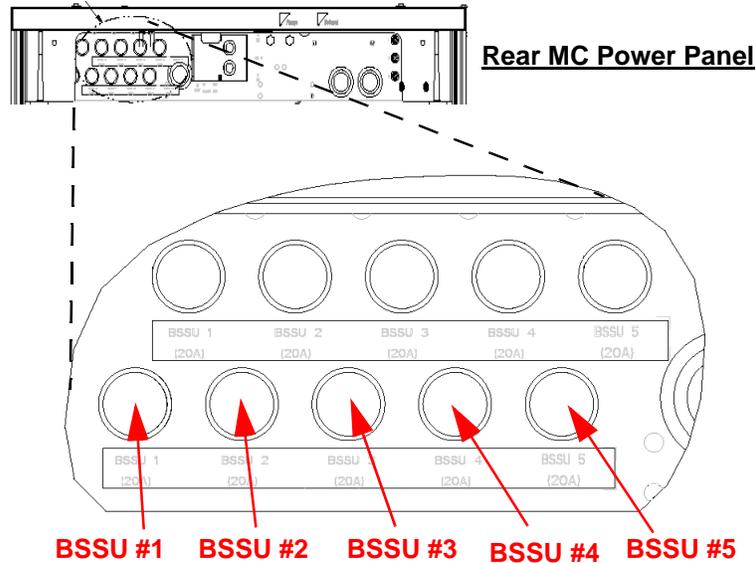


**CAUTION:**

*Disregard any other alarms reported at this time!*

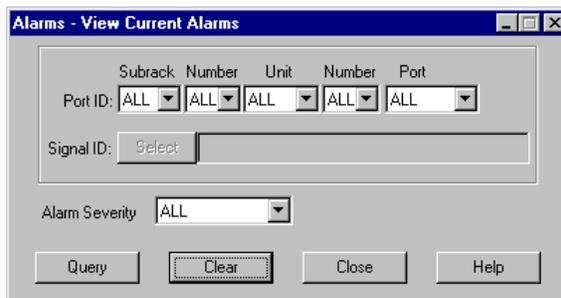
- Step 12-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the  button.

- Step 13:** At the appropriate **rear Power Distribution Panel**, **remove** the appropriate fuse which corresponds to **Feeder B** of the selected **BSSU Unit** *under test*.



- Step 14:** The selected BSSU Unit *under test* is now powered solely by **Feeder A**. Verify that the **top digit** of the 4-digit LED display on the selected BSSU Unit (1-10) *under test* is **off** (i.e. not showing an "F").

- **Step 15:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify the correct **POWcDEG** alarm associated with **Feeder B** is reported for the **BSSU under test**.
- **Step 15-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- **Step 15-b:** Press the **Query** button, and verify that a **POWcDEG Alarm** associated with **Feeder B** (PWR2) is reported for the correct **BSSU under test**.

*Output Response:*

MS-3-BSSU-{1-10}-PWR2                      **POWcDEG**



**NOTE:**

If **PWR1** is reported for the BSSU, then the power cable is probably installed reversed (up-sidedown). Power-down BSSU completely (feeder A & B), and check proper cable connection. It is possible for cable to be forced in the incorrect mounting position.



**NOTE:**

If the alarm is reported on a **different** BSSU unit, then the power cable is probably incorrectly installed to the wrong reported BSSU unit. Power-down both the reported BSSU unit and selected BSSU unit, and rearrange power cabling to the correct BSSU units. Then power-up both BSSU units again, and repeat test.



**CAUTION:**

*Disregard any other alarms reported at this time!*

- **Step 15-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

- ❑ *Step 16:* At the appropriate *Power Distribution Panel*, **re-install** the fuse which corresponds to **Feeder B** of the **BSSU Unit** *under test*.

- ❑ *Step 17:* Verify that the top digit of the 4-digit LED display on the selected BSSU Unit (1-10) *under test* remains **off** (i.e. not showing an "F").

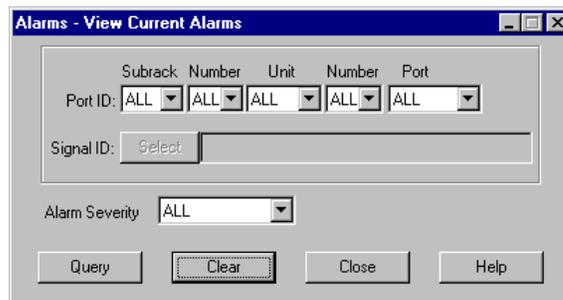


**NOTE:**

If the top digit of the 4-digit LED for the BSSU Unit displays an "F", then the unit's internal dual power circuit is defective, or power supply cable Feeder A is faulty, or fuse for Feeder A is defective. Replace the defective unit, cable or fuse, and repeat this test.

- ❑ *Step 18:* From the **View Current Alarms Window**, query the alarm status for the entire system, and verify that the **POWcDEG** alarm has cleared for the selected **BSSU** *under test*.

- ❑ *Step 18-a:* In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- ❑ *Step 18-b:* Press the  button, and verify that the **POWcDEG** alarm has cleared for the selected **BSSU** *under test*.



**NOTE:**

The alarm will not clear immediately, but will take the amount of time set in the Alarm Delay Setting.



**CAUTION:**

*Disregard any other alarms reported at this time!*

- ❑ *Step 18-c:* Close the **Reports-Current Alarms-Query Results Window** by pressing the  button.

---

*Step 19:* Check-off the appropriate  box corresponding to this procedure for the BSSU slot just tested on the appropriate *verification checklist*.

---

*Step 20:* Perform **one** of the procedural options below:

- If additional BSSU units need to be tested, return to **Step 4** and repeat test until all ten units have been tested.
  - If all **ten** BSSU units have been tested, proceed to next step.
- 

*Step 21:* Close the **Reports-Current Alarms Window** by pressing the .

---

*Step 22:* This completes the "BSSU Unit Power Test" for the all **ten** BSSU units.

---

### **STOP-Return to Calling Procedure**



## GTP 26 - Port Subrack Power Test

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### Description

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The purpose of this test procedure is to verify the following power related functions for the specific Port Subrack (PSA, PSB, or PSC).

- Verify the proper power cable connection to each of the PTM units (1 & 2) in the Port Subrack.
- Verify each of the equipped units internal dual power feed circuitry in the Port Subrack, by checking that each unit can remain operation under each of the supplied power feeds (A& B).
- Verify the SRC Unit can sense the loss of supplied voltage, and indicate the proper power alarm (POWcDEG).

### Assumptions:

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The *WaveStar*<sup>TM</sup> DACS 4/4/1 System is powered by **two** independent customer supplied power feeders (Feeder A and Feeder B).

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

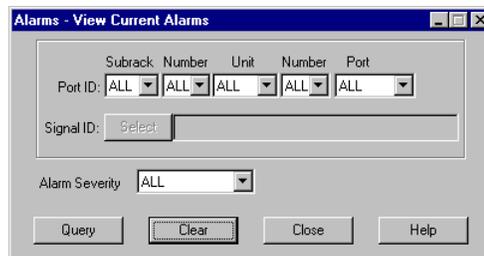
- Step 2:** At the *Customer's Power Distribution Bay (PDB)*, verify that **Power Feeder A** and **Power Feeder B** are turned **ON** for the associated Port Complex Rack.

- Step 3:** From the *Main Tool Bar*, open the **Alarms-View Current Alarms Window**.

**WINDOW PATH:**



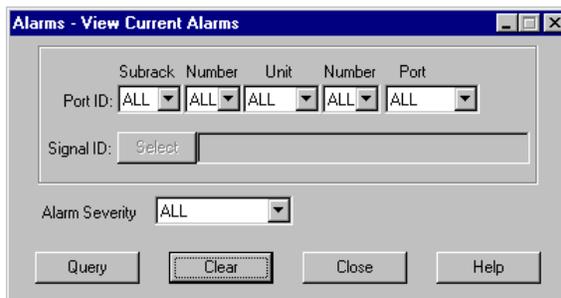
**WINDOW:**



- Step 4:** Select the appropriate **Port Subrack (PSA, PSB, or PSC)** to be tested, and **Subrack Position (top or bottom)**.
- Step 5:** Verify that the red LEDs on **all** the available units (SRC,DTU,Port Units) and modules (BSIU,IMO/E, PTM) in the **Port Subrack under test** are **off**.

- **Step 6:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify **no POWcDEG** alarms are reported for the **SRC Unit** in the selected **Port Subrack under test**.

- **Step 6-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:

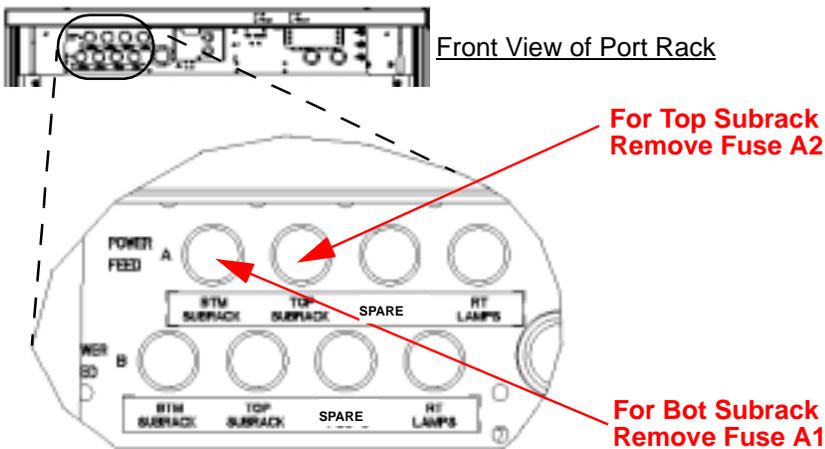


- **Step 6-b:** Press the **Query** button, and verify that **no POWcDEQ Alarm** is reported for the **SRC Unit** in the selected **Port Subrack under test**.

**CAUTION:**  
*Disregard any other alarms reported at this time!*

- **Step 6-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

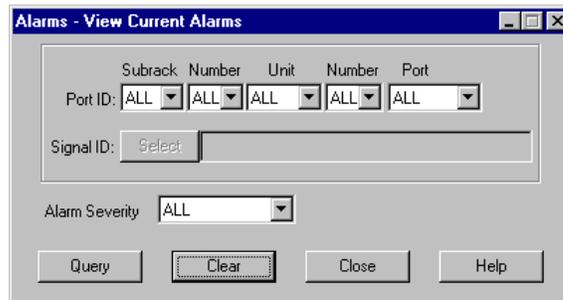
- **Step 7:** At the **Power and Alarm Distribution Panel** in the front of the Port Rack, **remove** the fuse which corresponds to **Feeder A (PTM-1)** of **only** the selected **Port Subrack under test**.



- ❑ **Step 8:** The selected **Port Subrack under test** is now being powered solely by **Feeder B (PTM-2)**. Verify that the red LEDs on the faceplates of **all** the available units (SRC,DTU,Port Units) and modules (BSIU,IMO/E, PTM) in the **Port Subrack** are **off**.

- ❑ **Step 9:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify the correct **POWcDEG** alarm associated with **Feeder A (PWR1)** is reported for the **Port Subrack under test**.

- ❑ **Step 9-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- ❑ **Step 9-b:** Press the **Query** button, and verify that a **POWcDEG Alarm** associated with **Feeder A (PWR1)** is reported by the SRC unit in the **Port Subrack under test**.

*Output Response:*

PS{A,B,C}-{4-11}-SRC-1-**PWR1** **POWcDEG**



**NOTE:**

If **PWR2** is reported by the SRC Unit, then the power cable may be reversed with PTM-1. Power-down Port Subrack completely (feeder A & B), and check proper cable connection (red/black wires to PTM-1, white/black wires to PTM-2), the repeat test.

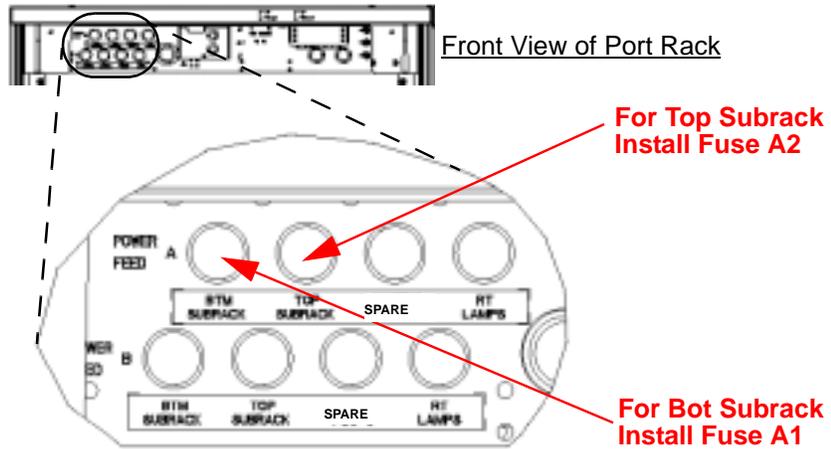


**CAUTION:**

*Disregard any other alarms reported at this time!*

- ❑ **Step 9-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

- **Step 10:** At the *Power and Alarm Distribution Panel* in the front of the Port Rack, **re-install** the fuse which corresponds to **Feeder A (PTM-1)** of **only** the selected **Port Subrack** under test.



- **Step 11:** Verify that the red LEDs on the faceplates of **all** the available units (SRC,DTU,Port Units) and modules (BSIU,IMO/E, PTM) of the selected **Port Subrack** under test are **off**.

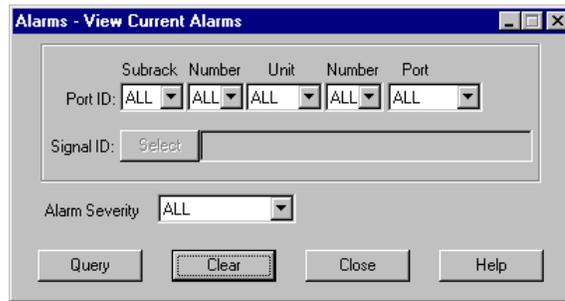


**NOTE:**

If a red LED for **any** unit or module in the subrack turns on, then the unit or module is defective and can not maintain power from the secondary power supply. Replace the defective unit or module, and repeat this test.

If the red LED on **all** the units and modules in the subrack turn on, then PTM-2 module is not supplying voltage and is defective. Replace PTM-2 module, and repeat this test.

- **Step 12:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify that the **POWcDEG** alarm has *cleared* for **Feeder A** of the selected **Port Subrack under test**.
- **Step 12-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- **Step 12-b:** Press the **Query** button, and verify that the **POWcDEG** alarm has *cleared* for **Feeder A** of the selected **Port Subrack under test**.



**NOTE:**

The alarm will not clear immediately, but will take the amount of time set in the Alarm Delay Setting.

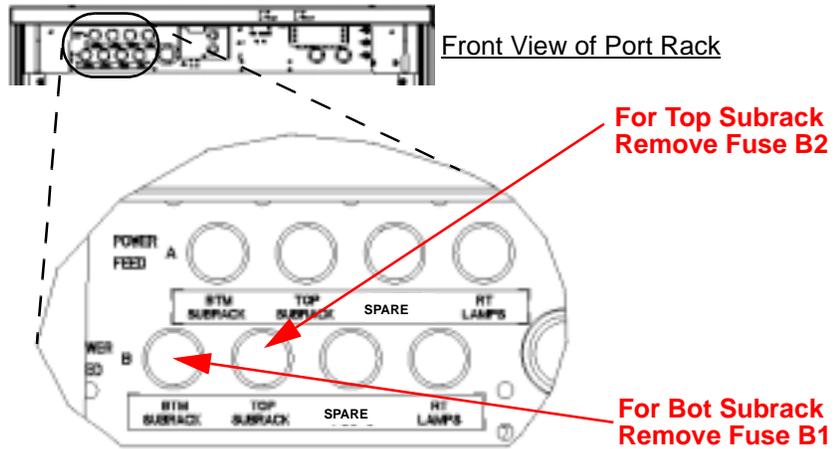


**CAUTION:**

*Disregard any other alarms reported at this time!*

- **Step 12-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

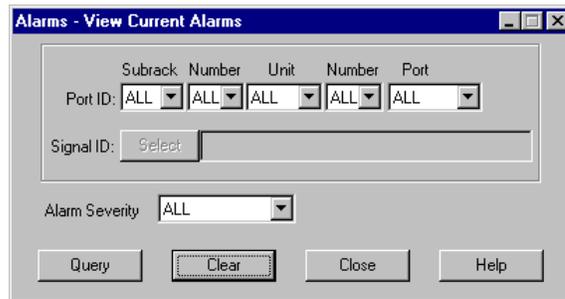
- **Step 13:** At the *Power and Alarm Distribution Panel* in the front of the Port Rack, **remove** the fuse which corresponds to **Feeder B (PTM-2)** of **only** the selected **Port Subrack under test**.



- **Step 14:** The selected **Port Subrack under test** is now being powered solely by **Feeder A (PTM-1)**. Verify that the red LEDs on the faceplates of **all** the available units (SRC,DTU,Port Units) and modules (BSIU,IMO/E, PTM) remain **off**.

- **Step 15:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify the correct **POWcDEG** alarm associated with **Feeder B (PWR2)** is reported for the **Port Subrack under test**.

- **Step 15-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- **Step 15-b:** Press the **Query** button, and verify that a **POWcDEG Alarm** associated with **Feeder B (PWR2)** is reported by the SRC unit in the **Port Subrack under test**.

*Output Response:*

PS{A,B,C}-{4-11}-SRC-1-PWR2 POWcDEG



**NOTE:**

If **PWR1** is reported by the SRC Unit, then the power cable may be reversed with PTM-2. Power-down Port Subrack completely (feeder A & B), and check proper cable connection (red/black wires to PTM-1, white/black wires to PTM-2), the repeat test.

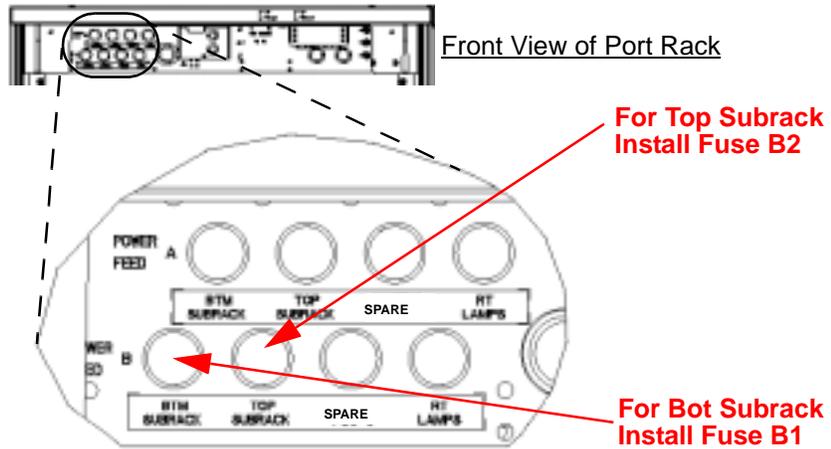


**CAUTION:**

*Disregard any other alarms reported at this time!*

- **Step 15-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the **Close** button.

- **Step 16:** At the *Power and Alarm Distribution Panel* in the front of the Port Rack, **re-install** the fuse which corresponds to **Feeder B (PTM-2)** of **only** the selected **Port Subrack** under test.



- **Step 17:** Verify that the red LEDs on the faceplates of **all** the available units (SRC,DTU,Port Units) and modules (BSIU,IMO/E, PTM) of the selected **Port Subrack** under test are **off**.



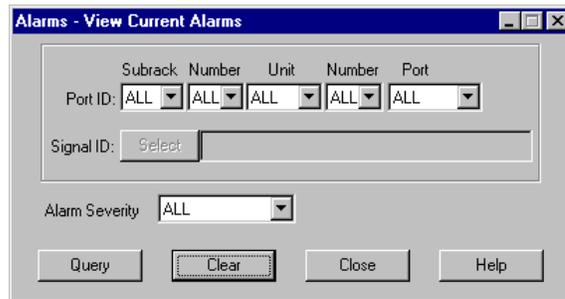
**NOTE:**

If a red LED for **any** unit or module in the subrack turns on, then the unit or module is defective and can not maintain power from the secondary power supply. Replace the defective unit or module, and repeat this test.

If the red LED on **all** the units and modules in the subrack turn on, then PTM-1 module is not supplying voltage and is defective. Replace PTM-1 module, and repeat this test.

- Step 18:** From the **View Current Alarms Window**, query the alarm status for the entire system, and verify that the **POWcDEG** alarm has cleared for **Feeder B** of the selected **Port Subrack under test**.

- Step 18-a:** In the **View Current Alarms Window**, leave the default settings (for all alarms in the system) as shown below:



- Step 18-b:** Press the  button, and verify that the **POWcDEG** alarm has cleared for **Feeder B** of the selected **Port Subrack under test**.



**NOTE:**

The alarm will not clear immediately, but will take the amount of time set in the Alarm Delay Setting.



**CAUTION:**

*Disregard any other alarms reported at this time!*

- Step 18-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the  button.

- 
- Step 19:** Close the **Reports-Current Alarms Window** by pressing the .

- Step 20:** Check-off the appropriate  box corresponding to this procedure for the selected Port Subrack just tested on the appropriate *verification checklist*.

- Step 21:** This completes the "Port Subrack Power Test" for the selected Port Subrack (PSA, PSB, or PSC).
- 

**STOP-Return to Calling Procedure**

## **GTP 27 - Unit Diagnostic Testing Setup**

---

### **Description**

---

This procedure explains the process for setting up the XC-CIT screen with the appropriate windows for diagnostic testing of units.

#### **Required Equipment:**

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### **Assumptions**

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### **Precautions**

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

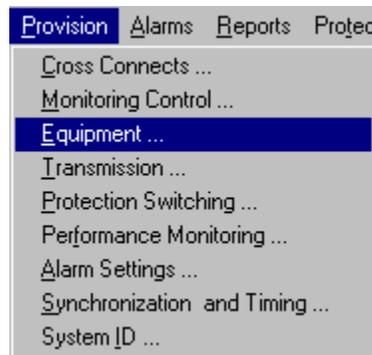
Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

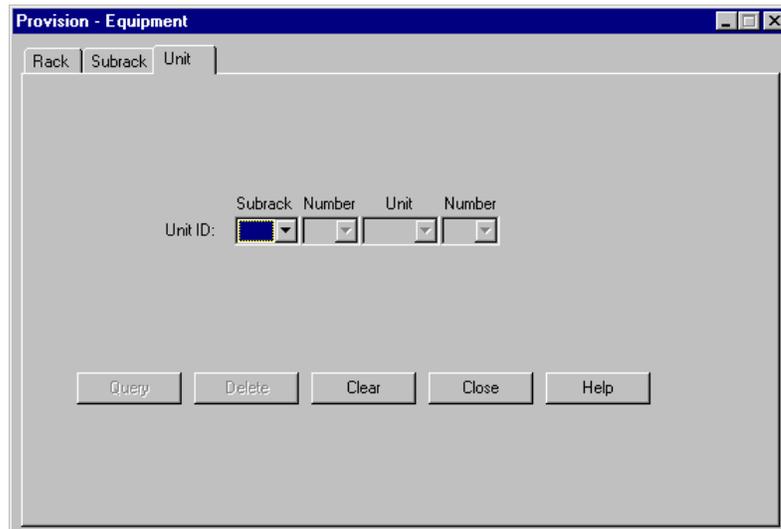
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Open the **Provision-Equipment Window** and select the **Unit Tab** in order to use for checking equipage state of units to be tested.

### WINDOW PATH:



### WINDOW:

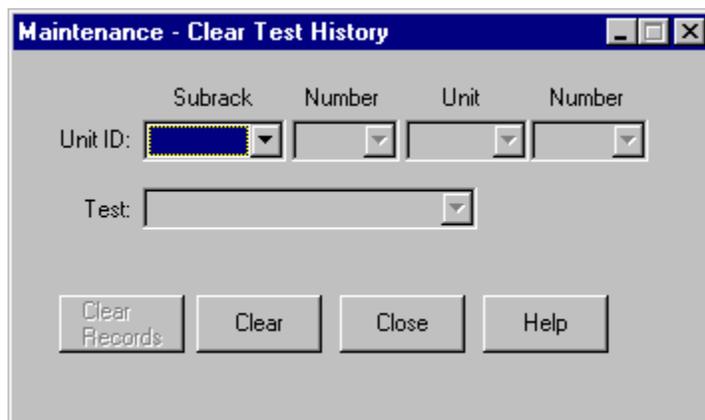


- ❑ **Step 3:** Open the **Maintenance-Clear Test History Window** in order to use for clearing test history of units to be tested.

**WINDOW PATH:**

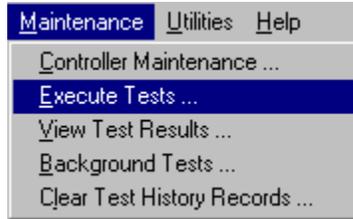


**WINDOW:**

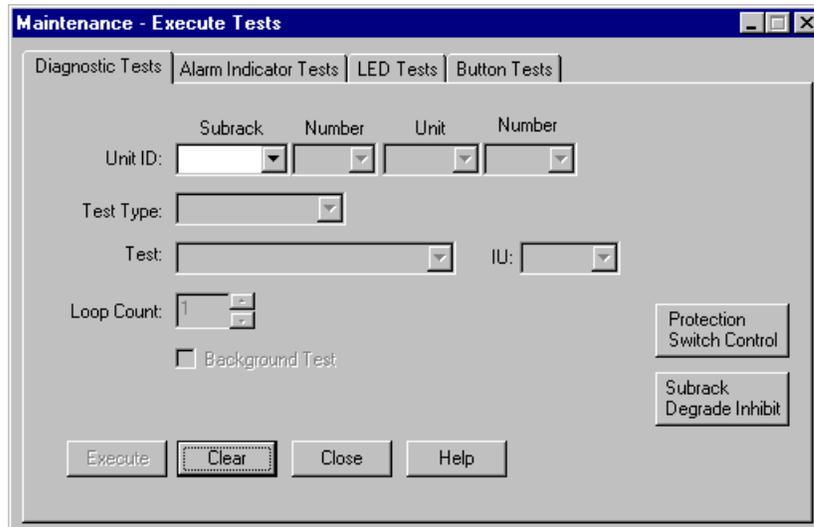


- ❑ **Step 4:** Obtain the ***Maintenance-Execute Tests Window*** in order to use for implementing diagnostic testing of units.

**WINDOW PATH:**



**WINDOW:**

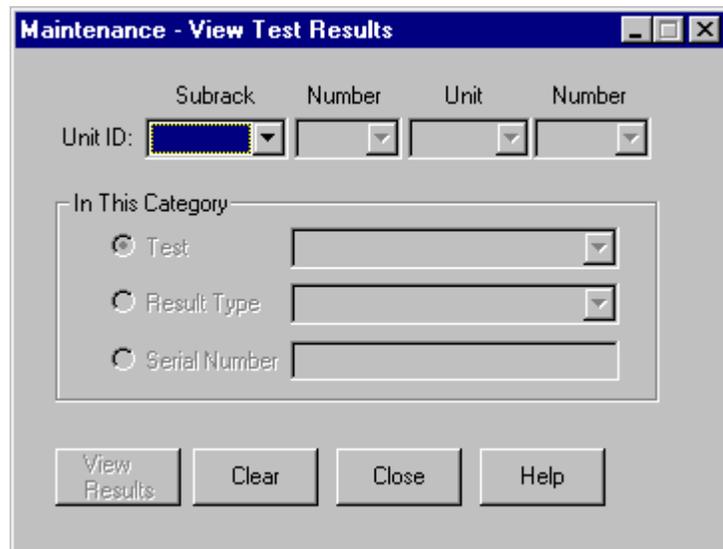


- ❑ **Step 5:** Obtain the **Maintenance-View Test Results Window** in order to use checking test results of previously executed unit diagnostic tests.

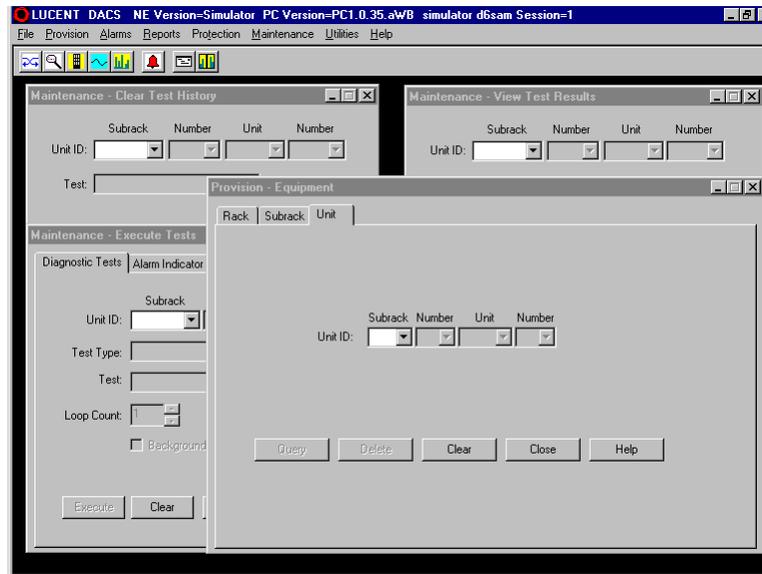
**WINDOW PATH:**



**WINDOW:**



- Step 6:** Position each of the windows on the XC-CIT screen as shown below, so that each window can easily be accessed during unit testing.



- Step 7:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.
- Step 8:** This completes the "*Unit Diagnostic Testing Setup*" procedure.
- 

**STOP-Return to Calling Procedure**

## GTP 28 - MC Unit Diagnostic Tests

---

### Description

---

This section of the MC Complex verification test process deals with executing all the diagnostic tests for all the **equipped** units in the Main Controller Subrack (Motorola Version).

#### Diagnostic Tests:

- **Network Interface** (MPU) - verifies the Network Interface Chips (NIC), and cables/connectors from the MPU to LHU-1.
- **Disk Media** (MSU) - verifies the hard drive and SCSI controller by performing file operations to the hard disk.
- **MCLAN** (LHU-1/LAN Hub) - verifies MCLAN connections from LAN Hub to provisioned SRC units.
- **Sanity Timer** (ARU) - verifies the sanity timer circuitry on the ARU.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter
- 1 → RJ-45 Coupler (ITE-7015)
- 1 → 10 inch Null-Modem LAN Cable (ITE-7002)

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

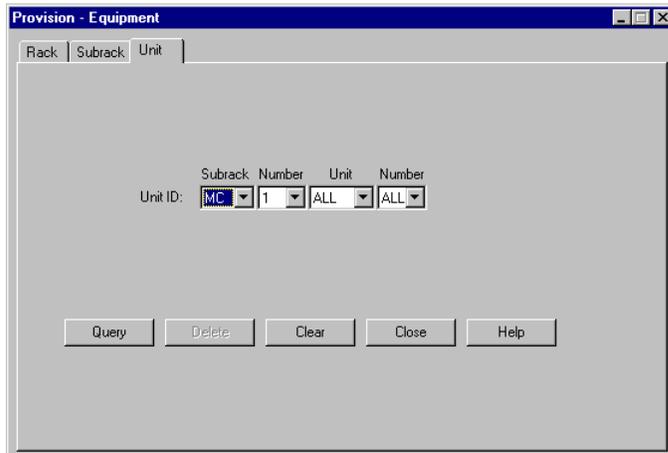
- Step 2:** **Clear** the test history for **all** the units in the MC Subrack.

- Step 2-a:** In the ***Maintenance-Clear Test History Window***, enter all the following information as shown below associated with all units in the MC Subrack:

The screenshot shows a dialog box titled "Maintenance - Clear Test History". It contains four dropdown menus for "Subrack", "Number", "Unit", and "Number". The "Subrack" dropdown is set to "MC", the "Number" dropdown is set to "1", the "Unit" dropdown is set to "ALL", and the "Number" dropdown is set to "ALL". Below these dropdowns is a "Test:" label followed by a dropdown menu set to "All". At the bottom of the dialog, there are four buttons: "Clear Records...", "Clear", "Close", and "Help".

- Step 2-b:** Press the  button, to clear any past test history corresponding to all units in the MC Subrack.

- ❑ **Step 3:** Query the **Unit Status** (i.e. equipage state) for **all** the units in the MC Subrack.
- ❑ **Step 3-a:** In the **Provision-Equipment-Unit Window**, select the unit identification shown below in the **Unit ID Box** associated with all units in the MC Subrack.



- ❑ **Step 3-b:** Press the  button in order to report the **Unit Status** of all the units in the MC Subrack.
- ❑ **Step 3-c:** Verify that the **Unit Status** for each of the units in the MC Subrack is reported as **Unit Provisioned and Initialized**.



**NOTE:**

If the unit is not in the proper equipage state, diagnostic testing can not be performed on the unit.

- ❑ **Step 3-d:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

- **Step 4:** Execute the **Network Interface** diagnostic test for the **MPU Unit**.

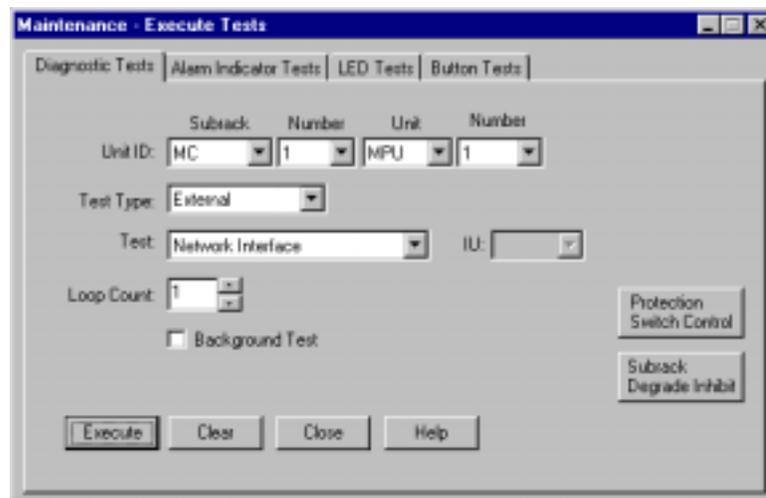


**NOTE:**

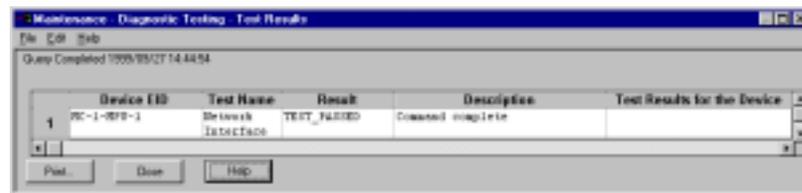
The network interface test performs a “ping” test from the following:

- From Workstation Computer (via NIC3) to Working MC (via NIC1)
- From Workstation Computer (via NIC3) to LAN Hub (via NIC1)
- From Workstation Computer (via NIC3) to a SRC unit (via NIC1)

- **Step 4-a:** In the **Maintenance-Execute Tests Window**, enter the information shown below for the **MPU Unit** in the MC Subrack (Do not select as Background Test):



- **Step 4-b:** Press the **Execute** button to start the **Network Interface** diagnostic test for the **MPU Unit**.
- **Step 4-c:** Verify that the **Network Interface** diagnostic test results for the **MPU Unit** is reported as **TEST\_PASSED**.



**NOTE:**

If the test results reports as either **TEST\_FAILED** or **TEST\_ERRORED**, check the *Test Results for Device* data field in output response for troubleshooting information, then clear test history for the failed/errored test and repeat test.

- **Step 4-d:** **Optional** - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)
- **Step 4-e:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

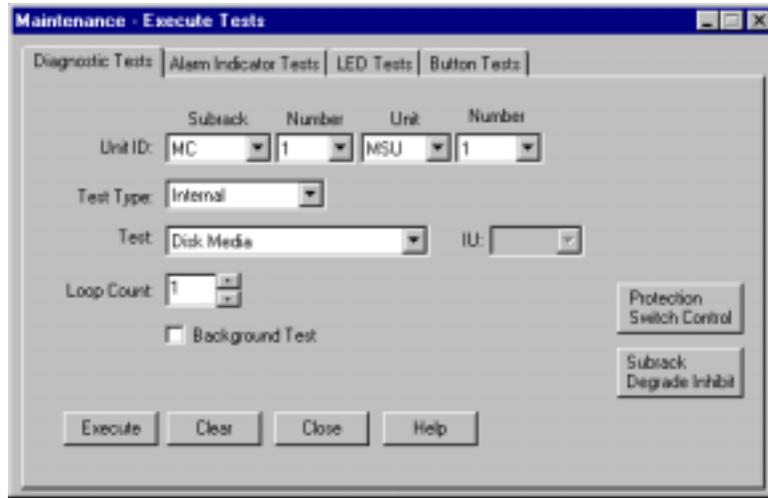
- **Step 5:** Execute the **Disk Media** diagnostic test for the **MSU Unit**.



**NOTE:**

The Disk Media test will create a file on the hard disk, open the file, write to the file, read the file, close the file, and then remove the file.

- **Step 5-a:** In the **Maintenance-Execute Tests Window**, enter the information shown below for the **MSU Unit** in the MC Subrack (Do not select as Background Test):



- **Step 5-b:** Press the **Execute** button to start the **Disk Media** diagnostic test for the **MSU Unit**.
- **Step 5-c:** Verify that the **Disk Media** diagnostic test results for the **MSU Unit** is reported as **TEST\_PASSED**.



**NOTE:**

If the test results reports as either **TEST\_FAILED** or **TEST\_ERRORED**, check the *Test Results for Device* data field in output response for troubleshooting information, then clear test history for the failed/errored test and repeat test.

- **Step 5-d:** Optional - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)
- **Step 5-e:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

- **Step 6:** Execute the **MCLAN** diagnostic test for the **LHU-1 Unit (LAN HUB)**.

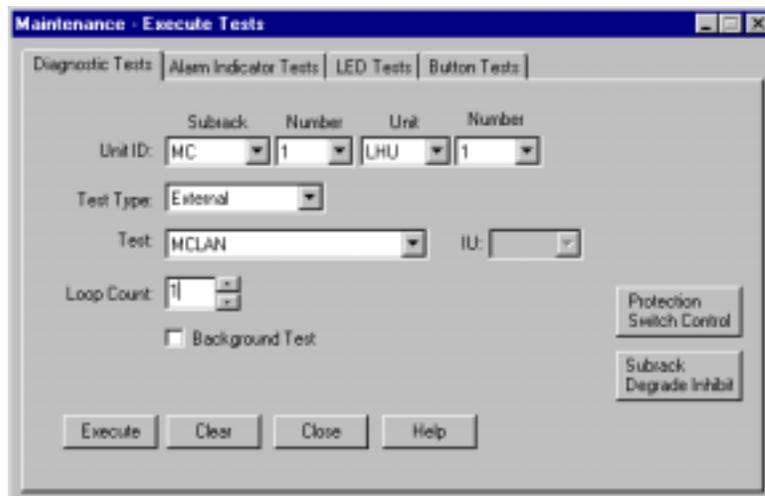


**NOTE:**

The MCLAN test will perform a “ping” test to the Subrack Controllers (SRC) of all provisioned LAN Hub Ports by performing the following operations:

- Determine which LAN hub ports are provisioned (ie. ports enabled).
- Disable the provisioned ports, execute “ping” test, verify it fails.
- Enable the provisioned ports, execute “ping” test, verify it passes.

- **Step 6-a:** In the **Maintenance-Execute Tests Window**, enter the information shown below for the **LHU-1 Unit (LAN HUB)** in the MC Subrack (Do not select as Background Test):



- **Step 6-b:** Press the **Execute** button to start the **MCLAN** diagnostic test for the **LHU-1 Unit (LAN HUB)**.
- **Step 6-c:** Verify that the **MCLAN** diagnostic test results for the **LHU-1 Unit (LAN HUB)** is reported as **TEST\_PASSED**.



**NOTE:**

If the test results reports as either **TEST\_FAILED** or **TEST\_ERRORED**, check the *Test Results for Device* data field in output response for troubleshooting information, then clear test history for the failed/errored test and repeat test.

- **Step 6-d:** *Optional* - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)
- **Step 6-e:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

- **Step 7:** Execute the **Sanity Timer** diagnostic test for the **ARU Unit**.



**NOTE:**

The ARU Sanity Timer test will perform the following operations:

- Disable reset command and MPU sanity timer.
- Set ARU sanity timer bit.
- Check if ARU alarm status bit gets set.

- **Step 7-a:** In the **Maintenance-Execute Tests Window**, enter the information shown below for the **ARU Unit** in the MC Subrack (Do not select as Background Test):

Maintenance - Execute Tests

Diagnostic Tests | Alarm Indicator Tests | LED Tests | Button Tests

Unit ID: MC Subrack: 1 Unit: ARU Number: 1

Test Type: Internal

Test: Sanity Timer IU: [ ]

Loop Count: 1

Background Test

Protection Switch Control

Subrack Degrade Inhibit

Execute Clear Close Help

- **Step 7-b:** Press the **Execute** button to start the **Sanity Timer** diagnostic test for the **ARU Unit**.
- **Step 7-c:** Verify that the **Sanity Timer** diagnostic test results for the **ARU Unit** is reported as **TEST\_PASSED**.

Maintenance - Diagnostic Testing - Test Results

File Edit Help

Query Completed 10/05/05/12 22:04:44

Device ID	Test Name	Result	Description	Test Results for the Device
1 MC-1-MPU-1	ARU Sanity Timer	TEST_PASSED	Command complete	

Print... Close Help



**NOTE:**

If the test results reports as either **TEST\_FAILED** or **TEST\_ERRORED**, check the *Test Results for Device* data field in output response for troubleshooting information, then clear test history for the failed/errored test and repeat test.

- **Step 7-d:** **Optional** - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)
- **Step 7-e:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

- 
- Step 8:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.
- 
- Step 9:* This completes the "*MC Units Diagnostic Test*" procedure for all the units in the MC Subrack.
- 

**STOP-Return to Calling Procedure**

## GTP 29 - SRC Unit Diagnostic Tests

---

### Description

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This section of the installation test process deals with executing all the **internal** diagnostic tests for the Subrack Controller unit (SRC) in either the MS Subrack, PSA Subrack, PSB Subrack, or PSC Subrack.

#### Diagnostic Tests:

- **BCLAN** - Verifies communication to all units in the subrack from the active and the standby BCLANs.
- **CHECKSUM** - Verifies the EPROMS on the SRC unit.
- **IIC** - Verifies the ability to communicate over the IIC bus.
- **NVRAM** - Verifies the Real Time Clock nonvolatile RAM on the SRC.
- **REGISTER** - Verifies the backplane connectivity on the SRC.
- **SANITY TIMER** - Verifies the Sanity Timer circuitry on the SRC.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The various diagnostic testing windows have already been setup on the XC-CIT Workstation screen.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

 **NOTE:**  
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

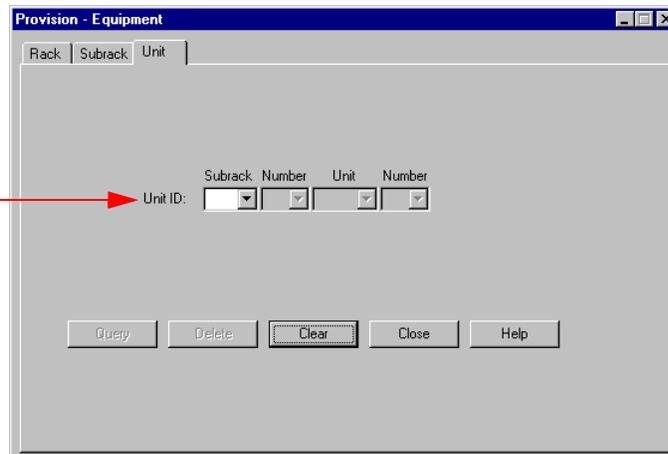
- Step 2:** Select a **SRC unit** to be diagnostic tested.

 **NOTE:**  
In the MS Subrack, there are 2 SRC units (1 working & 1 protection).  
Also, the SRC unit does not have to be in the standby state for the diagnostic tests to be successfully executed.

- Step 3:** **Query** the **Unit Status** (i.e. equipage state) of the selected **SRC Unit**.

- Step 3-a:** In the **Provision-Equipment-Unit Window**, select the appropriate **unit identification** in the *Unit ID Box* associated with the specific **SRC Unit** to be tested.

Select Unit ID  
PS{A,B,C}-{4-19}-SRC-1 or  
MS-3-SRC-{1,2}



- Step 3-b:** Press the  button, and verify that the **Unit Status** for the selected **SRC Unit** is reported as **Unit Provisioned and Initialized**.

 **NOTE:**  
If the unit is not in the proper equipage state, diagnostic testing can **not** be performed on the unit.

- Step 3-c:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

❑ **Step 4:** **Clear** the test history for the selected **SRC Unit** to be tested.

❑ **Step 4-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **SRC Unit** to be tested.

Select Unit ID  
PS{A,B,C}-{4-19}-SRC-1 or  
MS-3-SRC-{1,2}

Maintenance - Clear Test History

Subrack Number Unit Number

Unit ID: [ ] [ ] [ ] [ ]

Test: [ ]

Clear Records Clear Close Help

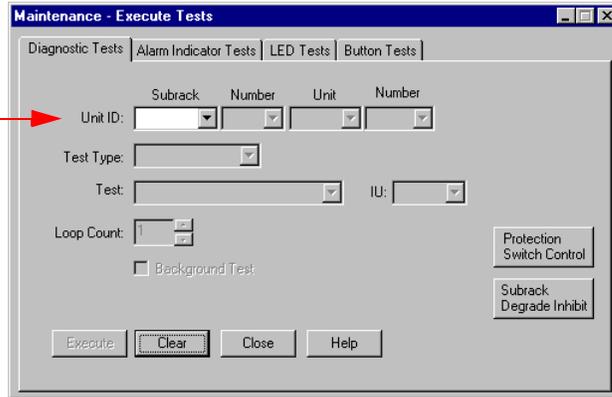
❑ **Step 4-b:** In the **Test Box**, select “**All**” in order to clear all tests for the unit:

Test: All

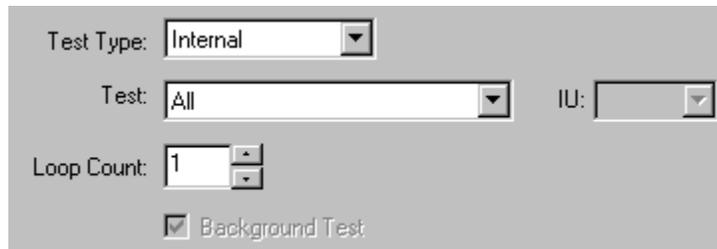
❑ **Step 4-c:** Press the  button, to clear any past test history corresponding to the selected **SRC Unit**.

- **Step 5:** Execute all the **internal** diagnostic tests for the selected **SRC Unit**.
  - **Step 5-a:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **SRC Unit** to be tested.

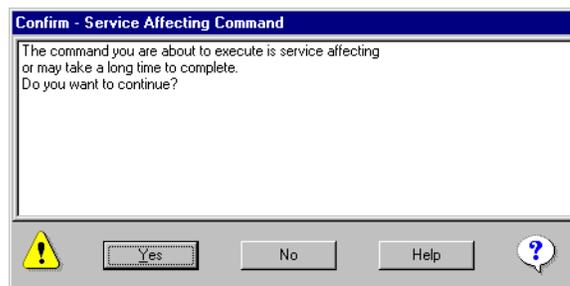
Select Unit ID  
PS{A,B,C}-{4-19}-SRC-1 or  
MS-3-SRC-{1,2}



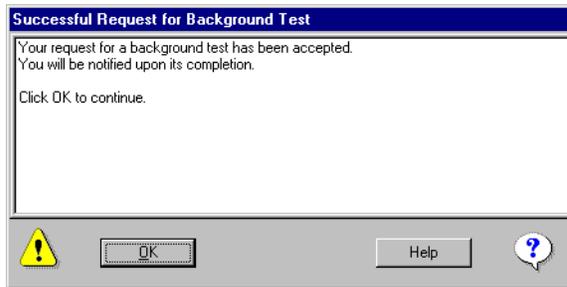
- **Step 5-b:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below:



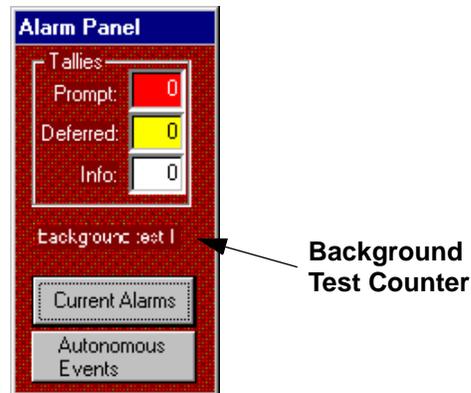
- **Step 5-c:** Execute all the internal diagnostic tests for the selected **SRC unit** by pressing the **Execute** button, then verify that the following command confirmation window appears:



- **Step 5-d:** Confirm the command execution by pressing the  button, then verify that the background test acceptance window appears



- **Step 5-e:** Continue by pressing the  button, and verify that the background test counter on the **Alarm Panel Window** increments by 1.

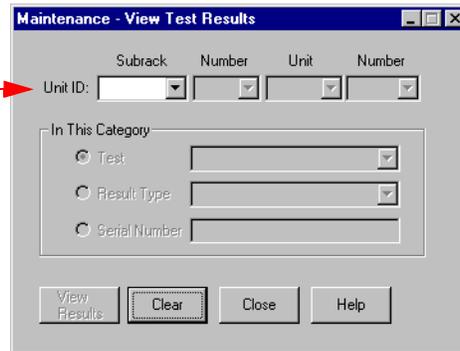


- **Step 5-f:** Wait until the test command completes when the background test counter on the **Alarm Panel Window** is cleared or disappears.

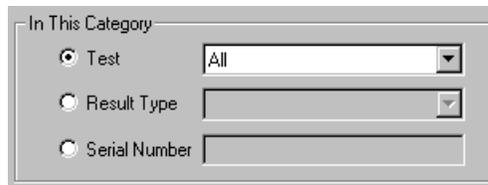
❑ **Step 6:** Query for the individual test results for all the internal diagnostic tests which were executed for the selected **SRC Unit**.

❑ **Step 6-a:** In the **Maintenance-View Test Results Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **SRC Unit** to be tested.

Select Unit ID  
 PS{A,B,C}-{4-19}-SRC-1 or  
 MS-3-SRC-{1,2}



❑ **Step 6-b:** In the **Maintenance-View Test Results Window**, enter the remaining information as shown below:



❑ **Step 6-c:** Query results for all the diagnostic tests which were executed for the selected **SRC Unit** by pressing the **View Results** button, and verify that each of the tests are reported under the **“Passed”** column. (Sample shown for SRC-1 in MS Subrack).

	Entity ID	Serial Number	Test Executed	Passed	Partial Pass	Failed	Errored	Date of Execution
1	MS-3-SRC-1	98MV08661125	BCLAM	1	0	0	0	
2	MS-3-SRC-1	98MV08661125	Checksum	1	0	0	0	
3	MS-3-SRC-1	98MV08661125	IIC	1	0	0	0	
4	MS-3-SRC-1	98MV08661125	NVRAM	1	0	0	0	
5	MS-3-SRC-1	98MV08661125	Register	1	0	0	0	
6	MS-3-SRC-1	98MV08661125	Sanity_Timer	1	0	0	0	



**NOTE:**

If any of the tests reported under the **“Failed”** or **“Errored”** column, repeat the individual test in order to obtain detailed test results.

❑ **Step 6-d:** *Optional* - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)

❑ **Step 6-e:** Close the **Maintenance-Diagnostic Testing-View Results Window** by pressing the **Close** button.

---

*Step 7:* Perform **one** of the procedural options below:

- If testing the MS Subrack, and another SRC unit needs to be diagnostic tested (i.e. protection SRC) in the other Sync Shelf, return to **Step 2** and repeat testing for the other SRC unit.
- Otherwise, proceed to next step.

---

*Step 8:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

*Step 9:* This completes the "*SRC Unit Diagnostic Tests*" procedure.

---

## **STOP-Return to Calling Procedure**



## GTP 30 - STU Unit Diagnostic Tests

---

### Description

---

This section of the installation test process deals with executing the diagnostic tests for the System Timing Unit (STU) in the Matrix/Sync Subrack.

#### Diagnostic Tests:

- **UNIT** - verifies the internal hardware on the STU unit.
- **Station Clock Loopback** - verifies the ability of the STU to properly detect and phaselock to the station clock input signals.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter
- 3 → Coax Loopback Cable (ITE-8656)

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The various diagnostic testing windows have already been setup on the XC-CIT Workstation screen.
4. STU Unit must be in the standby side of the MS Subrack and locked from providing service, in order for the Unit diagnostic test to run.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- 
- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- 
- Step 2:** Select a **STU unit** in the MS Subrack to be diagnostic tested.

When selecting which STU unit to start testing first, use the following recommended testing order when testing in the MS Subrack.

Test Sequence:

1. Test STU-1 Unit first (make protection STU-2 Active)
2. Test STU-2 Unit last (make working STU-1 Active) -> final config

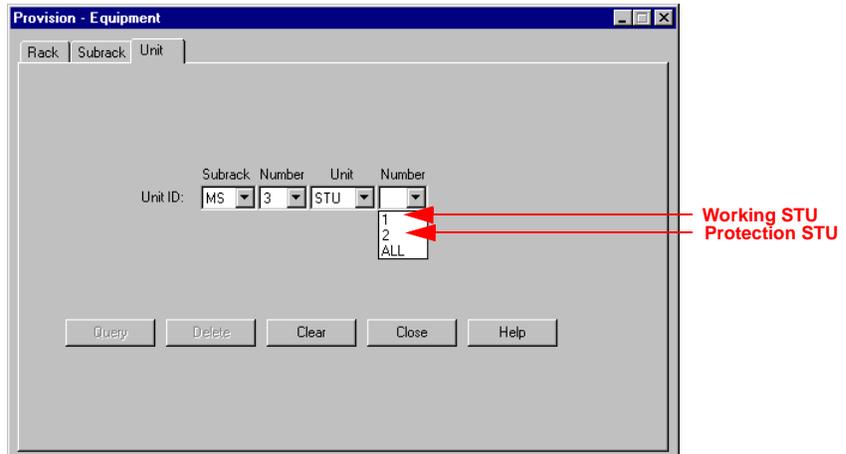


**NOTE:**

The test sequence is *recommended* in this matter since protection switches are performed in this procedure, and it is desired to leave the working STU unit in the active state at the end of testing units.

❑ **Step 3:** Query the **Unit Status** (i.e. equipage state) of the selected **STU Unit**.

❑ **Step 3-a:** In the **Provision-Equipment-Unit Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STU Unit** to be tested.



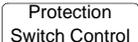
❑ **Step 3-b:** Press the  button, and verify that the **Unit Status** for the selected **STU Unit** is reported as **Unit Provisioned and Initialized**.



**NOTE:**

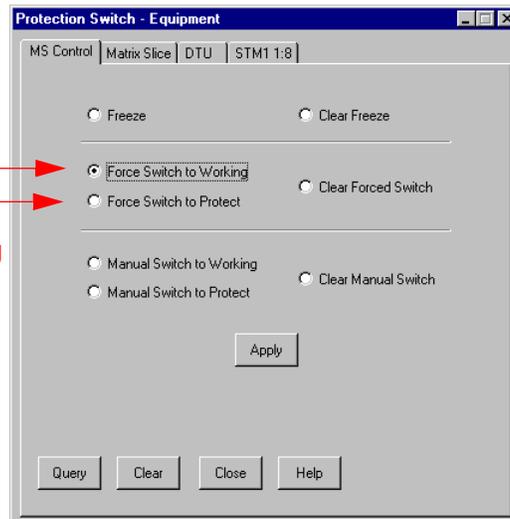
If the unit is not in the proper equipage state, diagnostic testing can not be performed on the unit.

❑ **Step 3-c:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

- ❑ **Step 4:** In order to test the selected **STU Unit**, the corresponding **SRC unit** in the **same** shelf of the MS Subrack (top/bottom) must be in the **standby** state (i.e. when testing STU-1, SRC-1 must be standby, SRC-2 made active). The appropriate **forced protection switch** command must be performed in order to make the **SRC Unit** in the other shelf of the MS Subrack active.
- ❑ **Step 4-a:** From the **Maintenance-Execute Tests Window**, proceed directly to the **Protection Switch-Equipment Window** by pressing the  button, then verify that the **MS Control** tab is selected.
- ❑ **Step 4-b:** Select the appropriate **Force Switch** command below, based on which **STU unit** is to be tested:

Select if testing **protect STU-2 (2nd pass)**

Select if testing **working STU-1 (1st pass)**



- ❑ **Step 4-c:** Execute the **Forced Switch** command, by pressing  button.
- ❑ **Step 4-d:** Keep pressing the  button wait until the **unit status** (standby/active) and **unit condition** (operational) is reported for both SRC units in the MS Subrack, and then verify that the information reported for the SRC unit in the **same** shelf corresponding to the selected **STU unit** to be tested is as follows:

Unit Status = Standby, Unit Condition = Operational

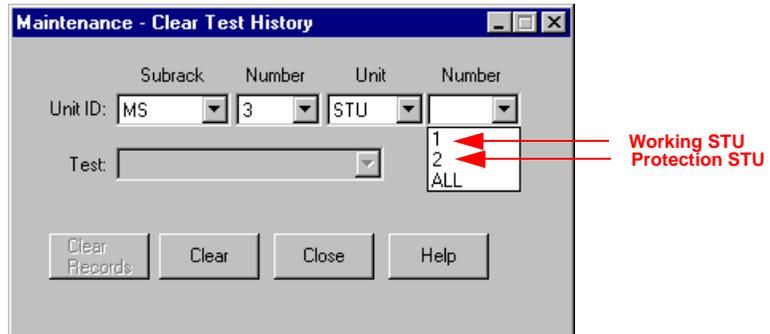
Sample Output: Shows SRC-2 as in the standby state, so the top shelf of the MS Subrack is active, and STU-2 unit tests can be run.

	Member ID	Unit Status	Unit Condition
1	MS-3-SRC-1	Active	Operational
2	MS-3-SRC-2	Standby	Operational

- ❑ **Step 4-e:** Close the **Protection Switch-Equipment-MS Control-Query Results Window** by pressing the  button.
- ❑ **Step 4-f:** Close the **Protection Switch-Equipment Window** by pressing the  button.

❑ **Step 5:** **Clear** the test history for the **Unit Test** of selected **STU Unit** to be tested.

❑ **Step 5-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STU Unit** to be tested.



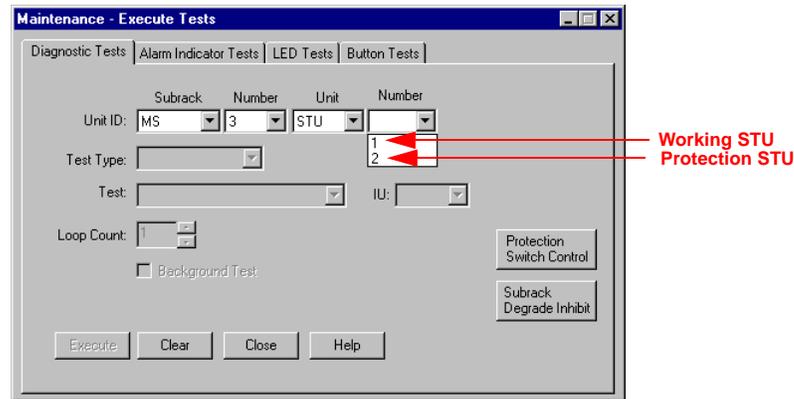
❑ **Step 5-b:** In the **Test Box**, select “**Unit**” in order to clear the test for the unit:



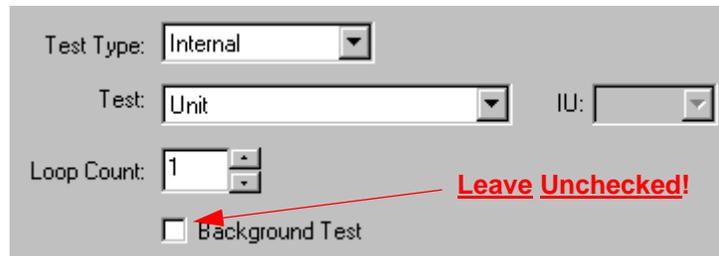
❑ **Step 5-c:** Press the **Clear Records** button, to clear any past test history corresponding to the selected **STU Unit**.

❑ **Step 6:** Execute the **Unit** diagnostic test for the selected **STU Unit**.

❑ **Step 6-a:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STU Unit** to be tested.



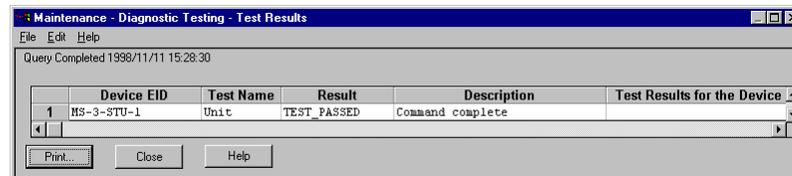
❑ **Step 6-b:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do not select as Background Test):



❑ **Step 6-c:** Execute the diagnostic test for the selected **STU unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.

❑ **Step 6-d:** Continue the diagnostic test for the selected **STU unit** by pressing the **Yes** button.

❑ **Step 6-e:** Verify that the results of the diagnostic test for the selected **STU Unit** is reported as **“TEST\_PASSED”**. (sample shown for STU-1).



**NOTE:**

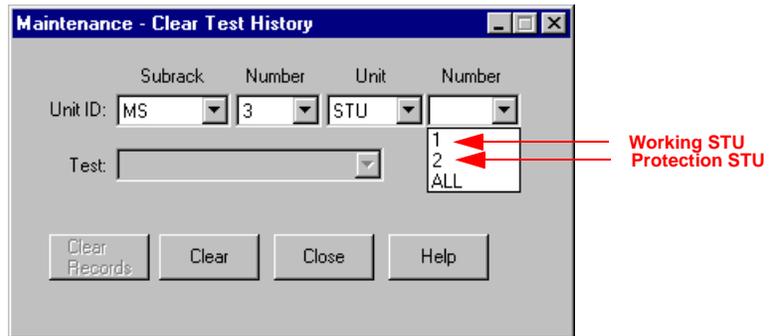
If the test results reports as either **“TEST\_FAILED”** or **“TEST\_ERRORED”**, check the test results data field in output response for troubleshooting information, then return to **Step 5** and repeat test.

❑ **Step 6-f:** Optional - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)

❑ **Step 6-g:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

❑ **Step 7:** **Clear** the test history for the **Station Clock Test** for the selected **STU Unit** to be tested.

❑ **Step 7-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STU Unit** to be tested.



❑ **Step 7-b:** In the **Test Box**, select "**Station Clock**" in order to clear the test for the unit:



❑ **Step 7-c:** Press the **Clear Records** button, to clear any past test history corresponding to the selected **STU Unit**.

☐ **Step 8:** Execute the **Station Clock** diagnostic test for the selected **STU Unit**.

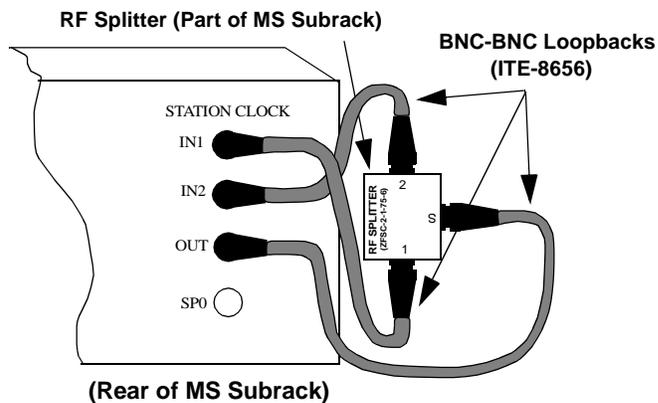


**NOTE:**

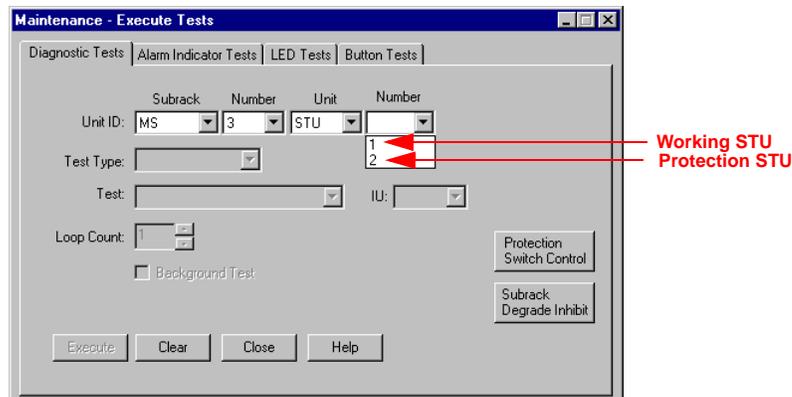
This test can not be executed for the STU-64 Unit or 64KBPS station clock interface unit (only valid for 2MBPS station clock).

☐ **Step 8-a:** In the rear of the appropriate MS Subrack shelf, setup for the Station Clock test as shown in figure below:

1. **Remove** any external timing cabling that may be connected to the Station Clock Interfaces (IN1,IN2,OUT).
2. **Locate** RF Splitter which is attached to rear of MS Subrack.
3. **Install** three BNC-BNC Coax loopbacks (ITE-8656) from the RF Splitter to Station Clock Interfaces on MS Subrack.
  - Source (S) to SC-OUT
  - Splitter (1) to SC-IN1
  - Splitter (2) to SC-IN2.



☐ **Step 8-b:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STU Unit** to be tested.



- Step 8-c:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do **not** select as Background Test):

Test Type: External  
Test: Station Clock  
Loop Count: 1  
 Background Test

**Leave Unchecked!**

- Step 8-d:** Execute the diagnostic test for the selected **STU unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.
- Step 8-e:** Continue the diagnostic test for the selected **STU unit** by pressing the **Yes** button.
- Step 8-f:** Verify that the results of the diagnostic test for the selected **STU Unit** is reported as **“TEST\_PASSED”**. (sample shown for STU-1).

	Device EID	Test Name	Result	Description	Test Results for the Device
1	MS-3-STU-1	Station Clock	TEST_PASSED	Command complete	



**NOTE:**

If the test results reports as either **“TEST\_FAILED”** or **“TEST\_ERRORED”**, check the test results data field in output response for troubleshooting information, then return to **Step 7** and repeat test.

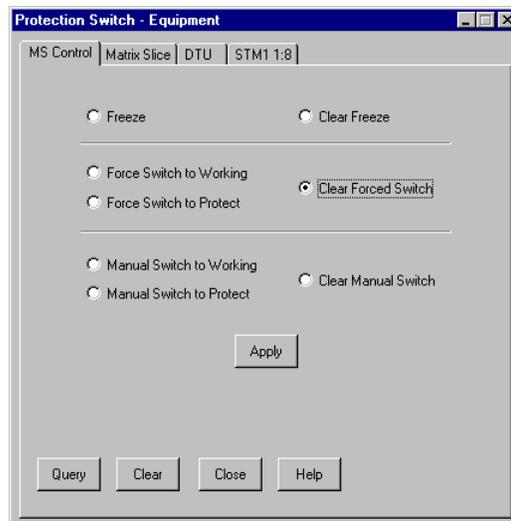
- Step 8-g:** Optional - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)
- Step 8-h:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.
- Step 8-i:** Disconnect the testing setup on the selected Station Clock interface.
1. **Remove** the BNC-BNC Coax loopbacks (ITE-8656) from the RF Splitter and Station Clock Interfaces on MS Subrack.
  2. **Re-install** any external timing cabling that may have been previously connected to the Station Clock Interfaces (IN1,IN2,OUT).

- Step 9:** Perform the **Clear Protection Switch** command, in order to clear the previous protection state of the corresponding **STU unit**.

**⚠ CAUTION:**

*This step must be performed, in order to unlock the freeze and allow protection switching to occur again in the MS Subrack.*

- Step 9-a:** From the **Maintenance-Execute Tests Window**, proceed directly to the **Protection Switch-Equipment Window** by pressing the  button, then verify that the **MS Control** tab is selected.
- Step 9-b:** Select the **Clear Forced Switch** command below, in order to clear the locked protection switch state as a result of the forced switch:



- Step 9-c:** Execute the **Clear Forced Switch** command, by pressing the  button.
- Step 9-d:** Close the **Protection Switch-Equipment Window** by pressing the  button.

- 
- Step 10:** Perform **one** of the procedural options below:
- If another STU unit in the other Sync Shelf of the MS Subrack needs to be diagnostic tested, return to **Step 2** and repeat testing for the other STU unit.
  - If the STU units in **both** Sync Shelves of the MS Subrack have been successfully tested, proceed to next step.

- 
- Step 11:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- 
- Step 12:** This completes the "*STU Unit Diagnostic Test*" procedure.
- 

**STOP-Return to Calling Procedure**

## GTP 31 - BSC Unit Diagnostic Test

---

### Description

---

This section of the installation test process deals with executing the Unit Diagnostic test for the Bit Slice Controller units (BSC) in the Sync Shelves of the MS Subrack.

#### Diagnostic Tests:

- **UNIT** - verifies the internal hardware of the BSC Unit.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The various diagnostic testing windows have already been setup on the XC-CIT Workstation screen.
4. BSC Unit must be in the standby side of the MS Subrack and locked from providing service, in order for the Unit diagnostic test to run.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- 
- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- 
- Step 2:** Select a **BSC unit** in the MS Subrack to be diagnostic tested.

When selecting which BSC unit to start testing first, use the following recommended testing order when testing in the MS Subrack.

Test Sequence:

1. Test BSC-1 Unit first (make protection BSC-2 Active)
2. Test BSC-2 Unit last (make working BSC-1 Active) -> final config

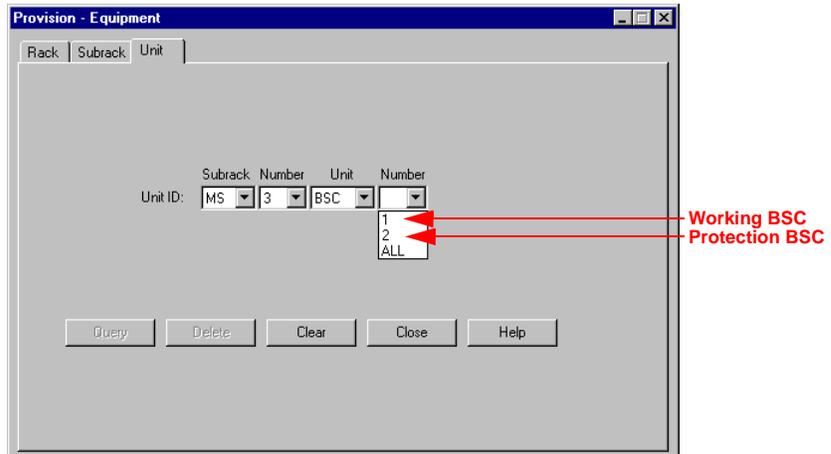


**NOTE:**

The test sequence is *recommended* in this matter since protection switches are performed in this procedure, and it is desired to leave the working BSC unit in the active state at the end of testing units.

❑ **Step 3:** Query the **Unit Status** (i.e. equipage state) of the selected **BSC Unit**.

❑ **Step 3-a:** In the **Provision-Equipment-Unit Window**, select the appropriate unit identification in the **Unit ID Box** associated with the selected **BSC Unit** to be tested.



❑ **Step 3-b:** Press the  button, and verify that the **Unit Status** for the selected **BSC Unit** is reported as **Unit Provisioned and Initialized**.



**NOTE:**

If the unit is not in the proper equipage state, diagnostic testing can not be performed on the unit.

❑ **Step 3-c:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

- ❑ **Step 4:** In order to test the selected **BSC unit**, the corresponding **SRC unit** in the **same** shelf of the MS Subrack (top/bottom) must be in the **standby** state (i.e. when testing BSC-1, SRC-1 must be standby, SRC-2 made active).

The appropriate **forced protection switch** command must be performed in order to make the **SRC Unit** in the other shelf of the MS Subrack active.

- ❑ **Step 4-a:** From the **Maintenance-Execute Tests Window**, proceed directly to the **Protection Switch-Equipment Window** by pressing the  button, then verify that the **MS Control** tab is selected.

- ❑ **Step 4-b:** Select the appropriate **Force Protection Switch** command below, based on which **BSC unit** is to be tested:

Select if testing **protect BSC-2 (2nd pass)**

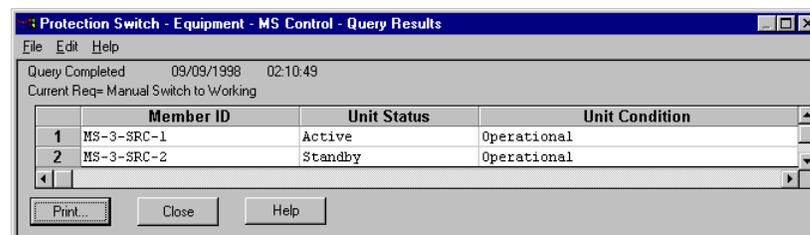
Select if testing **working BSC-1 (1st pass)**



- ❑ **Step 4-c:** Execute the **Forced Switch** command, by pressing  button.
- ❑ **Step 4-d:** Keep pressing the  button wait until the **unit status** (standby/active) and **unit condition** (operational) is reported for both SRC units in the MS Subrack, and then verify that the information reported for the SRC unit in the **same** shelf corresponding to the selected **BSC unit** to be tested is as follows:

Unit Status = Standby Unit Condition = Operational

Sample Output: Shows SRC-2 as in the standby state, so the top shelf of the MS Subrack is active, and BSC-2 unit tests can be run.



- ❑ **Step 4-e:** Close the **Protection Switch-Equipment- MS Control -Query Results Window** by pressing the  button.
- ❑ **Step 4-f:** Close the **Protection Switch-Equipment Window** by pressing the  button.

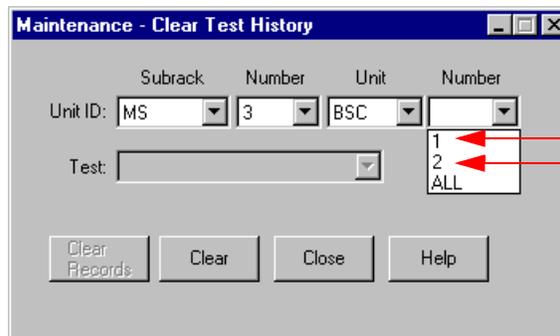
- ❑ *Step 5:* Verify that the selected **BSC Unit** to be tested is in the **standby** state, by visually checking that the green LED labeled “ACTIVE” on the BSC unit faceplate is **off**.



**NOTE:**

If the unit is not in the **standby** state, the unit diagnostic test can **not** be performed on the BSC unit.

- ❑ *Step 6:* **Clear** the test history for the selected **BSC Unit** to be tested.
  - ❑ *Step 6-a:* In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **BSC Unit** to be tested.



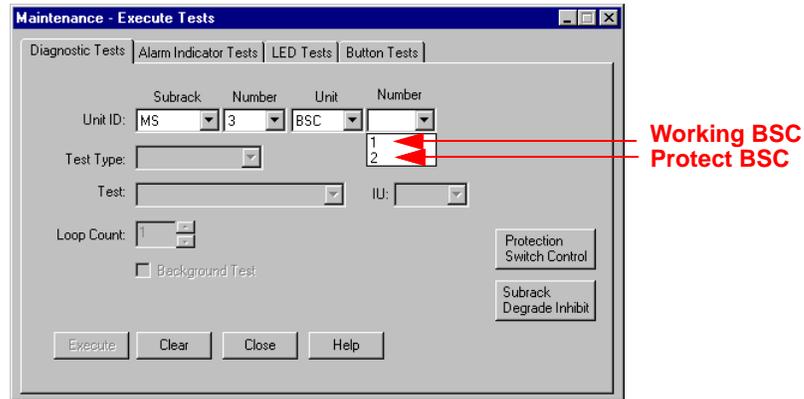
- ❑ *Step 6-b:* In the **Test Box**, select “Unit” in order to clear the test for the unit:



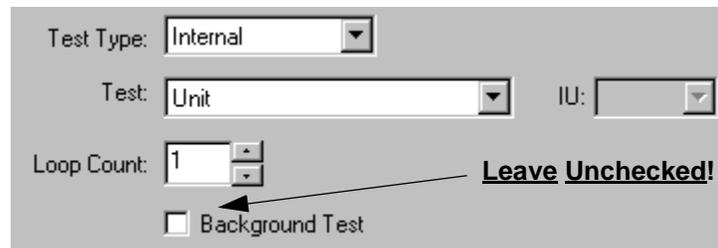
- ❑ *Step 6-c:* Press the **Clear Records** button, to clear any past test history corresponding to the selected **BSC Unit**.

□ **Step 7:** Execute the unit diagnostic test for the selected **BSC Unit**.

□ **Step 7-a:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **standby BSC Unit** to be tested.



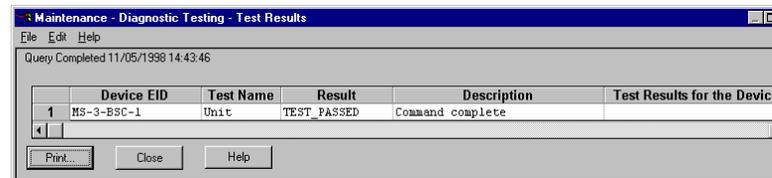
□ **Step 7-b:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do not select as Background Test):



□ **Step 7-c:** Execute the diagnostic test for the selected **BSC unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.

□ **Step 7-d:** Continue the diagnostic test for the selected **BSC unit** by pressing the **Yes** button.

□ **Step 7-e:** Verify that the results of the diagnostic test for the selected **BSC Unit** is reported as **“TEST\_PASSED”**. (sample shown for BSC-1).



**NOTE:**

If the test results reports as either **“TEST\_FAILED”** or **“TEST\_ERRORED”**, check the test results data field in output response for troubleshooting information, then return to **Step 6** and repeat test.

□ **Step 7-f:** Optional - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)

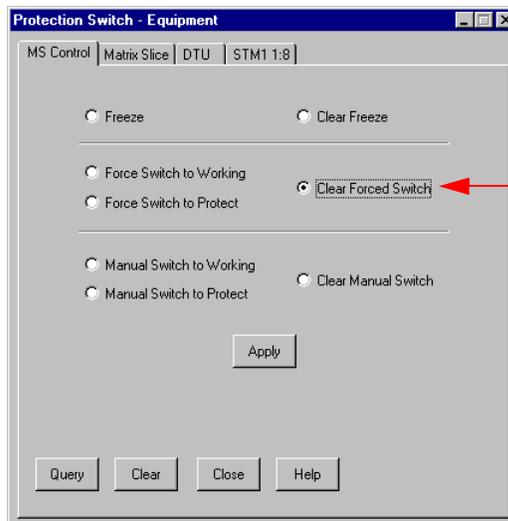
□ **Step 7-g:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

- Step 8:** Perform the **clear** protection switch command, in order to clear the previous protection state of the corresponding **BSC unit**.

**⚠ CAUTION:**

*This step must be performed, in order to unlock the freeze and allow protection switching to occur again in the MS Subrack.*

- Step 8-a:** From the **Maintenance-Execute Tests Window**, proceed directly to the **Protection Switch-Equipment Window** by pressing the **Protection Switch Control** button, then verify that the **MS Control** tab is selected.
- Step 8-b:** Select the **Clear Forced Switch** command below, in order to clear the locked protection switch state as a result of the forced switch:



- Step 8-c:** Execute the **Clear Forced Switch** command, by pressing the **Apply** button.
- Step 8-d:** Close the **Protection Switch-Equipment Window** by pressing the **Close** button.

- Step 9:** Perform **one** of the procedural options below:
- If another BSC unit in the other Sync Shelf of the MS Subrack needs to be diagnostic tested, return to **Step 2** and repeat testing for the other BSC unit.
  - If the BSC units in **both** Sync Shelves of the MS Subrack have been successfully tested, proceed to next step.

- Step 10:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- Step 11:** This completes the "**BSC Unit Diagnostic Test**" procedure.

---

**STOP-Return to Calling Procedure**



## GTP 32 - BSIU Unit Diagnostic Tests

---

### Description

---

This section of the installation test process deals with executing the diagnostic tests for the Bit Slice Interface Unit (BSIU) in the Port Subracks (PSA,PSB,PSC).

#### Diagnostic Tests:

- **UNIT** - verifies the internal hardware on the BSIU unit.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The various diagnostic testing windows have already been setup on the XC-CIT Workstation screen.
4. The state of the BSIU unit follows the state of the corresponding BSSU unit.
5. The BSSU Unit in the switch matrix corresponding to the selected BSIU unit to be tested must be in the standby protection switch state and locked from providing service (i.e active) in order for the BSIU Unit diagnostic test to run.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Select the **BSIU unit** in the Port Subrack to be diagnostic tested.
- Working Units: **BSIU-1** thru **BSIU-8**
  - Protection Units: **BSIU-9** and **BSIU-10**

- Step 3:** Execute the following steps in order to query the equipage state of the selected **BSIU Unit** to be tested.

- Step 3-a:** In the **Provision-Equipment-Unit Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **BSIU Unit** to be tested.

Select Unit ID  
PS{A,B,C}-{4-19}-BSIU-{1-10} or

The screenshot shows a window titled "Provision - Equipment" with tabs for "Rack", "Subrack", and "Unit". Below the tabs, there are four dropdown menus labeled "Subrack", "Number", "Unit", and "Number". A red arrow points to the "Unit" dropdown menu, which is currently empty. Below the dropdowns, there are five buttons: "Query", "Delete", "Clear", "Close", and "Help".

- Step 3-b:** Press the  button, and verify that the **Unit Status** for the selected **BSIU Unit** is reported as **Unit Provisioned and Initialized**.



**NOTE:**

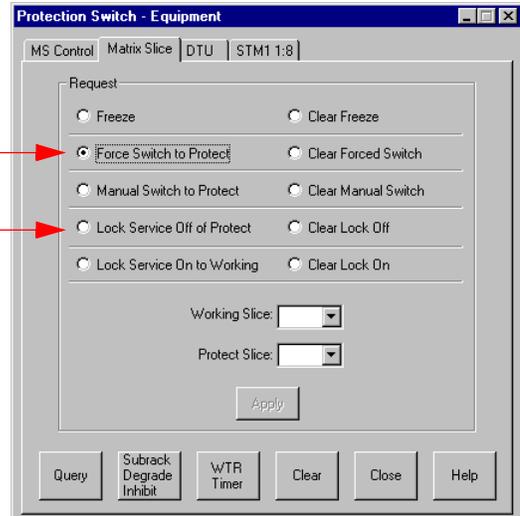
If the unit is not in the proper equipage state, diagnostic testing can **not** be performed on the unit.

- Step 3-c:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

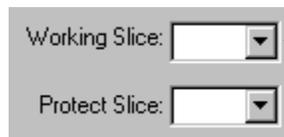
- ❑ **Step 4:** Perform the appropriate protection switch command, in order to place the selected **BSIU Unit** into ***standby*** and ***locked off*** from becoming active.
  - ❑ **Step 4-a:** From the ***Maintenance-Execute Tests Window***, proceed directly to the ***Protection Switch-Equipment Window*** by pressing the  button, then select the ***Matrix Slice*** tab.
  - ❑ **Step 4-b:** Select the appropriate **Protection Switch** command below, based on whether the selected **BSIU Unit** is a ***Working*** or ***Protection*** unit:

Select if testing a ***Working BSIU Unit (1-8)***

Select if testing a ***Protection BSIU Unit (9,10)***



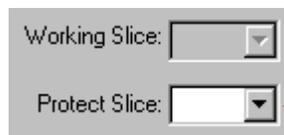
- ❑ **Step 4-c:** Select the appropriate protection switch command information based on whether a ***working*** or ***protection*** **BSIU Unit** is switched.  
 If testing a ***Working*** BSIU Unit:



Select ***Working*** BSIU to lock Standby

Select ***Protection*** BSIU to make Active

If testing a ***Protection*** BSIU Unit:



Select ***Protection*** BSIU to lock Standby

- ❑ **Step 4-d:** Press the  button to execute the **Protection Switch** command.
- ❑ **Step 4-e:** Press the  button, and then verify that the information reported for the appropriate **BSSU Unit** which corresponds to the **selected BSIU unit** to be tested is as follows (BSIU unit follows BSSU unit):  

$$\text{Unit Status} = \text{Standby} \quad \text{Unit Condition} = \text{Operational}$$
- ❑ **Step 4-f:** Close the ***Protection Switch-Equipment- Matrix Slice-Query Results Window*** by pressing the  button.
- ❑ **Step 4-g:** Close the ***Protection Switch-Equipment- Matrix Slice Window*** by pressing the  button.

❑ **Step 5:** **Clear** the test history for the **Unit Test** of selected **BSIU Unit** to be tested.

❑ **Step 5-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **BSIU Unit** to be tested.

Select Unit ID  
PS{A,B,C}-{4-19}-BSIU-{1-10} or

Maintenance - Clear Test History

Subrack Number Unit Number

Unit ID: [ ] [ ] [ ] [ ]

Test: [ ]

Clear Records Clear Close Help

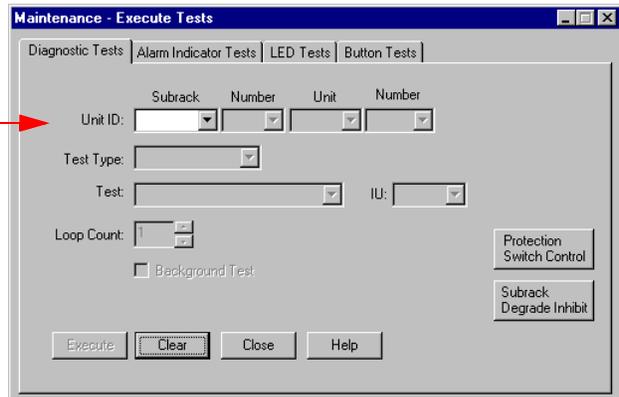
❑ **Step 5-b:** In the **Test Box**, select “**Unit**” in order to clear the test for the unit:

Test: Unit

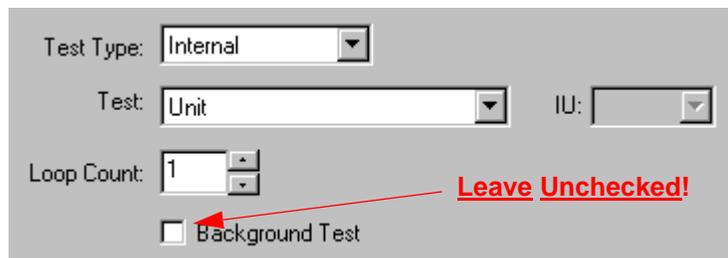
❑ **Step 5-c:** Press the  button, to clear any past test history corresponding to the selected **BSIU Unit**.

- ❑ **Step 6:** Execute the **Unit** diagnostic test for the selected **BSIU Unit**.
  - ❑ **Step 6-a:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **BSIU Unit** to be tested.

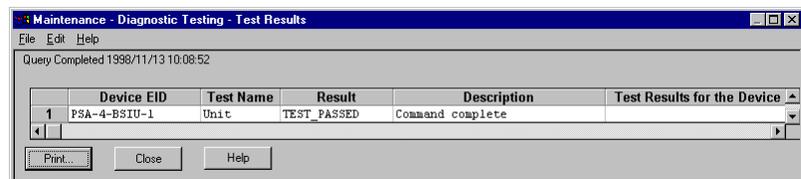
Select Unit ID  
 PS{A,B,C}-{4-19}-BSIU-{1-10} or



- ❑ **Step 6-b:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do not select as Background Test):



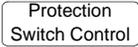
- ❑ **Step 6-c:** Execute the diagnostic test for the selected **BSIU unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.
- ❑ **Step 6-d:** Continue the diagnostic test for the selected **BSIU unit** by pressing the **Yes** button.
- ❑ **Step 6-e:** Verify that the results of the diagnostic test for the selected **BSIU Unit** is reported as **“TEST\_PASSED”**. (sample shown for BSIU-1).

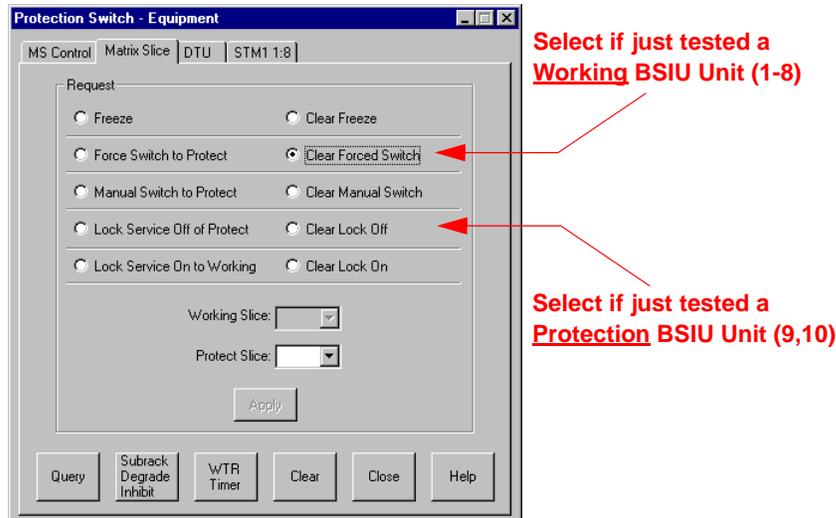


**NOTE:**

If the test results reports as either **“TEST\_FAILED”** or **“TEST\_ERRORED”**, check the test results data field in output response for troubleshooting information, then return to **Step 5** and repeat test.

- ❑ **Step 6-f:** *Optional* - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)
- ❑ **Step 6-g:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

- ❑ **Step 7:** Perform the appropriate **Clear Protection Switch** command, in order to clear the previous protection state of the selected **BSIU unit** just tested.
- ❑ **Step 7-a:** From the **Maintenance-Execute Tests Window**, proceed directly to the **Protection Switch-Equipment Window** by pressing the  button, then select the **Matrix Slice** tab.
- ❑ **Step 7-b:** Select the appropriate **Clear Protection Switch** command below, based on whether the tested **BSIU Unit** is Working or Protection:



- ❑ **Step 7-c:** Select the appropriate protection switch command information based on whether a working or protection **BSIU Unit** was tested.

If a Working BSIU unit was tested:



If a Protection BSIU unit was tested:



- ❑ **Step 7-d:** Execute the selected **Protection Switch** command, by pressing the  button.

- Step 7-e:** Keep pressing the  button and *wait* until the **unit status** (standby/active) and **unit condition** (operational) is reported for all ten BSSU units in the Matrix, and then verify that the information reported for the appropriate **BSSU unit** which corresponds to the selected and tested **BSIU Unit** is as follows:

For Working BSSU Unit:

Unit Status = Active Unit, Condition = Operational

For Protection BSSU Unit:

Unit Status = Standby Unit, Condition = Operational

- Step 7-f:** Close the **Protection Switch-Equipment- Matrix Slice-Query Results Window** by pressing the  button.
- Step 7-g:** Close the **Protection Switch-Equipment Window** by pressing the  button.

- 
- Step 8:** Perform one of the procedural options below:
- If another BSIU unit needs to be diagnostic tested, return to **Step 2**.
  - If all ten BSIU units have been successfully tested, proceed to next step.

- 
- Step 9:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- 
- Step 10:** This completes the "*BSIU Unit Diagnostic Test*" procedure.
- 

**STOP-Return to Calling Procedure**



## GTP 33 - BSSU Unit Diagnostic Tests

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### Description

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This section of the installation test process deals with executing the diagnostic tests for the Bit Slice Switch Unit (BSSU) in the Matrix.

#### Diagnostic Tests:

- **UNIT** - verifies the internal hardware on the BSSU unit.
- **ECI Optical Loopback** - verifies all eight Equipment Core Interface (ECI) optical transceivers on the BSSU unit.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter
- 8 → SC-SC Loopback Adapter (ITE-7099)
- 16 → LC-LC Multimode Loopback Adapter (ITE-7152 or equiv)

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The various diagnostic testing windows have already been setup on the XC-CIT Workstation screen.
4. BSSU Unit must be in the standby protection switch state and locked from providing service (i.e active) in order for the Unit diagnostic test to run.

### Precautions

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- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



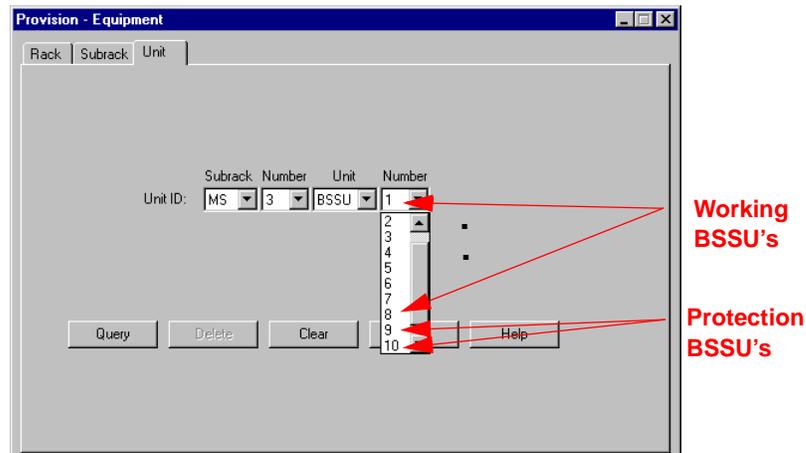
**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Select the **BSSU unit** in the Matrix to be diagnostic tested.
- Working Matrix Units: **BSSU-1** thru **BSSU-8**
  - Protection Matrix Units: **BSSU-9** and **BSSU-10**

- Step 3:** Execute the following steps in order to query the equipage state of the selected **BSSU Unit** to be tested.

- Step 3-a:** In the **Provision-Equipment-Unit Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **BSSU Unit** to be tested.



- Step 3-b:** Press the  button, and verify that the **Unit Status** for the selected **BSSU Unit** is reported as **Unit Provisioned and Initialized**.



**NOTE:**

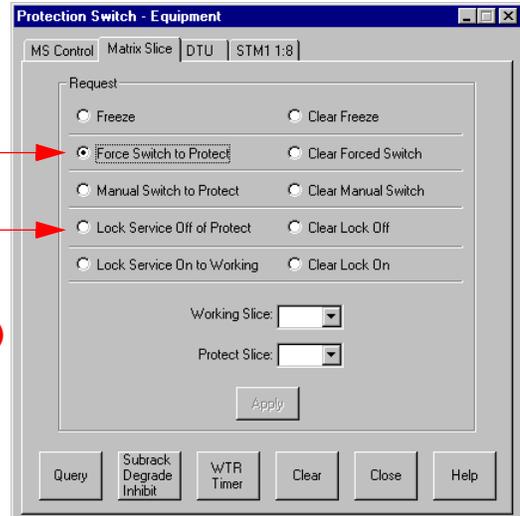
If the unit is not in the proper equipage state, diagnostic testing can **not** be performed on the unit.

- Step 3-c:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

- ❑ **Step 4:** Perform the appropriate protection switch command, in order to place the selected **BSSU unit** into ***standby*** and ***locked off*** from becoming active.
  - ❑ **Step 4-a:** From the ***Maintenance-Execute Tests Window***, proceed directly to the ***Protection Switch-Equipment Window*** by pressing the  button, then select the ***Matrix Slice*** tab.
  - ❑ **Step 4-b:** Select the appropriate **Protection Switch** command below, based on whether the selected **BSSU Unit** is a ***Working*** or ***Protection*** unit:

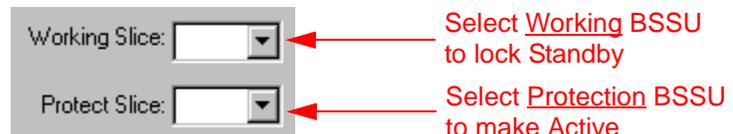
Select if testing a ***Working BSSU Unit (1-8)***

Select if testing a ***Protection BSSU Unit (9,10)***

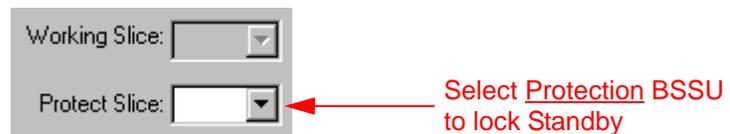


- ❑ **Step 4-c:** Select the appropriate protection switch command information based on whether a ***working*** or ***protection*** **BSSU Unit** is to be switched.

If testing a ***Working*** BSSU Unit:



If testing a ***Protection*** BSSU Unit:

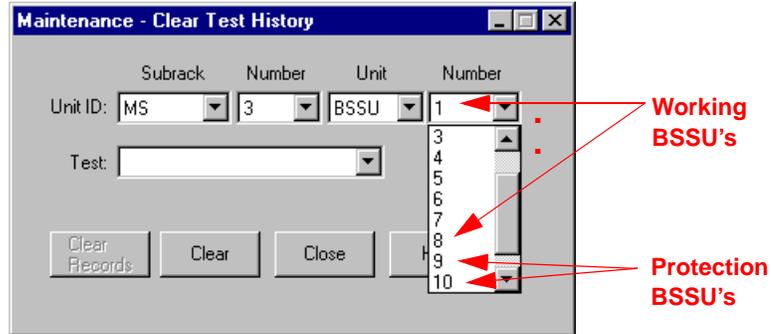


- ❑ **Step 4-d:** Press the  button to execute the **Protection Switch** command.
- ❑ **Step 4-e:** Press the  button, and then verify that the information reported for the **selected BSSU unit** to be tested is as follows:  

Unit Status = Standby, Unit Condition = Operational
- ❑ **Step 4-f:** Close the ***Protection Switch-Equipment- Matrix Slice-Query Results Window*** by pressing the  button.
- ❑ **Step 4-g:** Close the ***Protection Switch-Equipment- Matrix Slice Window*** by pressing the  button.

❑ **Step 5:** **Clear** the test history for the **Unit Test** of selected **BSSU Unit** to be tested.

❑ **Step 5-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **BSSU Unit** to be tested.



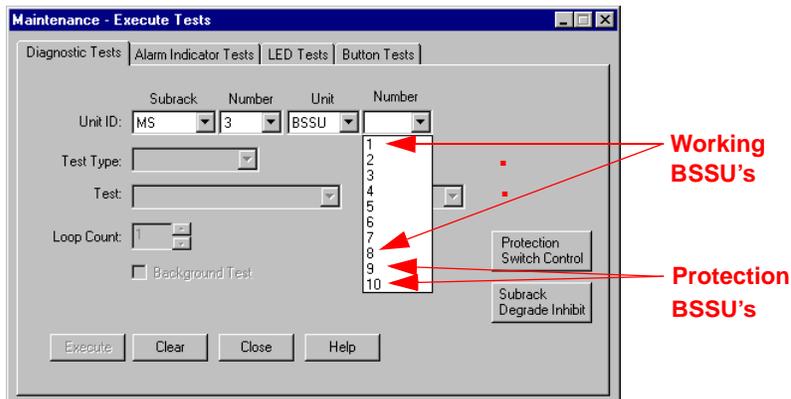
❑ **Step 5-b:** In the **Test Box**, select “Unit” in order to clear the test for the unit:



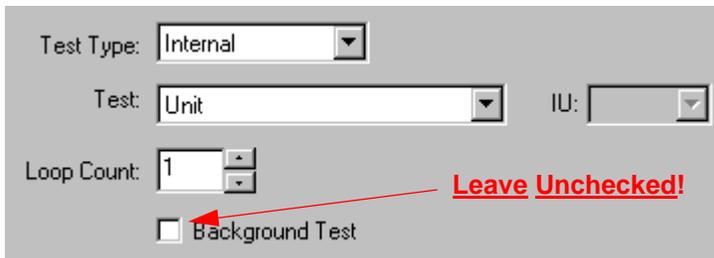
❑ **Step 5-c:** Press the **Clear Records** button, to clear any past test history corresponding to the selected **BSSU Unit**.

**Step 6:** Execute the **Unit** diagnostic test for the selected **BSSU Unit**.

**Step 6-a:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **BSSU Unit** to be tested. (Unit must be in Standby State)



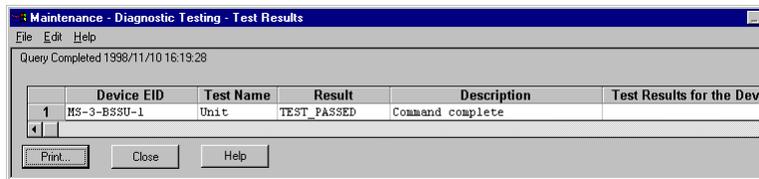
**Step 6-b:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do not select as Background Test):



**Step 6-c:** Execute the diagnostic test for the selected **BSSU unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.

**Step 6-d:** Continue the diagnostic test for the selected **BSSU unit** by pressing the **Yes** button.

**Step 6-e:** Verify that the results of the diagnostic test for the selected **BSSU Unit** is reported as **“TEST\_PASSED”**. (sample shown for BSSU-1).



**NOTE:**

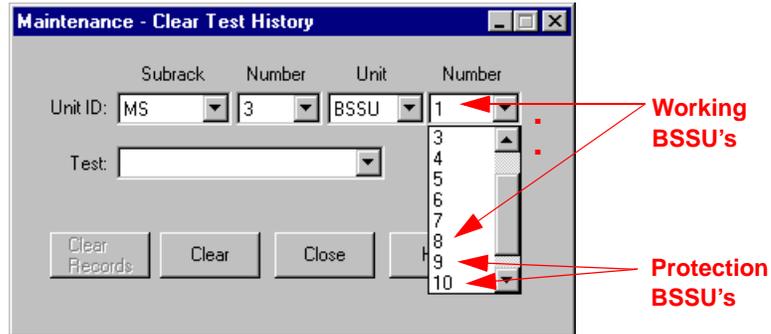
If the test results reports as either **“TEST\_FAILED”** or **“TEST\_ERRORED”**, check the test results data field in output response for troubleshooting information, then return to **Step 5** and repeat test.

**Step 6-f:** *Optional* - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)

**Step 6-g:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

❑ **Step 7:** **Clear** the test history for the **ECI Optical Loopback Test** for the selected **BSSU Unit** to be tested.

❑ **Step 7-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **BSSU Unit** to be tested.



❑ **Step 7-b:** In the **Test Box**, select “**ECI Optical Loopback**” in order to clear the test for the unit:



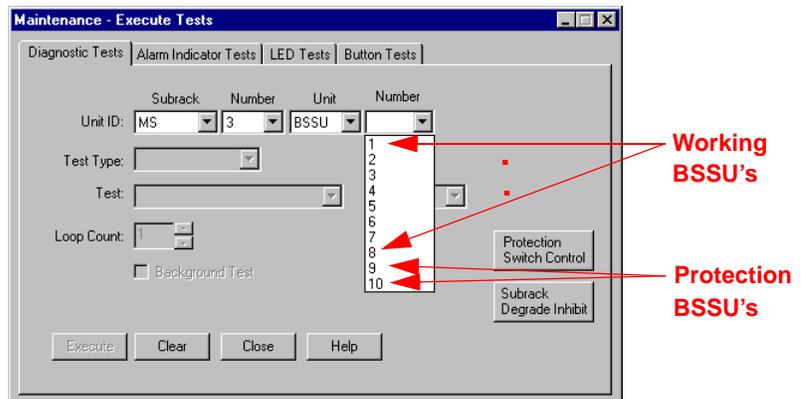
❑ **Step 7-c:** Press the **Clear Records** button, to clear any past test history corresponding to the selected **BSSU Unit**.

❑ **Step 8:** Execute the **ECI Optical Loopback** diagnostic test for the selected **BSSU Unit**.

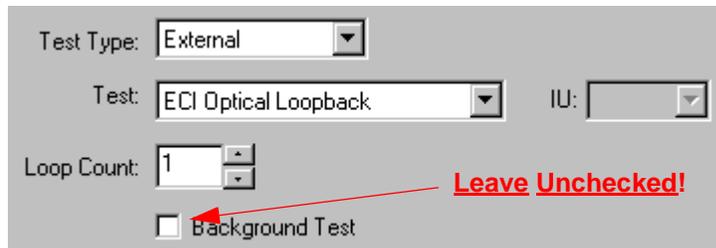
❑ **Step 8-a:** Temporarily **remove** any system fibers that are connected to a Port Subrack at this time, and **install** optical loopbacks onto each of the port connectors (transmit to receive) of the selected **BSSU Unit** to be tested.

- For 256 BSSU (LAC4): Use 8 SC/SC Multimode Loopbacks (ITE-7099)
- For 512 BSSU (LAC5): Use 16 LC/LC Multimode Loopbacks (ITE-7152)

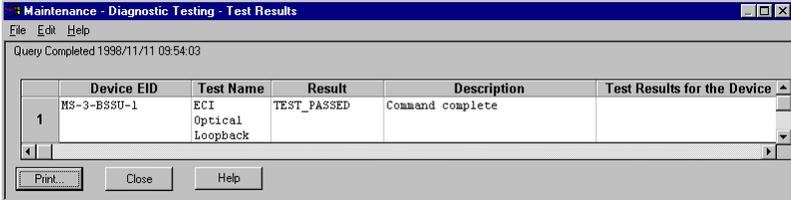
❑ **Step 8-b:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **BSSU Unit** to be tested.



❑ **Step 8-c:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do not select as Background Test):



- ❑ **Step 8-d:** Execute the diagnostic test for the selected **BSSU unit** by pressing the  button, and verify the *Confirmation Window* appears.
- ❑ **Step 8-e:** Continue the diagnostic test for the selected **BSSU unit** by pressing the  button.
- ❑ **Step 8-f:** Verify that the results of the diagnostic test for the selected **BSSU Unit** is reported as “**TEST\_PASSED**”. (sample shown for BSSU-1).



	Device EID	Test Name	Result	Description	Test Results for the Device
1	MS-3-BSSU-1	ECI Optical Loopback	TEST_PASSED	Command complete	

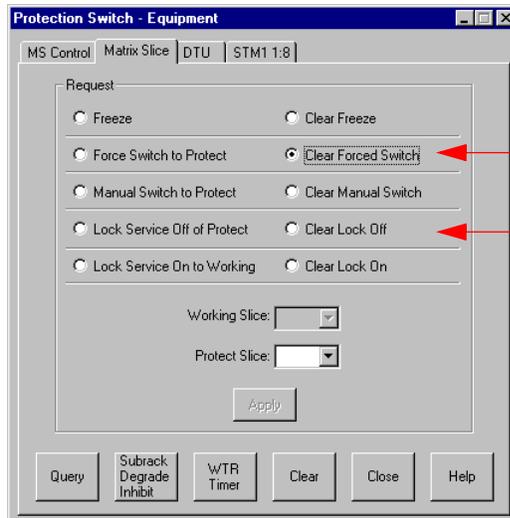


**NOTE:**

If the test results reports as either “**TEST\_FAILED**” or “**TEST\_ERRORED**”, check the test results data field in output response for troubleshooting information, then return to **Step 7** and repeat test.

- ❑ **Step 8-g:** *Optional* - If a printout of the test results is desired, press the  button. (Requires printer connected to XC-CIT Workstation)
- ❑ **Step 8-h:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the  button.
- ❑ **Step 8-i:** **Remove** all eight of the optical loopbacks (ITE-7099), and **re-install** any of the system fibers that were temporarily disconnected prior to testing the selected **BSSU Unit**.

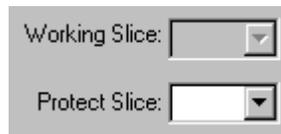
- ❑ **Step 9:** Perform the appropriate **Clear Protection Switch** command, in order to clear the previous protection state of the selected **BSSU unit** just tested.
  - ❑ **Step 9-a:** From the **Maintenance-Execute Tests Window**, proceed directly to the **Protection Switch-Equipment Window** by pressing the  button, then select the **Matrix Slice** tab.
  - ❑ **Step 9-b:** Select the appropriate **Clear Protection Switch** command below, based on whether the tested **BSSU Unit** is Working or Protection:



Select if just tested a **Working BSSU Unit (1-8)**

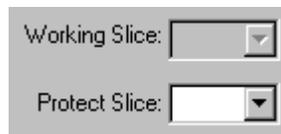
Select if just tested a **Protection BSSU Unit (9,10)**

- ❑ **Step 9-c:** Select the appropriate protection switch command information based on whether a working or protection **BSSU Unit** was tested.  
If a Working BSSU unit was tested:



Select **Protection BSSU** that was made **Active**.

If a Protection BSSU unit was tested:



Select **Protection BSSU** that **Locked Off Service**

- ❑ **Step 9-d:** Execute the selected **Protection Switch** command, by pressing the  button.

- Step 9-e:** Keep pressing the  button and *wait* until the **unit status** (standby/active) and **unit condition** (operational) is reported for all ten BSSU units in the Matrix, and then verify that the information reported for the selected and tested **BSSU unit** is as follows:

For Working BSSU Unit:

Unit Status = Active Unit, Condition = Operational

For Protection BSSU Unit:

Unit Status = Standby Unit, Condition = Operational

- Step 9-f:** Close the **Protection Switch-Equipment- Matrix Slice-Query Results Window** by pressing the  button.
- Step 9-g:** Close the **Protection Switch-Equipment Window** by pressing the  button.

- 
- Step 10:** Perform **one** of the procedural options below:
- If another BSSU unit needs to be diagnostic tested, return to **Step 2**.
  - If all **ten** BSSU units have been successfully tested, proceed to next step.

- 
- Step 11:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- 
- Step 12:** This completes the "*BSSU Unit Diagnostic Test*" procedure.
- 

**STOP-Return to Calling Procedure**

## GTP 34 - DTU Unit Diagnostic Test

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### Description

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This section of the installation test process deals with executing the Unit Diagnostic test for the Digital Timing Unit unit (DTU) in a Port Subrack (PSA, PSB, or PSC).

#### Diagnostic Test:

- **UNIT** - verifies the internal hardware of the DTU Unit.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The various diagnostic testing windows have already been setup on the XC-CIT Workstation screen.
4. DTU Unit must be in the standby state and locked from providing service, in order for the Unit diagnostic test to run.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- 
- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- 
- Step 2:** Select a **DTU unit** in the Port Subrack to be diagnostic tested.

When selecting which DTU unit to start testing first, use the following recommended testing order when testing in a Port Subrack (PSA,PSB, or PSBC).

Test Sequence:

1. Test DTU-1 Unit first (make protection DTU-2 Active)
2. Test DTU-2 Unit last (make working DTU-1 Active) -> final config



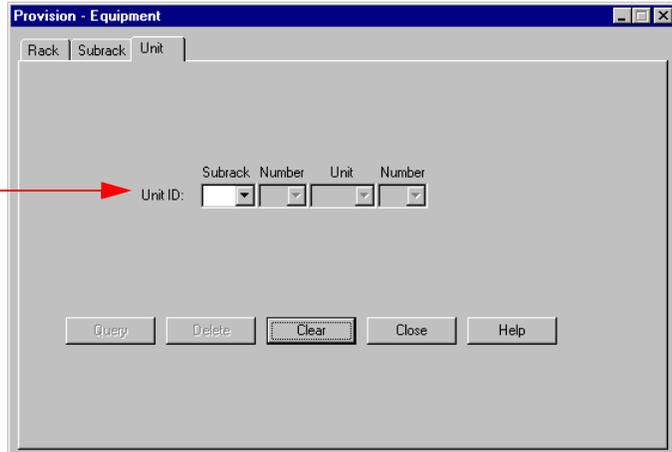
**NOTE:**

The test sequence is *recommended* in this matter since protection switches are performed in this procedure, and it is desired to leave the working DTU unit in the active state at the end of testing units.

❑ **Step 3:** Query the **Unit Status** (i.e. equipage state) of the selected **DTU Unit**.

❑ **Step 3-a:** In the **Provision-Equipment-Unit Window**, select the appropriate unit identification in the **Unit ID Box** associated with the selected **DTU Unit** to be tested.

Select Unit ID  
PS{A,B,C}-{4-19}-DTU-{1,2}



❑ **Step 3-b:** Press the  button, and verify that the **Unit Status** for the selected **DTU Unit** is reported as **Unit Provisioned and Initialized**.



**NOTE:**

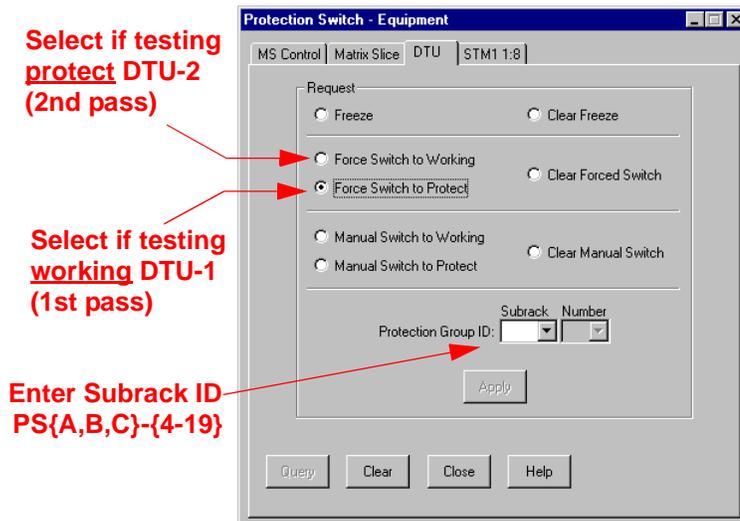
If the unit is not in the proper equipage state, diagnostic testing can not be performed on the unit.

❑ **Step 3-c:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

- ❑ **Step 4:** Perform the appropriate protection switch command, in order to place the selected **DTU Unit** to be tested into the ***standby*** state and ***locked off*** from providing service (i.e. not active).

- ❑ **Step 4-a:** From the ***Maintenance-Execute Tests Window***, proceed directly to the ***Protection Switch-Equipment Window*** by pressing the  button, then verify that the **DTU** tab is selected.

- ❑ **Step 4-b:** Select the appropriate **Protection Switch** command below, based on which **DTU Unit** is to be tested, and select the appropriate Subrack ID in the **Protection Group ID box** corresponding to the Port Subrack (PSA or PSB) under test:



- ❑ **Step 4-c:** Press the  button to execute the **Protection Switch** command.

- ❑ **Step 4-d:** Press the  button, and then verify that the information reported for the **selected DTU Unit** to be tested is as follows:

Unit Status = Standby, Unit Condition = Operational

- ❑ **Step 4-e:** Close the ***Protection Switch-Equipment- DTU-Query Results Window*** by pressing the  button.

- ❑ **Step 4-f:** Close the ***Protection Switch-Equipment Window*** by pressing the  button.

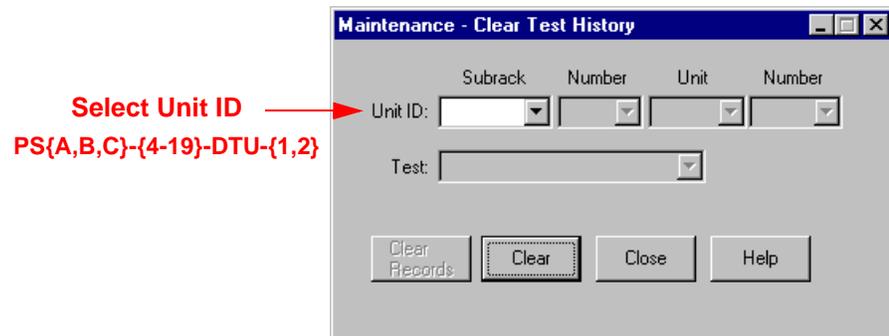
- ❑ *Step 5:* Verify that the selected **DTU Unit** to be tested is in the ***standby*** state, by visually checking that the green LED labeled “ACTIVE” on the unit face-plate is ***off***.



**NOTE:**

If the unit is not in the ***standby*** state, the unit diagnostic test can ***not*** be performed on the DTU unit.

- ❑ *Step 6:* **Clear** the test history for the selected **DTU Unit** to be tested.
  - ❑ *Step 6-a:* In the ***Maintenance-Clear Test History Window***, select the appropriate unit identification in the ***Unit ID Box*** associated with the specific **DTU Unit** to be tested.



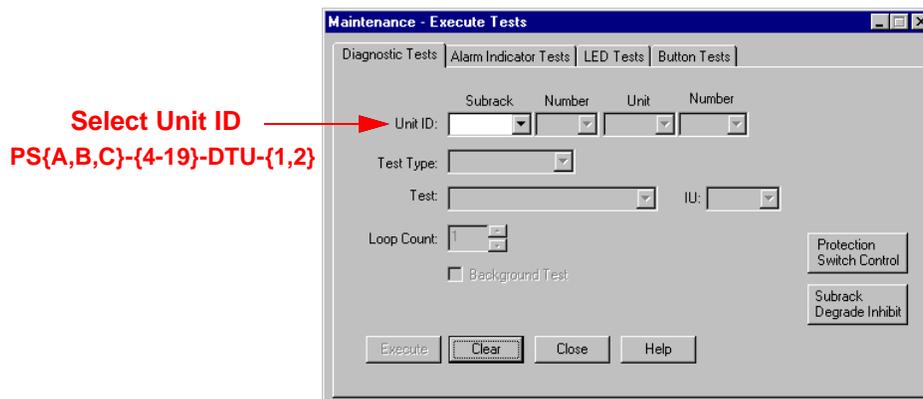
- ❑ *Step 6-b:* In the ***Test Box***, select “**Unit**” in order to clear the test for the unit:



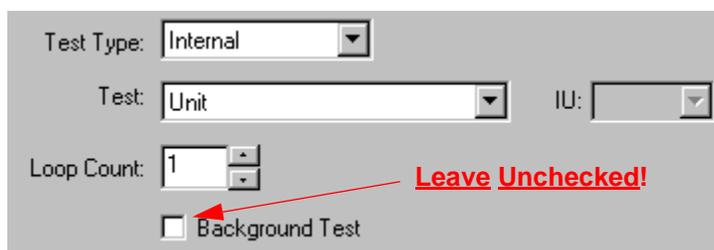
- ❑ *Step 6-c:* Press the **Clear Records** button, to clear any past test history corresponding to the selected **DTU Unit**.

❑ **Step 7:** Execute the **Unit** diagnostic test for the selected **DTU Unit**.

❑ **Step 7-a:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **standby DTU Unit** to be tested.



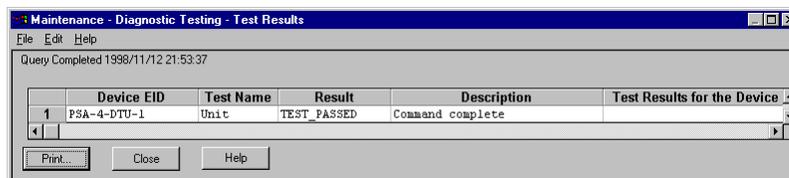
❑ **Step 7-b:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do **not** select as Background Test):



❑ **Step 7-c:** Execute the diagnostic test for the selected **DTU unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.

❑ **Step 7-d:** Continue the diagnostic test for the selected **DTU unit** by pressing the **Yes** button.

❑ **Step 7-e:** Verify that the results of the diagnostic test for the selected **DTU Unit** is reported as **“TEST\_PASSED”**. (sample shown for DTU-1).



**NOTE:**

If the test results reports as either **“TEST\_FAILED”** or **“TEST\_ERRORED”**, check the test results data field in output response for troubleshooting information, then return to **Step 6** and repeat test.

❑ **Step 7-f:** Optional - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)

❑ **Step 7-g:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

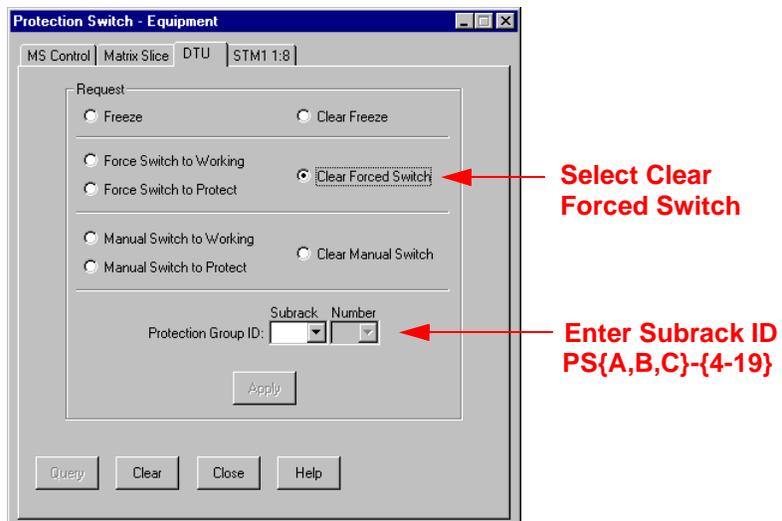
- Step 8:** Perform the **Clear Protection Switch** command, in order to clear the previous protection switch state of the corresponding **DTU Unit**.

**⚠ CAUTION:**

*This step must be performed, in order to unlock the freeze and allow protection switching of timing unit to occur again in Port Subrack.*

- Step 8-a:** From the **Maintenance-Execute Tests Window**, proceed directly to the **Protection Switch-Equipment Window** by pressing the  button, then verify that the **DTU** tab is selected.

- Step 8-b:** Select the **Clear Forced Switch** command shown below, and select the appropriate Subrack ID in the **Protection Group ID box** corresponding to the Port Subrack (PSA or PSB) under test:



- Step 8-c:** Press the  button to execute the **Clear Forced Switch** command.
- Step 8-d:** Close the **Protection Switch-Equipment Window** by pressing the  button.

- Step 9:** Perform **one** of the procedural options below:
- If another DTU unit in the Port Subrack needs to be diagnostic tested, return to **Step 2** and repeat testing for the other DTU unit.
  - If both DTU units in the Port Subrack have been successfully tested, proceed to next step.

- Step 10:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- Step 11:** This completes the "*DTU Unit Diagnostic Test*" procedure.
- 

**STOP-Return to Calling Procedure**



## GTP 35 - STM1 Unit Diagnostic Tests

---

### Description

---

This section of the installation test process deals with executing the diagnostic tests for the STM1 Unit in the PSA Port Subrack.

#### Diagnostic Tests:

- **UNIT** - verifies the internal hardware on the STM1 unit.
- **DFWT** (Distribution Frame Wiring) - verifies the input/output optical/electrical interface devices for all ports on the STM1 Unit.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter
- 4 min → Per Electrical unit: Coax Loopback Cable (ITE-8656)
- 4 min → Per Optical unit: SC-SC Loopback Adapter (ITE-7099)

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The various diagnostic testing windows have already been setup on the XC-CIT Workstation screen.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



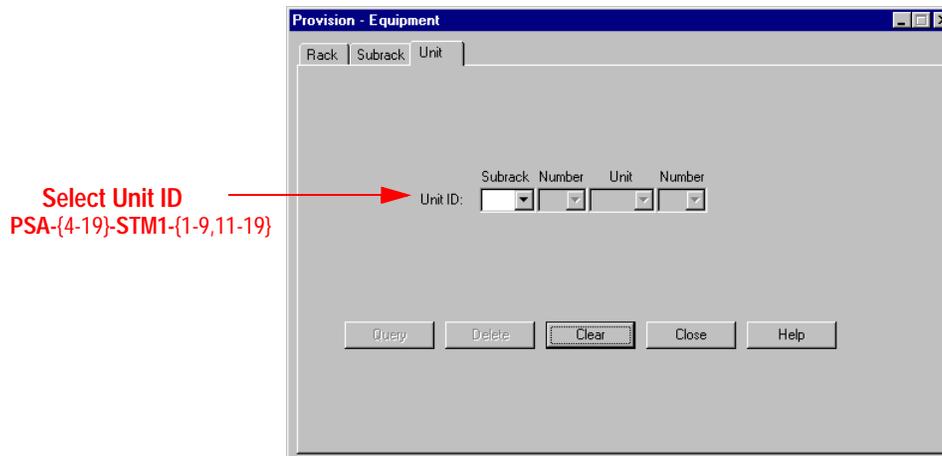
**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Select a **STM1 Unit** in the PSA Port Subrack to be diagnostic tested.

- Step 3:** **Query** the **Unit Status** (i.e. equipage state) of the selected **STM1 Unit**.

- Step 3-a:** In the **Provision-Equipment-Unit Window**, select the appropriate unit identification in the **Unit ID Box** associated with the selected **STM1 Unit** to be tested.



- Step 3-b:** Press the  button, and verify that the **Unit Status** for the selected **STM1 Unit** is reported as **Unit Provisioned and Initialized**.

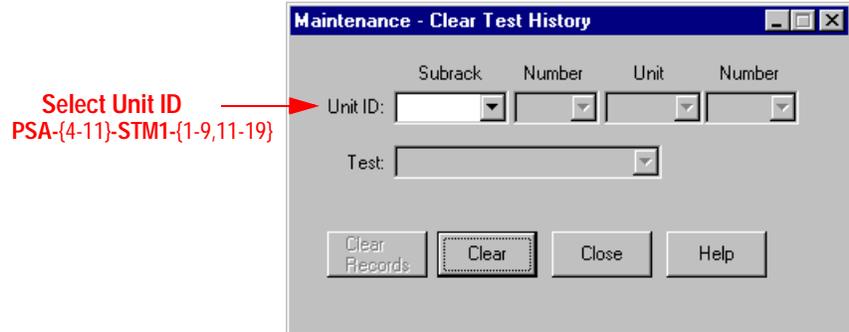


**NOTE:**

If the unit is not in the proper equipage state, diagnostic testing can **not** be performed on the unit.

- Step 3-c:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

- ❑ **Step 4:** **Clear** the test history for the **Unit Test** of selected **STM1 Unit** to be tested.
  - ❑ **Step 4-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM1 Unit** to be tested.



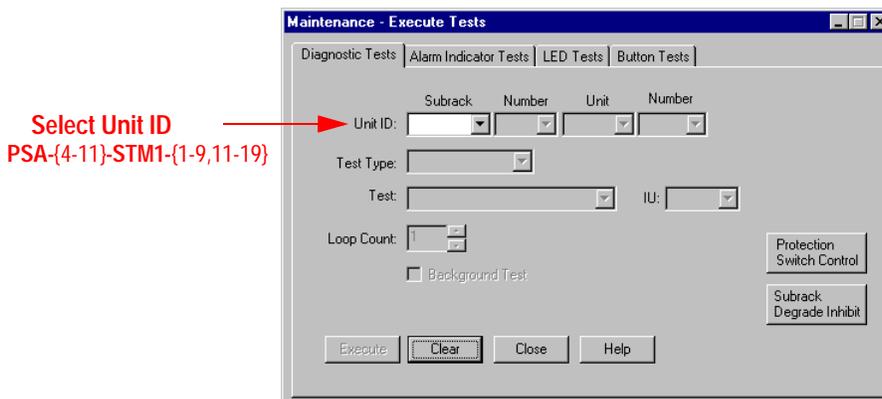
- ❑ **Step 4-b:** In the **Test Box**, select “**Unit**” in order to clear the test for the unit:



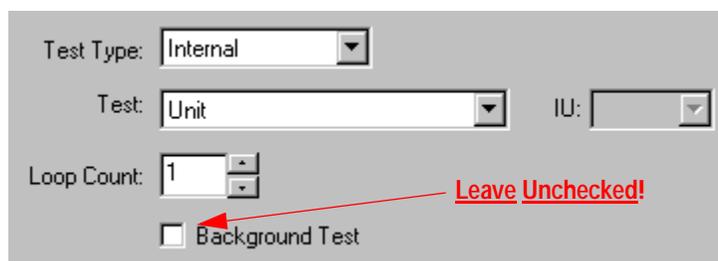
- ❑ **Step 4-c:** Press the  button, to clear any past test history corresponding to the selected **STM1 Unit**.

❑ **Step 5:** Execute the **Unit** diagnostic test for the selected **STM1 Unit**.

❑ **Step 5-a:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM1 Unit** to be tested.



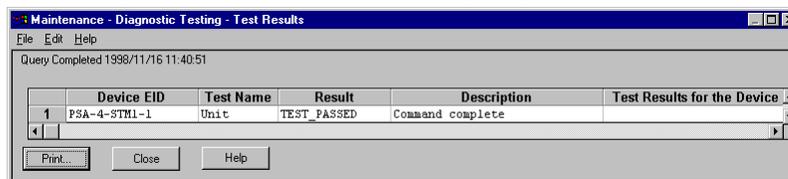
❑ **Step 5-b:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do not select as Background Test):



❑ **Step 5-c:** Execute the diagnostic test for the selected **STM1 unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.

❑ **Step 5-d:** Continue the diagnostic test for the selected **STM1 unit** by pressing the **Yes** button.

❑ **Step 5-e:** Verify that the results of the diagnostic test for the selected **STM1 Unit** is reported as **“TEST\_PASSED”**. (sample shown for STM1-1).



**NOTE:**

If the test results reports as either **“TEST\_FAILED”** or **“TEST\_ERRORED”**, check the test results data field in output response for troubleshooting information, then return to **Step 4** and repeat test.

❑ **Step 5-f:** **Optional** - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)

❑ **Step 5-g:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

- ❑ **Step 6:** **Clear** the test history for the **Distribution Frame Wiring Test (DFWT)** for the selected **STM1 Unit** to be tested.
  - ❑ **Step 6-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM1 Unit** to be tested.

Select Unit ID  
PSA-{4-11}-STM1-{1-9,11-19}

Maintenance - Clear Test History

Subrack Number Unit Number

Unit ID: [ ] [ ] [ ] [ ]

Test: [ ]

Clear Records Clear Close Help

- ❑ **Step 6-b:** In the **Test Box**, select “**DFWT**” in order to clear the test for the unit:

Test: DFWT [ ]

- ❑ **Step 6-c:** Press the **Clear Records** button, to clear any past test history corresponding to the selected **STM1 Unit**.

☐ **Step 7:** Execute the **Distribution Frame Wiring** diagnostic test for the selected **STM1 Unit**.

☐ **Step 7-a:** In the rear of the appropriate PSA Port Subrack, setup for the Distribution Frame Wiring test as shown in figure below:

1. **Remove** any external transmission cabling that may be connected to the STM1 Port Interface Module (T/R).
2. **Install** the appropriate loopback adapters onto each of the four ports (T/R) on the selected STM1 Interface Module.

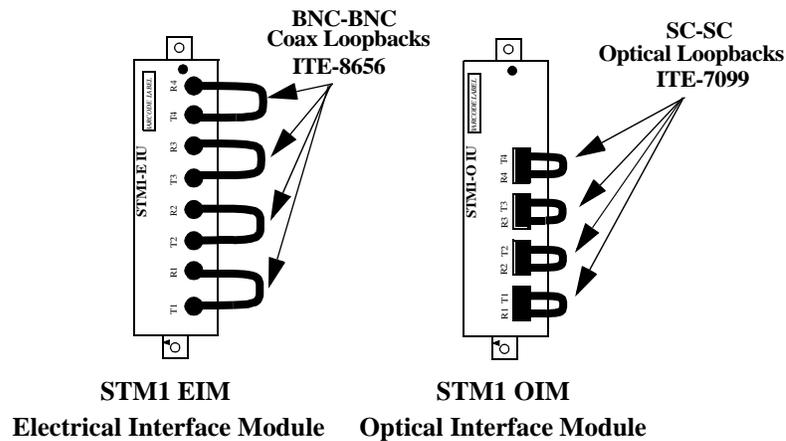


**NOTE:**

If testing a protection electrical STM1 unit (9 or 19), select one working STM1 unit in the group to loopback.

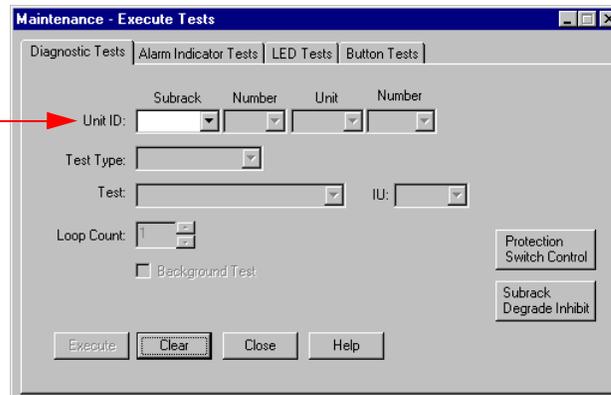
For STM1-9 -> Loopback STM1-{1-8}

For STM1-19 -> Loopback STM1-{11-18}



☐ **Step 7-b:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM1 Unit** to be tested.

Select Unit ID  
 PSA-{4-11}-STM1-{1-9,11-19}



- ❑ **Step 7-c:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do **not** select as Background Test):

Test Type: External  
Test: DFWT  
Loop Count: 1  
 Background Test  
IU: [ ]

**Leave Unchecked!**

If protection interface unit is selected, must select a equipped working interface unit ID in the **IU Box**.  
This working unit must be looped back at the IM.

For STM1-9 -> Select IU 1-8  
For STM1-19 -> Select IU 11-18

- ❑ **Step 7-d:** Execute the diagnostic test for the selected **STM1 unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.
- ❑ **Step 7-e:** Continue the diagnostic test for the selected **STM1 unit** by pressing the **Yes** button.
- ❑ **Step 7-f:** Verify that the results of the diagnostic test for the selected **STM1 Unit** is reported as **“TEST\_PASSED”**. (sample shown for STM1-1).

Device EID	Test Name	Result	Description	Test Results for the Device
1 PSA-4-STM1-1	DFWT	TEST_PASSED	Command complete	TEST_PASSED



**NOTE:**

If the test results reports as either **“TEST\_FAILED”** or **“TEST\_ERRORED”**, check the test results data field in output response for troubleshooting information, then return to **Step 6** and repeat test.

- ❑ **Step 7-g:** *Optional* - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)
- ❑ **Step 7-h:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.
- ❑ **Step 7-i:** Disconnect the testing setup on the selected interface unit.
1. **Remove** the loopback adapters from each of the 4 ports on the STM1 Interface Module.
  2. **Re-install** any external transmission cabling that have been previously connected to the STM1 Port Interface Module.

- 
- Step 8:* Perform **one** of the procedural options below:
- If another STM1 Unit in the PSA Port Subrack needs to be diagnostic tested, return to **Step 2** and repeat testing for the other STM1 Unit.
  - If all the equipped STM1 Units in the PSA Port Subrack have been successfully tested, proceed to next step.

---

*Step 9:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

*Step 10:* This completes the "*STM1 Unit Diagnostic Tests*" procedure.

---

**STOP-Return to Calling Procedure**

## GTP 36 - STM0 Unit Diagnostic Tests

---

### Description

---

This section of the installation test process deals with executing the diagnostic tests for the STM0 Unit in the PSB Port Subrack.

#### Diagnostic Tests:

- **UNIT** - verifies the internal hardware on the STM0 unit.
- **DFWT** (Distribution Frame Wiring) - verifies the input/output optical interface devices for all ports on the STM0 Unit.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter
- 12 min → For Optical unit: SC-SC Loopback Adapter (ITE-7099)

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The various diagnostic testing windows have already been setup on the XC-CIT Workstation screen.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



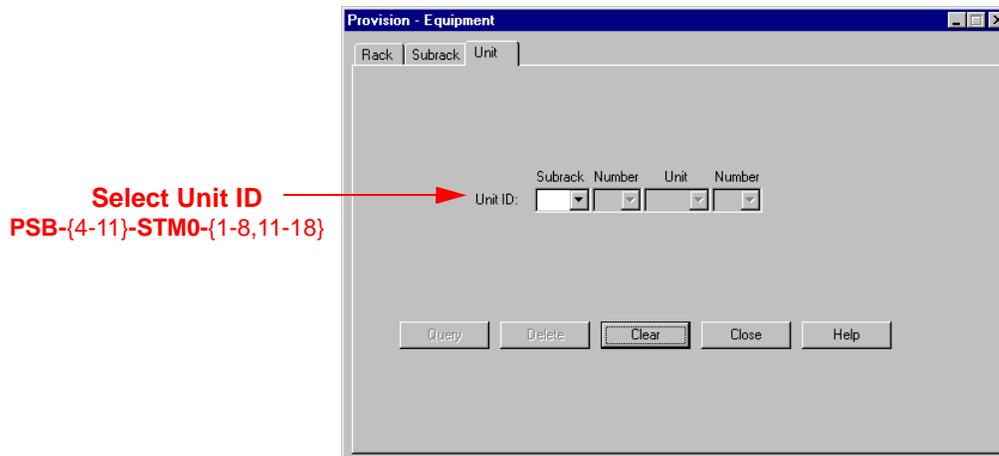
**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Select a **STM0 Unit** in the PSB Port Subrack to be diagnostic tested.

- Step 3:** **Query** the **Unit Status** (i.e. equipage state) of the selected **STU Unit**.

- Step 3-a:** In the **Provision-Equipment-Unit Window**, select the appropriate unit identification in the **Unit ID Box** associated with the selected **STM0 Unit** to be tested.



- Step 3-b:** Press the  button, and verify that the **Unit Status** for the selected **STM0 Unit** is reported as **Unit Provisioned and Initialized**.

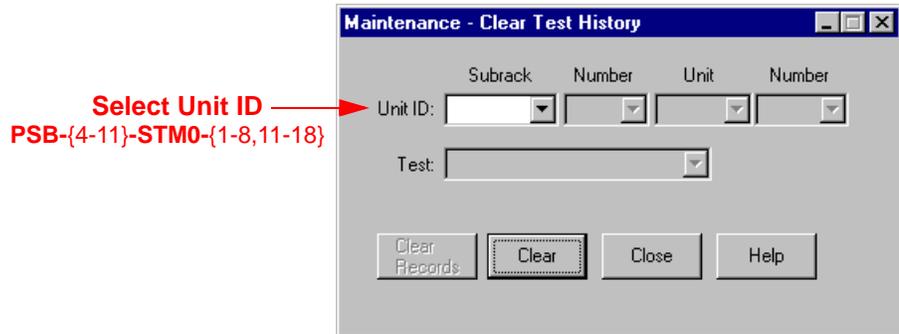


**NOTE:**

If the unit is not in the proper equipage state, diagnostic testing can **not** be performed on the unit.

- Step 3-c:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

- ❑ **Step 4:** **Clear** the test history for the **Unit Test** of selected **STM0 Unit** to be tested.
  - ❑ **Step 4-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM0 Unit** to be tested.



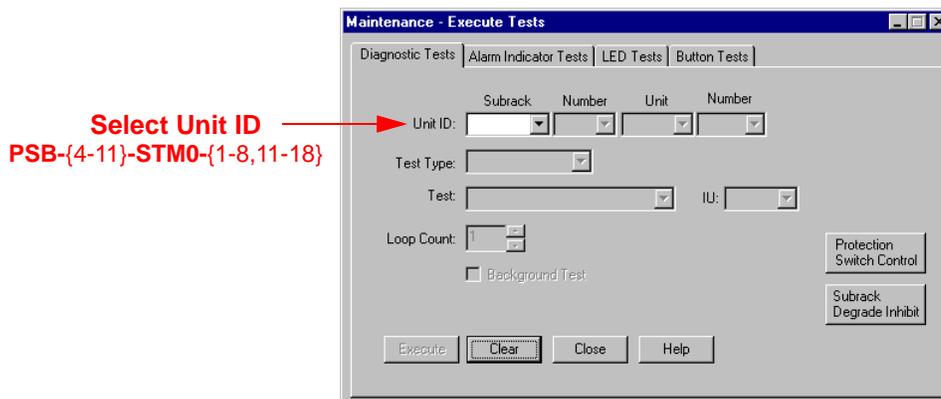
- ❑ **Step 4-b:** In the **Test Box**, select “**Unit**” in order to clear the test for the unit:



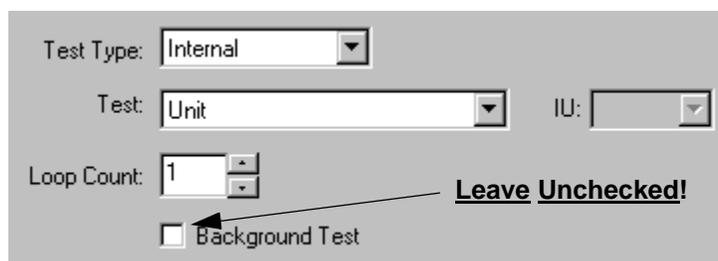
- ❑ **Step 4-c:** Press the  button, to clear any past test history corresponding to the selected **STM0 Unit**.

❑ **Step 5:** Execute the **Unit** diagnostic test for the selected **STM0 Unit**.

❑ **Step 5-a:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM0 Unit** to be tested.



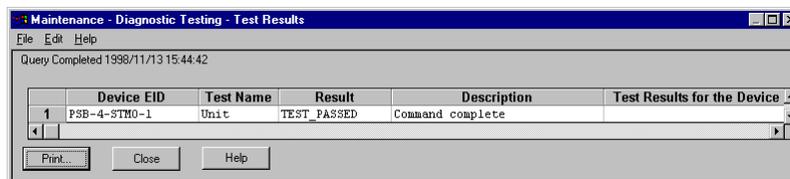
❑ **Step 5-b:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do not select as Background Test):



❑ **Step 5-c:** Execute the diagnostic test for the selected **STM0 unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.

❑ **Step 5-d:** Continue the diagnostic test for the selected **STM0 unit** by pressing the **Yes** button.

❑ **Step 5-e:** Verify that the results of the diagnostic test for the selected **STM0 Unit** is reported as **“TEST\_PASSED”**. (sample shown for STM0-1).



**NOTE:**

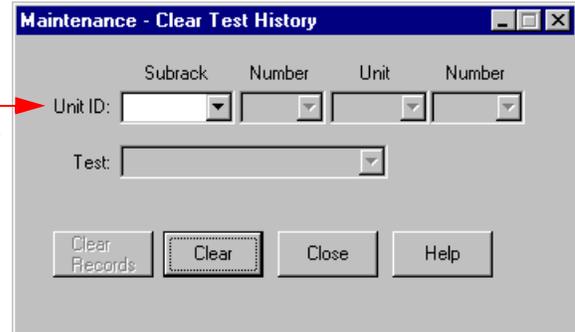
If the test results reports as either **“TEST\_FAILED”** or **“TEST\_ERRORED”**, check the test results data field in output response for troubleshooting information, then return to **Step 4** and repeat test.

❑ **Step 5-f:** Optional - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)

❑ **Step 5-g:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

- ❑ **Step 6:** **Clear** the test history for the **Distribution Frame Wiring Test (DFWT)** for the selected **STM0 Unit** to be tested.
  - ❑ **Step 6-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM0 Unit** to be tested.

Select Unit ID  
PSB-{4-11}-STM0-{1-8,11-18}



- ❑ **Step 6-b:** In the **Test Box**, select “**DFWT**” in order to clear the test for the unit:

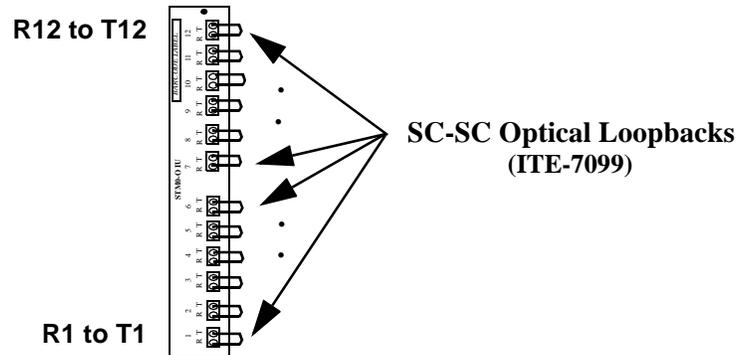


- ❑ **Step 6-c:** Press the **Clear Records** button, to clear any past test history corresponding to the selected **STM0 Unit**.

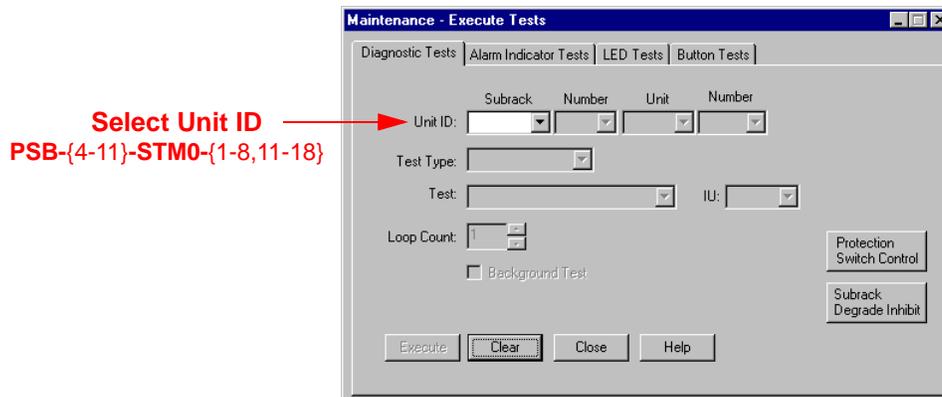
❑ **Step 7:** Execute the **Distribution Frame Wiring** diagnostic test for the selected **STM0 Unit**.

❑ **Step 7-a:** In the rear of the appropriate PSB Port Subrack, setup for the Distribution Frame Wiring test as shown in figure below:

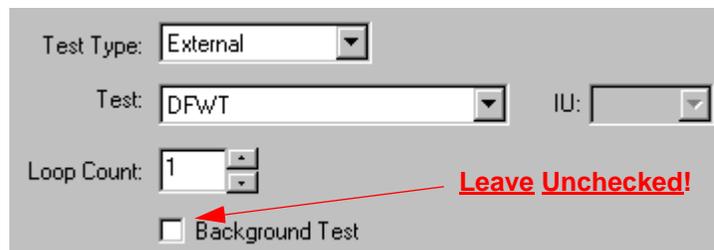
1. **Remove** any external transmission cabling that may be connected to the STM0 Port Interface Module (T/R).
2. **Install** an Optical loopback (ITE-7099) onto each of the 12 ports on the STM0 Optical Interface Module.



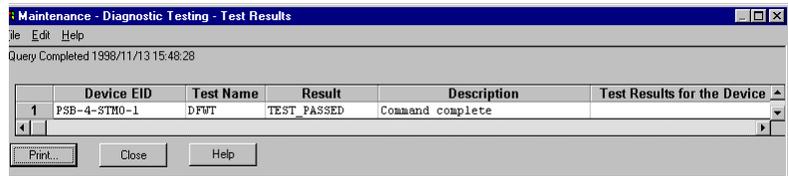
❑ **Step 7-b:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM0 Unit** to be tested.



❑ **Step 7-c:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do **not** select as Background Test):



- Step 7-d:** Execute the diagnostic test for the selected **STM0 unit** by pressing the  button, and verify the *Confirmation Window* appears.
- Step 7-e:** Continue the diagnostic test for the selected **STM0 unit** by pressing the  button.
- Step 7-f:** Verify that the results of the diagnostic test for the selected **STM0 Unit** is reported as **"TEST\_PASSED"**. (sample shown for STM0-1).



	Device EID	Test Name	Result	Description	Test Results for the Device
1	PSB-4-STM0-1	DFUT	TEST_PASSED	Command complete	



**NOTE:**

If the test results reports as either **"TEST\_FAILED"** or **"TEST\_ERRORED"**, check the test results data field in output response for troubleshooting information, then return to **Step 6** and repeat test.

- Step 7-g:** *Optional* - If a printout of the test results is desired, press the  button. (Requires printer connected to XC-CIT Workstation)
- Step 7-h:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the  button.
- Step 7-i:** Disconnect the testing setup on the selected interface unit.
  1. **Remove** the Optical loopback (ITE-7099) from each of the 12 ports on the STM0 Optical Interface Module.
  2. **Re-install** any external transmission cabling that have been previously connected to the STM0 Port Interface Module.

- 
- Step 8:** Perform **one** of the procedural options below:
    - If another STM0 Unit in the PSB Port Subrack needs to be diagnostic tested, return to **Step 2** and repeat testing for the other STM0 Unit.
    - If all the equipped STM0 Units in the PSB Port Subrack have been successfully tested, proceed to next step.

- 
- Step 9:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- 
- Step 10:** This completes the *"STM0 Unit Diagnostic Tests"* procedure.
- 

## STOP-Return to Calling Procedure



## GTP 37 - STM4 Unit Diagnostic Tests

---

### Description

---

This section of the installation test process deals with executing the diagnostic tests for the STM4 Unit in the PSC Port Subrack.

#### Diagnostic Tests:

- **UNIT** - verifies the internal hardware on the STM4 unit.
- **DFWT** (Distribution Frame Wiring) - verifies the input/output optical interface devices for all ports on the STM4 Unit.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter
- 4 min → Per Optical unit: LC-LC Loopback Adapter

#### Assumptions

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The various diagnostic testing windows have already been setup on the XC-CIT Workstation screen.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



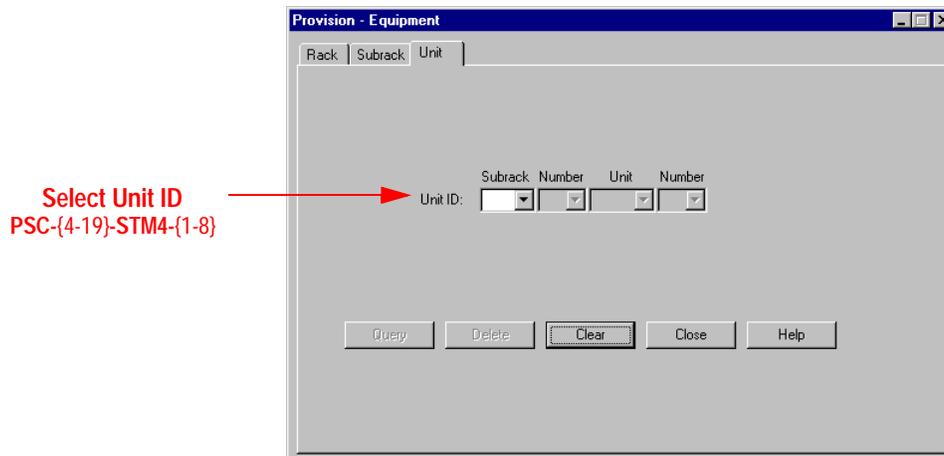
**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Select a **STM4 Unit** in the PSC Port Subrack to be diagnostic tested.

- Step 3:** **Query** the **Unit Status** (i.e. equipage state) of the selected **STM4 Unit**.

- Step 3-a:** In the **Provision-Equipment-Unit Window**, select the appropriate unit identification in the **Unit ID Box** associated with the selected **STM4 Unit** to be tested.



- Step 3-b:** Press the  button, and verify that the **Unit Status** for the selected **STM4 Unit** is reported as **Unit Provisioned and Initialized**.

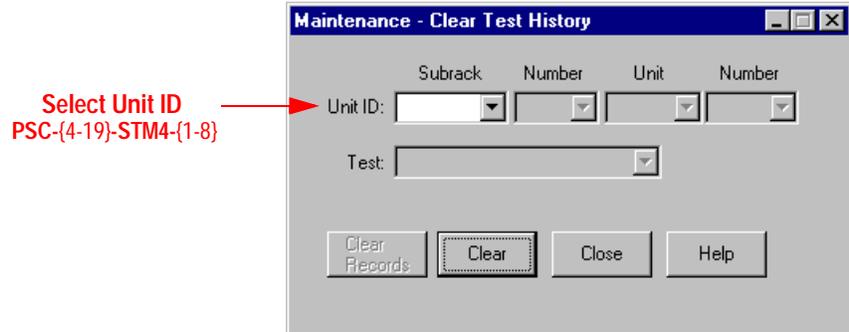


**NOTE:**

If the unit is not in the proper equipage state, diagnostic testing can **not** be performed on the unit.

- Step 3-c:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

- ❑ **Step 4:** **Clear** the test history for the **Unit Test** of selected **STM4 Unit** to be tested.
  - ❑ **Step 4-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM4 Unit** to be tested.



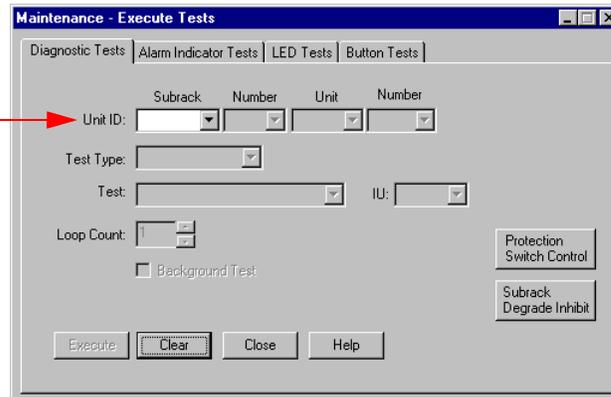
- ❑ **Step 4-b:** In the **Test Box**, select “**Unit**” in order to clear the test for the unit:



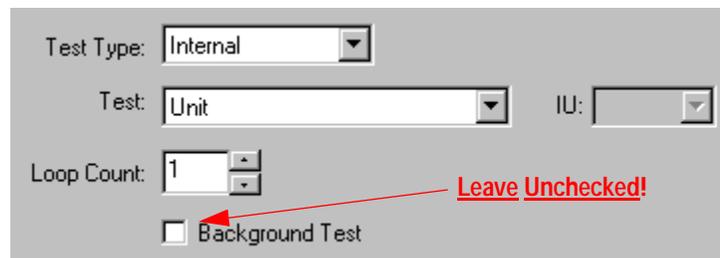
- ❑ **Step 4-c:** Press the  button, to clear any past test history corresponding to the selected **STM4 Unit**.

- ❑ **Step 5:** Execute the **Unit** diagnostic test for the selected **STM4 Unit**.
  - ❑ **Step 5-a:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM4 Unit** to be tested.

Select Unit ID  
PSC-{4-19}-STM4-{1-8}



- ❑ **Step 5-b:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do not select as Background Test):



- ❑ **Step 5-c:** Execute the diagnostic test for the selected **STM4 unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.
- ❑ **Step 5-d:** Continue the diagnostic test for the selected **STM4 unit** by pressing the **Yes** button.
- ❑ **Step 5-e:** Verify that the results of the diagnostic test for the selected **STM4 Unit** is reported as **“TEST\_PASSED”**.



**NOTE:**

If the test results reports as either **“TEST\_FAILED”** or **“TEST\_ERRORED”**, check the test results data field in output response for troubleshooting information, then return to **Step 4** and repeat test.

- ❑ **Step 5-f:** Optional - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)
- ❑ **Step 5-g:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

- ❑ **Step 6:** **Clear** the test history for the **Distribution Frame Wiring Test (DFWT)** for the selected **STM4 Unit** to be tested.
  - ❑ **Step 6-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM4 Unit** to be tested.

Select Unit ID  
PSC-{4-19}-STM4-{1-8}

Maintenance - Clear Test History

Subrack Number Unit Number

Unit ID: [ ] [ ] [ ] [ ]

Test: [ ]

Clear Records Clear Close Help

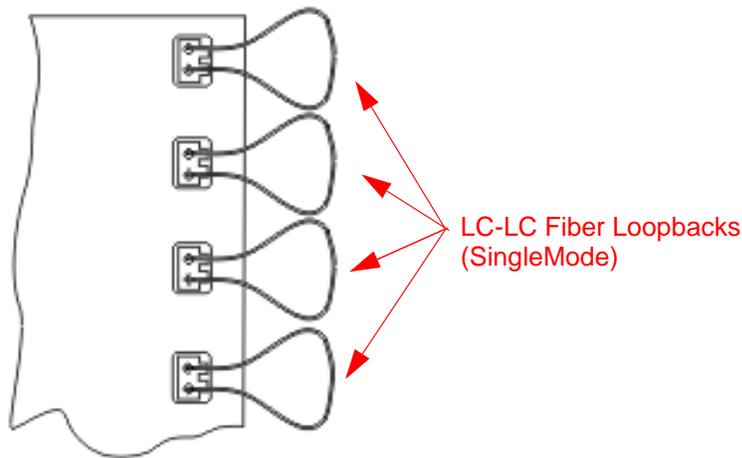
- ❑ **Step 6-b:** In the **Test Box**, select “**DFWT**” in order to clear the test for the unit:

Test: DFWT [ ]

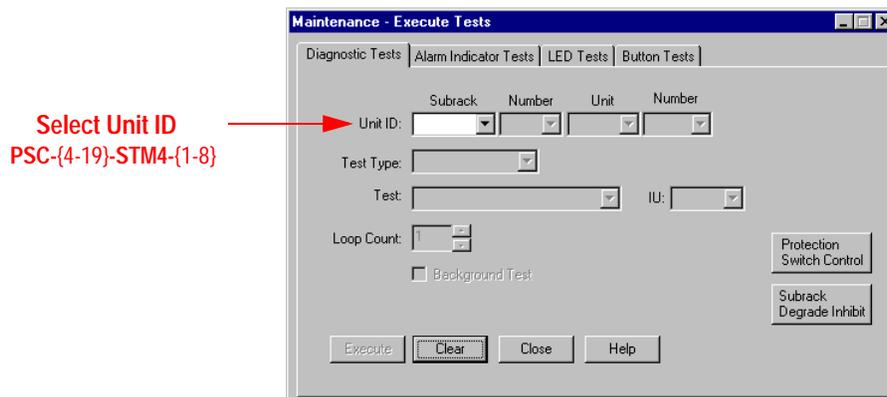
- ❑ **Step 6-c:** Press the **Clear Records** button, to clear any past test history corresponding to the selected **STM4 Unit**.

- ❑ **Step 7:** Execute the **Distribution Frame Wiring** diagnostic test for the selected **STM4 Unit**.
- ❑ **Step 7-a:** In the rear of the appropriate PSC Port Subrack, setup for the Distribution Frame Wiring test as shown in figure below:
  1. **Remove** any external transmission cabling that may be connected to the STM4 Port Interface Panel (T/R).
  2. **Install** the appropriate loopback adapters onto each of the four ports (T/R) on interface panel for the selected STM4 Unit.

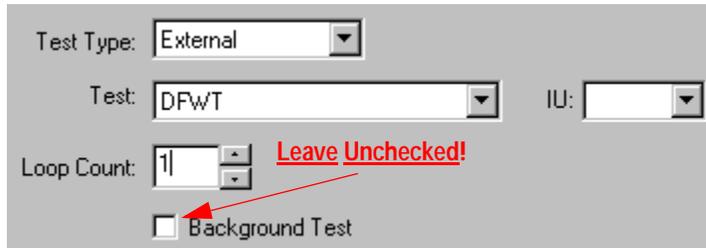
**Rear View of PSC Subrack**



- Step 7-b:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM4 Unit** to be tested.



- Step 7-c:** In the ***Maintenance-Execute Tests Window***, enter the remaining information as shown below (Do **not** select as Background Test):



The screenshot shows a software window with the following fields and controls:

- Test Type: External (dropdown menu)
- Test: DFWT (dropdown menu)
- IU: (dropdown menu)
- Loop Count: 1 (spin box)
- Background Test:  (checkbox)

A red arrow points to the Background Test checkbox with the text "Leave Unchecked!" written in red.

- Step 7-d:** Execute the diagnostic test for the selected **STM4 unit** by pressing the  button, and verify the *Confirmation Window* appears.
- Step 7-e:** Continue the diagnostic test for the selected **STM4 unit** by pressing the  button.
- Step 7-f:** Verify that the results of the diagnostic test for the selected **STM4 Unit** is reported as "**TEST\_PASSED**".



**NOTE:**

If the test results reports as either "**TEST\_FAILED**" or "**TEST\_ERRORED**", check the test results data field in output response for troubleshooting information, then return to **Step 6** and repeat test.

- Step 7-g:** *Optional* - If a printout of the test results is desired, press the  button. (Requires printer connected to XC-CIT Workstation)
- Step 7-h:** Close the ***Maintenance-Diagnostic Testing-Test Results Window*** by pressing the  button.
- Step 7-i:** Disconnect the testing setup on the selected interface unit.
1. **Remove** the loopback adapters from each of the 4 ports on the interface panel for the STM4 Unit.
  2. **Re-install** any external transmission cabling that have been previously connected to the STM4 Port Interface Panel.

- 
- Step 8:* Perform **one** of the procedural options below:
- If another STM4 Unit in the PSC Port Subrack needs to be diagnostic tested, return to **Step 2** and repeat testing for the other STM4 Unit.
  - If all the equipped STM4 Units in the PSC Port Subrack have been successfully tested, proceed to next step.

---

*Step 9:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

*Step 10:* This completes the "*STM4 Unit Diagnostic Tests*" procedure.

---

**STOP-Return to Calling Procedure**

## GTP 38 - STM16 Unit Diagnostic Tests

---

### Description

---

This section of the installation test process deals with executing the diagnostic tests for the STM16 Unit in the PSC Port Subrack.

#### Diagnostic Tests:

- **UNIT** - verifies the internal hardware on the STM16 unit.
- **DFWT** (Distribution Frame Wiring) - verifies the input/output optical interface devices for all ports on the STM16 Unit.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter
- 4 min → Per Optical unit: LC-LC Loopback Adapter

#### Assumptions

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The various diagnostic testing windows have already been setup on the XC-CIT Workstation screen.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



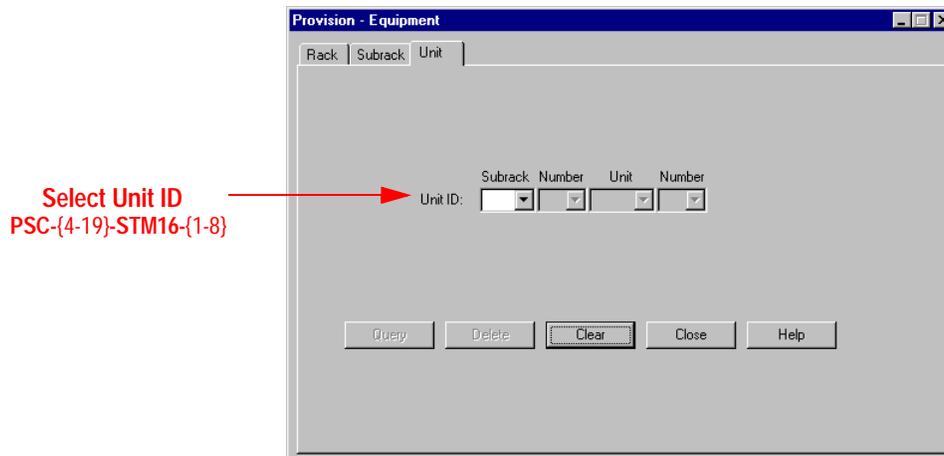
**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Select a **STM16 Unit** in the PSC Port Subrack to be diagnostic tested.

- Step 3:** **Query** the **Unit Status** (i.e. equipage state) of the selected **STM16 Unit**.

- Step 3-a:** In the **Provision-Equipment-Unit Window**, select the appropriate unit identification in the **Unit ID Box** associated with the selected **STM16 Unit** to be tested.



- Step 3-b:** Press the  button, and verify that the **Unit Status** for the selected **STM16 Unit** is reported as **Unit Provisioned and Initialized**.

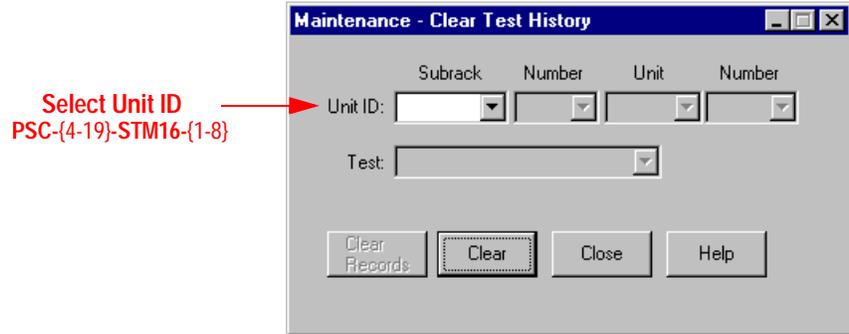


**NOTE:**

If the unit is not in the proper equipage state, diagnostic testing can **not** be performed on the unit.

- Step 3-c:** Close the **Provision-Equipment-Unit-Query Results Window** by pressing the  button.

- ❑ **Step 4:** **Clear** the test history for the **Unit Test** of selected **STM16 Unit** to be tested.
  - ❑ **Step 4-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM16 Unit** to be tested.



- ❑ **Step 4-b:** In the **Test Box**, select “**Unit**” in order to clear the test for the unit:

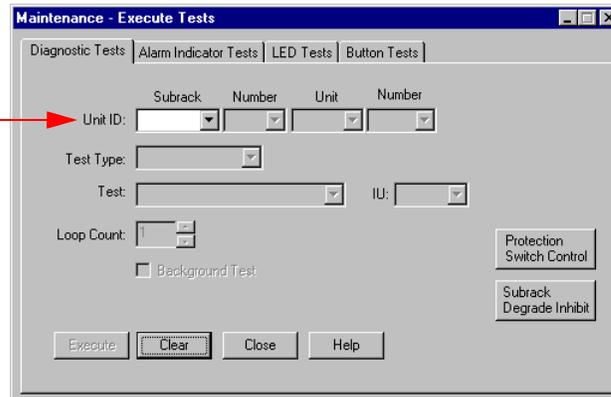


- ❑ **Step 4-c:** Press the  button, to clear any past test history corresponding to the selected **STM16 Unit**.

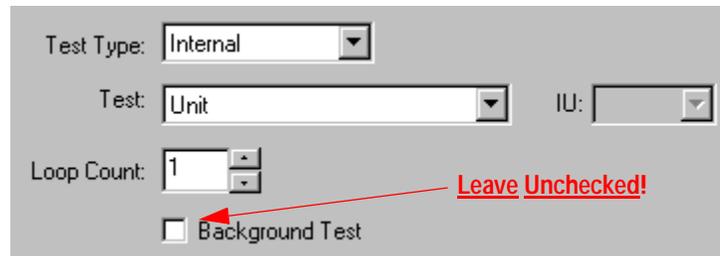
❑ **Step 5:** Execute the **Unit** diagnostic test for the selected **STM16 Unit**.

❑ **Step 5-a:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM16 Unit** to be tested.

Select Unit ID  
PSC-{4-19}-STM16-{1-8}



❑ **Step 5-b:** In the **Maintenance-Execute Tests Window**, enter the remaining information as shown below (Do not select as Background Test):



❑ **Step 5-c:** Execute the diagnostic test for the selected **STM16 unit** by pressing the **Execute** button, and verify the **Confirmation Window** appears.

❑ **Step 5-d:** Continue the diagnostic test for the selected **STM16 unit** by pressing the **Yes** button.

❑ **Step 5-e:** Verify that the results of the diagnostic test for the selected **STM16 Unit** is reported as **TEST\_PASSED**.



**NOTE:**

If the test results reports as either **TEST\_FAILED** or **TEST\_ERRORED**, check the test results data field in output response for troubleshooting information, then return to **Step 4** and repeat test.

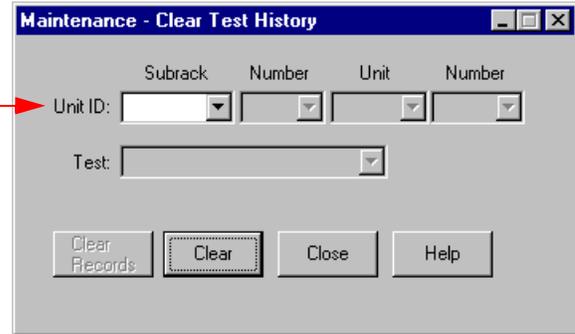
❑ **Step 5-f:** Optional - If a printout of the test results is desired, press the **Print...** button. (Requires printer connected to XC-CIT Workstation)

❑ **Step 5-g:** Close the **Maintenance-Diagnostic Testing-Test Results Window** by pressing the **Close** button.

- ❑ **Step 6:** **Clear** the test history for the **Distribution Frame Wiring Test (DFWT)** for the selected **STM16 Unit** to be tested.

- ❑ **Step 6-a:** In the **Maintenance-Clear Test History Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM16 Unit** to be tested.

Select Unit ID  
PSC-{4-19}-STM16-{1-8}



- ❑ **Step 6-b:** In the **Test Box**, select “**DFWT**” in order to clear the test for the unit:



- ❑ **Step 6-c:** Press the **Clear Records** button, to clear any past test history corresponding to the selected **STM16 Unit**.

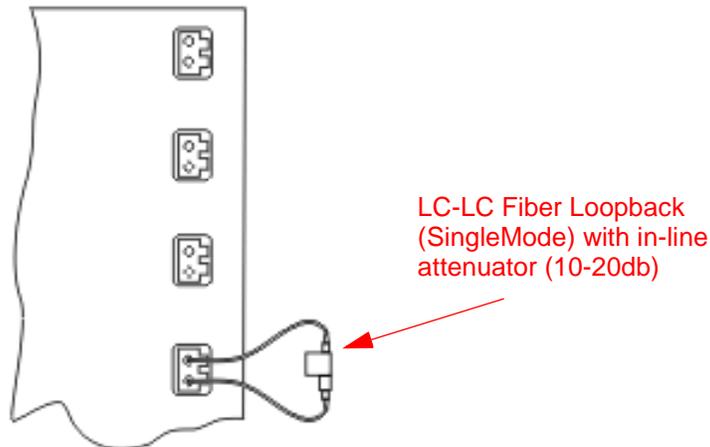
❑ **Step 7:** Execute the **Distribution Frame Wiring** diagnostic test for the selected **STM16 Unit**.

❑ **Step 7-a:** In the rear of the appropriate PSC Port Subrack, setup for the Distribution Frame Wiring test as shown in figure below:

1. **Remove** any external transmission cabling that may be connected to the STM16 Port Interface Panel (T/R).
2. **Install** the appropriate loopback adapter onto the port (T/R) on interface panel for the selected STM16 Unit.

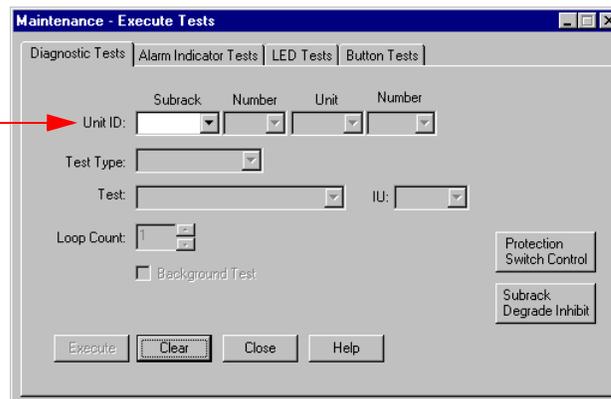
**⚠ CAUTION:**  
*You must install a 10-20 db attenuator in-line in the loopback of the STM16 port of the optical receiver will be damaged!!.*

**Rear View of PSC Subrack**

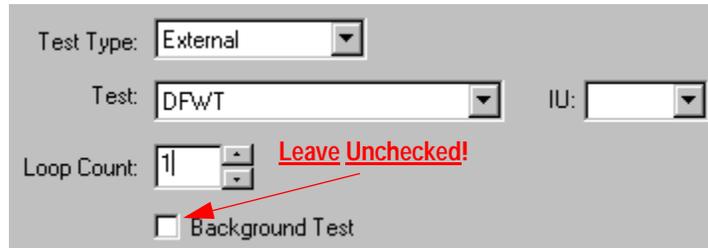


**Step 7-b:** In the **Maintenance-Execute Tests Window**, select the appropriate unit identification in the **Unit ID Box** associated with the specific **STM16 Unit** to be tested.

**Select Unit ID**  
**PSC-(4-19)-STM16-(1-8)**



- Step 7-c:** In the ***Maintenance-Execute Tests Window***, enter the remaining information as shown below (Do **not** select as Background Test):



The screenshot shows a software window with the following fields and controls:

- Test Type: External (dropdown menu)
- Test: DFWT (dropdown menu)
- IU: (dropdown menu)
- Loop Count: 1 (spin box)
- Background Test:  (checkbox)

A red arrow points to the Background Test checkbox with the text "Leave Unchecked!" written in red above it.

- Step 7-d:** Execute the diagnostic test for the selected **STM16 unit** by pressing the  button, and verify the *Confirmation Window* appears.
- Step 7-e:** Continue the diagnostic test for the selected **STM16 unit** by pressing the  button.
- Step 7-f:** Verify that the results of the diagnostic test for the selected **STM16 Unit** is reported as "**TEST\_PASSED**".



**NOTE:**

If the test results reports as either "**TEST\_FAILED**" or "**TEST\_ERRORED**", check the test results data field in output response for troubleshooting information, then return to **Step 6** and repeat test.

- Step 7-g:** *Optional* - If a printout of the test results is desired, press the  button. (Requires printer connected to XC-CIT Workstation)
- Step 7-h:** Close the ***Maintenance-Diagnostic Testing-Test Results Window*** by pressing the  button.
- Step 7-i:** Disconnect the testing setup on the selected interface unit.
1. **Remove** the loopback adapter from the port on the interface panel for the STM16 Unit.
  2. **Re-install** any external transmission cabling that have been previously connected to the STM16 Port Interface Panel.

---

*Step 8:* Perform **one** of the procedural options below:

- If another STM16 Unit in the PSC Port Subrack needs to be diagnostic tested, return to **Step 2** and repeat testing for the other STM16 Unit.
- If all the equipped STM16 Units in the PSC Port Subrack have been successfully tested, proceed to next step.

---

*Step 9:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

*Step 10:* This completes the "*STM16 Unit Diagnostic Tests*" procedure.

---

**STOP-Return to Calling Procedure**

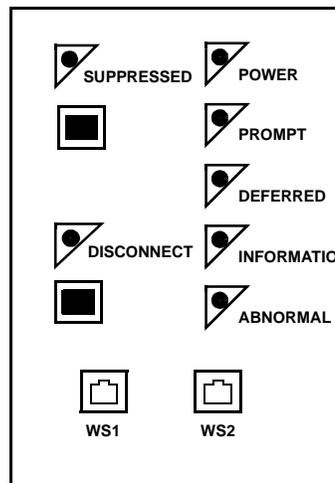
## GTP 39 - System User Panel Test

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### Description

---

The following test procedure will verify the operation of all the System User Panel alarm indicators and push-buttons. These tests require the installer to visually verify the status of the alarms indicators or to actuate the push-buttons on the System User Panel (SUP). This test also verifies the SUP cable which is installed between the ACP and the System User Panel. These tests do not require the alarms indications on the SUP to be off, prior to executing the individual alarm tests. The test will return the alarm indications back to the original state at the end of the test.



#### Alarm Indicators:

- Power
- Prompt
- Deferred
- Information
- Abnormal
- Suppressed
- Disconnect

#### Push-buttons:

- Suppressed
- Disconnect

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

## Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

## Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

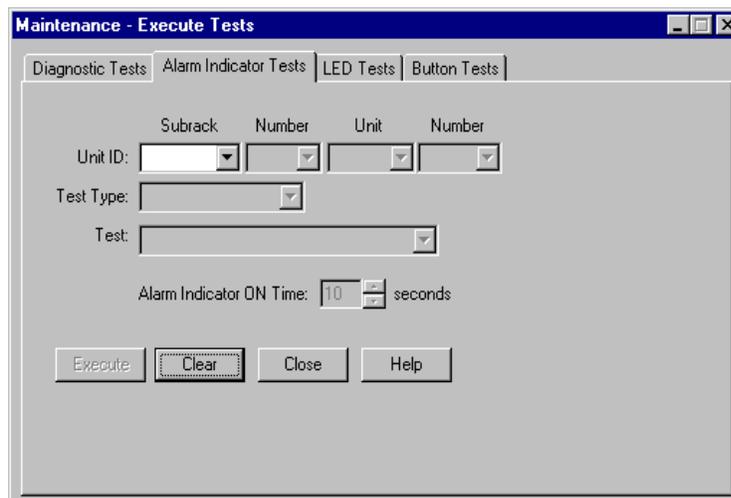
- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System and the GUI Window is visible on the screen.



### NOTE:

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** At the top of the rack assembly corresponding to the subrack *under test*, verify that the **Prompt** and **Deferred** alarm indicators are **off** on the front and rear of the rack assembly.
- Step 3:** Open the **Maintenance-Execute Tests Window** and select the **Alarm Indicator Tests Tab** in order to setup for system user panel alarm testing.



- Step 4:** In the **Alarm Indicator Tests Window**, setup for testing the **User Panel Alarm Indicators** and **Push-buttons** on the system user panel.

- Step 4-a:** Select the **Unit ID** corresponding to the MC Subrack:

Subrack	Number	Unit	Number
Unit ID: MC	1	ARU	1

- Step 4-b:** Select **User Panel** in the **Test Box**.

Test Type: User Panel

- Step 5:** Execute the **Suppressed** alarm indicator test for the system user panel.

- Step 5-a:** Select **Suppressed** in the **Test Box**.

Test: Suppressed

- Step 5-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).

Alarm Indicator ON Time: 10 seconds

- Step 5-c:** Press the **Execute** button to start the alarm test, then verify that the **yellow** alarm indicator labelled **Suppressed** on the system user panel turns **on** (for Alarm Indicator ON Time) then **off**.

- Step 6:** Execute the **Disconnected** alarm indicator test for the system user panel.

- Step 6-a:** Select **Disconnected** in the **Test Box**.

Test: Disconnected

- Step 6-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).

Alarm Indicator ON Time: 10 seconds

- Step 6-c:** Press the **Execute** button to start the alarm test, then verify that the **yellow** alarm indicator labelled **Disconnected** on the system user panel turns **on** (for Alarm Indicator ON Time) then **off**.

**Step 7:** Execute the **Power Failure** alarm indicator test for the system user panel.

**Step 7-a:** Select **Power Failure** in the **Test Box**.



Test: Power Failure

**Step 7-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time: 10 seconds

**Step 7-c:** Press the  button to start the alarm test, then verify that the **red** alarm indicator labelled **Power** on the system user panel turns **on** (for Alarm Indicator ON Time) then **off**.

---

**Step 8:** Execute the **Prompt** alarm indicator test for the system user panel.

**Step 8-a:** Select **Prompt** in the **Test Box**.



Test: Prompt

**Step 8-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time: 10 seconds

**Step 8-c:** Press the  button to start the alarm test, then verify that the **red** alarm indicator labelled **Prompt** on the system user panel turns **on** (for Alarm Indicator ON Time) then **off**.

---

**Step 9:** Execute the **Deferred** alarm indicator test for the system user panel.

**Step 9-a:** Select **Deferred** in the **Test Box**.



Test: Deferred

**Step 9-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time: 10 seconds

**Step 9-c:** Press the  button to start the alarm test, then verify that the **red** alarm indicator labelled **Deferred** on the system user panel turns **on** (for Alarm Indicator ON Time) then **off**.

**Step 10:** Execute the **Information** alarm indicator test for the system user panel.

**Step 10-a:** Select **Information Alarm** in the **Test Box**.



Test: Information Alarm

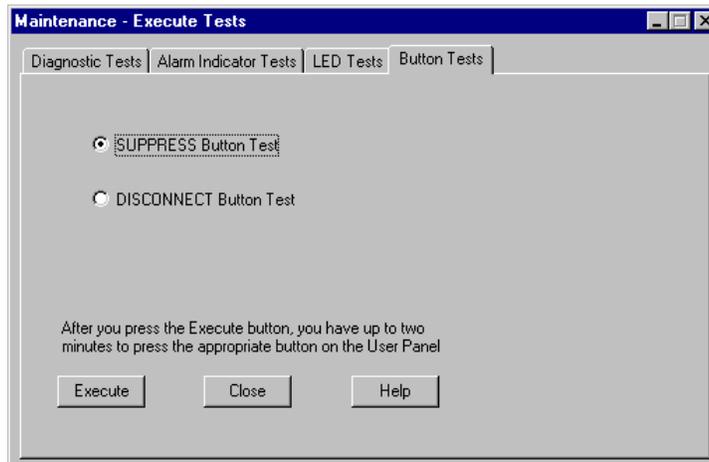
**Step 10-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time: 10 seconds

**Step 10-c:** Press the  button to start the alarm test, then verify that the **yellow** alarm indicator labelled **Information** on the system user panel turns **on** (for Alarm Indicator ON Time) then **off**.

**Step 11:** Open the **Maintenance-Execute Tests Window** and select the **Button Tests Tab** in order to setup for system user panel button testing.



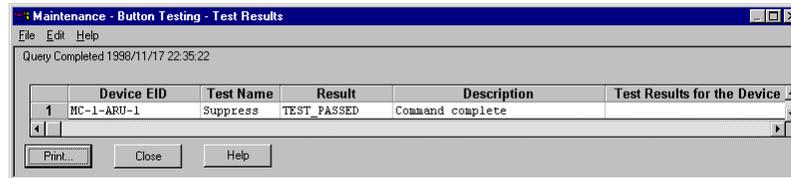
**Step 12:** Execute the **Suppress Button Test** for the system user panel.

**Step 12-a:** Select **SUPPRESS Button Test** option.



**Step 12-b:** Press the  button to start the button test, then within 2 minutes press the **Suppress Button** on the System User Panel.

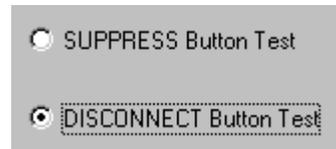
**Step 12-c:** Verify that the test reports as “**TEST\_PASSED**” in the result column.



**Step 12-d:** Close the **Maintenance-Button Testing-Test Results Window** by pressing the  button.

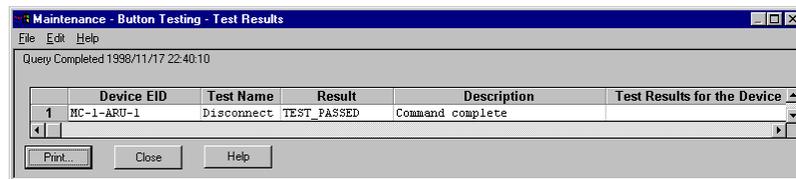
**Step 13:** Execute the **Disconnect Button Test** for the system user panel.

**Step 13-a:** Select **DISCONNECT Button Test** option.



**Step 13-b:** Press the  button to start the button test, then within 2 minutes press the **Disconnect Button** on the System User Panel.

**Step 13-c:** Verify that the test reports as “**TEST\_PASSED**” in the result column.



**Step 13-d:** Close the **Maintenance-Button Testing-Test Results Window** by pressing the  button.

**Step 14:** Close the **Maintenance-Execute Tests Window** by pressing .

**Step 15:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

**Step 16:** This completes the “*System User Panel Test*” procedure.

---

## STOP-Return to Calling Procedure

## GTP 40 - Rack Top Alarm Test

---

### Description

---

The following test procedure will test the **Prompt** and **Deferred** alarm indicators at the top of any rack assembly from a specific subrack *under test*. These tests require the installer to visually verify the status of the alarms indicators. This test will also verify the prompt and deferred wiring between the Rack Top Alarm Terminal Strip and the subrack alarm interface.

#### **Prompt Alarm (20 GA,Slate):**

Terminal **P** of Rack Top Alarm Terminal Strip to:

- Pin **1** of RackTop Connector Interface of ACP (MC Subrack)
- Pin **8** of RackTop Connector Interface (F/R) on rear of subrack (MS,PSA,PSB,PSC)

#### **Deferred Alarm (20 GA,Yellow):**

Terminal **D** of Rack Top Alarm Terminal Strip to:

- Pin **6** of RackTop Connector Interface of ACP (MC Subrack)
- Pin **7** of RackTop Connector Interface (F/R) on rear of subrack (MS,PSA,PSB,PSC)

#### **Required Equipment:**

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

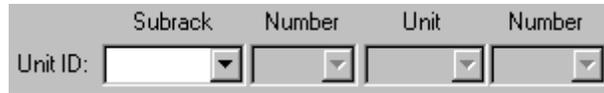
- Step 2:** At the top of the rack assembly corresponding to the subrack *under test*, verify that the **Prompt** and **Deferred** alarm indicators are **off** on the front and rear of the rack assembly.

- Step 3:** Open the **Maintenance-Execute Tests Window** and select the **Alarm Indicator Tests tab** in order to setup for subrack alarm testing.

The screenshot shows a software window titled "Maintenance - Execute Tests". It has four tabs: "Diagnostic Tests", "Alarm Indicator Tests" (which is selected), "LED Tests", and "Button Tests". Below the tabs, there are four dropdown menus for "Subrack", "Number", "Unit", and "Number". Below these is a "Test Type:" dropdown menu and a "Test:" dropdown menu. At the bottom of the form area, there is a spinner control for "Alarm Indicator ON Time" set to "10" with "seconds" to its right. At the very bottom of the window, there are four buttons: "Execute", "Clear", "Close", and "Help".

- Step 4:** In the **Alarm Indicator Tests Window**, setup for testing the **Rack Top** alarm indicators for the selected subrack *under test*.

- Step 4-a:** Select the **Unit ID** corresponding to the subrack *under test*:



For MC Subrack: **MC-1-ARU-1**

For MS Subrack: **MS-3-SRC-1** (Working SRC)

**MS-3-SRC-2** (Protection SRC)

For PSA Subrack: **PSA-{4-19}-SRC-1**

For PSB Subrack: **PSB-{4-19}-SRC-1**

For PSC Subrack: **PSC-{4-19}-SRC-1**

- Step 4-b:** Select **Rack Top** in the **Test Type Box**.

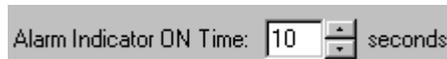


- Step 5:** Execute the **Prompt Maintenance Rack Top Alarm** indicator test for the selected subrack *under test*.

- Step 5-a:** Select **Prompt Maintenance** in the **Test Box**.



- Step 5-b:** Set the desired **Alarm Indicator ON Time** (default is 10 seconds) for the selected RackTop Alarm Test.



- Step 5-c:** Press the **Execute** button to start the alarm test, then verify that the **Prompt Maintenance Alarm** alarm indicator (red) at the top of the rack turns **on** (for LED ON Time) then **off**.
- For MC Subrack - Verify only front of Rack
  - For MS/PSA/PSB/PSC Subracks - Verify front & rear of Rack

---

**Step 6:** Execute the **Deferred Maintenance Rack Top Alarm** indicator test for the selected subrack *under test*.

**Step 6-a:** Select **Deferred Maintenance** in the **Test Box** for the Deferred Maintenance RackTop Alarm Test.



The image shows a software interface element. On the left, the text 'Test:' is followed by a rectangular box containing a dropdown menu. The dropdown menu is currently open, showing the text 'Deferred Maintenance' and a small downward-pointing arrow on the right side of the box.

**Step 6-b:** Press the  button to start the alarm test, then verify that the **Deferred Maintenance Alarm** alarm indicator (yellow) at the top of the rack turns **on** (for LED ON Time) then **off**.

- For MC Subrack - Verify only front of Rack
- For MS/PSA/PSB/PSC Subracks - Verify front & rear of Rack

---

**Step 7:** Close the **Maintenance-Execute Tests Window** by pressing the  button.

---

**Step 8:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

**Step 9:** This completes the "*Rack Top Alarms Test*" procedure.

---

**STOP-Return to Calling Procedure**

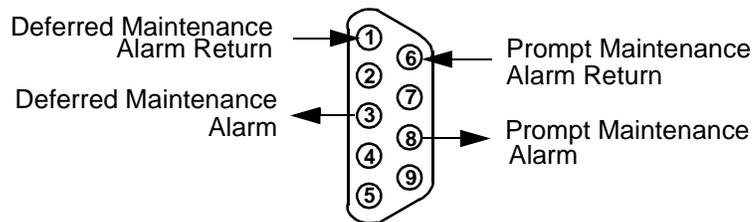
## GTP 41 - End of Suite Alarms Test

---

### Description

---

The following test procedure will test the **Prompt** and **Deferred** End of Suite alarms indicators connecting to a specific subrack *under test*. This test is a non-interactive test, which means the software will turn the alarm indicator on and off for a selected time interval, so that the status of the alarm indication can be checked. This test will also test the prompt and deferred wiring between the subrack suite alarm connector interfaces and the connected Suite Alarm indicator equipment. If the suite alarm is not connected to an external alarm system, then the indicated pins below can be checked for continuity using a VOM when each individual alarm is set by the test.



**DB9-Female Connector Interface**

### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter
- 1 → Multimeter (ITE-6379A or equiv.)

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** At the external suite alarm indicator equipment, verify that the **End of Suite Alarm indicators (Prompt & Deferred)** for the subrack *under test* are **off**.

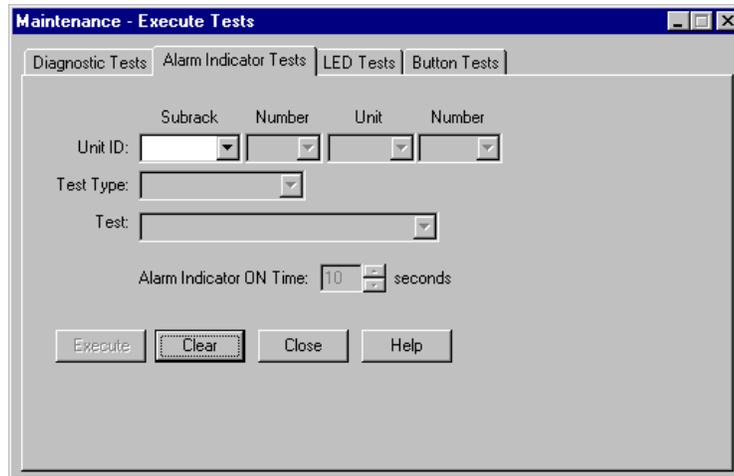


**NOTE:**

If the suite alarms for the subrack are not connected to an external alarm panel, then use a VOM and verify **no continuity** between indicated pins in table using a VOM.

<input checked="" type="checkbox"/>	End of Suite Alarm		Connector Pins
<input type="checkbox"/>	Prompt Maintenance	PM	Pins 8 & 6
<input type="checkbox"/>	Deferred Maintenance	DM	Pins 3 & 1

- **Step 3:** Open the **Maintenance-Execute Tests Window** and select the **Alarm Indicator Tests tab** in order to setup for subrack alarm testing.



- **Step 4:** In the **Alarm Indicator Tests Window**, setup for testing the **End of Suite Alarm Indicators** for the selected subrack *under test*.

- **Step 4-a:** Select the **Unit ID** corresponding to the subrack *under test*.

	Subrack	Number	Unit	Number
Unit ID:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

For MC Subrack: **MC-1-ARU-1**

For MS Subrack: **MS-3-SRC-1 (Working SRC)**  
**MS-3-SRC-2 (Protection SRC)**

For PSA Subrack: **PSA-{4-19}-SRC-1**

For PSB Subrack: **PSB-{4-19}-SRC-1**

For PSC Subrack: **PSC-{4-19}-SRC-1**

- **Step 4-b:** Select **End of Suite** in the **Test Box**.

Test Type:	<input type="text" value="End of Suite"/>
------------	---

- Step 5:** Execute the **Prompt Maintenance End of Suite Alarm** indicator test for the selected subrack *under test*.

- Step 5-a:** Select **Prompt Maintenance** in the **Test Box**.



Test: Prompt Maintenance

- Step 5-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time: 10 seconds

- Step 5-c:** Press the  button to start the alarm test.

- Step 5-d:** Verify that the **Prompt Maintenance Alarm** indicator turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm panel.



**NOTE:**

If not connected to an external suite alarm panel, then check for continuity between **Pin 8** and **Pin 6** using a VOM at each of the appropriate EOS connector interfaces of the subrack *under test*.

- 
- Step 6:** Execute the **Deferred Maintenance End of Suite Alarm** indicator test for the selected subrack *under test*.

- Step 6-a:** Select **Deferred Maintenance** in the **Test Box**.



Test: Deferred Maintenance

- Step 6-b:** Press the  button to start the alarm test.

- Step 6-c:** Verify that the **Deferred Maintenance Alarm** indicator turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm panel.



**NOTE:**

If not connected to an external suite alarm panel, then check for continuity between **Pin 3** and **Pin 1** using a VOM at each of the appropriate EOS connector interfaces of the subrack *under test*.

- 
- Step 7:** Close the **Maintenance-Execute Tests Window** by pressing the .

- 
- Step 8:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- 
- Step 9:** This completes the "*End of Suite Alarms Test*" for the subrack *under test*.
- 

**STOP-Return to Calling Procedure**

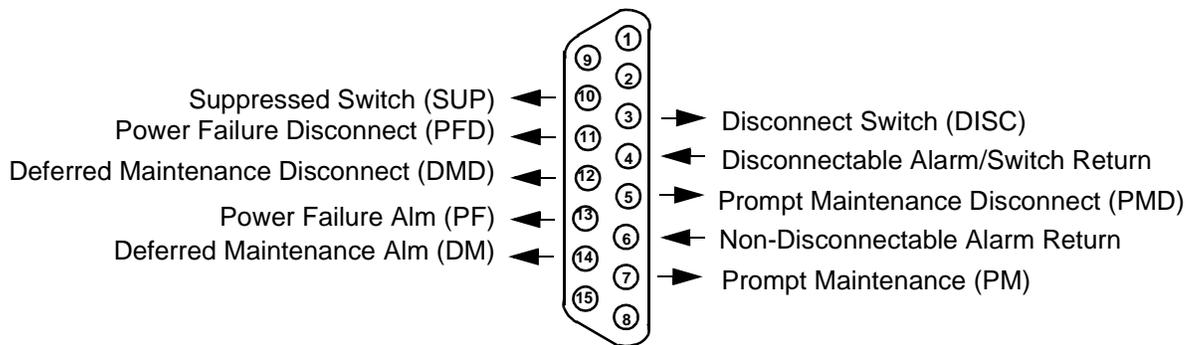
## GTP 42 - Station Alarms Test

---

### Description

---

The following test procedure will test the **Prompt, Deferred, and Power disconnectable** station alarms indicators, and the **Prompt, Deferred, Power, Suppress, and Disconnect non-disconnectable** station alarms indicators connecting to the Alarm Control Panel (ACP) which is located in the rear of the System User Panel. This test is a non-interactive test, which means the software will toggle the alarm indication on then off for a user selectable time interval. However, the alarm indicator must be visually verified during this user selectable time interval. This test will also test the wiring between the station alarm connector interface of the Alarm Control Panel (ACP) and the connected Station Alarm indicator equipment. If the station alarm is not connected to an external alarm system, then the indicated pins below can be checked for continuity using a VOM when each individual alarm is set by the test.



### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter
- 1 → Multimeter (ITE-6379A or equiv.) {optional}

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

## Precautions

- When working on the *WaveStar™* DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

Use the  boxes to check off the steps as they are completed.

- Step 1:* Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
 (See *GTP 11 - System Login Procedure*)

- Step 2:* Verify that all the **Station Alarm Indicators** are **off** at the connected external customer's alarm system.

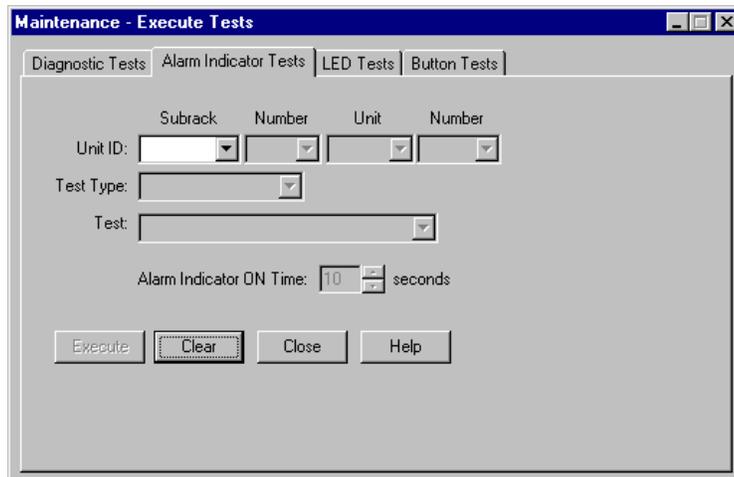


**NOTE:**

If not connected to an external alarm system, then check for **no continuity** between indicated pins in table using a VOM.

✓	Station Alarm		Connector Pins
<input type="checkbox"/>	Prompt Maintenance	PM	Pins 7 & 6
<input type="checkbox"/>	Prompt Maintenance Disconnectable	PMD	Pins 5 & 4
<input type="checkbox"/>	Suppress	SUP	Pins 10 & 4
<input type="checkbox"/>	Disconnect	DIS	Pins 3 & 4
<input type="checkbox"/>	Deferred Maintenance	DM	Pins 14 & 6
<input type="checkbox"/>	Deferred Maintenance Disconnectable	DMD	Pins 12 & 4
<input type="checkbox"/>	Power Failure	PF	Pins 13 & 6
<input type="checkbox"/>	Power Failure Disconnect	PFD	Pins 11 & 4

- ❑ **Step 3:** Open the **Maintenance-Execute Tests Window** and select the **Alarm Indicator Tests tab** in order to setup for subrack alarm testing.



- ❑ **Step 4:** In the **Alarm Indicator Tests Window**, setup for testing the **Station Alarm Indicators** for the MC Subrack.

- ❑ **Step 4-a:** Select the **Unit ID** corresponding to the MC Subrack:

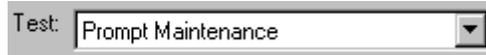


- ❑ **Step 4-b:** Select **Station Alarm** in the **Test Box**.



**Step 5:** Execute the **Prompt Maintenance Station Alarm** indicator test.

**Step 5-a:** Select **Prompt Maintenance** in the **Test Box**.



Test: Prompt Maintenance

**Step 5-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time: 10 seconds

**Step 5-c:** Press the **Execute** button to start the alarm test.

**Step 5-d:** Verify that the **Prompt Maintenance Alarm** indicator turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm system.



**NOTE:**

If **not** connected to an external alarm system, then check for continuity between **Pin 7** and **Pin 6** using a VOM at the Station connector interface of the ACP.

---

**Step 6:** Execute the **Prompt Maintenance Disconnectable Station Alarm** indicator test.

**Step 6-a:** Select **Prompt Maintenance Disconnectable** in the **Test Box**.



Test: Prompt Maintenance Disconnectable

**Step 6-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time: 10 seconds

**Step 6-c:** Press the **Execute** button to start the alarm test.

**Step 6-d:** Verify that the **Prompt Maintenance Disconnectable Alarm** indicator turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm system.



**NOTE:**

If **not** connected to an external alarm system, then check for continuity between **Pin 5** and **Pin 4** using a VOM at the Station connector interface of the ACP.

**Step 7:** Execute the **Suppressed Station Alarm** indicator test.

**Step 7-a:** Select **Suppressed** in the **Test Box**.



Test:

**Step 7-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time:  seconds

**Step 7-c:** Press the  button to start the alarm test.

**Step 7-d:** Verify that the **Suppressed Alarm** indicator turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm system.



**NOTE:**

If not connected to an external alarm system, then check for continuity between **Pin 10** and **Pin 4** using a VOM at the Station connector interface of the ACP.

---

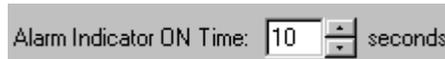
**Step 8:** Execute the **Disconnected Station Alarm** indicator test.

**Step 8-a:** Select **Disconnected** in the **Test Box**.



Test:

**Step 8-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time:  seconds

**Step 8-c:** Press the  button to start the alarm test.

**Step 8-d:** Verify that the **Disconnected Alarm** indicator turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm system.



**NOTE:**

If not connected to an external alarm system, then check for continuity between **Pin 3** and **Pin 4** using a VOM at the Station connector interface of the ACP.

**Step 9:** Execute the **Deferred Maintenance Station Alarm** indicator test.

**Step 9-a:** Select **Deferred Maintenance** in the **Test Box**.



Test:

**Step 9-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time:  seconds

**Step 9-c:** Press the  button to start the alarm test.

**Step 9-d:** Verify that the **Deferred Maintenance Alarm** indicator turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm system.



**NOTE:**

If not connected to an external alarm system, then check for continuity between **Pin 14** and **Pin 6** using a VOM at the Station connector interface of the ACP.

---

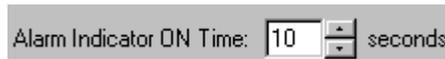
**Step 10:** Execute the **Deferred Maintenance Disconnectable Station Alarm** indicator test.

**Step 10-a:** Select **Deferred Maintenance Disconnectable** in the **Test Box**.



Test:

**Step 10-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time:  seconds

**Step 10-c:** Press the  button to start the alarm test.

**Step 10-d:** Verify that the **Deferred Maintenance Disconnectable Alarm** indicator turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm system.



**NOTE:**

If not connected to an external alarm system, then check for continuity between **Pin 12** and **Pin 4** using a VOM at the Station connector interface of the ACP.

**Step 11:** Execute the **Power Failure Station Alarm** indicator test.

**Step 11-a:** Select **Power Failure** in the **Test Box**.

Test:

**Step 11-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).

Alarm Indicator ON Time:  seconds

**Step 11-c:** Press the  button to start the alarm test.

**Step 11-d:** Verify that the **Power Failure Alarm** indicator turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm system.



**NOTE:**

If not connected to an external alarm system, then check for continuity between **Pin 13** and **Pin 6** using a VOM at the Station connector interface of the ACP.

---

**Step 12:** Execute the **Power Failure Disconnectable Station Alarm** indicator test.

**Step 12-a:** Select **Power Failure Disconnectable** in the **Test Box**.

Test:

**Step 12-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).

Alarm Indicator ON Time:  seconds

**Step 12-c:** Press the  button to start the alarm test.

**Step 12-d:** Verify that the **Power Failure Disconnectable Alarm** indicator turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm system.



**NOTE:**

If not connected to an external alarm system, then check for continuity between **Pin 11** and **Pin 4** using a VOM at the Station connector interface of the ACP.

---

**Step 13:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

**Step 14:** This completes the "*Station Alarms Test*" for the MC Subrack.

---

**STOP-Return to Calling Procedure**



## GTP 43 - Miscellaneous Discrete Outputs Test

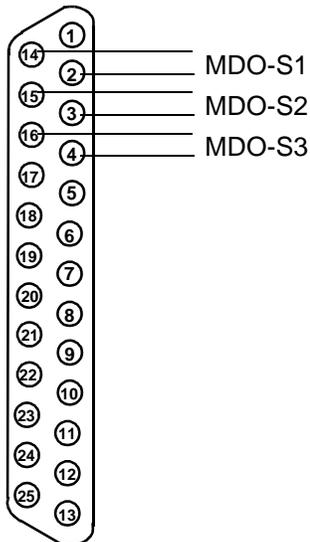
---

### Description

---

The following test procedure will test each of the three **Miscellaneous Discrete Outputs** on the MD Connector interface of the ACP. This test is an interactive test, which means the software will prompt the installer to visually verify the status of the output relay interface connection during the test. This test will also test the wiring between the Miscellaneous Discrete connector interface of the ACP and the connected station equipment. If the relay output is not connected to external equipment, then the indicated pins below can be checked for continuity using a VOM when each relay is set by the test.

#### Miscellaneous Discrete Outputs (MDO): :



#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter
- 1 → Multimeter (ITE-6379A or equiv.)

## Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

## Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

- 
- Step 1:* Verify that the XC-CIT Workstation is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See GTP 11 - System Login Procedure)

- 
- Step 2:* Verify that all **three** of the **Miscellaneous Discrete Output Alarm Contacts** are **off** at the connected external customer's alarm panel. .

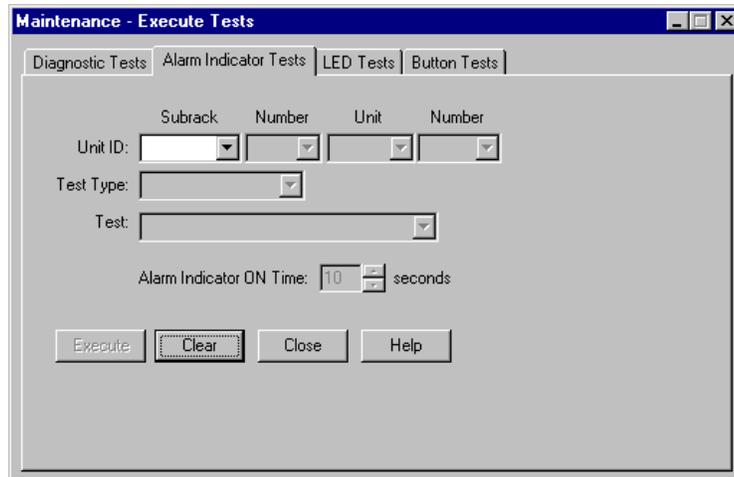
<input checked="" type="checkbox"/>	MD Output Relay	MD Connector Pins
<input type="checkbox"/>	MDO-S1	Pins 14 & 2
<input type="checkbox"/>	MDO-S2	Pins 15 & 3
<input type="checkbox"/>	MDO-S3	Pins 16 & 4



**NOTE:**

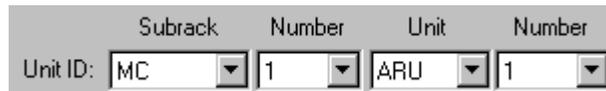
If the Miscellaneous Discrete Output Relays are **not** connected to an external alarm panel, then use a VOM and verify **no continuity** between each set of pins indicated above at the ACP.

- ❑ **Step 3:** Open the **Maintenance-Execute Tests Window** and select the **Alarm Indicator Tests tab** in order to setup for alarm testing.



- ❑ **Step 4:** In the **Alarm Indicator Tests Window**, setup for testing the **Miscellaneous Discrete Output Alarm Contacts** for the MC Subrack.

- ❑ **Step 4-a:** Select the **Unit ID** corresponding to the MC Subrack:



- ❑ **Step 4-b:** Select **Miscellaneous** in the **Test Box**.



- Step 5:** Execute the **Miscellaneous Discrete Output-1 (MDO-S1)** alarm relay contact test for the MC Subrack.

- Step 5-a:** Select **Output1** in the **Test Box**.



Test:

- Step 5-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time:  seconds

- Step 5-c:** Press the  button to start the alarm test.

- Step 5-d:** Verify that the **Output-1 (MDO-S1)** alarm relay contact turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm panel.



**NOTE:**

If not connected to an external alarm system, then check for continuity between **Pin 14** and **Pin 2** using a VOM at the MD connector interface of the ACP.

- 
- Step 6:** Execute the **Miscellaneous Discrete Output-2 (MDO-S2)** alarm relay contact test for the MC Subrack.

- Step 6-a:** Select **Output2** in the **Test Box**.



Test:

- Step 6-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time:  seconds

- Step 6-c:** Press the  button to start the alarm test.

- Step 6-d:** Verify that the **Output-2 (MDO-S2)** alarm relay contact turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm panel.



**NOTE:**

If not connected to an external alarm system, then check for continuity between **Pin 15** and **Pin 3** using a VOM at the MD connector interface of the ACP.

- Step 7:** Execute the **Miscellaneous Discrete Output-3 (MDO-S3)** alarm relay contact test for the MC Subrack.

- Step 7-a:** Select **Output3** in the **Test Box**.



Test:

- Step 7-b:** Select the desired **Alarm Indicator ON Time** (default 10 seconds).



Alarm Indicator ON Time:  seconds

- Step 7-c:** Press the  button to start the alarm test.

- Step 7-d:** Verify that the **Output-3 (MDO-S3)** alarm relay contact turns **on** (for Alarm Indicator ON Time) then **off**, at the external alarm panel.



**NOTE:**

If not connected to an external alarm system, then check for continuity between **Pin 16** and **Pin 4** using a VOM at the MD connector interface of the ACP.

- 
- Step 8:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

- 
- Step 9:** This completes the "*Miscellaneous Discrete Output Alarms Test*" for the MC Subrack.
- 

**STOP-Return to Calling Procedure**



## GTP 44 - Miscellaneous Discrete Inputs Test

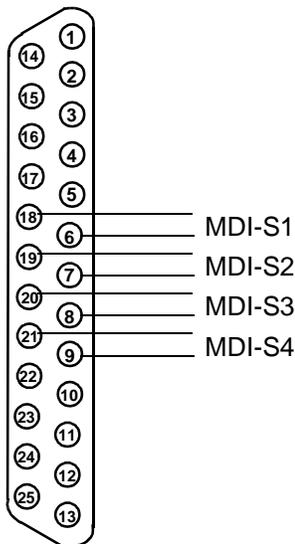
---

### Description

---

The following test procedure will test each of the four **Miscellaneous Discrete Inputs** for the MD connector interface of the ACP. The MD input alarm interface can be connected to external alarm devices (i.e. door closure, fire alarm, ..ect.). The alarm input is generated by either activating the specific connected alarm device for the MD Input or by shorting the appropriate 2 pins on the MD connector interface. After generating the input alarm, this test will verify that the system reports the correct alarm output response. After the alarm input reports successfully, clear the alarm and verify that the system reports the cleared alarm. This test is an interactive test, which means the installer must short the pins and wait to verify system response. This test will also test the internal wiring between the sub-rack Miscellaneous Discrete connector interface and Alarm Relay Unit (ARU).

#### Miscellaneous Discrete Inputs:



#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

## Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

## Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

Use the  boxes to check off the steps as they are completed.

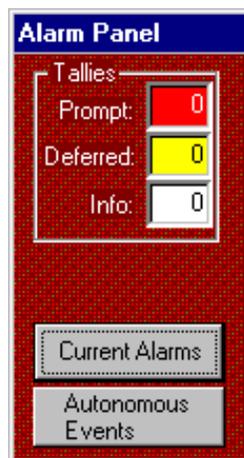
- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System and the GUI Window is visible on the screen.



**NOTE:**

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

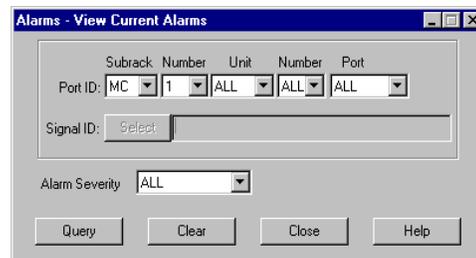
- Step 2:** Locate the **Alarm Panel Window** on the XC-CIT GUI screen as shown:



- Step 3:** Open the **Alarms-View Current Alarms Window** by pressing the  button.



- Step 4:** In the **Alarms-View Current Alarms Window**, select the MC Subrack as shown below, in order to query alarms generated **only** for the MC Subrack:



- Step 5:** Query the alarm status for **only** the MC Subrack, and verify that **no Miscellaneous Discrete Input - MDcIP{1-4}** alarms are currently present on the system.
- Step 5-a:** In the **Alarms-View Current Alarms Window**, press the  button to check for alarms for the MC Subrack.
- Step 5-b:** Verify that **no MDcIP{1-4}** alarms for the MC Subrack are reported, by performing **one** of the following:
- If the "NORC - No Records Found" message window appears, then there are **no** alarms present for the MC Subrack. Exit the message window by pressing .
  - If the **Reports-Current Alarms-Query Results Window** appears, verify **no MDcIP{1-4}** alarms are reported for the MC Subrack, then close the window by pressing the .

- Step 6:** Generate **one** of the following **Miscellaneous Discrete Input (MDI)** alarm contacts by activating the appropriate alarm device (i.e door closure, fire alarm, ect.). If **no** alarm device is connected, then activate the specific alarm contact under test by **shorting** the corresponding pins indicated below at the MD connector interface of the ACP. Check off the appropriate MD Input Alarm *under test*.

<input checked="" type="checkbox"/>	MD Input Alarm	MD Connector Pins
<input type="checkbox"/>	MDI-S1	Pins 18 & 6
<input type="checkbox"/>	MDI-S2	Pins 19 & 7
<input type="checkbox"/>	MDI-S3	Pins 20 & 8
<input type="checkbox"/>	MDI-S4	Pins 21 & 9



**NOTE:**

This test procedure will be repeated for each of the MD Input Alarms listed in the table above **one** at a time.

- Step 7:** Query the alarm status for **only** the MC Subrack, and verify that the appropriate **Miscellaneous Discrete Input - MDcIP{1-4}** alarm has been autonomously reported by the system.
- Step 7-a:** In the **View Current Alarms Window**, press the  button to check for alarms for the MC Subrack.
- Step 7-b:** Verify that the appropriate MD Alarm MDcIP{1-4} is reported in the **Failure Condition Column**.
- Step 7-c:** Close the **Reports-Current Alarms-Query Results Window** by pressing the  button.
- Step 8:** **Clear** the appropriate **Miscellaneous Discrete Input (MDI)** alarm by disengaging the specific connected alarm device, or by removing the short of the corresponding pins at the MD connector interface of the ACP.

- 
- Step 9:** Query the alarm status for **only** the MC Subrack, and verify that **no Miscellaneous Discrete Input - MDcIP{1-4}** alarms are currently present on the system.
- Step 9-a:** In the **Alarms-View Current Alarms Window**, press the  button to check for alarms for the MC Subrack.
- Step 9-b:** Verify that **no MDcIP{1-4}** alarms for the MC Subrack are reported, by performing **one** of the following:
- If the “NORC - No Records Found” message window appears, then there are **no** alarms present for the MC Subrack. Exit the message window by pressing .
  - If the **Reports-Current Alarms-Query Results Window** appears, verify **no MDcIP{1-4}** alarms are reported for the MC Subrack, then close the window by pressing the .
- 
- Step 10:** Return to **Step 6** and repeat test for **another** MD Input alarm contact, until all four MD Input alarm contacts have been tested.
- Otherwise**, when all four MD Input alarm contacts have been tested on the MD connector interface of the ACP, proceed to next step.
- 
- Step 11:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.
- 
- Step 12:** This completes the “*Miscellaneous Discrete Input Alarms Test*” for the MC Subrack.
- 

**STOP-Return to Calling Procedure**



## GTP 45 - Provisioning the System Timing

---

### Description

---

The following procedure will explain the necessary steps to provision the system timing to **one** of the following references:

- Station Clock Reference (IN 1 or IN 2)
- Line Timing References (derived from incoming STM-1 signal)
- Temporary Loopback (OUT to IN 1)
  - This is only for clearing alarm and not for using during service applications.

### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MC Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

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Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Open the ***Provision-Synchronization and Timing Window***.

**WINDOW PATH:**



- Step 3:** From the ***Provision-Synchronization and Timing Window***, select the ***System Clock Tab*** in order to provision the ***System Output Timing***.

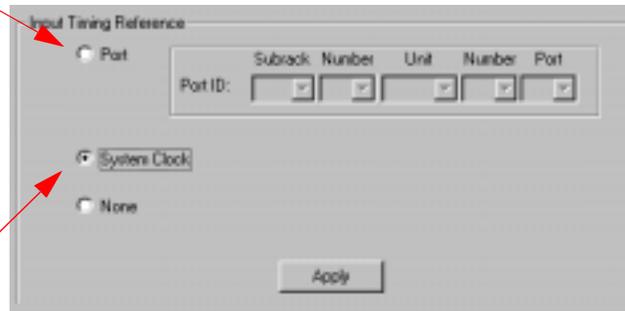
**WINDOW:**



- **Step 4:** Perform the following steps to provision the **Station Clock Output** only if providing timing from the *WaveStar™* DACS 4/4/1 System to other equipment in the station, or for use as a source for the temporary input timing reference.

- **Step 4-a:** In the **Input Timing Reference Box**, select which input timing reference to be provided as the output timing source.

Select if you want to use the timing from a STM-1 Port.

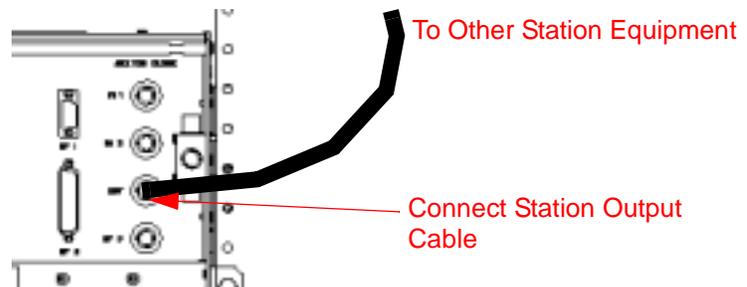


Select if you want to use the timing from the STU units. (Use this setting for temporary input timing reference.)

- **Step 4-b:** Provision the selected output timing source into the database by pressing the  button.
- **Step 4-c:** Query the status of the **Station Clock Output** by pressing the  button, and verify the working and protection STU Output reports as "Active". (Shown below using System Clock as input reference)

Reference ID	Working STU Input	Protect STU Input	Working STU Output	Protect STU Output
SYSTEM CLOCK	ACTIVE	ACTIVE	ACTIVE	ACTIVE

- **Step 4-d:** Close the **Query Results Window** by pressing the  button.
- **Step 4-e:** If providing timing to other equipment, connect the actual **Station Clock Output** cabling to the OUT connector interface on the rear of **both** Sync Subracks.



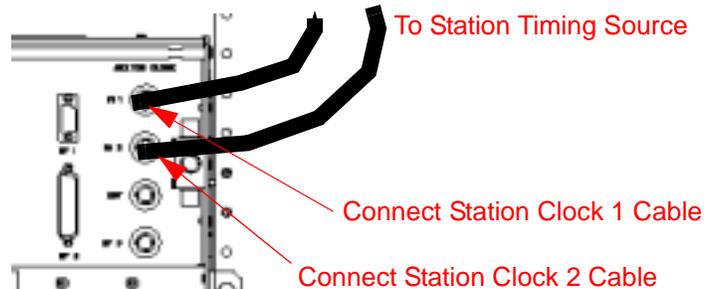
Rear View of Sync Subrack

- Step 5: From the **Provision-Synchronization and Timing Window**, select the **System Clock Tab** in order to provision the input timing reference.

**WINDOW:**

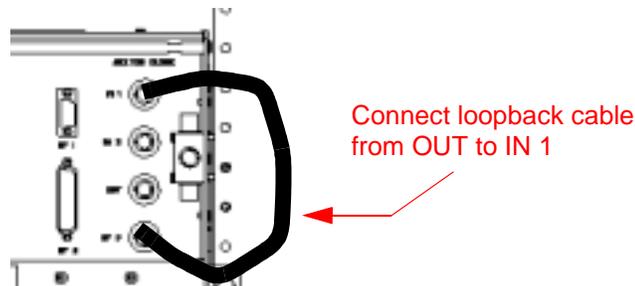


- Step 6: Connect the appropriate **Station Clock Input** cabling for the selected timing reference to provision:
  - For line timing reference, verify that a good STM-1 signal is connected to the input port of the select port number.
  - For actual station clock references, connect input timing cables to IN 1 or IN 2 connector interface on the rear of **both** Sync Subracks.



Rear View of Sync Subrack

- For temporary timing reference, connect loopback cable from OUT to IN 1 connector interfaces on the rear of **both** Sync Subracks (Not for service applications).



Rear View of Sync Subrack

❑ **Step 7:** Perform the following steps to provision a **timing reference** (station clock or Line Timing) into the system database.

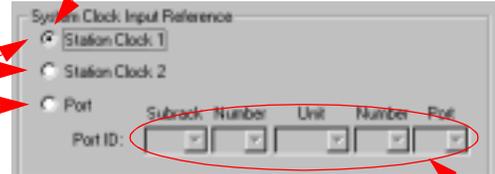
❑ **Step 7-a:** In the **System Clock Input Reference Box**, select one of the input references to provision (Station Clock 1, Station Clock 2 or Port).

For actual station reference, select one reference type.

For temporary reference, select Station Clock 1.

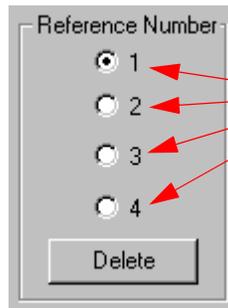
Station Clock Timing

Line Timing



If Port is selected, enter specific STM-1 port number to use.

❑ **Step 7-b:** In the **Reference Number Box**, select a reference number (1-4). You can provision up to 4 different references.



Select Reference Number (1-4)

(For temp ref, select "1")

❑ **Step 7-c:** In the **Assigned Priority Box**, select a priority number (1-4). This number determines the order of reference switching during failure.



Select Priority Number

(For temp ref, select "1")

❑ **Step 7-d:** Provision the selected input timing reference into the database by pressing the  button.

- ❑ **Step 8:** Query the Active and Standby STU units, and verify the status of the provisioned references to **both** Sync Subracks.
- ❑ **Step 8-a:** Query the Synchronizaation Status of **both** STU units by pressing the  button, and verify the timing mode reports as "Phase Locked".
  - Active STU should be "phase-locked" to reference (If "holdover" is reported, then the reference is either disconnected or not provisioned).
  - Standby STU should be "phase-locked" to cross-couple

STU	Protection Switch Status	Timing Mode	Active Reference
1 Working	ACTIVE	PHASE LOCKED	1
2 Protect	STANDBY	PHASE LOCKED	CROSS COUPLE

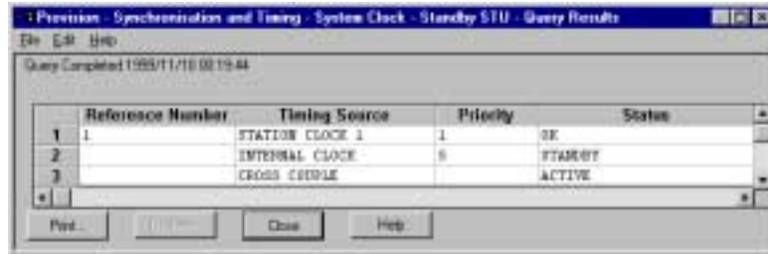
- ❑ **Step 8-b:** Close the **Query Results Window** by pressing the  button.
- ❑ **Step 8-c:** Query the Active STU unit by pressing the  button, and verify the following information:
  - Provisioned Reference Status is "Active" (If "failed" then the incoming signal is bad to active STU)
  - Internal Clock Status is "Standby"
  - Cross-Couple Status is "OK"

(shown below for temporary reference Station Clock 1).

Reference Number	Timing Source	Priority	Status
1	STATION CLOCK 1	1	ACTIVE
2	INTERNAL CLOCK	5	STANDBY
3	CROSS COUPLE	SE	

- ❑ **Step 8-d:** Close the **Query Results Window** by pressing the  button.

- Step 8-e:** Query the Standby STU unit by pressing the  button, and verify the following information:
- Provisioned Reference Status is “OK”  
(If “failed” then the incoming signal is bad to standby STU)
  - Internal Clock Status is “Standby”
  - Cross-Couple Status is “Active”  
(standby side always cross-coupled to active side)
- (shown below for temporary reference Station Clock 1).



Reference Number	Timing Source	Priority	Status
1	STATION CLOCK 1	1	OK
2	INTERNAL CLOCK	0	STANDBY
3	CROSS COUPLE	0	ACTIVE

- Step 8-f:** Close the **Query Results Window** by pressing the  button.
- 

- Step 9:** Perform **one** of the options below:
- If additional input timing references need to be provisioned (up to 4 references allowed), return to **Step 6**.
  - If all timing references are provisioned, proceed to next step.

- Step 10:** Close the **Provision-Synchronization and Timing Window** by pressing the  button.
- 

- Step 11:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.
- 

- Step 12:** This completes the “*Provisioning the System Timing*” procedure.
- 

## STOP-Return to Calling Procedure



## GTP 46 - Provisioning the MSP Groups

---

### Description

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The following procedure will explain the steps to provision any odd/even pair of adjacent port interface units in either a PSA Port Subrack (STM-1), PSB Port Subrack (STM-0) or PSC Port Subrack (STM-4/16) in the *WaveStar*<sup>TM</sup> DACS 4/4/1 System as a Multiplex Section Protection (MSP) Group for line protection operation.

There can be a maximum of eight MSP Groups provisioned within either a PSA (STM-1), PSB (STM-0) Subrack, or PSC (STM-4/16) Subrack. Each odd/even pair of adjacent port interface units can be configured independantly, and can be setup for either simplex operation, or line protection (MSP) operation. By default, each odd/even pair of adjacent port interface units within a PSA,PSB, or PSC Subrack is configured for simplex operation. In order to configure the odd/even pair of adjacent port interface units for line protection operation, the user must manually provision (i.e. create) the MSP Group. This makes the odd port interface unit the *working* unit, and the even port interface unit the *protection* unit.

#### Required Equipment:

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### Assumptions

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MS Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.
3. The Port Subrack can not be provisioned for Electrical Equipment Protection Switching operation (EEPS).

### Precautions

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

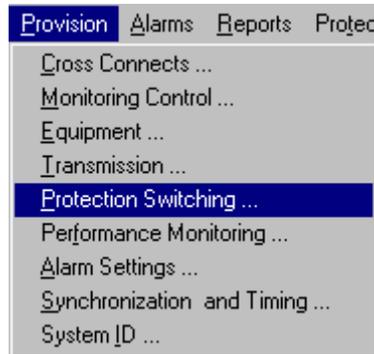
Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

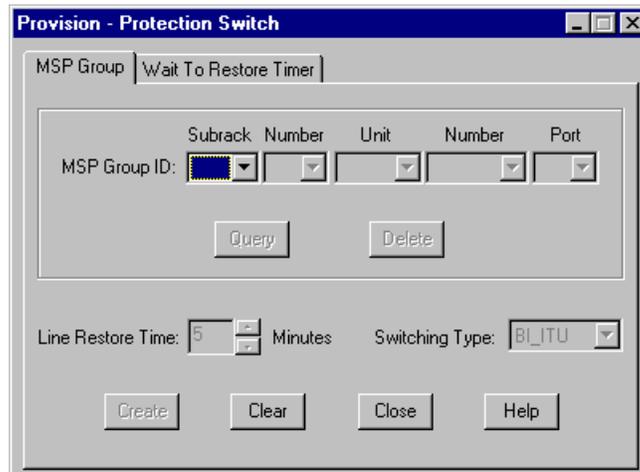
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Open the **Provision-Protection Switching Window** and select the **MSP Group Tab** in order to provision into the system database any odd/even pair of port interface units for line protection operation.

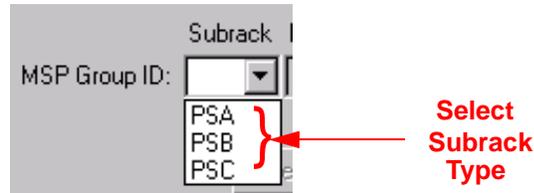
### WINDOW PATH:



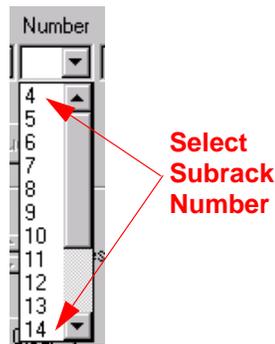
### WINDOW:



- **Step 3:** In the **MSP Group ID Box**, select the appropriate **subrack type** (PSA, PSB or PSC) corresponding to the selected port subrack.

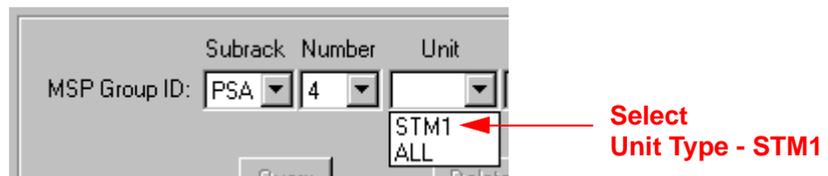


- **Step 4:** In the **MSP Group ID Box**, select the appropriate **subrack number** (4-19) corresponding to the selected port subrack.

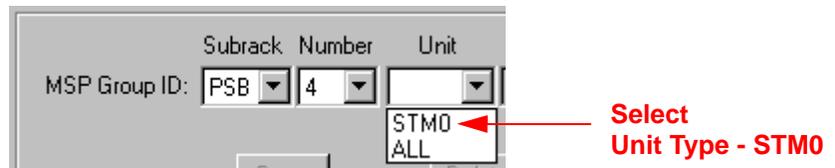


- **Step 5:** In the **MSP Group ID Box**, select the appropriate **unit type** (STM0, STM-1, STM-4, or STM16) corresponding to units to be provisioned.

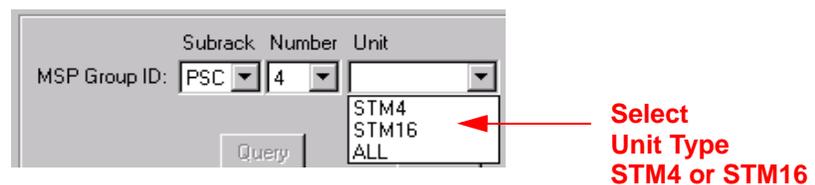
For PSA Subrack (STM1):



For PSB Subrack (STM0):

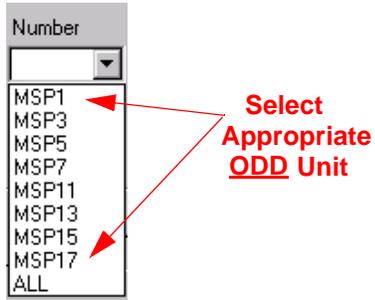


For PSC Subrack (STM4/16):

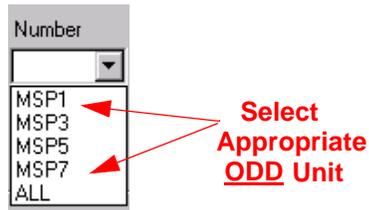


- Step 6:** In the **MSP Group ID Box**, select the appropriate **odd-numbered slot** of the MSP Group to be provisioned.

For STM-0 or STM-1 MSP Groups:



For STM-4 or STM-16 MSP Groups:



- Step 7:** In the **MSP Group ID Box**, select **one** of the ports of the port interface unit to be provisioned for MSP operation.

For STM-0 Unit: Select Port 1,2,3... or 12

For STM-1 Unit: Select Port 1,2,3 or 4

For STM-4 Unit: Select Port 1,2,3 or 4

For STM-16 Unit: Select Port 1

Each port on the port interface unit needs to be provisioned for MSP operation separately, but not all ports need to be provisioned for MSP operation.

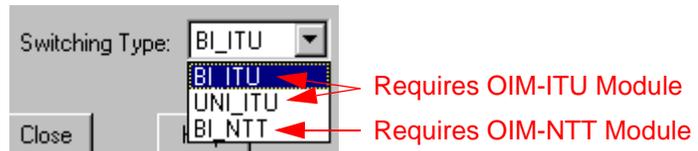
- Step 8:** In the **Switching Type Box**, select the MSP switching type protocol.

For STM-0 Unit:



Switching Type: BI\_NTT

For STM-1 Unit:



Switching Type: BI\_ITU

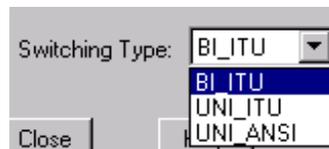
BI\_ITU  
UNI\_ITU  
BI\_NTT

Close

Requires OIM-ITU Module

Requires OIM-NTT Module

For STM-4 or STM-16 Unit:



Switching Type: BI\_ITU

BI\_ITU  
UNI\_ITU  
UNI\_ANSI

Close

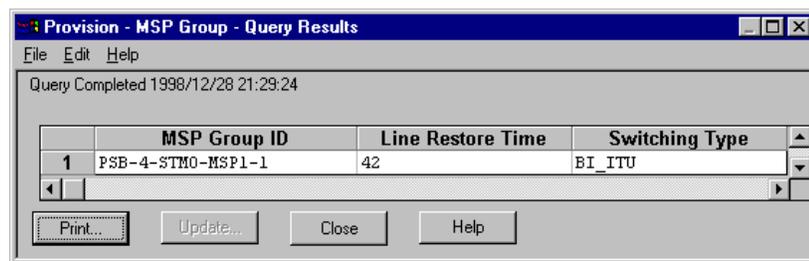
- Step 9:** If the selected **Switching Type** is **BI-NTT**, then in the **Line Restore Time Box**, select the appropriate time in minutes (default is 5 minutes).



Line Restore Time: 5 Minutes

- Step 10:** Provision the designated MSP Group by pressing the **Create** button.

- Step 11:** Query the newly provisioned information for the MSP Group by pressing the **Query** button, and verify that the MSP Group has been provisioned correctly into the system database. (Shown for STM0 MSP Group)



Provision - MSP Group - Query Results

File Edit Help

Query Completed 1998/12/28 21:29:24

	MSP Group ID	Line Restore Time	Switching Type
1	PSB-4-STM0-MSP1-1	42	BI_ITU

Print... Update... Close Help

- Step 12:** This completes provisioning for one port for MSP operation, perform one of the procedural options below:



**NOTE:**

Each port in the port interface unit can be configured differently (simplex or duplex). Not all ports in the port interface unit need to be configured and provisioned for MSP operation.

- Return to **Step 7** and repeat provisioning for each port on the port interface unit that is to be provisioned for MSP operation. (It is not required that all ports on the unit be provisioned for MSP operation.)
- When all ports to be provisioned for MSP operation is complete, proceed to next step.

---

*Step 13:* This completes provisioning for one MSP Group in the specific Port Subrack, perform one of the procedural options below:



**NOTE:**

Each odd/even pair of units in the Port Subrack can be configured differently (simplex or duplex). Not all odd/even pairs of adjacent port interface units need to be configured and provisioned for MSP operation.

- If **additional** odd/even pair of adjacent port interface units need to be provisioned as a MSP Group, return to **Step 6** and repeat this procedure.
- If all of the MSP Groups in the selected Port Subrack have been provisioned, proceed to the next step.

---

*Step 14:* Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

*Step 15:* This completes the "*Provisioning the MSP Groups*" procedure.

---

## **STOP-Return to Calling Procedure**

## **GTP 47 - Provisioning Port Subrack Inhibit Status**

---

### **Description**

---

The following procedure will explain the steps to “allow” matrix slice protection switching to occur for a selected Port Subrack, if there is a failure within that Port Subrack. The default state of the protection switching for a port subrack is “Inhibit” (for no protection switching allowed), since subrack testing usually occurs after provisioning and subrack testing normally generates numerous alarms.

#### **Required Equipment:**

- 1 → XC-CIT Workstation running GUI Application
- 1 → 25ft 10 Base T Data Cable (ITE-7016)
- 1 → Ethernet LAN Adapter

### **Assumptions**

---

1. A XC-CIT Workstation is connected to the EXLAN ethernet LAN port in the MS Subrack.
2. User is currently logged into the *WaveStar*<sup>TM</sup> DACS 4/4/1 System from the XC-CIT Workstation.

### **Precautions**

---

- When working on the *WaveStar*<sup>TM</sup> DACS 4/4/1 System, ESD grounding procedures must be followed (e.g.: wrist strap, or grounded shoes, etc. must be worn) at all times.

## Procedure

---

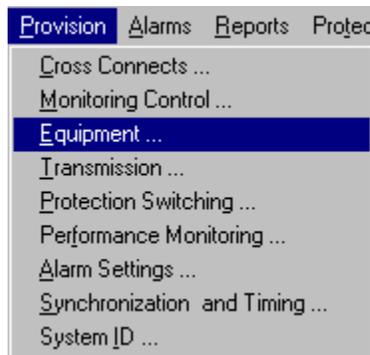
Use the  boxes to check off the steps as they are completed.

- Step 1:** Verify that the XC-CIT Workstation is currently logged into the *WaveStar™* DACS 4/4/1 System and the GUI Window is visible on the screen.

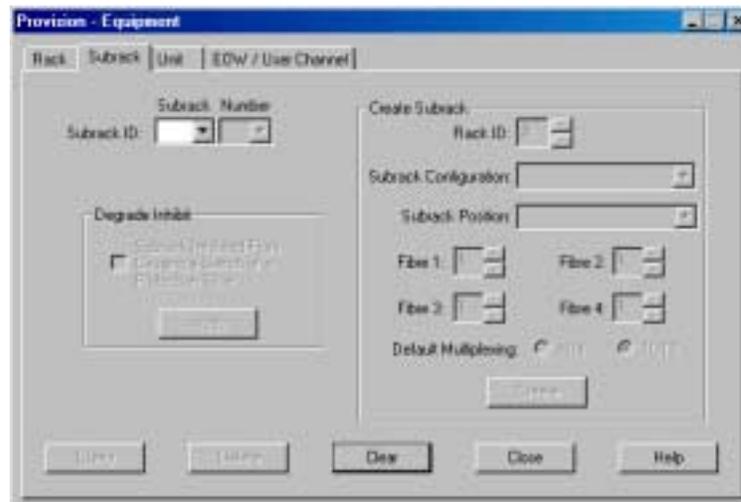
If **not**, connect and login to the system.  
(See *GTP 11 - System Login Procedure*)

- Step 2:** Open the **Provision-Equipment-Subrack Window** and select the **Subrack Tab**.

### WINDOW PATH:



### WINDOW:





---

**Step 8:** Close the ***Provision-Equipment-Query Results Window*** by pressing the  button.

---

**Step 9:** Close the ***Provision-Equipment Window*** by pressing the  button.

---

**Step 10:** Check-off the appropriate  box corresponding to this procedure on the appropriate *verification checklist*.

---

**Step 11:** This completes the "***Provisioning Port Subrack Inhibit Status***" procedure.

---

**STOP-Return to Calling Procedure**