Lucent Technologies

Bell Labs Innovations

WaveStar™ **DACS 4/4/1 System Release 2.1**

MC Duplex Upgrade (In-Service)

Modification Implementation Procedure

Notice

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change.

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Acknowledgments

This document was developed by the Lucent Technologies Customer Technical Support (CTS) organization at the Merrimack Valley Works in North Andover, Massachusetts USA.

How Are We Doing?

Title: *WaveStar*™ **DACS 4/4/1 System, Rel 2.1 MC Duplex Upgrade (In-Service)**
Modification Implementation Procedure

Identification No.: **365-367-410**   Issue No.: **1.0**   Date: **September 2000**

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Customer Technical Support Organization
WaveStar™ **DACS 4/14/1 Technical Support Manager**
1600 Osgood Street
North Andover, MA 01845-9985
USA

Contents

Attachments

■   Completion Form

About This Document

Purpose

This Modification Implementation Procedure provides instructions for upgrading the Motorola Controller Subrack in a Release 2.1 *WaveStar*™ DACS 4/4/1 System from simplex to duplex operation. This manual contains instructions for system preconditioning, new hardware installation and startup, software feature activation, new hardware verification, and system testing troubleshooting information.

Intended Audiences

This procedure shall be implemented by Lucent Technologies installation personnel or the customer's craftpersons.

This document is primarily for end users responsible for maintaining and installing the *WaveStar*™ DACS 4/4/1, including, but not limited to:

- Lucent Technologies Installation Personnel

- Lucent Technologies Field Support Engineers

- Customer Field Technicians

- Customer Station Engineers

Dash Number to Product Association

This information is not required in this procedure.

Reason for Reissue

This information is not required in this procedure.

Conventions Used

This information is not required in this procedure.

Safety Instructions

Admonishments

This document may contain admonishments in the form of **DANGERS**, **WARNINGS**, **CAUTIONS, and NOTES.** These admonishments, listed in order of priority, have the following definitions:

⚠ **DANGER:**
*Indicates the presence of a hazard that **will** cause death or severe personal injury if the hazard is not avoided.*

⚠ **WARNING:**
Indicates the presence of a hazard that ***can*** cause death or severe personal injury if the hazard is not avoided.

⚠ **CAUTION:**
*Indicates the presence of a hazard that **will** or **can** cause minor personal injury or property damage if the hazard is not avoided. Caution is also used for property-damage-only accidents. This includes equipment damage, loss of software, or service interruption.*

✎ **NOTE:**
Indicates extra information regarding the current topic.

Lightwave Safety

The *WaveStar*™ DACS 4/4/1 and associated optical test sets use semiconductor laser transmitters <u>only</u> for external port interfaces (internal optics are provided by LED transmitters). The lasers emit lightwaves, at or near infrared wavelengths, into lightguide cables. This light is at the red end of the visible spectrum. Direct exposure at close distances should be avoided.

⚠ **WARNING:**
> *Never view any unterminated optical connector with optical instruments other than indirect image-converting devices such as the FIND-R-SCOPE, since viewing optics tends to collimate the energy from an optical connector and, hence, increases the potential risk for injury.*

Electrostatic Discharge (ESD) Considerations

To reduce the possibility of ESD damage, subracks are equipped with grounding jacks to enable personnel to ground themselves using wrist straps, while handling circuit packs or working on subracks. The jacks for connection of wrist straps are located on each the sides of each rack (under stile strips). These jacks are properly labeled with the "ESD" symbol. Where grounding jacks are not provided, an alligator clip adapter can be used to enable a proper connection to the bay frame ground. The wrist straps should be checked periodically with a wrist strap tester to ensure that they are working properly.

⚠ **CAUTION:**
> *Industry experience has shown that all integrated circuit packs can be damaged by static electricity that builds up on work surfaces and personnel. The static charges are produced by various charging effects of movement and contact with other objects. Dry air allows greater static charges to accumulate. Higher potentials are measured in areas with low relative humidity, but potentials high enough to cause damage can occur anywhere.*

Basic Safety Precautions

When performing procedures on telecommunication equipment, basic safety pre-
cautions should always be followed to reduce the risk of fire, electric shock, and
injury to persons, including the following:

- Read and understand all instructions.

- Follow all warnings and instructions marked on the product.

- Slots and openings in this product and the back or bottom are provided for
  ventilation. To protect it from overheating, these openings must not be
  blocked or covered.

- Never push objects of any kind into this product through slots as they may
  touch dangerous voltage points or short out parts that could result in a risk
  of fire or electrical shock.

- Never spill liquid of any kind on the product.

- Never install telecommunication wiring during a lightning storm.

- Never install telecommunication connections in wet locations unless the
  connection is specifically designed for wet locations.

- Never touch uninsulated telecommunication wires or terminals unless the
  telecommunications line has been disconnected at the network interface.

- Grounding/bonding circuit continuity is vital for safe operation of this equip-
  ment. Installation must include an independent frame ground conductor to
  building ground. Never operate with grounding/bonding conductor discon-
  nected.

- For continued protection against risk of fire, replace fuses only with equiva-
  lent fuses of same type and rating.

- Installation and maintenance procedures must be followed and performed
  by trained personnel only.

- This product has two input power feeders. Disconnecting one power feeder
  will not de-energize the product. To reduce the risk of injury, disconnect two
  power supply cables when removing power from the rack.

Related Documentation

Practices

The following Lucent Technologies practices provide reference information about the *WaveStar*™ DACS 4/4/1 System.

- Number: 365-367-400

  TItle: *WaveStar*™ DACS 4/4/1 *Applications, Planning and Ordering Guide*
  Audience: System planners, engineers, and sales teams.
  Content: Features, applications, general description, system configurations, system planning, and ordering information.

- Number: 365-367-403

  TItle: *WaveStar*™ DACS 4/4/1 *Quick Reference Card*
  Audience: System installers, maintenance and support personnel.
  Content: System descriptions, hardware information, user information.

- Number: 365-367-404

  TItle: *WaveStar*™ DACS 4/4/1 *Installation Assembly Manual*
  Audience: System installers, maintenance and support personnel.
  Content: System installation instructions for hardware assembly and construction of the equipment to customer order.

- Number: 365-367-405

  TItle: *WaveStar*™ DACS 4/4/1 *Installation Testing Manual*
  Audience: System installers, maintenance and support personnel.
  Content: System verification instructions for hardware testing and system configuration procedures.

- Number: 365-367-412

  TItle: *WaveStar*™ DACS 4/4/1 *Provisioning Guide*
  Audience: System operations, maintenance and support personnel.
  Content: System provisioning information and instructions.

- Number: 365-367-413

  TItle: *WaveStar*™ DACS 4/4/1 *Administration and Maintenance Guide*
  Audience: System operations, maintenance and support personnel.
  Content: General descriptions, system configurations, service procedures, support procedures, maintenance procedures and technical specification information.

Drawings

The following Lucent Technologies drawings provide reference information about the *WaveStar*™ DACS 4/4/1 System.

- SD96764-01 - System Schematic Drawing

How to Order Documentation

To order additional copies of this document please contact your Lucent Technologies Local Field Support Organization (LFS) or directly to the Lucent Technologies Customer Information Center (CIC).

The ordering number for this document is **365-367-410**.

To order by Mail, write to:

> Lucent Technologies Inc.
> Customer Information Center
> Attention: Order Entry Section
> 2855 N. Franklin Road
> P.O. Box 19901
> Indianapolis, Indiana 46219
> U.S.A.

Place telephone orders Monday through Friday, To order by telephone, call:

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>
> From <u>outside</u> the U.S.A.: 1-317-322-6416
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> or Fax: 1-317-322-6699

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Lucent Technologies, Inc.
Customer Technical Support Organization
WaveStar™ DACS 4/4/1 Technical Support Manager
1600 Osgood Street
North Andover, MA 01845

General Description

Scope

This Modification Implementation Procedure describes the steps necessary to upgrade a Motorola Controller Subrack in an **in-service** *WaveStar*™ DACS 4/4/1 System from simplex to duplex operation while maintaining service. This is a coordinated upgrade requiring new hardware retroffiting, and MCDUP software enabling to be performed at key intervals in the upgrade process.

This manual contains instructions for system preconditioning, new hardware installation, MCDUP software feature activation, new hardware verification, and system testing troubleshooting information.

This document references procedures from the *WaveStar*™ DACS 4/4/1 Installation Testing Manual (365-367-405).

Change Details

Reason for Change

The purpose of this change procedure is to provide instructions for upgrading a Motorola Controller Subrack in a *WaveStar*™ DACS 4/4/1 system for Duplex Main Controller Operation in Rel 2.1.

Coordination

This information is not required in this change procedure.

Change Classification

This is an optional change and to be performed only if customer purchases MC Duplex hardware.

When to Apply This Change

This change shall be applied at a desired time when the customer can accept a temporary suspension of system control while the Motorola Controller is upgraded from Simplex to Duplex Operation without affecting service.

Type of Change

Installer Change (IC) / Installer Change Rotational (ICR)

✓	Installer Change (IC)
	Installer Change Rotational (ICR)

Software, Hardware, Firmware

This change affects hardware

SOFTWARE	HARDWARE
	✓

Equipment Affected

System Affected

SYSTEM	*WaveStar*™ DACS 4/4/1	Release 2.1

Unit Affected

RACK	2200 Core Complex (Rel 1.0) - Upgraded with kit to Rel 2.0	848136321 848435673
	2600 Core Complex (Rel 1.0) - Upgraded with kit to Rel 2.0	848136230 848435673
	2200 Core Complex (Rel 1.1) - Upgraded with kit to Rel 2.0	848306452 848486742
	2600 Core Complex (Rel 1.1) - Upgraded with kit to Rel 2.0	848306460 848486742
	2200 Core Complex (Rel 2.0)	848478301

Product Affected

OLD	Motorola Controller (Simplex)	408067916
NEW	MC Duplex Upgrade Kit[a]	848486734
	LAN Cable Adapter Kit (1 per sub)	848529210
	LAN Cable (1 per sub)	

a. See Table 2 for contents of kit.

Software Release Information

This procedure requires the *WaveStar*™ DACS 4/4/1 Release 2.1.x Core Software Set.

Installation Requirements

Training

The following table defines the installation requirements that the installer must possess in order for this procedure to be implemented on the *WaveStar*™ DACS 4/4/1 system. If you have any questions regarding these requirements, contact your local Lucent Technologies Customer Technical Support Representative.

Knowledge and Experience

It is recommended that the installer complete as many of the following conditions below:

■ Successfully completes the *WaveStar*™ DACS 4/4/1 Installation and Assembly course.

■ Successfully completes the *WaveStar*™ DACS 4/4/1 Installation and Test course.

■ Successfully completes the *WaveStar*™ DACS 4/4/1 Operation and Maintenance course.

■ Familiar with installation/testing of Lucent Technologies SDH Transmission Equipment

Installer Information

Number of Installers: One installer is required to execute these procedures.

Technical Support

Contacts

If any problems are encountered, or if any of the steps specified in this procedure cannot be completed as indicated, contact the next level of support.

Table 1.   Technical Support Contacts

Customer Location	Lucent Technologies Support Contact
Peoples Republic of China, - Northern Provinces	Lucent Technologies China Beijing China (86) 10-500-4455
Peoples Republic of China, - Southern Provinces	Lucent Technologies China Guangzhou, China (86) 20-331-1600
Indonesia	Lucent Technologies Indonesia Jawabarat, Indonesia (62) 21-898-0840
Japan	Lucent Technologies Japan Tokyo, Japan (81) 35-561-3000
Saudi Arabia	Lucent Technologies Saudi Arabia Riyadh, Saudi Arabia (96) 61-241-1055
USA and Canada [a]	Lucent Technologies CTAM (1) 800-225-4672
Europe, Middle East, and Africa (all countries not listed above)	Lucent Technologies - NSI Hilversum, The Netherlands (31) 35-87-1555
Asia and Pacific Rim (all countries not listed above)	Lucent Technologies Singapore Singapore (65) 390-5450
Central America (all countries not listed above)	Lucent Technologies de Guatemala Guatemala City, Guatemala (502) 233-4211
South America (all countries not listed above)	Lucent Technologies de Argentina Argentina (54) 149-7231

a. During normal working hours of **7:30 a.m.** to **4:15 p.m. Monday-Friday**, your call is answered by a *WaveStar*[TM] DACS 4/4/1 engineer. Outside normal working hours (and occasionally during them), your call is transferred to CTAM (Lucent Support answering service) who will request the product assistance information then contact an engineer who will return your call as quickly as possible.

Risk Assessments

Service Risk Assessment

Rating:

LOW   This procedure has a **LOW** service risk rating, since there is **NO** potential service loss if this procedure is not implemented immediately. This procedure can be implemented at any time as desired by the Customer.

Additional Service Risks:

None

Implementation Risk Assessment

Rating:

HIGH   This procedure has a **HIGH** implementation risk rating, since there is a potential for a service interruption to the end customer, if any procedural deviations or procedure specific equipment failures occur during the procedure. However, the potential service interruption exceeds a momentary hit or burst of errors to the end customer. This procedure should be performed at low traffic periods as determined by the Customer, such that the effect on service on the system would be minimal in the event of a failure during implementation of the procedure.

Additional Implementation Risks:

None

Time Estimates

Procedural Time

The time to implement this procedure is estimated to be 6 hrs. per system.

The following chart provides time estimates for each phase in this procedure, and the actual time may vary slightly due to experience.

Pre-Conditioning	**15 min**
Upgrade Procedure	**5.5 hours**

- Hardware Upgrade:
   - MCDUP Upgrade:
   - MC Diagnostic Test:
	2 hours
	 3 hours
	 .5 hours

Conclusion	**15 min**

Out-Of-Service Time

The following chart provides system out-of-service time or reduced system control time estimates.

System Out-of-Service	**none**
Controller Out-of-Service	**Approx. 1 hour**

Soak Time

The following chart provides any system soak time that is required after completion of the procedure.

Soak Time	**n/a**

Items Required to Implement Procedure

The list of required equipment and tools for this procedure is shown below: The items with **L** in the **Note** column shall be provided by Lucent Technologies and the items denoted with a **C** shall be provided by the customer.

Code	Qty	Note	Description
108399593	1	L	ITE-7110 *WaveStar*™ DACS 4/4/1 Installation Test Accessory Kit[a]
848634226 **or** 8486342000	1	C	*WaveStar*™ DACS 4/4/1 Release 2.1.2 Core Software Set - New Frame **or** - Upgrade from 2.0.x
108900382	1	C	Rel 2.1 Documentation Upgrade Kit - MC Duplex Upgrade MIP (365-367-410)
108900358	1	C	Rel 2.1 Installation Documentation Kit - Installation Assembly Manual (365-367-404) - Installation Testing Manual (365-367-405)
-	1	C	XC-CIT Workstation Computer[b]
848486734	1	C	MC Duplex Upgrade Kit[c]
848529210	See Note [d]	C	LAN Cable Adapter Kit
108566522 108566530 108566548 108566555	See Note [d]	C	LAN Data Cable (choose one) - D8CM 7.6 meter (for Sync Subracks) - D8CM 50 ft (for Port Subracks) - D8CM 100 ft (for Port Subracks) - D8CM 200 ft (for Port Subracks)

a. The contents of this kit can be found in the Release 2.1 Installation Testing Manual (365-367-405)

b. Compaq Model AP400 or equivalent running the XC-CIT Application Software.

c. The contents of this system upgrade kit are to be found in Table 2.

d. Order 1 LAN Cable Kit and 1 LAN cable (appropriate length)per equipped Sync Subrack and Port Subrack in system.

NOTES:

C = The item shall be supplied by the customer.

L = The item is part of typical local installation.

The Installation Test Equipment (ITE) item listed in above table can be acquired from the Lucent Technologies Installation Material Distribution and Repair Center (IMDARC).

Address:

> **Lucent Technologies - IMDARC**
> **1111 Woodsmill Road**
> **Town and Country, MO 63017**
> **(314) 891-3024**

Table 2.   Contents of MC Duplex Upgrade Kit (848486734)

Description	QTY	COMCODE
MC Duplex Cable Upgrade Kit[a]	1	848519468
VMA-1 (LAN HUB Unit)	2	108371535
MPU (MCG P/N SMMXRCPULUCNT5-K)	1	408420313
MSU (MCG P/N SMMXRDMOLUCNT1)	1	408151421[b]
NIC TM (MCG P/N SMMXR100BTLUCNT1)	1	408091643
SERIAL TM (MCG P/N SMMXR121LUCNT)	1	408091650
ARU TM (MCG P/N SMMXR712129LUCNT)	1	408091668
SCSI TM (MCG P/N MVME712-104)	1	408091676
SCSI TERM (MCG P/N P417K)	1	408091718
SCSI CABLE (MCG P/N CA34)	1	408091734
VME CABLE (MCG P/N CA71)	1	408091585
PSP (MCG P/N MC1000K-DC700A)	1	4080917425

a. Contents od MC Duplex Cable Kit are shown in Table 3.
b. SMMXRDMOLUCNT2 (408346724) maybe shipped as an equivalent unit.

Table 3.   Contents of MC Duplex Cable Upgrade Kit (848519468)

Description	QTY	COMCODE
ARU-ALARM CABLE	1	848299251
ARU-RELAY CABLE	1	848299244
ARU-ALT CABLE	1	848299236
SUP CABLE	1	848362505
1FT D8SA MODULAR CORD	1	108566407
2 FT D8SA MODULAR CORD	2	108566415
LHU 2-PORT INTERCONNECT CABLE	1	848326567
MCLAN CABLE LABEL Kit	1	408346831

Precautions and Recommendations

Precautions

- Read each step completely before performing the action specified, and perform the steps in the provided sequence.

- ESD wrist straps must be worn during the entire procedure, when touching the *WaveStar*™ DACS 4/4/1 System equipment or handling related system components.

- ESD straps must be tested before starting the procedure.

- All jewelry (rings, watches, etc.) should be removed before starting this procedure.

- Be careful when working near all power cables, shorting these cables could cause a loss of service.

Recommendations

- Procedural stopping points (break points) should only be taken at the end of any procedure. Do not stop in the middle of any procedure.

- Autonomous log-out occurs when the XC-CIT Inactivity Timer is exceeded. You will be required to log back into the system.

- Wait for the appropriate response before continuing to the next step.

- Do not proceed with testing if a command does not successfully complete; contact your next level of support.

- Approximate command execution times are given in each step. If no time is given, the command completes in under one minute.

- If any problems or service loss occur, contact your next level of support immediately. If the solution is known, have one person continue correcting the problem while the other person calls the next level of support.

Pre-Conditioning

Pre-Conditioning Procedure

Description

The steps in this section shall be performed so that the equipment, the personnel, and the ancillary systems, such as, alarm centers, are ready for the change.

Procedure

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

❏ *Step 1:* Contact your next level of support, in order to verify that this procedure is the latest version.

> ⚠ **CAUTION:**
> Do **not** continue if the procedure to be used is **not** the latest version.

❏ *Step 2:* Verify the presence of all the items listed in the **Required Items** paragraph in the *"General Description"* section of this document.

> ✎ **NOTE:**
> Verify all the equipment is available and not damaged. If all the material and documents are not available or any equipment is missing or damaged, do not continue, contact your next level of support.

❏ *Step 3:* Test all ESD wrist straps before beginning the procedure. Use an approved ESD wrist strap tester or an ohmmeter. Follow the directions for the wrist strap tester when using this method or if using an ohmmeter, approximately 1 Meg ohm must be measured from the banana plug to the webbing of the wrist strap.

❏ *Step 4:* Verify that an outside phone line is present, functional (i.e. phone attached and working), and near to the *WaveStar*™ DACS 4/4/1 System location. This communication line will be used to contact the next level of support in the event of problems during the implementation procedure.

❏ *Step 5:* Get authorization from the customer to begin the hardware verification phase of the installation process on the *WaveStar*™ DACS 4/4/1 System.

⚠ **CAUTION:**
*Do **not** proceed until receiving authorization from customer to continue with testing procedure.*

❏ *Step 6:* This completes the "*Pre-Conditioning*" section of this procedure, proceed to next section "*Upgrade Procedure*".

Upgrade Procedure

Description

This section will describe the required process for implementing MC Duplication on an **in-service** *WaveStar*™ DACS 4/4/1 System while maintaining service. This process must be followed in-order to successfully install and test the Protection Main Controller (MC-2) equipment and associated cabling in System B (right-side) of Motorola Controller Subrack. This procedure will also explaing the steps to load the Rel 2.1 Core Software onto the Protection Main Controller, perform protection switch to new controller, then test the new controller equipment.

✎ **NOTE:**
   All GTP procedure references in this section for <u>Release 2.1</u> are to the GTP procedures found in Volume 2 of the Release 2.1 *WaveStar*™ DACS 4/4/1 Installation Testing Manual (365-367-405).

✎ **NOTE:**
   All Appendix procedure references in this section are to appendices in this MIP document.

Process Flow Chart

```
                          ┌─────────────┐
                          │   MCDUP     │
                          │   Upgrade   │
                          │   Process   │
                          └─────────────┘

Pre-conditioning    ┌─────────────────────┐
                    │  Workstation Setup  │
                    │     Procedure       │
                    └─────────────────────┘

                    ┌─────────────────────┐      MC-2        ┌─────────────────────┐
                    │      XC-CIT         │      Diagnostic  │     MC Switch       │
                    │   System Login      │      Testing     │   to Protection     │
                    │    (via MC-1)       │                  │  (MC-2 to Active)   │
                    └─────────────────────┘                  └─────────────────────┘

                    ┌─────────────────────┐                  ┌─────────────────────┐
                    │ "Pre-Upgrade" Rel 2.1│                 │      XC-CIT         │
                    │  Database Backup    │                  │   System Login      │
                    └─────────────────────┘                  │    (via MC-2)       │
                                                             └─────────────────────┘
                    ┌─────────────────────┐
                    │    "Lock" MC        │                  ┌─────────────────────┐
                    │ Protection Switching│                  │  Equiment Alarm     │
                    │    (via MC-1)       │                  │      Check          │
                    └─────────────────────┘                  └─────────────────────┘

Start-up            ┌─────────────────────┐                  ┌─────────────────────┐
Protection          │   Protection MC-2   │                  │   MC Diagnostics    │
MC-2                │ Hardware Installation│                 │ for Protection MC-2 │
In Simplex          │     Procedure       │                  └─────────────────────┘
Mode                └─────────────────────┘
                                                             ┌─────────────────────┐
                    ┌─────────────────────┐                  │     MC Switch       │
                    │   Start-up the      │                  │    to Working       │
                    │  Protection MC-2    │                  │  (MC-1 to Active)   │
                    └─────────────────────┘                  └─────────────────────┘

                    ┌─────────────────────┐     Conclusion   ┌─────────────────────┐
                    │  Firmware Self-Tests│                  │      XC-CIT         │
                    │  for Protection MC-2│                  │   System Login      │
                    └─────────────────────┘                  │    (via MC-1)       │
                                                             └─────────────────────┘
                    ┌─────────────────────┐
                    │  Install Software   │                  ┌─────────────────────┐
                    │  on Protection MC-2 │                  │  Equiment Alarm     │
                    └─────────────────────┘                  │      Check          │
                                                             └─────────────────────┘
Simplex             ┌─────────────────────┐
to                  │  Enabling MCDUP     │                  ┌─────────────────────┐
Duplex              │    Operation        │                  │ "Post-Upgrade" Rel 2.1│
                    └─────────────────────┘                  │  Database Backup    │
                                                             └─────────────────────┘
                    ┌─────────────────────┐
                    │  Set IP Addresses   │
                    └─────────────────────┘                         ┌─────────────┐
                                                                    │   Go To     │
                    ┌─────────────────────┐                         │ Conclusion  │
                    │   Reboot MC-1       │                         └─────────────┘
                    │   (Active MC)       │
                    └─────────────────────┘

                    ┌─────────────────────┐
                    │   Reboot MC-2       │
                    │   (Standby MC)      │
                    └─────────────────────┘
```

Procedure

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

❏ *Step 1:* Obtain the following Installation Manual which will be used throughout this upgrade procedure. Do not start upgrade without obtaining this manual.

- 365-367-405 Release 2.1 Installation Testing Manual (Volume 2)

❏ *Step 2:* Perform the following upgrade pre-conditioning procedures from the <u>Working</u> Main Controller (MC-1) prior to starting the upgrade.

From Working MC:

❏ Workstation Computer Setup - *{Refer to GTP 2 }*

❏ System Login Procedure - *{Refer to GTP 11}*

❏ Database Backup Procedure - *{Refer to GTP 12}*

— Use **_first_** blank MO disk supplied with upgrade software set, and label disk **"Pre-Upgrade - _Rel 2.1_"**.

⚠ **CAUTION:**
*Do **not** proceed with this procedure until a database backup of the existing system configuration has been created.*

❏ Disabling MC Protection Switching - *{Refer to Appendix A}*

❏ Simplex Main Controller Power-down Procedure - *{Refer to Appendix B}*

❏ *Step 3:* Perform the following hardware installation procedure for the operation of the <u>Protection</u> Main Controller in a Duplex Motorola Controller Subrack.

❏ MC-2 Hardware Installation Procedure - *{Refer to Appendix C}*

❏ *Step 4:* Perform the following start-up procedures for the <u>Working</u> Main Controller (MC-1) in the Motorola Controller Subrack.

From Working MC:

❏ MC-1 Start-up Procedure - *{Refer to Appendix E}*

❏ *Step 5:* Perform the following start-up procedures for the <u>Protection</u> Main Controller (MC-2) in the Motorola Controller Subrack.

From Protection MC:

❏ MC-2 Start-up Procedure - *{Refer to Appendix F}*

❏ MPU Firmware Self-Tests - *{Refer to Appendix G}*

❏ MC-2 Core Software Installation - *{Refer to Appendix H}*

❑ *Step 6:* Perform the following procedures to change operating mode for the Motorola
Controller Subrack from simplex to duplex operation.

From Working MC:

❑ Enabling MC Duplex Operation Procedure - *{Refer to Appendix I}*

❑ Set IP Addresses Procedure - *{Refer to Appendix J}*

❑ Reboot MC-1 Procedure - *{Refer to Appendix K}*

From Protection MC:

❑ Reboot MC-2 Procedure - *{Refer to Appendix L}*

❑ *Step 7:* Perform the following procedure to manual protection switch to the <u>Protection</u>
Main Controller (MC-2), so that it becomes the <u>Active</u> controller.

From Protection MC:

❑ MC Switch to Protection Procedure - *{Refer to Appendix M}*

❑ *Step 8:* Perform the following procedures from the <u>Protection</u> Main Controller (MC-2),
inorder to start-up the System User Interface (XC-CIT) and check for any
newly generated alarms as a result of the upgrade.

From Protection MC:

❑ Move EXLAN connection to Protection MC Subrack.

❑ System Login Procedure - *{Refer to GTP 11}*

❑ Equipment Alarm Check - *{Refer to GTP 21}*

— Verify **no** equipment alarms, except Abnormal alarm on MC-1-
MPU-1 due to locked condition.

❑ *Step 9:* Perform the following diagnostic test procedures on the <u>Protection</u> Main
Controller (MC-2) in the Motorola Controller Subrack.

From Protection MC:

Required Tests:

❑ Subrack LED Test - *{Refer to GTP 22}*

❑ MC Subrack Power Test - *{Refer to GTP 23}*

❑ Unit Diagnostic Test Setup - *{Refer to GTP 27}*

❑ MC Units Diagnostic Tests - *{Refer to GTP 28}*

❑ System User Panel Test - *{Refer to GTP 37}*

❑ Rack Top Alarms Test **(Front Only)** - *{Refer to GTP 38 }*

Optional Tests (If Connected):

❑ End of Suite Alarms Test - *{Refer to GTP 39}*

❑ Station Alarms Test - *{Refer to GTP 40}*

❑ Miscellaneous Discrete Output Alarms Test - *{Refer to GTP 41}*

❑ Miscellaneous Discrete Input Alarms Test - *{Refer to GTP 42}*

❏ *Step 10:* Perform the following procedure to manual protection switch to the <u>Working</u> Main Controller (MC-1), so that it becomes the <u>Active</u> controller.

<u>From Working MC</u>:

   ❏ MC Switch to Working Procedure - *{Refer to Appendix N}*

❏ *Step 11:* Perform the following procedures from the <u>Working</u> Main Controller (MC-1), inorder to start-up the System User Interface (XC-CIT) and check for any newly generated alarms as a result of the upgrade.

<u>From Working MC</u>:

   ❏ System Login Procedure - *{Refer to GTP 11}*

   ❏ Equipment Alarm Check - *{Refer to GTP 21}*

      — Verify **<u>no</u>** equipment alarms

   ❏ Database Backup Procedure - *{Refer to GTP 12}*

      — Use ***second*** blank MO disk supplied with upgrade software set, and label disk **"Post-Upgrade - *Rel 2.1*"**.

      ⚠ **CAUTION:**
      *Do **not** proceed with this procedure until a database backup of the Post- Upgrade Rel 2.1 System Configuration has been successfully created.*

❏ *Step 12:* If this <u>*Upgrade Procedure*</u> has been successfully completed, then proceed to the chapter "<u>*Conclusion*</u>".

Backout Procedure

Backout Procedure

Description

For backout procedure for Rel 2.1 Core Software, see Software Release Description for Rel 2.1 and perform "Reloading Software on Existing System", and use "Pre-Upgrade" System Database backup disk for restoral.

Conclusion

Completion Procedure

Description

This section will ensure that all system preparations that were previously made are returned back to their original states, and any external hardware that was previously removed are replaced onto the system. This procedure will also verify that the system is left with no additional alarms and a new system database will be created for emergency restoration.

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 and the GUI Window is visable on the screen.

If **not**, connect and login to the system.

❑ *Step 2:* From the **Alarm Panel Window**, verify there are **no** alarms.

If there are **no** alarms present on the system as indicated in output response below, then proceed directly to next step.

Otherwise, if there **are** alarms currently on the system, press the Current Alarms button in the **Alarm Panel Window** in order to obtain a list of all the alarms. Print the list of alarms, then try to troubleshoot all alarms. Do **not** leave the system with any unexplained alarms.

❑ *Step 3:* Reinstall all subrack EMI shields and close the rack doors on all the remaining common equipment.

❑ *Step 4:* Copy and fill-out the completion form in the back of the Attachment Section, and retain for records.

❑ *Step 5:* This completes the "*Completion Procedure*".

STOP- This completes the Procedure.

Appendices

List of Appendices

- Appendix A - Disabling MC Protection Switching Procedure

- Appendix B - Simplex Motorola Controller Power-Down Procedure

- Appendix C - MC-2 Equipment Installation Procedure

- Appendix D - Fan Failure Cable Installation Procedure

- Appendix E - MC-1 Start-up Procedure

- Appendix F - MC-2 Start-up Procedure

- Appendix G - MPU Firmware Self-Tests Procedure

- Appendix H - MC-2 Core Software Installation Procedure

- Appendix I - Enabling MC Duplication Procedure

- Appendix J - Setting EXLAN IP Addresses

- Appendix K - MC-1 (Active) Reboot Procedure

- Appendix L - MC-2 (Standby) Reboot Procedure

- Appendix M - MC Switch to Protection Procedure

- Appendix N - MC Switch to Working Procedure

Appendix A - Disabling MC Protection Switching Procedure

Description

The following procedures will explain how to disable or "lock" protection switching for the Main Controller for the Release 2.1 *WaveStar*™ 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. The serial port of the workstation computer is connected to the system workstation port (WS1 or WS2) on the System User Panel corresponding to the active Main Controller (MC-1 or MC-2).

3. This procedure is done from the Active Main Controller.

4. The terminal is currently at the "user name:" prompt.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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:* Determine which Main Controller (working: MC-1 or protection: MC-2) is the **Active** controller.

For <u>Simplex</u> MC: MC-1 (left-side) always active.

For <u>Duplex</u> MC: Check which MPU unit has the <u>flashing</u> the **BPL** LED.

❑ *Step 2:* Connect the serial port of the Workstation Computer to the appropriate workstation port (WS1 or WS2) on the System User Panel (SUP) corresponding to the **Active** main controller (MC-1 or MC-2).

> For Working MC-1   ➜   Use WS1 Port
>
> For Protection MC-2 ➜   Use WS2 Port

Use:

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

❑ *Step 3:* Verify that the Workstation Computer is currently running the Hyperterminal Application (VT100 terminal emulation) and connected to the *WaveStar*™ DACS 4/4/1 Console.

❑ *Step 4:* Obtain the `user name:` prompt by entering a ⎡RETURN⎤.

Output Response:

```
user name:
```

❏ *Step 5:* 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_20000829
|* Wavestar Digital Access Cross Connect
|* Copyright (c) Lucent Technologies
|* Copyright (c) Lynx Realtime Systems, Inc.
|* Compiled by lynxrts
|* On Thu Aug 31 13:11:39 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 6:* From the System Administration Main Menu, select the **MC Duplication Functions** option by entering ⑦, then press `RETURN`.

Input Command:

```
Enter choice:7
```

Output Response:

```
Enter special MC Duplication password and hit <return>
```

❏ *Step 7:* Enter the MC Duplication Password **BaRamU**, then press a `RETURN` key.

Input Command:

```
Enter special MC Duplication password and hit <return>BaRamU
```

Output Response:

```
DACS                                        System Administration

                       MC Duplication Functions

    1 - Query Duplication Status
    2 - Switch MC Controller
    3 - Change MC Simplex/Duplex
    ? - Help
    p - Return to Main Menu

    Enter choice:
```

❑ *Step 8:* From the MC Duplication Function Menu, select the **Query Duplication Status** option by entering ①, then press RETURN.

Check the setting for the Controller's Lock (Locked or Unlocked).

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is      working or protect (whichever is active mc)
This Controller's Status is   active
This Controller's Lock is     unlocked or locked
This Controller's Mode is     simplex or duplex


DACS                                               System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 9:* Perform <u>one</u> of the following procedural options below, based on the condition (locked or unlocked) of the Controllers Lock State.

■ If the controller's lock state is set to **locked**, mc protection switching is already disabled, proceed to **Step 15** to discontinue procedure.

■ If the controller's lock state is set to **unlocked**, proceed directly to <u>next step</u> to continue with disabling mc protection switching.

❑ *Step 10:* From the MC Duplication Function Menu, select the **Switch MC Controller** option by entering ②, then press RETURN.

Input Command:

```
Enter choice:2
```

Output Response:

```
DACS                                               System Administration

              MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu
```

❑ *Step 11:* From the MC Controller Switch Menu, select the **Locked** option by entering
③, then press RETURN.

Input Command:

```
Enter choice:3
```

Output Response:

```
locked

DACS                                          System Administration

              MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu

Enter choice:
```

❑ *Step 12:* From the MC Controller Switch Menu, select the **Return to previous
menu** option by entering ⓟ, then press RETURN.

Input Command:

```
Enter choice:p
```

Output Response:

```
DACS                                          System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 13:* From the MC Duplication Function Menu, select the **Query Duplication
Status** option by entering ①, then press RETURN.

Verify that the Controller's Lock is now set for **Locked**.

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is      working or protect (whichever is active mc)
This Controller's Status is  active
This Controller's Lock is    locked
This Controller's Mode is    simplex or duplex


DACS                                          System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 14:* Perform <u>one</u> of the following procedural options below, based on the condition (locked or unlocked) of the Controllers Lock State.

■ If the controller's lock state is set to **unlocked**, then mc protection switching was <u>not</u> disabled, return to **Step 10** and repeat procedure.

■ If the controller's lock state is properly set to **locked**, then mc protection switching is successfully disabled, proceed directly to <u>next step</u>.

❑ *Step 15:* From the MC Duplication Function Menu, select the **Return to previous menu** option by entering ⌐p⌐, 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 16:* Exit the System Administration Main Menu from the Active Main Controller, select the **Quit** option by enterring ⌐q⌐, then press ⌐RETURN⌐.

Input Command:

```
Enter choice: q
```

Output Response:

```
user name:
```

❑ *Step 17:* Check-off the appropriate ❑ box corresponding to this procedure on the appropriate *verification checklist*.

❑ *Step 18:* This successfully completes the "*Disabling MC Protection Switching Procedure*".

STOP-Return to Calling Procedure

Appendix B - Simplex Motorola Controller Power-down Procedure

Description

The following procedure will provide the steps to power-down a **simplex** Motorola Controller Subrack equipped with only Working Main Controller (MC-1).

Required Equipment:

1 ➔ XC-CIT Workstation running GUI Application

1 ➔ 25ft 10 Base T Data Cable (ITE-7016)

1 ➔ Ethernet LAN Adapter

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 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*™ DACS 4/4/1 from the XC-CIT Workstation.

4. Motorola Controller only contains a powered-up Working Main Controller.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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 Cmputer is currently running the Hyperterminal Application (VT100 terminal emulation) and connected to the *WaveStar*™ DACS 4/4/1 Console.

❑ *Step 3:* Verify that the Workstation is currently logged into the *WaveStar*™ DACS 4/4/1 and the XC-CIT GUI Window is visable 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.
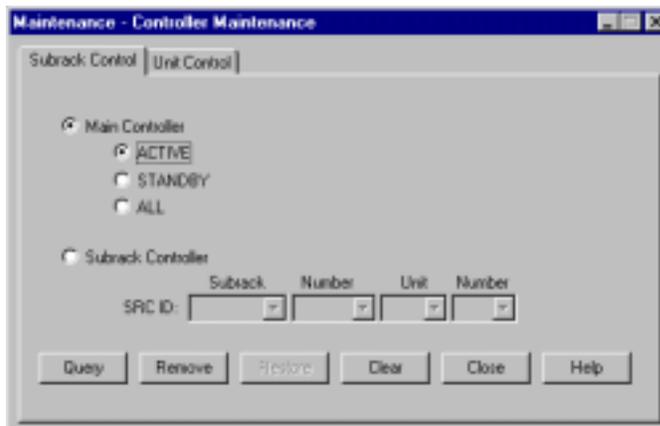
❑ *Step 4-c:*   Execute the removal command by pressing the ⌐Remove⌐ button, and verify the following *Confirmation Window* appears.
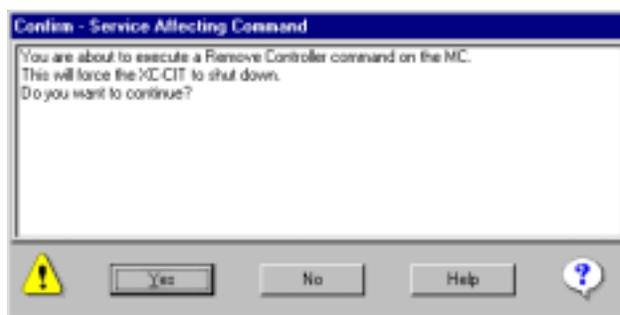
❑ *Step 4-d:*   Continue the removal process for the Main Controller by pressing the ⌐Yes⌐ button.

❑ *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*™ DACS 4/4/1 <u>Console</u> 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

.
.
.
.

PPC1-Bug>
```

❑ *Step 6:* Turn the <u>Working</u> Main Controller (MC-1) in the Motorola Controller Sub-rack **off** by pressing the green power button on the front of the subrack so that the switch remains in "pushed out" position.

**Press-Out
Green Button**

❑ *Step 7:* In the <u>front</u> of the Motorola Controller Subrack, verify that the Working Main Controller (MC-1) is **off**, by checking that the **FUS** and **SYS** green leds on the MPU Unit are **off**.

Green LEDS <u>off</u>
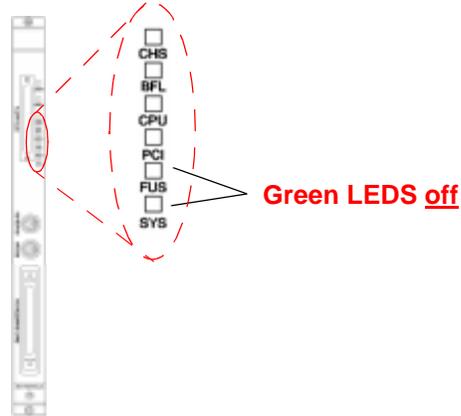
MPU VME Card

❑ *Step 8:* Remove power to the **Motorola Controller Subrack** by **<u>removing</u>** the appropriate fuse from fuseholder positions **A1** and **B1** in the <u>front</u> MC Power Panel.
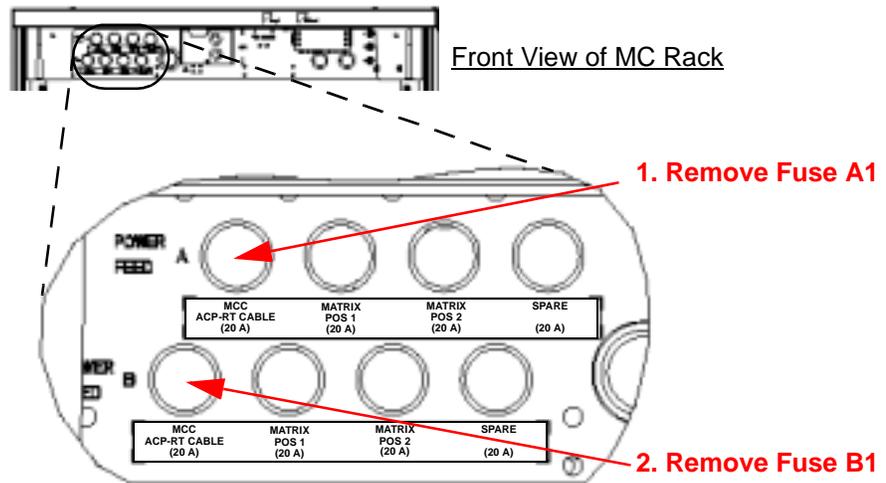
<u>Front View of MC Rack</u>

1. Remove Fuse A1

2. Remove Fuse B1

❑ *Step 9:* Check-off the appropriate ❑ box corresponding to this procedure.

❑ *Step 10:* This completes the "*Simplex Motorola Controller Power-down Procedure*".

STOP- Return to Calling Procedure

Appendix C - MC-2 Equipment Installation Procedure

Description

The following procedure will provide the steps to install the necessary equipment for the operation of the Protection MC Controller (MC-2) in the Motorola Controller Subrack.

Required Equipment:

1 ➜ Screwdriver Set (R-5955)

Assumptions:

1. The Motorola Controller Subrack must be completely powered-off.

2. The <u>Protection</u> Main Controller (System B Side) contains no units/modules.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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 **Green Power Button** is **pushed out** (off) for **both** the Working Main Controler and Protection Main Controller of the Motorola Controller Subrack.

⚠ **CAUTION:**
If power button is not in off position, then the units could be damaged when the fuses are installed for the subrack.

Button Pushed-Out (off) Working Main Controller   **Button Pushed-Out (off) Protection Main Controller**
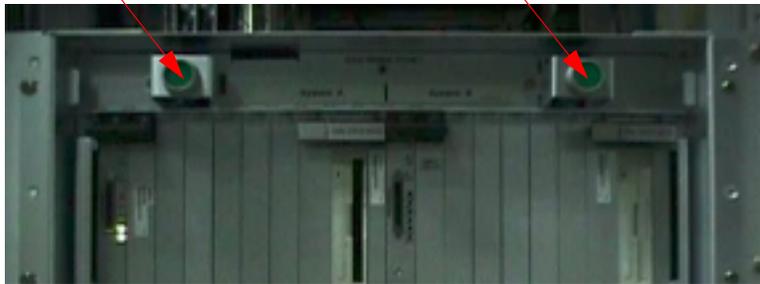
❑ *Step 2:* At the **rear** of the Motorola Controller Subrack, use Volt-Ohm Meter (VOM) and check for **zero** voltage at the -48v power terminals for System A and System B.

⚠ **CAUTION:**
PSP unit can store charge for a short period after turning unit off, due to large capacitor inside power unit, so wait until voltage readings are zero before continuing with this procedure.

This is to insure that subrack contains no power before removing back panel.

1. Measure Zero Volts   **2. Measure Zero Volts**

❑ *Step 3:* From the **front** of the Motorola Controller Subrack, remove the following blank plates from VME slots 1, 2, 8, 9, 10 of System B (right-side), then discard removed blank plates (no longer needed).
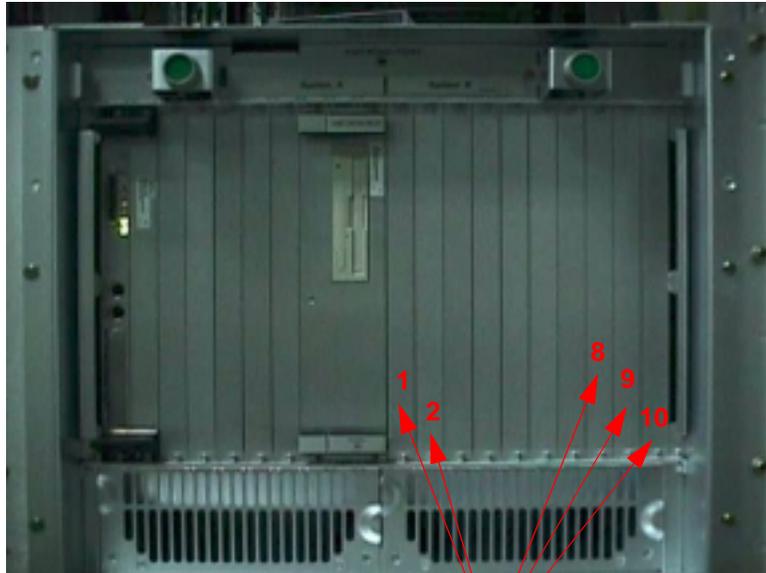
Remove these blank plates shown.
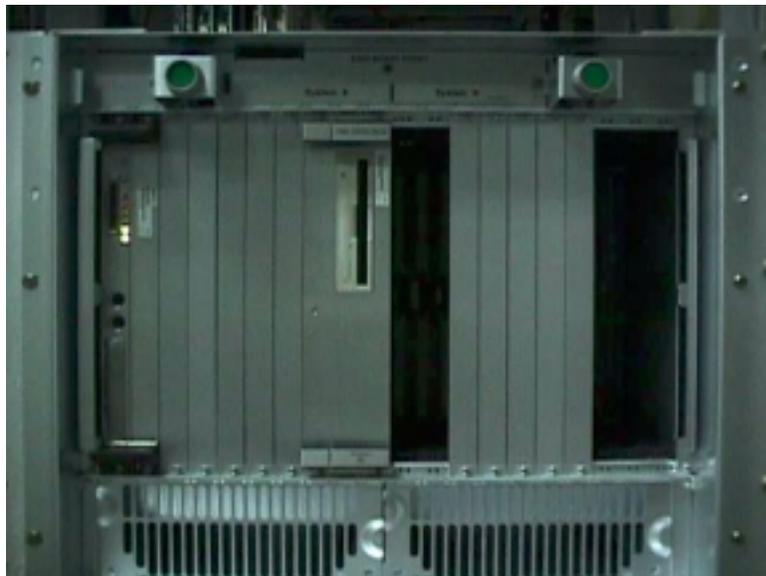
Blank Plates Removed

❑ *Step 4:* Unpack and install the **MPU** unit (408420313 or SMMXRCPULUCNT5-K) into front VME slots 1 & 2 of System B (right-side) of the Motorola Controller Subrack, and screw down top and bottom mounting screws.
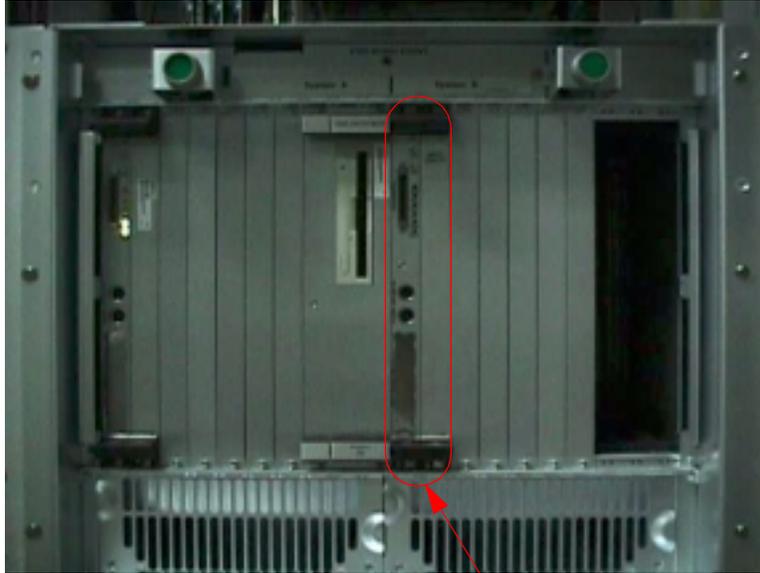
MPU Installed

❑ *Step 5:* Unpack and install the **MSU** unit (408151421 or SMMXRDMOLUCNT1) into front VME slots 8-10 of System B (right-side) of the Motorola Controller Subrack, and screw down top and bottom mounting screws.
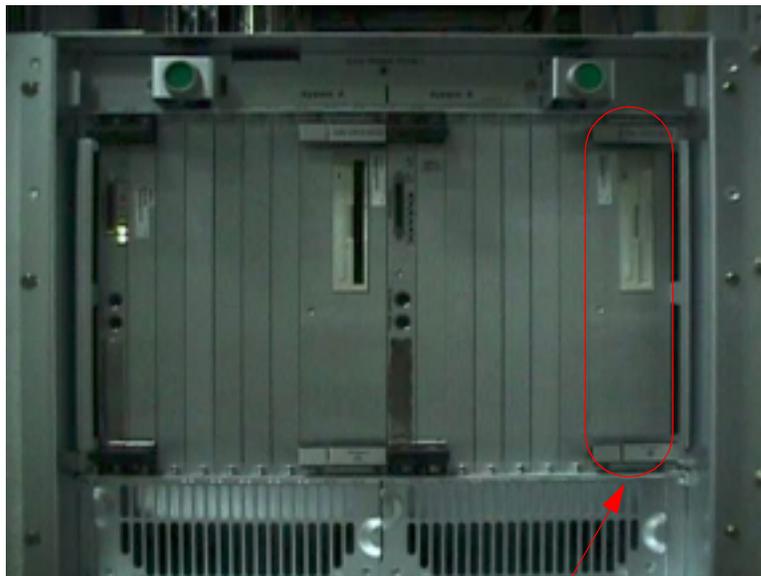
MSU Installed

❑ *Step 6:* From the **front** of the Motorola Controller Subrack, remove the lower baffle cover (using provided hex tool).

Lower baffle removed

❑ *Step 7:* Unpack and install the **PSP** unit (408091742 or MC1000K-DC700A) into front right power supply slot of System B (right-side) of the Motorola Controller Subrack, and screw down left and right mounting screws.
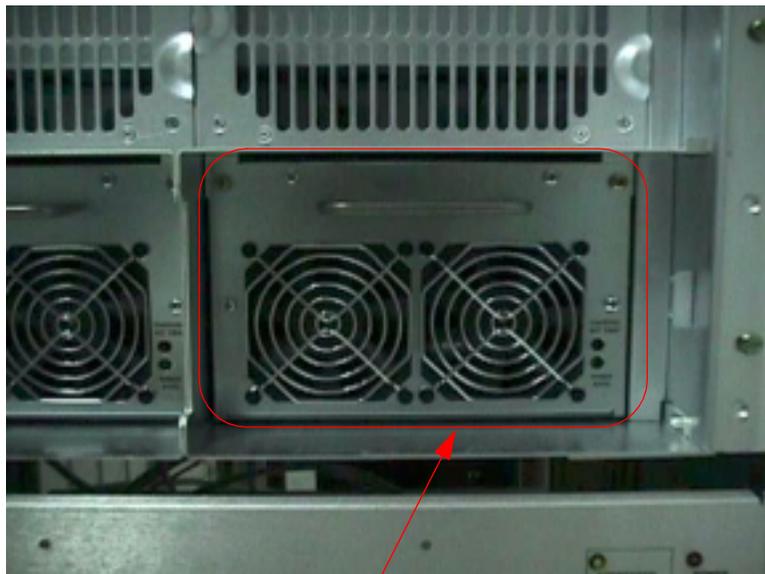
PSP Installed

❑ *Step 8:* Re-install the lower baffle cover on the bottom-front of the Motorola Controller Subrack, and lock into place using provided hex tool.

❑ *Step 9:* Locate the power disignation sticker, which is supplied with the PSP Unit, and found inside the PSP shipping box.
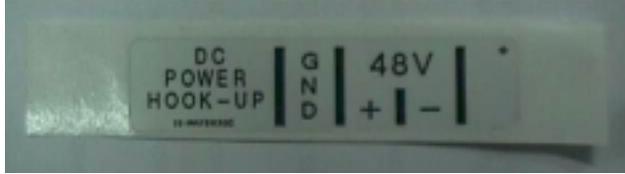
❑ *Step 10:* From the **rear** of the Motorola Controller Subrack, place the sticker that is supplied with PSP unit above the power terminal location.
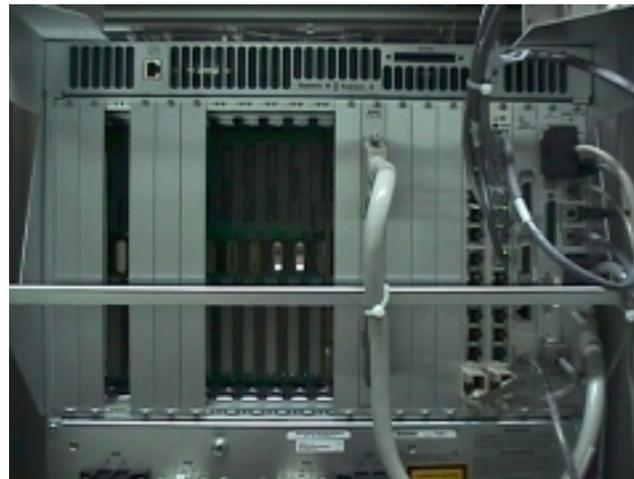
BEFORE:

Place Sticker Here!

AFTER:

Sticker Installed!

❑ *Step 11:* From the **rear** of the Motorola Controller Subrack, remove blank plates from rear VME slots 3, 7, 8, 9, 10, 11 of System B (left-side), then discard blank plates (no longer needed).
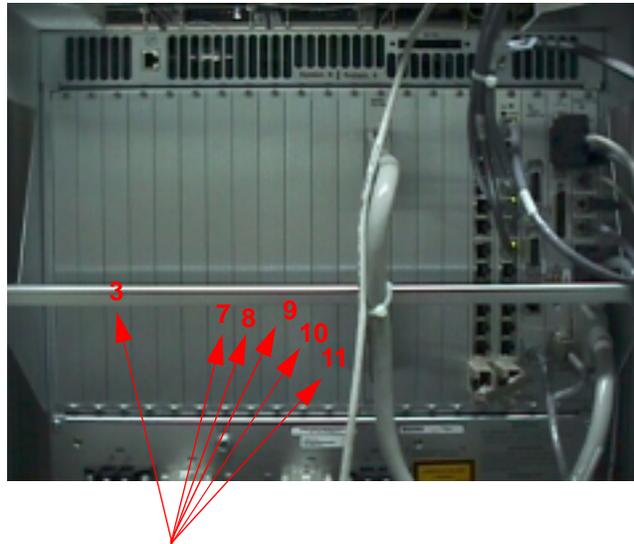
Remove these blank plates shown.

Blank Plates Removed

❏ *Step 12:* In the <u>rear</u> of the Protection Main Controller (MC-2), locate the Fan Failure Indication Cable Connector P1, which should be cable tied to the bottom card guide inside of ARU-TM Slot (VME Slot 10).

**Fan Failure Indication Cable
(30-W2379E01C)**

Locate this connector in ARU-TM Slot.

P1

To Rear Subrack Backplane

P2   **P3**
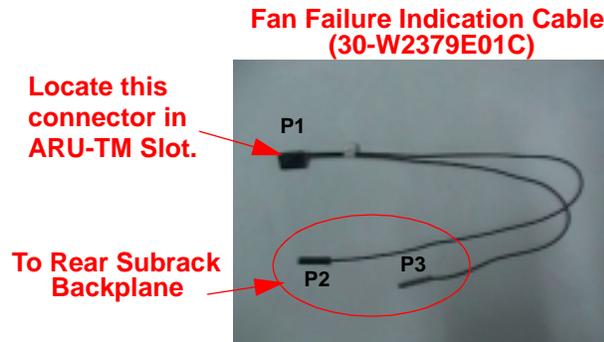
■ If connector P1 of Fan Indication cable **is present** in ARU TM Slot (Slot 10), remove the cable tie holding cable to bottom card guide, then proceed to next step to connect cable to the ARU TM before insertion into slot.

⚠ **CAUTION:**
Be very carefull **_not_** to drop cable down inside the subrack backplane area. If cable drops down into backplane area, do not continue, but perform the next option below. Do not attempt to locate cable down inside backplane area with power on the subrack.

■ If connector P1 of Fan Indication cable is **_not_** present in ARU TM Slot (Slot 10), then perform the following procedure to locate and install the Fan Failure Indication Cable in the rear backplane subrack area. To perform these procedures, the entire Motorola Controller Subrack must be powered-down.

— *Fan Failure Indication Cable Install Procedure -*<u>Appendix C</u>

❏ *Step 13:* Unpack the **ARU TM** module (408091668 or SMMXR712129LUCNT) and before installing module, install connector P1 of the Fan Failure Indication Cable to the ARU TM unit (see location in figure below).

Install Fan Failure Connector (P1) Here!
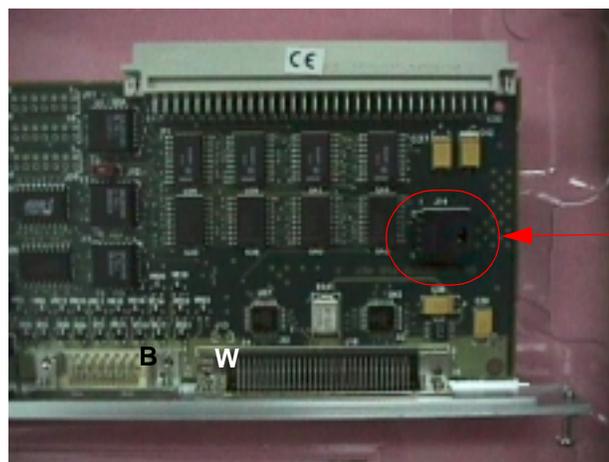
❑ *Step 14:* After connecting the attached Fan Failure Indication Cable, install the **ARU TM** module (408091668 or SMMXR712129LUCNT) into rear VME slot 10 of System B (left-side) of the Motorola Controller Subrack, and screw down top and bottom faceplate mounting screws.
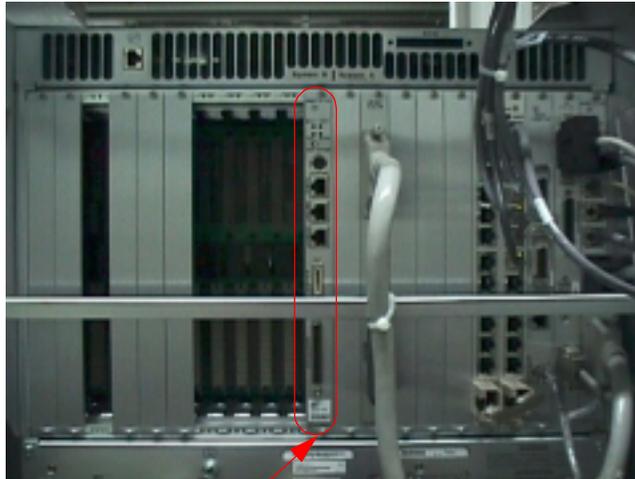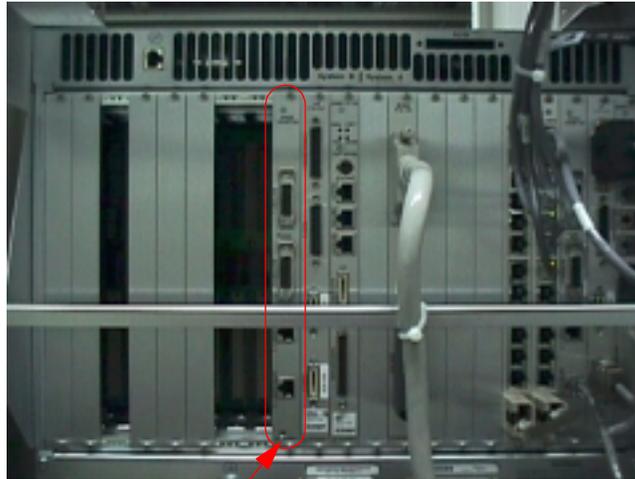

Install ARU TM

❑ *Step 15:* Unpack and install the **SERIAL TM** module (408091650 or SMMXR121LUCNT1) into rear VME slot 9 of System B side (left-side) of the Motorola Controller Subrack, and screw down top and bottom faceplate mounting screws.
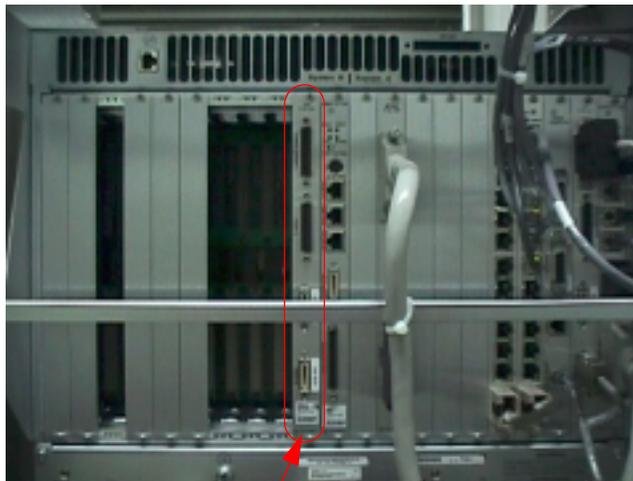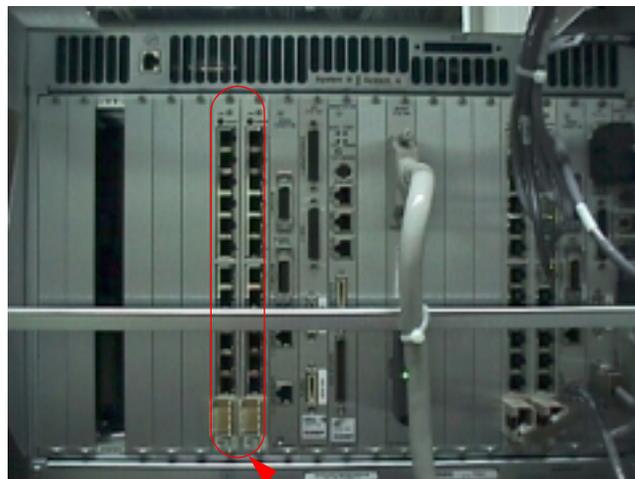

Install SERIAL TM

❑ *Step 16:* Unpack and install the **NIC TM** module (408091643 or
SMMXR100BTLUCNT1) into rear VME slot 8 of System B side (left-side) of
the Motorola Controller Subrack, and screw down top and bottom faceplate
mounting screws.

Install NIC TM

❑ *Step 17:* Unpack and install 2 of the **VMA1 TM** modules (108371535) into rear VME
slots 6 & 7 of System B (left-side) of the Motorola Controller Subrack, and
screw down top and bottom faceplate mounting screws.

> ⚠ **CAUTION:**
> *Install left VMA1 module first, inorder to eliminate SMI/IRB connec-
> tor interference from right VMA1 module during insertion.*

Install 2 VMA1 TM

❑ *Step 18:* Unpack and install the **SCSI TM** modules (408091676 or MVME712-104) into rear VME slot 9 of System B side (left-side) of the Motorola Controller Subrack, and screw down top and bottom faceplate mounting screws.
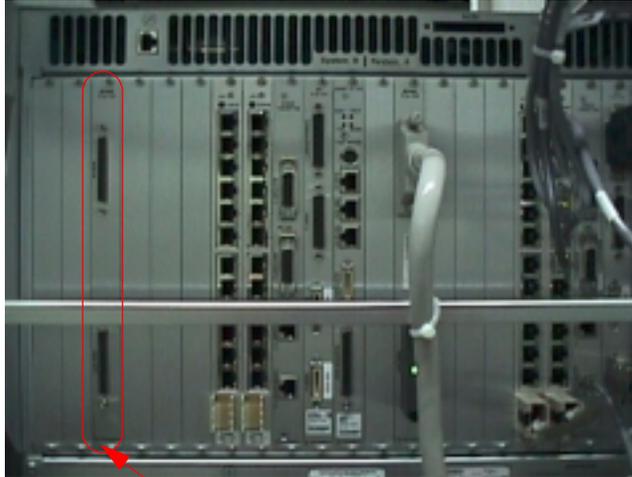
Install SCSI TM

❑ *Step 19:* In the **rear** of the Motorola Controller Subrack, install power cable harness (30-W2375E01A) between PSP terminal block (INPUT B) and rear (-48v) Terminal Strip B on rear of MC panel

Step 19-a: Locate Power Cable Harness (30-W2375E01A) from PSP box.

Step 19-b: Install power cable harness for INPUT B.

Install Power Harness.

❑ *Step 20:* Locate from the ARU-VME (408091585/CA71), SCSI Cable (408091734/ CA34), and SCSI Terminator (408091718/P417K) from the MC Duplex Upgrade Kit, and install the cables on the <u>rear</u> of the **Protection Main Controller (MC-2)**.

Rear View of Motorola Controller
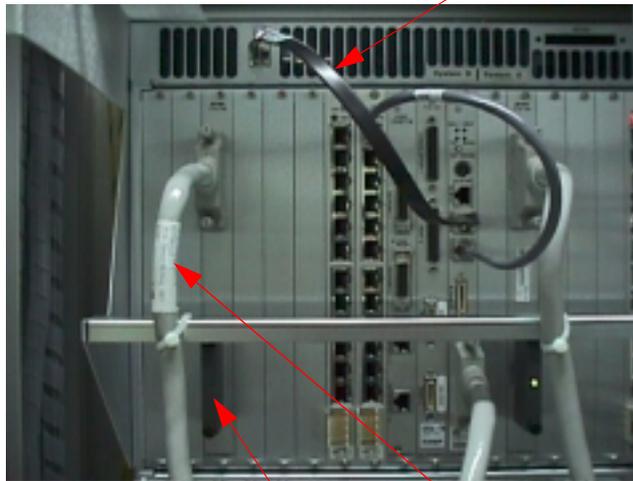
ARU-VME Cable (408091585 or CA71)

SCSI Terminator (408091718 or P417K)

SCSI Cable (408091734 or CA34)

❑ *Step 21:* From the <u>rear</u> of the MC Rack Assembly, install the following alarm cables and console cable from the ACP to the Protection MC-2. .

Rear View of MC Rack Assembly

**ARU-Alt Cable
(848299236)**

**ARU-Alarm Cable
(848299251)**

**ARU-Relay Cable
(848299244)**

Rear View of System User Panel

**SUP Console Cable
(848362505)**
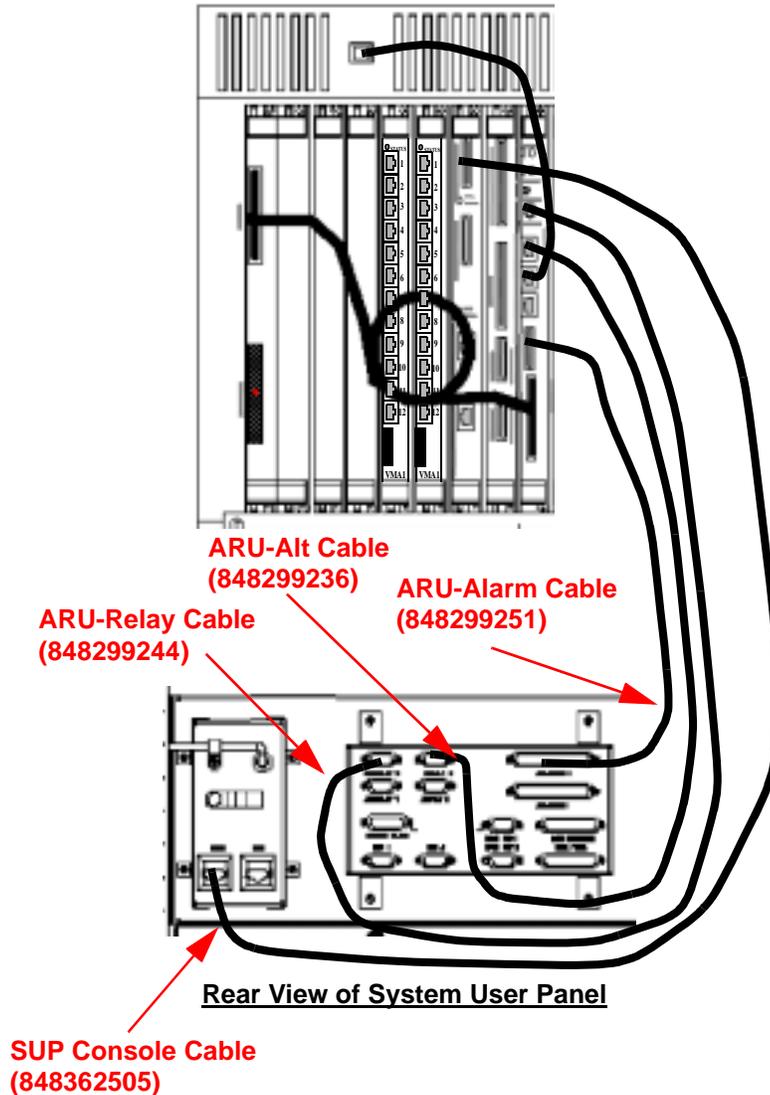
❑ *Step 22:* Tie off all above cables to the Motorola Controller Subrack rear support brace. Tie cables in a way that pressure on the connectors are release, allowing connectors to stay in-place (especially ARU-Relay mini-din connector housing).

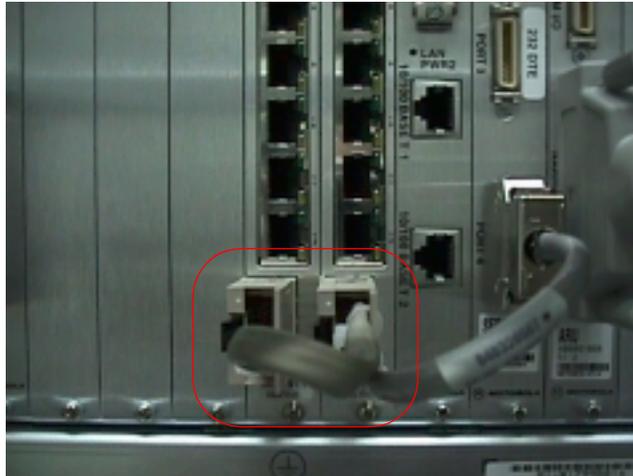❑ *Step 23:* In the **rear** of the Motorola Controller, install the **LHU 2-Port Interconnect Cable (848326567)** for the **Protection Main Controller (MC-2)**.

❑ *Step 23-a:* Obtain the **LHU 2-Port Interconnect Cable (848326567)** from the upgrade kit.

❑ *Step 23-b:* Install the LHU 2-Port Interconnect Cable between between the **SMI/IRB Port** of both **VMA1 TM (108371535)** and **DCE Port 4** of the **Serial TM(XR712-121)** of Protection MC-2.

<u>**Correct Installation**</u>

<u>**In-correct Installation**</u>
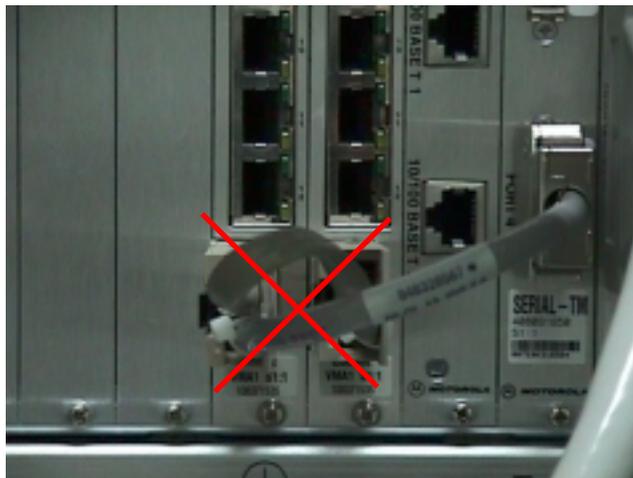
⚠ **CAUTION:**
Incorrect installation could cause damage to unit during power-up.

❏ *Step 24:* From the **rear** of the Motorola Controller, install the **LHU to ARU** MCLAN data connection for the **Protection Main Controller (MC-2)**.

❏ *Step 24-a:* Obtain two labels "**MC-P**" from the MCLAN label Kit (408346831) in the upgrade kit.

❏ *Step 24-a:* Obtain one **1ft Data Cable (108566407)** from the upgrade kit, and place "**MC-P**" labels on both ends of the cable.

❏ *Step 24-b:* Install data cable between **VMA1-1 Port 1** and **ARU-TM 10/100 BT Port** of **Protection MC-2**.
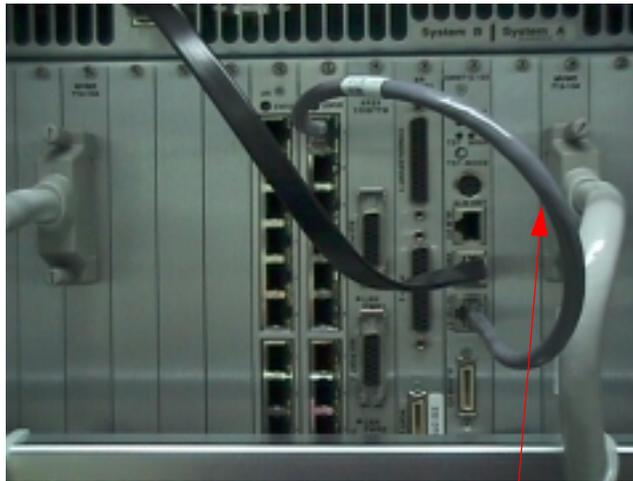
Rear View of Protection MC-2   **MC-P**

❑ *Step 25:* From the **rear** of the Motorola Controller, install the **MCLAN Cross-couple Cables (X1 and X2)** between working and protection main controllers.

❑ *Step 25-a:* Obtain labels "**MC-X1**"and "**MC-X2**" (2 of each) from the MCLAN label Kit (408346831) in the upgrade kit.

❑ *Step 25-a:* Obtain two **2ft Data Cables (108566415)** from the upgrade kit, and place "**MC-X1**" labels on both ends of one cable and place "**MC-X2**" labels on both ends of the other cable.

❑ *Step 25-b:* Install data cable labeled "**MC-X1**" between **NIC-TM 10/100 Base T1 of Working MC-1** and **VMA1-1 Port 2** of **Protection MC-2**.

❑ *Step 25-c:* Install data cable labeled "**MC-X2**" between **NIC-TM 10/100 Base T1 of Protection MC-2** and **VMA1-1 Port 2** of **Working MC-1**.

MC-X2   **MC-X1**
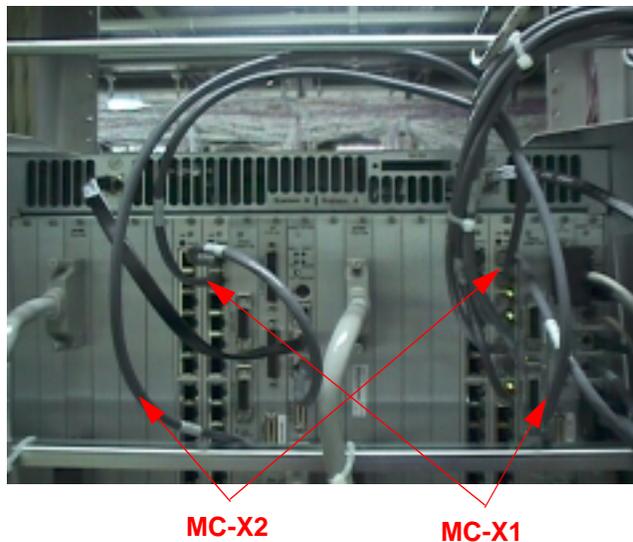
❑ *Step 26:* Obtain <u>one</u> **MCLAN Cable Adapter Kit (848529210)**, and <u>one</u> **data cable** per equipped Sync and Port Subrack equipped in the system.

MCLAN Cable Adapter Kit (848529210):
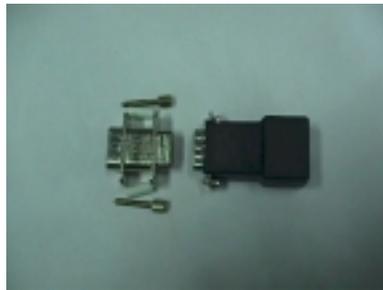
❑ *Step 27:* Install the **protection MCLAN** data cable for the Working Sync Subrack.

   ❑ *Step 27-a:* Obtain <u>two</u> labels "**MSW-P**" from MCLAN label Kit (408346831) from the upgrade kit.

   ❑ *Step 27-a:* Obtain <u>one</u> **7.6 meter data cable (108566522)**, and place the "**MSW-P**" labels on both ends of the cable.

   ❑ *Step 27-b:* Obtain one **MCLAN Cable Adapter Kit (848529210)**, and install the adapter/filter connector to the **MCLAN-P** connector interface on the rear of the Working Sync Subrack.

   ❑ *Step 27-c:* Install the protection MCLAN data cable from MCLAN-P of <u>Working</u> Sync Shelf to VMA1-1 Port 3 of MC-2.

Rear View of Motorola Controller

VMA1-1 Port 3

Protection MCLAN Data Cable (107742330)

Working Sync Shelf (rear view)
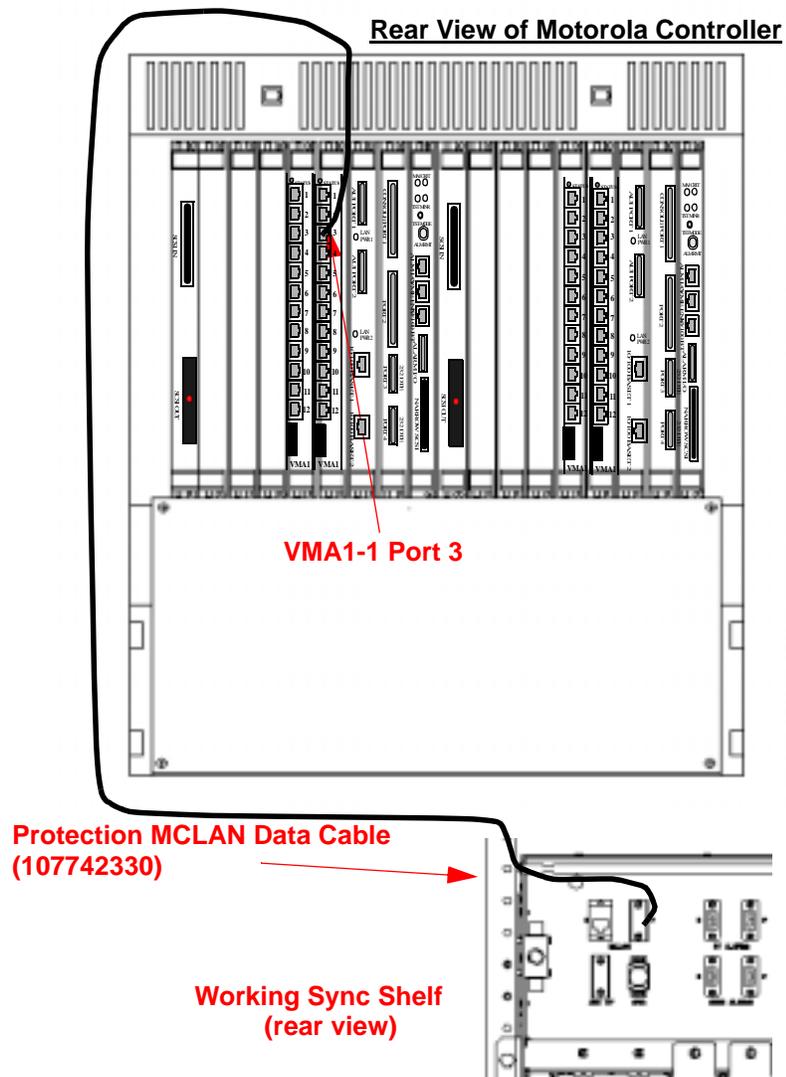
❑ *Step 28:* Install the **Protection MCLAN** data cable for the Protection Sync Subrack.

   ❑ *Step 28-a:* Obtain <u>two</u> labels "**MSP-P**" from MCLAN label Kit (408346831) from the upgrade kit.

   ❑ *Step 28-a:* Obtain <u>one</u> **7.6 meter data cable (108566522)**, and place the "**MSP-P**" labels on both ends of the cable.

   ❑ *Step 28-b:* Obtain one **MCLAN Cable Adapter Kit (848529210)**, and install the adapter/filter connector to the **MCLAN-P** connector interface on the rear of the Protection Sync Subrack.

   ❑ *Step 28-c:* Install the protection MCLAN data cable from MCLAN-P of Protection Sync Shelf to VMA1-1 Port 4 of MC-2.

Rear View of Motorola Controller

VMA1-1 Port 4

Protection MCLAN Data Cable (107742330)

Protection Sync Shelf (rear view)
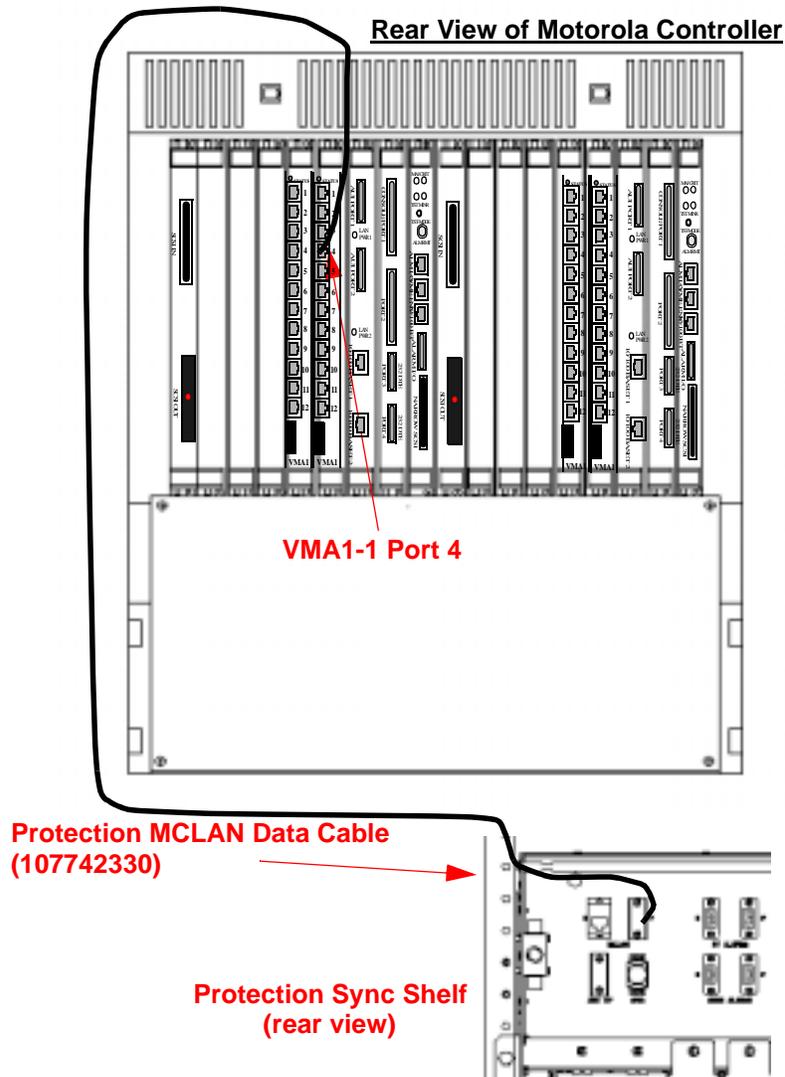
❑ *Step 29:* Install <u>one</u> **Protection MCLAN** data cable for <u>each</u> of the existing Port Subracks in the system. Perform the steps below for <u>each</u> Port Subrack.

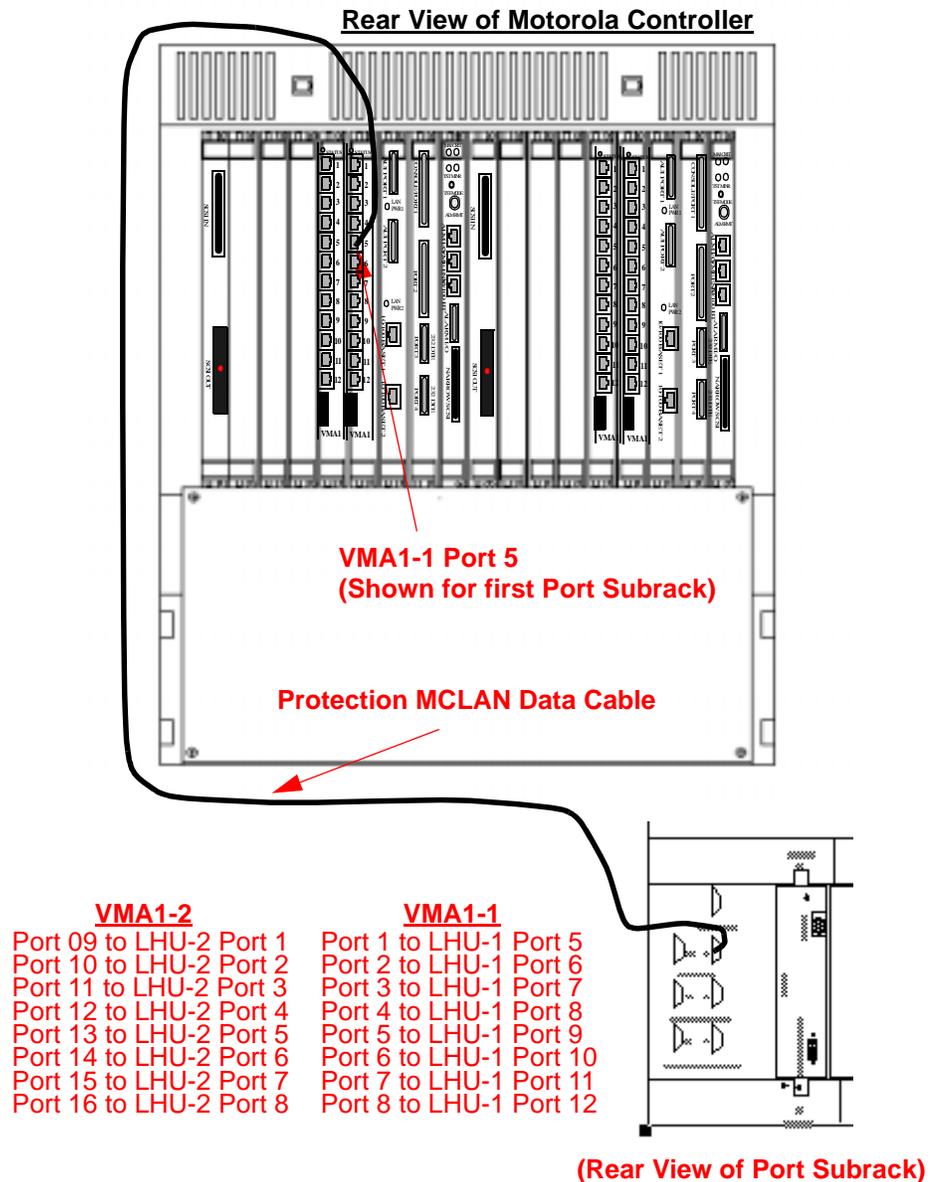❑ *Step 29-a:* Obtain <u>two</u> of the appropriate labels "**Port{1-16}-P**" from MCLAN label Kit (408346831) of upgrade kit for the specific Port Subrack.

❑ *Step 29-b:* Obtain <u>one</u> appropriate length data cable, and place the appropriate "**Port{1-16}-P**" labels on both ends of the cable.

Cables: 108566530 (50ft), 108566548 (100ft), 108566555 (200ft)

❑ *Step 29-c:* Obtain one **MCLAN Cable Adapter Kit (848529210)**, and install the adapter/filter connector to the **MCLAN-P** connector interface on the rear of the specific Port Subrack.

❑ *Step 29-d:* Install the <u>new</u> data cable (15m,30m,61m) from MCLAN-P of the Port Subrack to the appropriate VMA1 port below:.

Rear View of Motorola Controller

VMA1-1 Port 5
(Shown for first Port Subrack)

Protection MCLAN Data Cable

VMA1-2
Port 09 to LHU-2 Port 1
Port 10 to LHU-2 Port 2
Port 11 to LHU-2 Port 3
Port 12 to LHU-2 Port 4
Port 13 to LHU-2 Port 5
Port 14 to LHU-2 Port 6
Port 15 to LHU-2 Port 7
Port 16 to LHU-2 Port 8

VMA1-1
Port 1 to LHU-1 Port 5
Port 2 to LHU-1 Port 6
Port 3 to LHU-1 Port 7
Port 4 to LHU-1 Port 8
Port 5 to LHU-1 Port 9
Port 6 to LHU-1 Port 10
Port 7 to LHU-1 Port 11
Port 8 to LHU-1 Port 12

(Rear View of Port Subrack)

❑ *Step 30:* Dress all the Protection MCLAN Cables as indicated in the pictures below on the rear of the Motorola Controller Subrack.

❑ *Step 31:* Check-off the appropriate ❑ box corresponding to this procedure.

❑ *Step 32:* This completes the "*MC-2 Equipment Installation Procedure*".

STOP- Return to Calling Procedure

Appendix D - Fan Failure Cable Installation Procedure

Description

The following procedure will provide the steps to install the Fan Failure Indication Alarm Cable onto the rear subrack backplane in the Motorola Controller Subrack.

Required Equipment:

1 ➔ Screwdriver Set (R-5955)

Assumptions:

1. The <u>entire</u> Motorola Controller Subrack is powered-down.

2. The <u>protection</u> Main Controller (MC-2) contains no units/modules.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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 front MC Power Panel, verify that the **Motorola Controller Subrack** is powered-down by checking that fuses from fuseholder positions **A1** and **B1** have been removed.
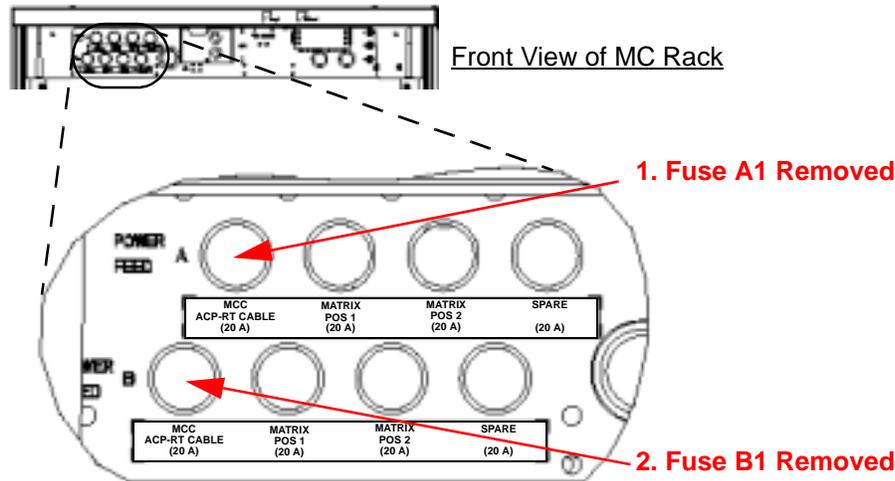
Front View of MC Rack

1. Fuse A1 Removed

POWER FEED A

| MCC ACP-RT CABLE (20 A) | MATRIX POS 1 (20 A) | MATRIX POS 2 (20 A) | SPARE (20 A) |

POWER FEED B

| MCC ACP-RT CABLE (20 A) | MATRIX POS 1 (20 A) | MATRIX POS 2 (20 A) | SPARE (20 A) |

2. Fuse B1 Removed

❑ *Step 2:* At the **rear** of the Motorola Controller Subrack, use Volt-Ohm Meter (VOM) and check for **zero** voltage at the -48v power terminals for System A and System B.

> ⚠ **CAUTION:**
> *PSP unit can store charge for a short period after turning unit off, due to large capacitor inside power unit, so wait until voltage readings are zero before continuing with this procedure.*
>
> *This is to insure that subrack contains no power before removing back panel.*

1. Measure Zero Volts   **2. Measure Zero Volts**
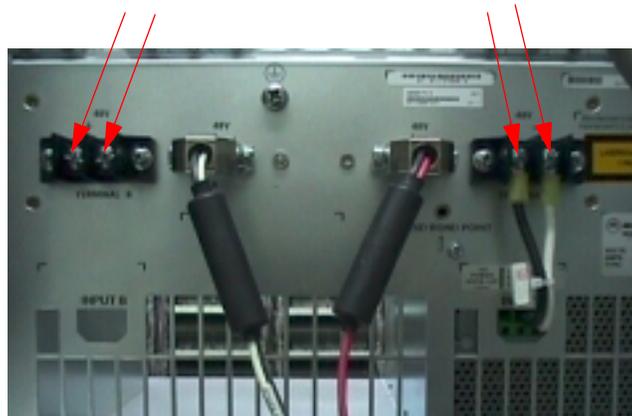
❏ *Step 3:* From the **rear** of the Motorola Controller Subrack, use a small flat blade screwdriver and disconnect the black/white power cable wires (part of harness 30-W2375E01A) from the PSP terminal block (INPUT A).
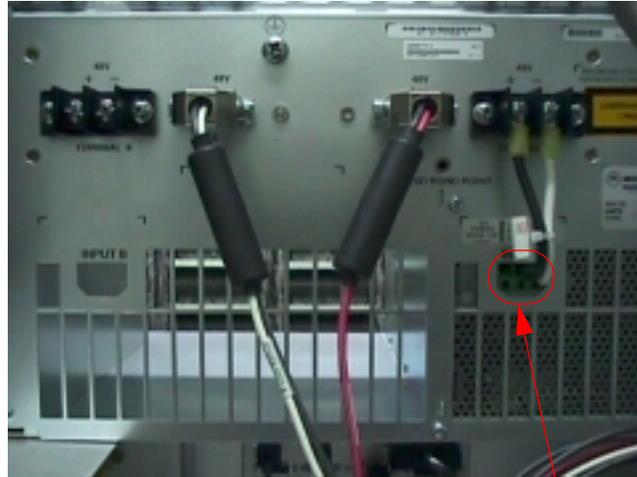
Disconnect wires (B & W)

❏ *Step 4:* From the **rear** of the Motorola Controller Subrack, use a phillips screwdriver and remove the lower rear subrack plate of the Motorola Controller Subrack, by removing the 8 indicated mounting screws.

Remove 8 screws
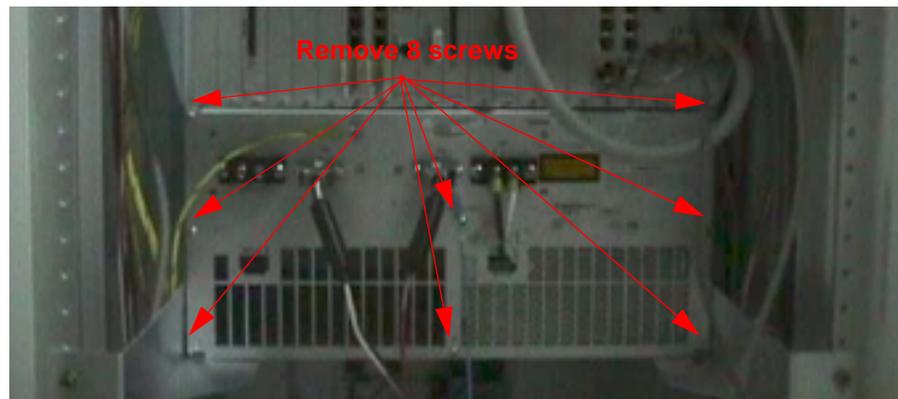
❑ *Step 5:* Install the two black wires (P2 & P3) from **Fan Failure Indication Cable (30-W2379E01C)** to rear backplane pins shown below on the 9-Slot backplane of the Motorola Controller Subrack (see figure below).

Fan Failure Indication Cable
(30-W2379E01C)
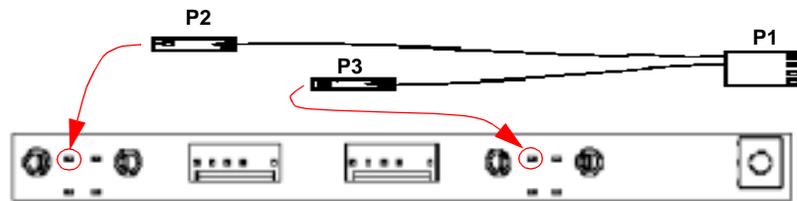
Rear Subrack Backplane

❑ *Step 6:* Route connector end (P1) of **Fan Failure Indication Cable (30-W2379E01C)**, up behind lower card cage rail of VME slot 10 for later connection to ARU Transition Module (SMM712-129).
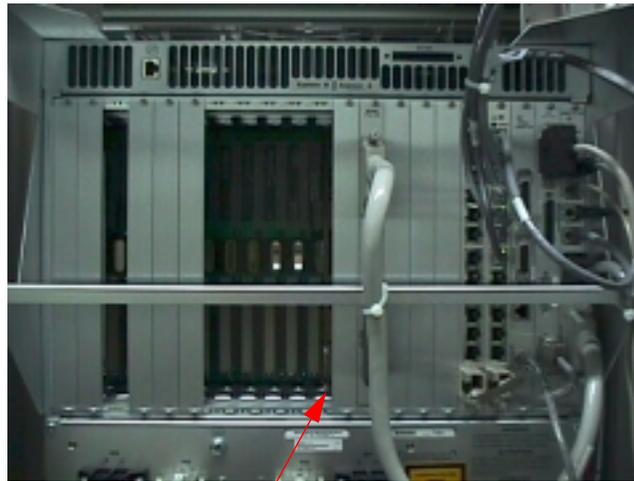
Route cable up from behind lower card cage rail of Slot 10 and loosely tie off cable to bottom of card guide, to prevent cable from droping down into subrack.

❑ *Step 7:* Replace the lower rear subrack panel of Motorola Controller Subrack using the eight screws.

❑ *Step 8:* From the **rear** of the Motorola Controller Subrack, re-connect black and white power cable wires (part of harness 30-W2375E01A) into PSP terminal block (INPUT A).
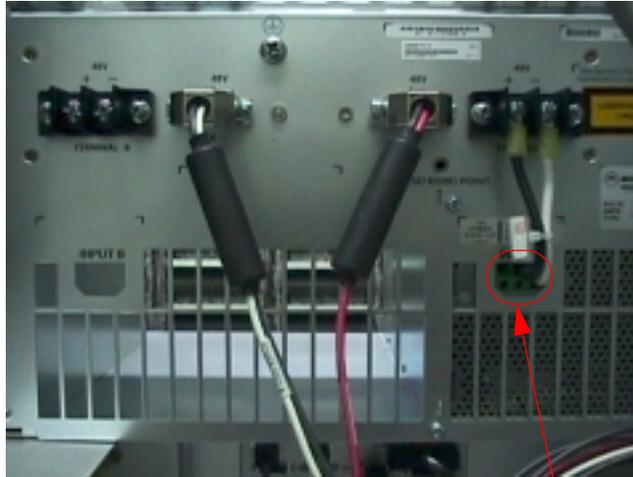
Reconnect wires (B & W)

❑ *Step 9:* Check-off the appropriate ❑ box corresponding to this procedure.

❑ *Step 10:* This completes the "*Fan Failure Cable Installation Procedure*".

STOP- Return to Calling Procedure

Appendix E - MC-1 Start-up Procedure

Description

The following procedure will provide the steps to start-up the Working Main Controller in the Motorola Controller Subrack.

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 Workstation Serial Port is connected to workstation port WS1 on the System User Panel corresponding to the Working Main Controller .

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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).

- 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*™ DACS 4/4/1 Console.

❑ *Step 3:* Enable power to the **Motorola Controller Subrack** by **installing** the appropriate fuse from fuseholder positions **A1** and **B1** in the front MC Power Panel.

Front View of MC Rack

1. Install Fuse A1

POWER FEED A

| MCC ACP-RT CABLE (20 A) | MATRIX POS 1 (20 A) | MATRIX POS 2 (20 A) | SPARE (20 A) |

POWER FEED B

| MCC ACP-RT CABLE (20 A) | MATRIX POS 1 (20 A) | MATRIX POS 2 (20 A) | SPARE (20 A) |

2. Install Fuse B1
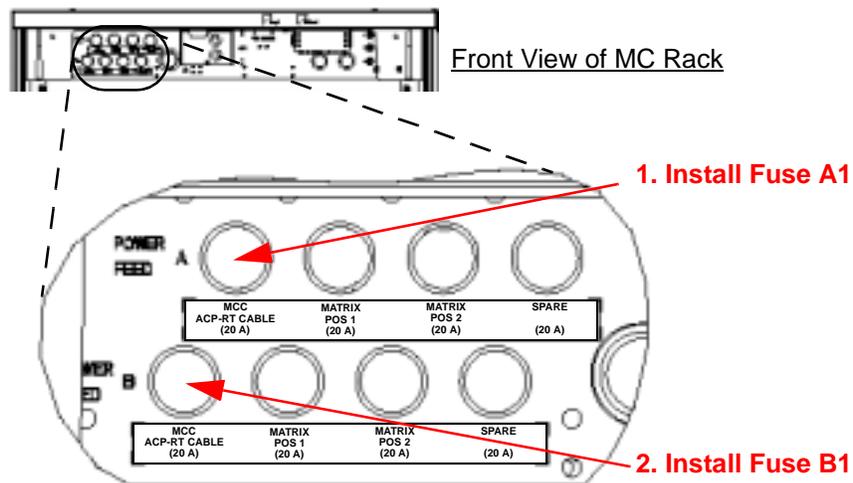
❑ *Step 4:* Turn **on** the Working Main Controller in the Motorola Controller Subrack by pushing in the **Green Power Button** on the front of the subrack. (Switch should remain in).

**Press-In to Turn on
Working Main Controller**
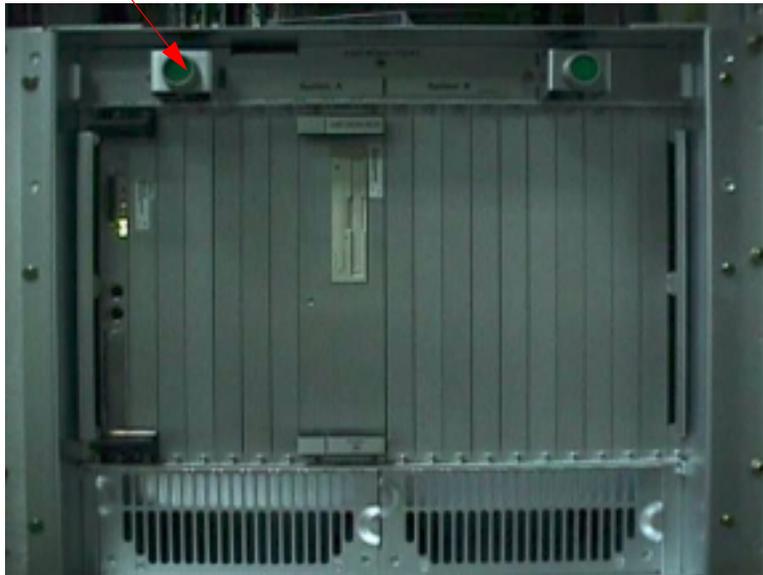
❑ *Step 5:* On the front of the MPU Unit of the Working Main Controller (MC-1), verify that the **FUS** and **SYS** green LEDs are **ON**.
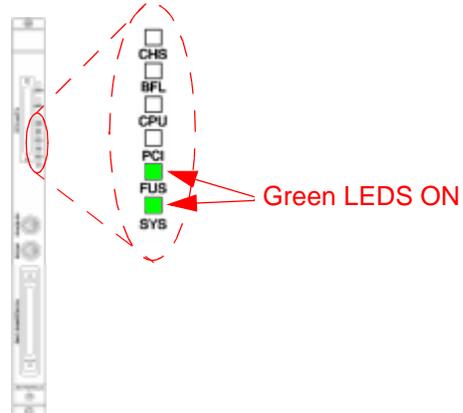
CHS
BFL
CPU
PCI
FUS
SYS

Green LEDS ON

MPU VME Card

❑ *Step 6:* 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.
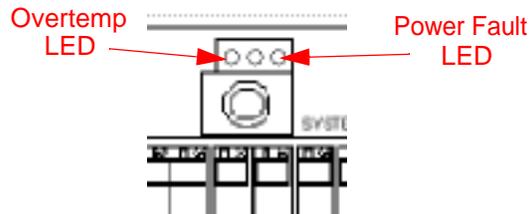
❑ *Step 7:* Verify the following output response is reported in the workstation console screen, if not press the reset button on the MPU of the Motorola Controller.

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

PPC1-Bug>
```

❑ *Step 8:* Enter **pboot 0 0** then press the ⌈RETURN⌉ key to boot the MPU from the
Hard Disk Drive on the MSU Unit.

Input Command:

```
PPC1-Diag> 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.

    •

    •

    •
Grandma: w001 Mom (256) started at Sat May 13 15:07:45 2000
Booting NEF Software Release B2.0.1 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 <u>working</u> 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 <u>protection</u> 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 <u>each</u> Port Subrack (starts with w005):

```
Grandma: w00? Mom (xxx) started at <current date-time>
w00? Run Level: SYSTEM
w00? Run Level: BOOT
w00? Run Level: ACTIVE_NEF
<current date-time> GEN002  dacs6: w00? Software Initialisation Complete
```

➔ Verify following lines reported for <u>working</u> MC Subrack:

```
w001 Run Level: ACTIVE_ALL
<current date-time> GEN002  dacs6: w001 Software Initialisation Complete
```

❑ *Step 9:* Check-off the appropriate ❑ box corresponding to this procedure.

❑ *Step 10:* This completes the "*MC-1 Start-up Procedure*".

STOP- Return to Calling Procedure

Appendix F - MC-2 Start-up Procedure

Description

The following procedure will provide the steps to start-up the Protection Main Controller (MC-2) in the Motorola Controller Subrack.

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 Workstation Serial Port is connected to the workstation port WS2 on the System User Panel corresponding to the Protection Main Controller (MC-2 or SYSTEM B Side).

2. User is currently logged into the *WaveStar*™ DACS 4/4/1 from the XC-CIT Workstation.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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 to the *WaveStar*™ DACS 4/4/1 Console terminal to the workstation port WS2 on the System User Panel corresponding to the Protection Main Controller (MC-2).

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*™ DACS 4/4/1 Console.

❑ *Step 3:* Verify on the Power Supply Plug-in (PSP) in the Protection Main Controller (MC-2) by checking that the **POWER GOOD** green LED is **ON** (means that PSP is receiving -48v input power).

Check POWER GOOD LED is ON.

❑ *Step 4:* Turn **on** the Protection Main Controller (MC-2 = System B) in the Motorola Controller Subrack by pushing in the **Green Power Button** on the front of the subrack. (Switch should remain in).

**Press-In to Turn on
Protection Main Controller**
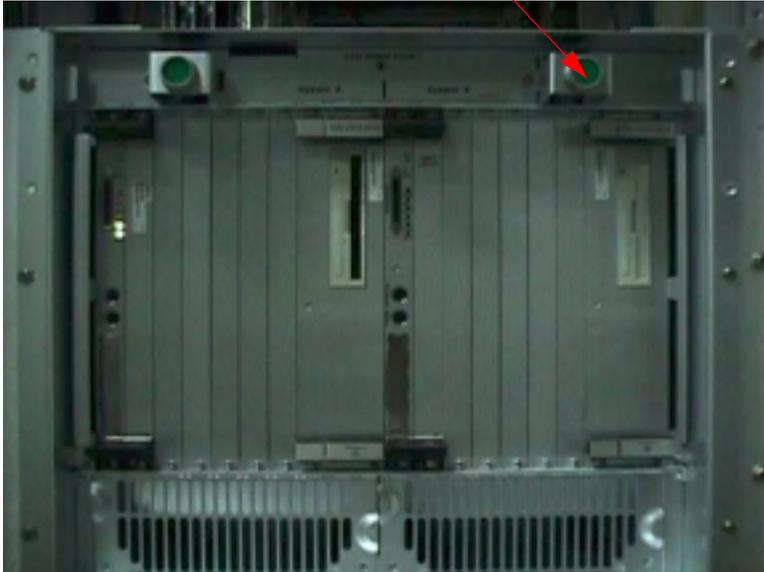
❑ *Step 5:* On the <u>front</u> of the MPU Unit of the Protection Main Controller (MC-2), verify that the **FUS** and **SYS** green LEDs are **ON**.
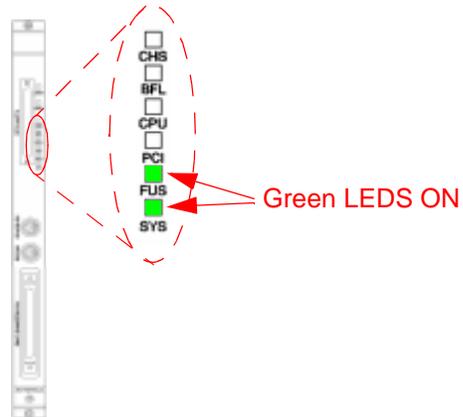
Green LEDS ON

MPU VME Card

❑ *Step 6:* Above the green power button, verify that the **Overtemp LED** (left-side), and Input **Power Fault LED** (right-side) are both <u>off</u>.

— 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.
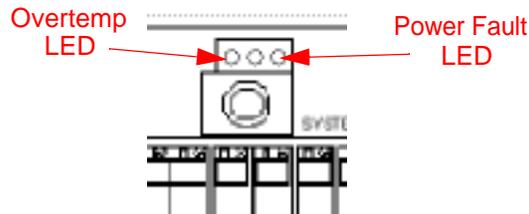
❑ *Step 7:* Perform the following steps to reset the MPU unit of the Protection Main Controller of the Motorola Controller Subrack.

❑ *Step 7-a:* Press the reset button on the <u>front</u> 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 7-b:* *Immediately* press ESC key to bypass Self-Test.

Output Response:

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

❑ *Step 7-c:* *Immediately* press ESC key again to bypass Auto Boot.

Output Response:

```
PPC1-Diag>
```

✎ **NOTE:**
If **PPC1-Bug>** prompt appears, change to **PPC1-Diag>** menu prompt by enterring **SD** then press the RETURN key.

❑ *Step 8:* Perform the follow substeps to set the MCDUP Token to "PSLS" (Protection-Standby-Locked-Simplex). The will insure that the system recognizes this controller as the protection MC, it is in the standby state, locked to prevent protection switching, and currently in the simplex config.

❑ *Step 8-a:* In the console menu at the `PPC1-Diag>` prompt, enter the following command to set the MCDUP Token for the Protection MC-2, then press the ⬚RETURN key.

Input Command:

```
PPC1-Diag> gevedit mcc-mcdup-token
```

Output Response:

```
mcc-mcdup-token=????  <- Ignore current setting!
mcc-mcdup-token=
```

❑ *Step 8-b:* Enter "**PSLS**" (Protection-Standby-Locked-Simplex), then press the ⬚RETURN key.

Input Command:

```
mcc-mcdup-token= PSLS
```

Output Response:

```
Update Global Environment Area of NVRAM (Y/N)?
```

❑ *Step 8-c:* Press ⬚y to **Update** and then press ⬚RETURN key.

Input Command:

```
Update Global Environment Area of NVRAM (Y/N)? y
```

Output Response:

```
PPC1-Diag>
```

❑ *Step 8-d:* Enter the following command again to query that the MCDUP Token was successfully set to "PSLS" for the Protection MC-2, then press the ⬚RETURN key.

Input Command:

```
PPC1-Diag> gevedit mcc-mcdup-token
```

Output Response:

```
mcc-mcdup-token=PSLS
mcc-mcdup-token=
```

❑ *Step 8-e:* Exit the query by just pressing the ⬚RETURN key.

Output Response:

```
Update Global Environment Area of NVRAM (Y/N)?
```

❑ *Step 8-f:* Press ⬚n then press ⬚RETURN key.

Input Command:

```
Update Global Environment Area of NVRAM (Y/N)? n
```

Output Response:

```
PPC1-Diag>
```

❑ *Step 9:* Check-off the appropriate ❑ box corresponding to this procedure.

❑ *Step 10:* This completes the "*MC-2 Start-up Procedure*".

STOP- Return to Calling Procedure

Appendix G - MPU Firmware Self-Tests Procedure

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*™ DACS 4/4/1.

Firmware Self-Tests:

- **RAM** - Ramdom 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*™ DACS 4/4/1, 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 Computer is currently running the Hyperterminal Application (VT100 terminal emulation) and connected to an appropriate workstation port for the *WaveStar*™ DACS 4/4/1 Console.

<div align="center">

For MC-1 ➜ Use WS1 Port

For MC-2 ➜ Use WS2 Port

</div>

❏ *Step 2:* Perform the following steps to reset the MPU unit of the specific <u>connected</u> Main Controller (MC-1 or MC-2) of the Motorola Controller.

❏ *Step 2-a:* Press the reset button on the <u>front</u> 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 2-b:* *Immediately* press ⌧ESC⌧ key to bypass Self-Test.

Output Response:

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

❏ *Step 2-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 enterring **SD** then press the ⌧RETURN⌧ key.

3. If **#** prompt appears, reboot controller by enterring **sync;reboot -aDh** then press the ⌧RETURN⌧ key.

❑ *Step 3:* From the `PPC1-Diag>` prompt, determine which firmware self-tests for the Motorolla Controller are currently <u>masked</u> during normal MPU reset, by enterring **mask** then pressing the ⌷RETURN⌷ key.

Input Command:

```
PPC1-Diag> mask
```

Output Response:

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

PPC1-Diag>
```

❑ *Step 4:* Verify that only the **PAR8730X/REG**, **DEC/SPACK**, and **DEC/CLOAD** self tests are *masked*, then proceed directly to next step.

<u>Otherwise</u>, 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 enterred, the specified test is toggled between "masked" and "un-masked" status.

Input Command:

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

     Where:                          <testdir> =
     PAR8730X or DEC

                                     <test> = REG,
     SPACK, CLOAD, CINIT ...
```

Output Response:

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

{lists currently masked tests}
```

❏ *Step 5:* From the `PPC1-Diag>` prompt, verify the **Controller Environment Set-tings** are programmed correctly, by enterring **env** then pressing the
$\boxed{\text{RETURN}}$ key.

> ✎ **NOTE:**
>> If the option setting is <u>correct</u> as indicated below, step to the next option by pressing the $\boxed{\text{RETURN}}$ key.
>>
>> If option setting is <u>incorrect</u>, enter correct value then press the $\boxed{\text{RETURN}}$ key.
>>
>> When finished, type a "**.**" (dot or period) and hit the $\boxed{\text{RETURN}}$ 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 <u>changed</u> 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 6:* From the `PPC1-Diag>` prompt, run the **Level 2 Cache** firmware self-tests on the Motorolla 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 7:* From the `PPC1-Diag>` prompt, run the **Counter/Timer** firmware self-tests on the Motorolla 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 8:* From the `PPC1-Diag>` prompt, run the **PCI/PMC Bus Register** firmware self-tests on the Motorolla 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 9:* From the `PPC1-Diag>` prompt, run the **PCI/ISA Bridge** firmware self-tests on the Motorolla 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 10:* From the `PPC1-Diag>` prompt, run the **VME Channel** firmware self-tests on the Motorolla 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 11:* From the `PPC1-Diag>` prompt, run the **SCSI2 I/O Processor** firmware self-tests on the Motorolla 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 12:* From the `PPC1-Diag>` prompt, run the **Serial Communication Controller** firmware self-tests on the Motorolla 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 13:* From the `PPC1-Diag>` prompt, run the **Serial I/O** firmware self-tests on the Motorolla 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 14:* From the `PPC1-Diag>` prompt, run the **Alarm Transition Module (XR712-129LUC)** firmware self-tests on the Motorolla 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 15:* From the `PPC1-Diag>` prompt, run the **Ethernet Controller** firmware self-tests on the Motorolla 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 16:* From the `PPC1-Diag>` prompt, run the **RAM Memory** firmware self-tests on the Motorolla 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 17:* From the `PPC1-Diag>` prompt, run the **Real Time Clock** firmware self-tests on the Motorolla Controller by entering **rtc ram adr** 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 18:* 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 reseting 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 19:* Check-off the appropriate ❑ box corresponding to this procedure on the appropriate *verification checklist*.

❑ *Step 20:* This completes the "*MPU Firmware Self-Tests*" procedure.

STOP-Return to Calling Procedure

Appendix H - MC-2 Core Software Installation Procedure

Description

The following procedures will explain how to install the Release 2.1.x *WaveStar*™ DACS 4/4/1 Core Software onto the Protection Main Controller (MC-2). This procedure will load the Operating System (OS) software and the Network Element Function (NEF) software onto the protection Main Controller (MC-2).

Required Equipment:

1 ➔ Rel 2.1.x 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. The Workstation Serial Port is connected to the workstation port WS2 on the System User Panel corresponding to the Protection Main Controller (MC-2 or SYSTEM B Side).

2. User is currently logged into the *WaveStar*™ DACS 4/4/1 from the XC-CIT Workstation.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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 **WS2** on the System User Panel (SUP).

- 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*™ DACS 4/4/1 Console.

❏ *Step 3:* Obtain the **Release 2.1.x Operation System MO Disk (DISK1)** and the **Network Element MO Disk (DISK 2)** from the *WaveStar*™ DACS 4/4/1 Core Software MO Disk Set as shown below:
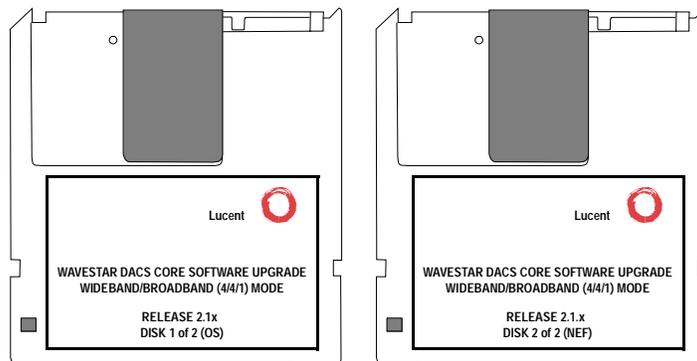
❑ *Step 4:*   Perform the following steps to reset the MPU unit of the Protection
Main Controller of the Motorola Controller.

❑ *Step 4-a:*   Press the reset button on the <u>front</u> 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 4-b:*   *Immediately* press ESC key to bypass Self-Test.

Output Response:

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

❑ *Step 4-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 enterring **SD** then press the RETURN key.

3. If **#** prompt appears, reboot controller by enterring **sync;reboot -aDh** then press the RETURN key.

❑ *Step 5:* <u>*Insert*</u> 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.

Lucent

**WAVESTAR DACS CORE SOFTWARE UPGRADE
WIDEBAND/BROADBAND (4/4/1) MODE**

**RELEASE 2.1.x
DISK 1 of 2 (OS)**
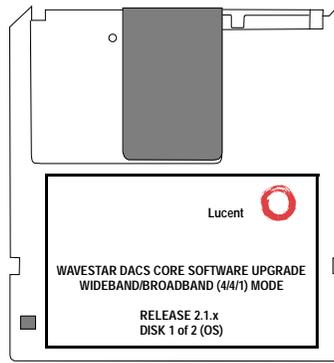
❑ *Step 6:* Enter **pboot 0 20** then press the [RETURN] key to boot the MPU from the MO Drive instead of the Hard Disk Drive (default).

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_20000829
|* Wavestar Digital Access Cross Connect
|* Copyright (c) Lucent Technologies
|* Copyright (c) Lynx Realtime Systems, Inc.
|* Compiled by lynxrts
|* On Wed Aug 30 15:41:14 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 Ⓨ,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:* Do not enter the System Time Parameters setup menu by entering ⒩, then press ⎡RETURN⎤ at the setup prompt.

Input Command:

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

Output Response:

```
common_install: info; Installation Complete.

common_install: info; rebooting the main controller.

reboot(0x108) called from pid 195, 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 <u>immediately</u> to next step for continuation of output.

❑ *Step 12:* 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

PL Loaded at: $1FC77000
Residual-Data Located at: $1FEF8000
CPU: MPC750 G3 (8), revision 0x8300  RAM Size: 512 Mb

Universe Driver Installed
mccInstall: info; mccInstall() Called.
sanityInstall: info; sanityInstall(0xb0118cac) 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)
Wed Oct 11 18:24:21 GMT 2000

(all sizes and block numbers in decimal)
(block size is 512)
(file system creation time is Wed Oct 11 18:18:53 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
770595 free blocks 75698 free inodes
Filesystem Ok

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

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

dec0: Configuring Network Interface
dec0: Network Interface Configured (p002)

decb0: Configuring Network Interface
decb0: Network Interface Configured (w002)

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

System Hostname is: w002

decc0: flags=8863<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST>
        inet 192.168.0.1 netmask 0xffffff00 broadcast 192.168.0.255
decc0 1500  <Link>8.0.3e.2e.2f.a            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 p003
add net BCLANnet4: gateway p004
add net BCLANnet5: gateway p005
add net BCLANnet6: gateway p006
add net BCLANnet7: gateway p007
add net BCLANnet8: gateway p008
add net BCLANnet9: gateway p009
add net BCLANnet10: gateway p010
add net BCLANnet11: gateway p011
add net BCLANnet12: gateway p012
add net BCLANnet13: gateway p013
add net BCLANnet14: gateway p014
add net BCLANnet15: gateway p015
```

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

Output Response: {Continued...}

```
add net BCLANnet16: gateway p016
add net BCLANnet17: gateway p017
add net BCLANnet18: gateway p018
add net BCLANnet19: gateway p019
add net BCLANnet20: gateway p020
Routes Added.


Network Initialization Complete


fsck /dev/sd0c
(all sizes and block numbers in decimal)
(block size is 512)
(file system creation time is Wed Oct 11 18:18:54 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 Wed Oct 11 18:18:56 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 Wed Oct 11 18:18:58 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

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

Prior Reboot/Crash Reason from NVRAM:
        10/11/2000 18:23:07 /bin/reboot
        Apps called reboot(0x108)
Application's Log from NVRAM:
        (No valid application log present)

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
```

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

Output Response: {Continued...}

```
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)

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

❏ *Step 13:* 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 14:* *Remove* the **Operating System (OS) MO Disk (DISK 1)** from the MO Disk Drive of the MSU unit.

✎ **NOTE:**
See "*Appendix A - Units*" for MO disk removal procedure.

❏ *Step 15:* *Install* the **Network Element Function (NEF) MO Disk (DISK 2)** into the MO disk drive of the MSU unit.

✎ **NOTE:**
See "*Appendix A - Units*" for MO disk installation procedure.
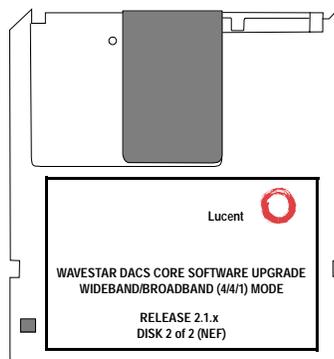
❑ *Step 16:* Verify that the **Network Element Function (NEF) MO disk** was installed in the MO Drive, and enter a ⌈RETURN⌉ to begin the NEF Installation Procedure.

🕐 ***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
1887 blocks

Verifying MO checksums
OK

Installing from /MO/addon.cpio.gz
21099 blocks

Installing from /MO/dacs6.cpio.gz
240338 blocks

Installing from /MO/root.cpio.gz
1887 blocks

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

Installing miscellaneous files
1887 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 17: <u>Remove</u> the **Network Element Function (NEF) MO Disk (DISK 2)** from the MO Disk Drive of the MSU unit.

✎ **NOTE:**
See "*Appendix A - Units*" for MO disk removal procedure.

❑ *Step 18:* Select the **Continue booting** option by entering Ⓒ, 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 "20000829", starting (Process 331)...

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

user name:
```

❑ *Step 19:* This successfully completes the "*MC-2 Core Software Installation Proce-
dure*".

STOP-Return to Calling Procedure

Appendix I - Enabling MC Duplication Procedure

Description

The following procedures will explain how to enable the MC Duplication Feature for the Release 2.1 *WaveStar*™ 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. The Workstation Serial Port is connected to the workstation port WS1 on the System User Panel corresponding to the Working Main Controller (MC-1 or SYSTEM A Side).

3. The terminal is currently at the "user name:" prompt.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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 the serial port of the Workstation Computer to the system workstation port labeled **WS1** on the System User Panel (SUP) for connection to the Working Main Controller (MC-1).

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*™ DACS 4/4/1 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_20000829
|* Wavestar Digital Access Cross Connect
|* Copyright (c) Lucent Technologies
|* Copyright (c) Lynx Realtime Systems, Inc.
|* Compiled by lynxrts
|* On Thu Aug 3l 13:11:39 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 **MC Duplication Functions** option by entering ⑦, then press RETURN.

Input Command:

```
Enter choice:7
```

Output Response:

```
Enter special MC Duplication password and hit <return>
```

❏ *Step 6:* Enter the MC Duplication Password **BaRamU**, then press a RETURN key.

Input Command:

```
Enter special MC Duplication password and hit <return>BaRamU
```

Output Response:

```
DACS                                           System Administration

                           MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❏ *Step 7:* From the MC Duplication Function Menu, select the **Query Duplication Status** option by entering ①, then press RETURN.

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is      working
This Controller's Status is  active
This Controller's Lock is    locked
This Controller's Mode is    simplex


DACS                                           System Administration

                           MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 8:*   From the MC Duplication Function Menu, select the **Switch MC Controller**
option by entering ②, then press RETURN.

Input Command:

```
Enter choice:2
```

Output Response:

```
DACS                                          System Administration

               MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu
```

❑ *Step 9:*   From the MC Controller Switch Menu, select the **Unlocked** option by
entering ④, then press RETURN.

Input Command:

```
Enter choice:4
```

Output Response:

```
unlocked

DACS                                          System Administration

               MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu

Enter choice:
```

❑ *Step 10:* From the MC Controller Switch Menu, select the **Return to previous
menu** option by entering ⓟ, then press RETURN.

Input Command:

```
Enter choice:p
```

Output Response:

```
DACS                                          System Administration

                    MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 11:* From the MC Duplication Function Menu, select the **Query Duplication Status** option by entering ①, then press ⎡RETURN⎤.

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is     working
This Controller's Status is  active
This Controller's Lock is    unlocked
This Controller's Mode is    simplex


DACS                                           System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 12:* From the MC Duplication Function Menu, select the **Change MC Simplex/ Duplex** option by entering ③, then press ⎡RETURN⎤.

Input Command:

```
Enter choice:3
```

Output Response:

```
DACS                                           System Administration

            MC Simplex/Duplex Change
WARNING
These options should only be executed when called from within a procedure docume
nt. Database replication and IP addressing may be adversely affected otherwise.


Set this Controller's Mode to
1 - Simplex
2 - Duplex
? - Help
p - Return to previous menu

Enter choice:
```

❑ *Step 13:* From the MC Simplex/Duplex Change Menu, select the **Duplex** option by
entering ②, then press RETURN.

Input Command:

```
Enter choice:2
```

Output Response:

```
duplex

DACS                                            System Administration

            MC Simplex/Duplex Change
WARNING
These options should only be executed when called from within a procedure docume
nt. Database replication and IP addressing may be adversely affected otherwise.


Set this Controller's Mode to
1 - Simplex
2 - Duplex
? - Help
p - Return to previous menu

Enter choice:
```

❑ *Step 14:* From the MC Simplex/Duplex Change Menu, select the **Return to
previous menu** option by entering ⓟ, then press RETURN.

Input Command:

```
Enter choice:p
```

Output Response:

```
DACS                                            System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 15:* From the MC Duplication Function Menu, select the **Query Duplication
Status** option by entering ①, then press RETURN.

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is      working
This Controller's Status is  active
This Controller's Lock is    unlocked
This Controller's Mode is    duplex


DACS                                            System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 16:* From the MC Duplication Function Menu, select the **Switch MC Controller**
option by entering ②, then press ⌷RETURN⌷.

Input Command:

```
Enter choice:2
```

Output Response:

```
DACS                                           System Administration

                  MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu
```

❑ *Step 17:* From the MC Controller Switch Menu, select the **Locked** option by entering
③, then press ⌷RETURN⌷.

Input Command:

```
Enter choice:3
```

Output Response:

```
locked

DACS                                           System Administration

                  MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu

Enter choice:
```

❑ *Step 18:* From the MC Controller Switch Menu, select the **Return to previous
menu** option by entering ⌷p⌷, then press ⌷RETURN⌷.

Input Command:

```
Enter choice:p
```

Output Response:

```
DACS                                           System Administration

                       MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 19:* From the MC Duplication Function Menu, select the **Query Duplication Status** option by entering ①, then press ⌈RETURN⌉.

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is      working
This Controller's Status is  active
This Controller's Lock is    locked
This Controller's Mode is    duplex


DACS                                            System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 20:* From the MC Duplication Function Menu, select the **Return to previous menu** option by entering ⓟ, 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 21:* Exit the System Administration Main Menu from the Working Main Controller Subrack (MC-1), select the **Quit** option by enterring ⓠ, then press ⌈RETURN⌉.

Input Command:

```
Enter choice: q
```

Output Response:

```
user name:
```

❑ *Step 22:* Check-off the appropriate ❑ box corresponding to this procedure on the appropriate *verification checklist*.

❑ *Step 23:* This successfully completes the "*Enabling the MC Duplication Procedure*".

STOP-Return to Calling Procedure

Appendix J - 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*™ DACS 4/4/1.

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*™ DACS 4/4/1, 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*™ DACS 4/4/1 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_20000829
|* Wavestar Digital Access Cross Connect
|* Copyright (c) Lucent Technologies
|* Copyright (c) Lynx Realtime Systems, Inc.
|* Compiled by lynxrts
|* On Thu Aug 31 13:11:39 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 <u>one</u> of the procedural options below based on how the IP addresses must be setup in the *WaveStar*™ DACS 4/4/1.

- To restore the factory pre-set <u>default</u> 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 ffffff00 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*™ DACS 4/4/
1, 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 Adrress is the same address uded by the
> Workstation Controller to log into the *WaveStar*™ DACS 4/4/1.

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 0xffffff00 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.

- ■ 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 Ⓟ, 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 Ⓠ, 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

Appendix K - MC-1 (Active) Reboot Procedure

Description

The following procedures will explain how to reboot the Working Main Controller (MC-1) from the Admin Menu for the Release 2.1 *WaveStar*™ 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. The Workstation Serial Port is connected to the workstation port WS1 on the System User Panel corresponding to the Working Main Controller (MC-1 or SYSTEM A Side).

3. The terminal is currently at the "user name:" prompt.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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 the serial port of the Workstation Computer to the system workstation port labeled **WS1** on the System User Panel (SUP) for connection to the Working Main Controller (MC-1).

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*™ DACS 4/4/1 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_20000829
|* Wavestar Digital Access Cross Connect
|* Copyright (c) Lucent Technologies
|* Copyright (c) Lynx Realtime Systems, Inc.
|* Compiled by lynxrts
|* On Thu Aug 3l 13:11:39 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 **Reboot the MC** option by entering ④, then press (RETURN).

Input Command:

```
Enter choice:4
```

Output Response:

```
This action will reboot the MC; enter <y,n> to confirm -
```

❑ *Step 6:* Enter ⓨ to confirm the reboot, then press a (RETURN) key.

Input Command:

```
This action will reboot the MC; enter <y,n> to confirm - y
```

Output Response:

```
COLD Startinit: info; transitioning to OS Run Level '0'.

reboot(0x4000) called from pid 164, tid 285 ("/bin/reboot")

*** system rebooting... ***


recover: reason: Apps called reboot(0x4000)

**** LynxOS is down ****




-------------------------ATTENTION------------------------

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

----------------------------------------------------------
```
    •
    •
    •
    •
```
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 B2.1.1 2000/09/15 15:51:35
w001 Run Level: SYSTEM
w001 Run Level: SYSTEM_ACTIVE
w001 Run Level: BOOT
w001 Run Level: ACTIVE_NEF
```

➜ Verify following lines reported for <u>working</u> 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 <u>protection</u> 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 <u>each</u> Port Subrack (starts with w005):

```
Grandma: w00? Mom (xxx) started at <current date-time>
w00? Run Level: SYSTEM
w00? Run Level: BOOT
w00? Run Level: STANDBY_NEF
<current date-time> GEN002  dacs6: w00? Software Initialisation Complete
```

➔ Verify following lines reported for <u>working</u> MC Subrack:

```
user name:

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

❑ *Step 7:*   Check-off the appropriate ❑ box corresponding to this procedure on the appropriate *verification checklist*.

❑ *Step 8:*   This successfully completes the "*MC-1 Reboot Procedure*".

STOP-Return to Calling Procedure

Appendix L - MC-2 (Standby) Reboot Procedure

Description

The following procedures will explain how to reboot the Protection Main Controller (MC-2) from the Admin Menu for the Release 2.1 *WaveStar*™ 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. The Workstation Serial Port is connected to the workstation port WS2 on the System User Panel corresponding to the Protection Main Controller (MC-2 or SYSTEM B Side).

3. The terminal is currently at the "user name:" prompt.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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 the serial port of the Workstation Computer to the system workstation port labeled **WS2** on the System User Panel (SUP) for connection to the Protection Main Controller (MC-2).

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*™ DACS 4/4/1 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_20000829
|* Wavestar Digital Access Cross Connect
|* Copyright (c) Lucent Technologies
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|* Compiled by lynxrts
|* On Thu Aug 3l 13:11:39 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 **Reboot the MC** option by entering ④, then press (RETURN).

Input Command:

```
Enter choice:4
```

Output Response:

```
This action will reboot the MC; enter <y,n> to confirm -
```

❑ *Step 6:* Enter (y) to confirm the reboot, then press a (RETURN) key.

Input Command:

```
This action will reboot the MC; enter <y,n> to confirm - y
```

Output Response:

```
COLD Startinit: info; transitioning to OS Run Level '0'.

reboot(0x4000) called from pid 164, tid 285 ("/bin/reboot")

*** system rebooting... ***


recover: reason: Apps called reboot(0x4000)

**** LynxOS is down ****




-------------------------ATTENTION------------------------

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

----------------------------------------------------------
    •
    •
    •
    •
Creating /usr/add-on/scs/bin/mips/.sum_list
init: info; transitioning to OS Run Level '2'.
CSD daemon, Version "20000426", starting (Process 176)...

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

❑ *Step 7:* Check-off the appropriate ❑ box corresponding to this procedure on the appropriate *verification checklist*.

❑ *Step 8:* This successfully completes the "*MC-1 Reboot Procedure*".

STOP-Return to Calling Procedure

Appendix M - MC Switch to Protection Procedure

Description

The following procedures will explain how to perform an manual switch to protection to make the Protection Main Controller (MC-2) the Active Controller for the Release 2.1 *WaveStar*™ 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. The Workstation Serial Port is connected to the workstation port WS2 on the System User Panel corresponding to the Protection Main Controller (MC-2 or SYSTEM B Side).

3. The Protection Main Controller (MC-2 or SYSTEM B Side) is initially in the Standby state at the start of the procedure.

4. The terminal is currently at the "user name:" prompt.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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 the serial port of the Workstation Computer to the system workstation port labeled **WS2** on the System User Panel (SUP) for connection to the **Protection Main Controller (MC-2)**.

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*™ DACS 4/4/1 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_20000829
|* Wavestar Digital Access Cross Connect
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\*********************************************/


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 **MC Duplication Functions** option by entering ⑦, then press RETURN.

Input Command:

```
Enter choice:7
```

Output Response:

```
Enter special MC Duplication password and hit <return>
```

❏ *Step 6:*   Enter the MC Duplication Password **BaRamU**, then press a RETURN key.

Input Command:

```
Enter special MC Duplication password and hit <return>BaRamU
```

Output Response:

```
DACS                                          System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❏ *Step 7:*   From the MC Duplication Function Menu, select the **Query Duplication Status** option by entering ①, then press RETURN.

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is     protect
This Controller's Status is  standby
This Controller's Lock is    locked or unlocked
This Controller's Mode is    duplex


DACS                                          System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❏ *Step 8:*   Perform one of the following procedural options below, based on the condition (locked or unlocked) of the Controllers Lock State.

■   If the controller's lock state is set to **unlocked**, proceed directly to **Step 13** to continue on with the protection switch procedure.

■   If the controller's lock state is set to **locked**, proceed to the next step to first unlock the controller and allow protection switching.

❑ *Step 9:* From the MC Duplication Function Menu, select the **Switch MC Controller** option by entering ②, then press ⌨RETURN.

Input Command:

```
Enter choice:2
```

Output Response:

```
DACS                                        System Administration

                MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu
```

❑ *Step 10:* From the MC Controller Switch Menu, select the **Unlocked** option by entering ④, then press ⌨RETURN.

Input Command:

```
Enter choice:4
```

Output Response:

```
unlocked

DACS                                        System Administration

                MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu

Enter choice:
```

❑ *Step 11:* From the MC Controller Switch Menu, select the **Return to previous menu** option by entering ⓟ, then press ⌨RETURN.

Input Command:

```
Enter choice:p
```

Output Response:

```
DACS                                        System Administration

                    MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 12:* From the MC Duplication Function Menu, select the **Query Duplication Status** option by entering ①, then press RETURN.

Verify that the Controller's Lock is now set for **Unlocked**.

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is      protect
This Controller's Status is  standby
This Controller's Lock is    unlocked
This Controller's Mode is    duplex


DACS                                              System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 13:* From the MC Duplication Function Menu, select the **Switch MC Controller** option by entering ②, then press RETURN.

Input Command:

```
Enter choice:2
```

Output Response:

```
DACS                                              System Administration

                 MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu
```

❑ *Step 14:* From the MC Controller Switch Menu, select the **Active** option by entering ①, then press RETURN.

Input Command:

```
Enter choice:1
```

Output Response:

```
/bin/csdPostEvent: info; posted event EventIdUserDemandSwitch to process 174.

DACS                                              System Administration

                 MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu

Enter choice:
```

❑ *Step 15:* From the MC Controller Switch Menu, select the **Return to previous menu** option by entering p, then press RETURN.

Input Command:

```
Enter choice:p
```

Output Response:

```
DACS                                              System Administration

                          MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 16:* **Wait** until the MPU in the <u>Protection</u> Main Controller, begins transitioning runlevels to become the <u>Active</u> controller.

Output Response:

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

    decc0: flags=8863<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST>
           inet 192.168.0.63 netmask 0xffffff00 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

Networks Active

init: info; transitioning to OS Run Level '4'.
Grandma: w002 Mom (256) started at <current date-time>
Booting NEF Software Release B2.1.x 2000/05/04 12:53:28
w002 Run Level: SYSTEM
w002 Run Level: SYSTEM_ACTIVE
w002 Run Level: BOOT
w002 Run Level: ACTIVE_NEF
```

➜ Verify following lines report for <u>working</u> 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 report for <u>protection</u> 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 report for <u>each</u> Port Subrack (starts with w005):

```
Grandma: w00? Mom (xxx) started at <current date-time>
w00? Run Level: SYSTEM
w00? Run Level: BOOT
w00? Run Level: STANDBY_NEF
<current date-time> GEN002  dacs6: w00? Software Initialisation Complete
```

➜ Verify following lines report for <u>Protection</u> MC Subrack:

```
w002 Run Level: ACTIVE_ALL
<current date-time> GEN002  dacs6: w002 Software Initialisation Complete
```

❑ *Step 17:* Press a ⌷RETURN⌷ key, to obtain the **MC Duplication Functions Menu**.

Output Response:

```
DACS                                                 System Administration

                           MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 18:* From the MC Duplication Function Menu, select the **Query Duplication Status** option by entering ⌷1⌷, then press ⌷RETURN⌷.

Verify that the MCDUP token is properly set as indicated below:

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is      protect
This Controller's Status is  active
This Controller's Lock is    unlocked
This Controller's Mode is    duplex


DACS                                                 System Administration

                           MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 19:* From the MC Duplication Function Menu, select the **Switch MC Controller** option by entering ⌷2⌷, then press ⌷RETURN⌷.

Input Command:

```
Enter choice:2
```

Output Response:

```
DACS                                                 System Administration

               MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu
```

❑ *Step 20:* From the MC Controller Switch Menu, select the **Locked** option by entering
Ⓐ, then press RETURN.

Input Command:

```
Enter choice:3
```

Output Response:

```
locked

DACS                                              System Administration

              MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu

Enter choice:
```

❑ *Step 21:* From the MC Controller Switch Menu, select the **Return to previous
menu** option by entering Ⓟ, then press RETURN.

Input Command:

```
Enter choice:p
```

Output Response:

```
DACS                                              System Administration

                         MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 22:* From the MC Duplication Function Menu, select the **Query Duplication
Status** option by entering Ⓐ, then press RETURN.

Verify that the Controller's Lock is now set for **Locked**.

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is      protect
This Controller's Status is  active
This Controller's Lock is    locked
This Controller's Mode is    duplex

DACS                                              System Administration

                         MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❏ *Step 23:* From the MC Duplication Function Menu, select the **Return to previous menu** option by entering ⓟ, 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 24:* Exit the System Administration Main Menu from the Protection Main Controller Subrack (MC-2), select the **Quit** option by enterring ⓠ, then press ⟨RETURN⟩.

Input Command:

```
Enter choice: q
```

Output Response:

```
user name:
```

❏ *Step 25:* Check-off the appropriate ❏ box corresponding to this procedure on the appropriate *verification checklist*.

❏ *Step 26:* This successfully completes the "*MC Switch to Protection Procedure*".

STOP-Return to Calling Procedure

Appendix N - MC Switch to Working Procedure

Description

The following procedures will explain how to perform an manual switch to working to make the Working Main Controller (MC-1) the Active Controller for the Release 2.1 *WaveStar*™ 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. The Workstation Serial Port is connected to the workstation port WS1 on the System User Panel corresponding to the Working Main Controller (MC-1 or SYSTEM A Side).

3. The Working Main Controller (MC-1 or SYSTEM A Side) is initially in the Standby state at the start of the procedure.

4. The terminal is currently at the "user name:" prompt.

Precautions

— When working on the *WaveStar*™ DACS 4/4/1, 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 the serial port of the Workstation Computer to the system workstation port labeled **WS1** on the System User Panel (SUP) for connection to the **Working Main Controller (MC-1)**.

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*™ DACS 4/4/1 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_20000829
|* Wavestar Digital Access Cross Connect
|* Copyright (c) Lucent Technologies
|* Copyright (c) Lynx Realtime Systems, Inc.
|* Compiled by lynxrts
|* On Thu Aug 31 13:11:39 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 **MC Duplication Functions** option by entering ⑦, then press ⎡RETURN⎤.

Input Command:

```
Enter choice:7
```

Output Response:

```
Enter special MC Duplication password and hit <return>
```

❑ *Step 6:* Enter the MC Duplication Password **BaRamU**, then press a ⎡RETURN⎤ key.

Input Command:

```
Enter special MC Duplication password and hit <return>BaRamU
```

Output Response:

```
DACS                                          System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 7:* From the MC Duplication Function Menu, select the **Query Duplication Status** option by entering ①, then press ⎡RETURN⎤.

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is     working
This Controller's Status is  standby
This Controller's Lock is    locked or unlocked
This Controller's Mode is    duplex


DACS                                          System Administration

                        MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 8:* Perform <u>one</u> of the following procedural options below, based on the condition (locked or unlocked) of the Controllers Lock State.

■ If the controller's lock state is set to **unlocked**, proceed directly to **Step 13** to continue on with the protection switch procedure.

■ If the controller's lock state is set to **locked**, proceed to the <u>next step</u> to first unlock the controller and allow protection switching.

❑ *Step 9:* From the MC Duplication Function Menu, select the **Switch MC Controller**
option by entering ②, then press RETURN.

Input Command:

```
Enter choice:2
```

Output Response:

```
DACS                                        System Administration

              MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu
```

❑ *Step 10:* From the MC Controller Switch Menu, select the **Unlocked** option by
entering ④, then press RETURN.

Input Command:

```
Enter choice:4
```

Output Response:

```
unlocked

DACS                                        System Administration

              MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu

Enter choice:
```

❑ *Step 11:* From the MC Controller Switch Menu, select the **Return to previous
menu** option by entering ⓟ, then press RETURN.

Input Command:

```
Enter choice:p
```

Output Response:

```
DACS                                           System Administration

                      MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 12:* From the MC Duplication Function Menu, select the **Query Duplication Status** option by entering ①, then press RETURN.

Verify that the Controller's Lock is now set for **Unlocked**.

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is       working
This Controller's Status is   standby
This Controller's Lock is     unlocked
This Controller's Mode is     duplex


DACS                                              System Administration

                          MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 13:* From the MC Duplication Function Menu, select the **Switch MC Controller** option by entering ②, then press RETURN.

Input Command:

```
Enter choice:2
```

Output Response:

```
DACS                                              System Administration

              MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu
```

❑ *Step 14:* From the MC Controller Switch Menu, select the **Active** option by entering ①, then press RETURN.

Input Command:

```
Enter choice:1
```

Output Response:

```
/bin/csdPostEvent: info; posted event EventIdUserDemandSwitch to process 172.

DACS                                              System Administration

              MC Controller Switch

Set this Controller's State to
1 - Active
2 - Standby
3 - Lock
4 - Unlock
? - Help
p - Return to previous menu

Enter choice:
```

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❑ *Step 15:* From the MC Controller Switch Menu, select the **Return to previous menu** option by entering ⓟ, then press [RETURN].

Input Command:

```
Enter choice:p
```

Output Response:

```
DACS                                             System Administration

                            MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 16:* **Wait** until the MPU in the <u>Working</u> Main Controller, begins transitioning runlevels to become the <u>Active</u> controller.

Output Response:

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


     decc0: flags=8863<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST>
           inet 192.168.0.63 netmask 0xffffff00 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

Networks Active

init: info; transitioning to OS Run Level '4'.
Grandma: w001 Mom (256) started at <current date-time>
Booting NEF Software Release B2.1.x 2000/xx/xx xx:xx:xx
w001 Run Level: SYSTEM
w001 Run Level: SYSTEM_ACTIVE
w001 Run Level: BOOT
w001 Run Level: ACTIVE_NEF
```

➜ Verify following lines report for <u>working</u> 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 report for <u>protection</u> 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 report for <u>each</u> Port Subrack (starts with w005):

```
Grandma: w00? Mom (xxx) started at <current date-time>
w00? Run Level: SYSTEM
w00? Run Level: BOOT
w00? Run Level: STANDBY_NEF
<current date-time> GEN002  dacs6: w00? Software Initialisation Complete
```

➜ Verify following lines report for <u>Working</u> MC Subrack:

```
w001 Run Level: ACTIVE_ALL
<current date-time> GEN002  dacs6: w001 Software Initialisation Complete
```

❑ *Step 17:* Press a ⌈RETURN⌉ key, to obtain the **MC Duplication Functions Menu**.

Output Response:

```
DACS                                                 System Administration

                               MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 18:* From the MC Duplication Function Menu, select the **Query Duplication Status** option by entering ⌈1⌉, then press ⌈RETURN⌉.

Verify that the MCDUP token is properly set as indicated below:

Input Command:

```
Enter choice:1
```

Output Response:

```
This Controller's ID is      working
This Controller's Status is  active
This Controller's Lock is    unlocked
This Controller's Mode is    duplex


DACS                                                 System Administration

                               MC Duplication Functions

1 - Query Duplication Status
2 - Switch MC Controller
3 - Change MC Simplex/Duplex
? - Help
p - Return to Main Menu

Enter choice:
```

❑ *Step 19:* From the MC Duplication Function Menu, select the **Return to previous menu** option by entering ⌈p⌉, 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 20:* Exit the System Administration Main Menu from the Working Main
Controller Subrack (MC-1), select the **Quit** option by enterring ⒬, then
press ⎡RETURN⎤.

Input Command:

```
Enter choice: q
```

Output Response:

```
user name:
```

❏ *Step 21:* Check-off the appropriate ❏ box corresponding to this procedure on the
appropriate *verification checklist*.

❏ *Step 22:* This successfully completes the "*MC Switch to Working Procedure*".

STOP-Return to Calling Procedure

Attachments

List of Attachments

The following attachments contains the following forms:

- Completion Form

Completion Form

Lucent Technologies
Bell Labs Innovations

Document Title: *WaveStar*™ **DACS 4/4/1, Rel 2.1 MC Duplex Upgrade (In-Service) Modification Implementation Procedure**

Identification No.: 365-367-410   **Issue No.:** Issue 1.0   **Date:** Sept 2000

Location Information

This procedure was completed:

Start Date: _____   **Completion Date:** _____

Station Location: _____

Country: _____

Participants

	Names (Printed)	**Company**
1.		
2.		
3.		
4.		
5.		
6.		

Customer Signature

Please read and sign the statement below:

I have witnessed the successful implementation of this procedure on this particular WaveStar™ *DACS 4/4/1 System.*

_____   _____
Customer Signature   *Date*

Note: This Completion Form is to be retained by the Lucent Technologies Representative as a record of successfully completion of this implementation procedure.