

RS/6000 Enterprise Server H50  
-48 Volt DC



# Service Guide

## **First Edition (July 1998)**

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## Communications Statements

The following statement applies to this product. The statement for other products intended for use with this product appears in their accompanying documentation.

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### Federal Communications Commission (FCC) Statement

**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Neither the provider nor the manufacturer are responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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### European Union (EU) Statement

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. The manufacturer cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of option cards supplied by third parties. Consult with your dealer or sales representative for details on your specific hardware.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to CISPR 22 / European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

**Attention:** This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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## **International Electrotechnical Commission (IEC) Statement**

This product has been designed and built to comply with IEC Standard 950.

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## **United Kingdom Telecommunications Safety Requirements**

This equipment is manufactured to the International Safety Standard EN60950 and as such is approved in the UK under the General Approval Number NS/G/1234/J/100003 for indirect connection to the public telecommunication network.

The network adapter interfaces housed within this equipment are approved separately, each one having its own independent approval number. These interface adapters, supplied by the manufacturer, do not use or contain excessive voltages. An excessive voltage is one which exceeds 70.7 V peak ac or 120 V dc. They interface with this equipment using Safe Extra Low Voltages only. In order to maintain the separate (independent) approval of the manufacturer's adapters, it is essential that other optional cards, not supplied by the manufacturer, do not use main voltages or any other excessive voltages. Seek advice from a competent engineer before installing other adapters not supplied by the manufacturer.

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## **Avis de conformité aux normes du ministère des Communications du Canada**

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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## **Canadian Department of Communications Compliance Statement**

This Class A digital apparatus meets the requirements of the Canadian Interference–Causing Equipment Regulations.

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## VCCI Statement

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

The following is a summary of the VCCI Japanese statement in the box above.

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

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## Electromagnetic Interference (EMI) Statement - Taiwan

### 警告使用者:

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

The following is a summary of the EMI Taiwan statement above.

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user will be required to take adequate measures.

---

## Radio Protection for Germany

Dieses Gerät ist berechtigt in Übereinstimmung mit Dem deutschen EMVG vom 9.Nov.92 das EG–Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM Germany.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse A. Für diese von Geräten gilt folgende Bestimmung nach dem EMVG:

Geräte dürfen an Orten, für die sie nicht ausreichend entstört sind, nur mit besonderer Genehmigung des Bundesministers für Post und Telekommunikation oder des Bundesamtes für Post und Telekommunikation betrieben werden. Die Genehmigung wird erteilt, wenn keine elektromagnetischen Störungen zu erwarten sind.

(Auszug aus dem EMVG vom 9.Nov.92, Para.3, Abs.4)

### Hinweis

Dieses Genehmigungsverfahren ist von der Deutschen Bundespost noch nicht veröffentlicht worden.



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## Safety Notices

A *danger* notice indicates the presence of a hazard that has the potential of causing death or serious personal injury.

A *caution* notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury.

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### Electrical Safety

Observe the following safety instructions any time you are connecting or disconnecting devices attached to the drawer.

#### DANGER

**An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.**

**Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.**

**When adding or removing any additional devices to or from the system, ensure that the power cables for those devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.**

**Use one hand, when possible, to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.**

**During an electrical storm, do not connect cables for display stations, printers, telephones, or station protectors for communication lines.**

#### CAUTION:

**Energy hazard, remove power before servicing. Disconnect two power supply cords.**

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## Laser Safety Information

The optical drive in this system unit is a laser product. The optical drive has a label that identifies its classification. The label, located on the drive, is shown below.

CLASS 1 LASER PRODUCT LASER KLASSE 1 LUOKAN 1 LASERLAITE APPAREIL À LASER DE CLASSE 1 IEC 825:1984 CENELEC EN 60 825:1991
---

The optical drive in this system unit is certified in the U.S. to conform to the requirements of the Department of Health and Human Services 21 Code of Federal Regulations (DHHS 21 CFR) Subchapter J for Class 1 laser products. Elsewhere, the drive is certified to conform to the requirements of the International Electrotechnical Commission (IEC) 825 (1st edition 1984) and CENELEC EN 60 825:1991 for Class 1 laser products.



### CAUTION:

**A class 3 laser is contained in the device. Do not attempt to operate the drive while it is disassembled. Do not attempt to open the covers of the drive as it is not serviceable and is to be replaced as a unit.**

Class 1 laser products are not considered to be hazardous. The optical drive contains internally a Class 3B gallium–arsenide laser that is nominally 0.14 milliwatts at 765 to 815 nanometers. The design incorporates a combination of enclosures, electronics, and redundant interlocks such that there is no exposure to laser radiation above a Class 1 level during normal operation, user maintenance, or servicing conditions.

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## About This Book

This book provides specific maintenance information for the -48 volt RS/6000 Enterprise Server H50 that is not found in the *RS/6000 Enterprise Server H50 Installation and Service Guide*, the *7014 Model S00 Rack Installation and Service Guide* or the *7015 Model R00 Rack Installation and Service Guide*.

This book is used by the service technician to repair system failures. This book assumes that the service technician has had training on the system unit.

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## ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

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## Related Publications

The following publications are available for purchase:

- The *RS/6000 Enterprise Server H50 User's Guide* contains information to help users set up, install options, configure, modify, and solve minor problems regarding the RS/6000 Enterprise Server H50.
- The *RS/6000 Enterprise Server H50 Installation and Service Guide* is used by the service technician to repair system failures in the RS/6000 Enterprise Server H50.
- The *7014 Model S00 Rack Installation and Service Guide* contains information regarding the 7014 Model S00 Rack, in which the RS/6000 Enterprise Server H50 may be installed.
- The *7015 Model R00 Rack Installation and Service Guide* contains information regarding the 7015 Model R00 Rack, in which the RS/6000 Enterprise Server H50 may be installed.
- The *Diagnostic Information for Multiple Bus Systems* contains common diagnostic procedures, error codes, service request numbers, and failing function codes. This manual is intended for trained service technicians.
- The *RS/6000 Adapters, Devices, and Cable Information for Multiple Bus Systems* contains information about adapters, external devices, and cabling. This manual is intended to supplement information found in the *Diagnostic Information for Multiple Bus Systems*.
- The *Site and Hardware Planning Information* contains information to help you plan your installation.



## Chapter 1. Reference Information

The RS/6000 Enterprise Server H50 -48 Volt DC CPU Drawer is a RS/6000 Enterprise Server H50 that operates on -48 volts direct current.

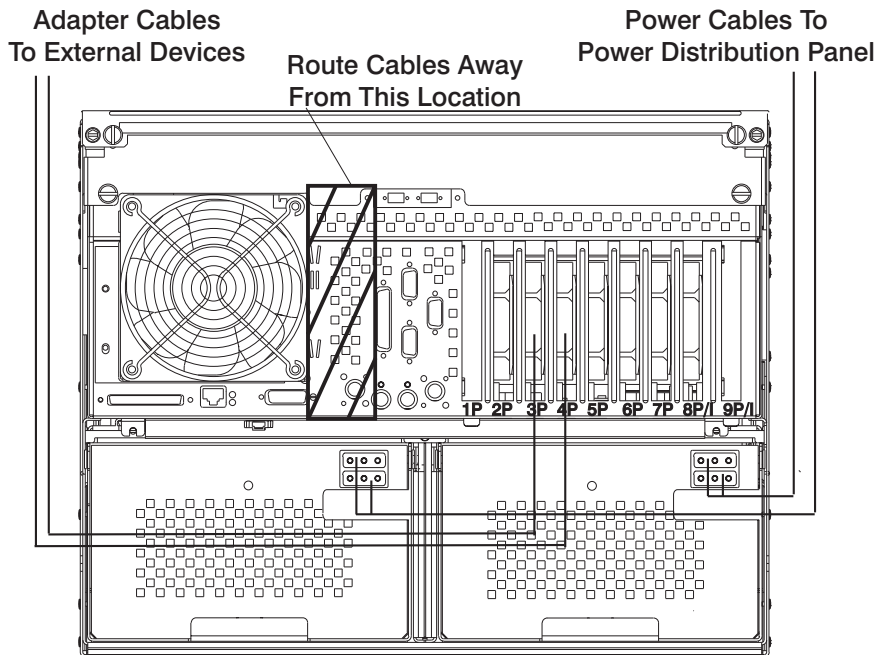
This book provides information specific to the -48 volt RS/6000 Enterprise Server H50 that is not found in the *RS/6000 Enterprise Server H50 Installation and Service Guide* or the *7014 Model S00 Rack Installation and Service Guide*.

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### Cable Routing

All cables must be organized and routed at least 2 inches away from the rear surfaces of the RS/6000 Enterprise Server H50 system. This will help optimize the system cooling and EMC performance. No labels or other objects should be added where they will obstruct air flow through the rear chassis ventilation holes.

The following diagram shows one example of how to route the cables at the rear of the drawer.





## Chapter 2. Error Code to FRU Index

This section supplements the information in chapter 3 of *RS/6000 Enterprise Server H50 Installation and Service Guide*

Table 2-1. Firmware Error Codes.

Error Code	Description	Action / Possible Failing FRU
25A80xxx	NVRAM problems	<b>NVRAM problem resolution:</b> <ol style="list-style-type: none"><li>1. Errors reported against NVRAM can be caused by low Battery voltage and (more rarely) power outages that occur during normal system usage. With the exception of the 25A80000 error, these errors are warnings that the NVRAM data content had to be re-established and do not require any FRU replacement unless the error is persistent. When one of these errors occurs, any system customization (eg. boot device list) information has been lost, the system may need to be re-configured.</li><li>2. If the error is persistent, replace the battery.</li><li>3. If the error is persistent after battery replacement, or the error code is 25A80000, replace the I/O board. (See notes on page 3-1 of <i>RS/6000 Enterprise Server H50 Installation and Service Guide.</i>)</li></ol>





## Chapter 3. Modem Configurations

### Sample Modem Configuration Files

This chapter provides information that is new, and supplements the Service Processor sections in the *RS/6000 Enterprise Server H50 Installation and Service Guide* and *RS/6000 Enterprise Server H50 User's Guide*.

With hundreds of modems to choose from, and various modem programming standards, configuring a modem for use with the RS/6000 Enterprise Server H50 -48 Volt DC CPU Drawer can be challenging. The RS/6000 Enterprise Server H50 -48 Volt DC CPU Drawer is designed to place little demand on an attached modem, thereby increasing the setup and connection success rates. Several sample modem configuration files are supplied that either work directly with your modem, or provide a good starting point for a custom setup, if required.

The sample modem configuration files can be found in your RS/6000 Enterprise Server H50 firmware and in the `/usr/share/modems` subdirectory (if your server is using AIX) with the following names. A listing of each specific file is included in appendix B. A listing of each generic file is in *RS/6000 Enterprise Server H50 Installation and Service Guide*.

#### Generic Modem Configuration Files

AIX File Name	Service Processor Firmware File Name
modem_z.cfg	modem_z_sp
modem_z0.cfg	modem_z0_sp
modem_f.cfg	modem_f_sp
modem_f0.cfg	modem_f0_sp
modem_f1.cfg	modem_f1_sp

#### Specific Modem Configuration Files

AIX File Name	Service Processor Firmware File Name
modem_m0.cfg	modem_m0_sp
modem_m1.cfg	modem_m1_sp

With the following selection procedures and your modem manual, one of these configuration files should be suitable for your use.

---

## Configuration File Selection

1. Is your modem an IBM 7852-400?

If yes, use modem configuration file `modem_m0.cfg` and go to step 7 on page 3-3 below.

**Note:** The IBM 7852-400 modem has dip switches on the right hand side of the unit. See “IBM 7852-400 DIP Switch Settings” on page 3-5 for the correct switch settings.

If no, continue with step 2 below.

2. Is your modem an IBM 7857-017?

If yes, use modem configuration file `modem_m1.cfg` and go to step 7 on page 3-3 below.

**Note:** The IBM 7857-017 modem has two telephone line connections on the back of the unit. One is marked “LL” (for Leased Line), and the other is marked “PTSN” (for Public Telephone Switched Network). The service processor expects to use the modem on the public network, so the telephone line should attach to the PTSN connector. Also, see the note on page 3-3.

If no, continue with step 3 below.

3. Does your modem respond to the extended command set (prefixed with `&`)?

If yes, go to step 5 below.

If no, continue with step 4 below.

4. Does your modem respond to:

a. ATZ reset command, or

b. ATZn reset commands, where n can be 0, 1, etc.?

If ATZ, configuration file `modem_z.cfg` is recommended.

If ATZn, configuration file `modem_z0.cfg` is recommended.

Go to step 7 on page 3-3 below.

5. Does your modem command set include a test for V.42 error correction at the remote modem (often called “Auto-Reliable Mode”)?

If yes, this test must be disabled. Sample configuration files `/usr/share/modem_m0.cfg` or `/usr/share/modem_m1.cfg` can be used as models to help you create a file for your particular modem. See “Customizing the Modem Configuration Files” on page 3-4. Go to 7 on page 3-3.

If no, go to 6 on page 3-3.

6. Does your modem respond to:

- a. AT&F reset command, or
- b. AT&Fn reset commands, where n can be 0, 1, etc.?

If AT&F, configuration file modem\_f.cfg is recommended.

If AT&Fn, configuration file modem\_f0.cfg or modem\_f1.cfg is recommended, depending on which provides the hardware flow control profile.

7. Selection is complete.

If your modem configuration selection is not available in the Service Processor Modem Configuration Menu, you must access it through the Configure Remote Maintenance Policy Service Aid.

If you find it necessary to adjust any of these configuration files, do so with reference to the manual that came with your modem. It is recommended you select settings that enable hardware flow control and respond to DTR.

**Note:** Some older modems do not respond to the commands X0 or &R1. You should edit out these commands from the modem configuration file if yours is such a modem. See your modem manual for more information.

**Note:** Some modems, such as IBM 7857-017, Some modems are not designed for the paging function. Although they can be used for paging, they return an error message when they do not get the expected response from another modem. Therefore, even though the paging was successful, the error message causes the Service Processor to retry, continuing to place pager calls for the number of retries specified in the Call-Out Policy Setup Menu. These retries result in redundant pages.

## Examples For Using the Generic Sample Modem Configuration Files

Modem	Setup Z	Setup Z0 (Rare)	Setup F	Setup F0	Setup F1
AT&T DataPort 2001 **				X	
Bocamodem 1440E			X		
Hayes Smart Modem 300	X				
IBM 5841	X				
IBM 5843	X				
IBM 7851				X	
IBM 7852-10				X	
IBM 7855					X
USRobotics 36.6K Sportster					X
Zoom V.32			X		

**Note:** \*\* Ring interrupt only on first ring.

### Customizing the Modem Configuration Files

You can create your own modem configuration file(s) or modify the samples provided. After you customize your modem configuration files, you **MUST** access them via the Configure Remote Maintenance Policy Service Aid rather than from the Service Processor menus.

**Note:** If you have already set up your serial ports, line speeds, authorizations and telephone numbers from the Service Processor menus, specify your customized modem configuration files from the service aid.

If you have not already set up your serial ports, line speeds, authorizations and telephone numbers from the Service Processor menus, you may set them up with the service aids while you specify your customized modem configuration files.

## IBM 7852-400 DIP Switch Settings

If you are using a 7852-400 modem to enable service processor communications, for proper operation, the DIP switches must be set according to the following table.

Switch	Position	Function
1	Up	Force DTR
2	Up	Flow Control &E4
3	Down	Result Codes Enabled
4	Down	Modem Emulation Disabled
5	Up	Auto Answer Enabled
6	Up	Maximum Throughput Enabled
7	Up	RTS Normal Functions
8	Down	Enable Command Mode
9	Down	Remote Digital Loopback Test Enabled
10	Up	Dial-Up Line Enabled
11	*Up	AT Responses Enabled (Extended Responses Disabled)
12	*Down	Asynchronous Operation
13	UP	28.8KB Line Speed
14	Up	
15	Up	CD and DSR Normal Functions
16	Up	2-Wire Leased Line Enabled

\* Only switches 11 and 12 are changed from the factory default settings.

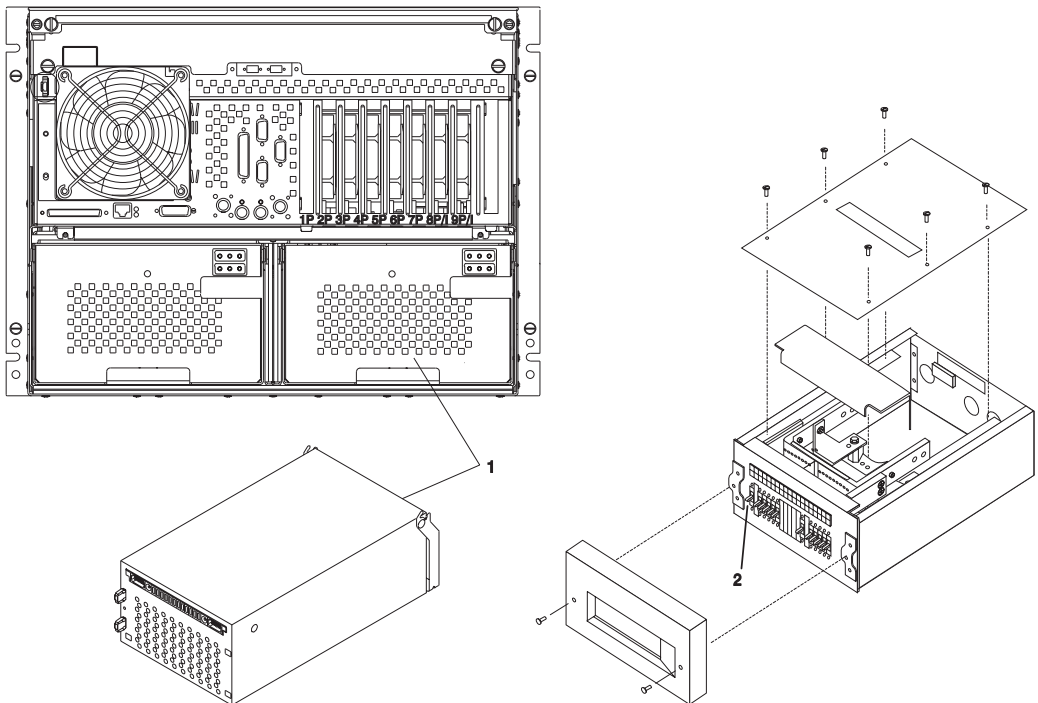


## Chapter 4. Parts Listings

### -48 Volt DC Specific Parts List

This section provides information that is specific to the RS/6000 Enterprise Server H50 -48 Volt DC CPU Drawer that is not found in the *RS/6000 Enterprise Server H50 Installation and Service Guide* or the *7014 Model S00 Rack Installation and Service Guide*.

The following parts are found on the RS/6000 Enterprise Server H50 -48 Volt DC CPU Drawer. All other parts for the RS/6000 Enterprise Server H50 are listed in the *RS/6000 Enterprise Server H50 Installation and Service Guide*, and for the 7014 Model S00 Rack are found in the *7014 Model S00 Rack Installation and Service Guide*.

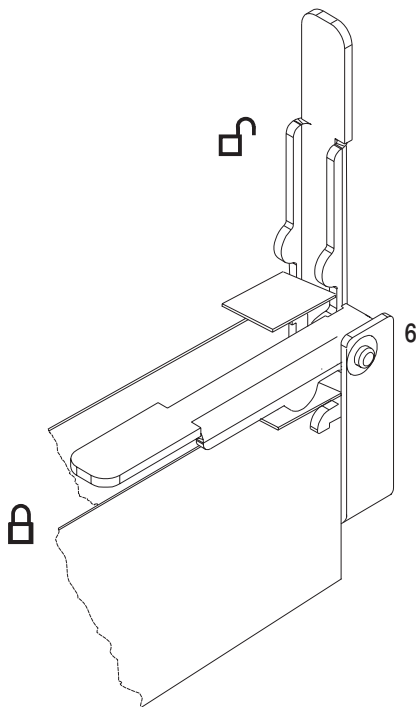


Index	Part Number	Units Per	Description
1	97H9464	1-2	-48 volt DC power supply (for RS/6000 Enterprise Server H50)
2	08L0335	4	20 Amp Circuit Breaker (for 7014 Model S00 Rack PDP Assembly)

---

## CPU and Memory Card Latches

Whenever you remove or replace the CPU or memory cards in the Enterprise Server H50, refer to the following diagram for the correct positioning of the locking latches that hold the cards in position.



The following tables list the internal SSA and other cables and associated part numbers for the RS/6000 Enterprise Server H50. This information is not listed in the current version of the *RS/6000 Enterprise Server H50 Installation and Service Guide*.

This section provides information that is new, and supplements the Parts section in the *RS/6000 Enterprise Server H50 Installation and Service Guide*.



## Assemblies, Retainers, Etc.

Index	Part Number	Units Per	Description
	00G1007		Screw
	00G1268		Planar Screw
	07L7319		Nut Plate
	07L8357		Service Processor (Replaces 93H4214)
	11H9760		Ethernet Slide Snap Latch
	33G3907		Screw
	42G4932		SCSI Screw
	73H3531		Memory Guide
	73H3768		Standoff
	78X8993		Screw
	81F9137		Stud Slider
	81F9178		Ethernet Latch
	88G3977		16 Bit Terminator Adapter
	93H0083		EMC Gasket
	93H4574		Cable Clamp
	93H6015		Fan Guide
	93H6016		92mm Fan Guard
	93H6017		Plastic Rivet
	93H6321		SSA Backplane Assembly
	59H7210		SSA Blank Carrier
6	93H8549		CPU Levers, Rear
6	93H8554		Front Lever Assembly
6	93H8558		Memory Levers, Rear
	93H8954		Power Supply Blank
	94H0136		Bezel
	94H0137		Plate
	94H0824		Operator Panel
	0257984		Washer
	1621180		Screw M3.5
	1621182		Screw
	6410857		Screw

## Cables and Related Parts

Index	Part Number	Units Per	Description
	06H6660	Up to 2	Cable (SCSI adapter to backplane)
	73H1894	1	Cable (diskette)
	39H9994	1	Cable (Power 2-drop)
	92F1294	3	Cable clamp
		A/R	Screw (3.5 x 6)
	6952300	1-2	Power cable
	93H4339	1	Int. Signal Cable, Bulkhead to SSA Backplane
	93H4340	1	Int. Signal Cable, SSA Adapter to Bulkhead
	93H4341	1	Int. Signal Cable, SSA Backplane to SSA Backplane
	93H8561	1	Power Cable, PDB to I/O Board
	93H8562	1	Power Cable, PDB to CPU Card 2
	93H8563	1	Power Cable, FMC to Right Blower (Fan 6)
	93H8564	1	Power Cable, FMC to Left Blower (Fan 5)
	93H8565	1	Power Cable, PDB to I/O Board
	93H8566	1	Power Cable, FMC to CPU Fan (Fan 7)
	93H8567	1	Power Cable, PDB to FMC
	93H8568	1	Power Cable, PDB to CPU Card 1
	93H8569	1	Signal Cable, I/O Board to FMC
	93H8571	1	Power Cable, PDB to DASD Docking Bulkhead
	93H8572	1	Power Cable, PDB to Media Docking Bulkhead
	93H8875	1	Power Cable, Media Devices to Media Docking Bulkhead
	93H8876	1	Power Cable, DASD Devices to DASD Docking Bulkhead
	93H9613	1	Signal Cable, I/O Board to Internal SCSI Devices
	93H9653	1	PCI Signal Cable, FMC to Bulkhead
	07L6763	1	EPO Signal Cable, I/O Board to DASD Backplanes
	93H1816	1	Signal Cable, Operator Panel Assembly to LCD

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## Appendix A. Sample Modem Configuration Files

### modem\_m0.cfg

```
#
# COMPONENT_NAME: (ESPSETUP) ENTRY SERVICE PROCESSOR SETUP: modem_m0
#
# FUNCTIONS: Modem configuration file specifically for IBM 7852-400
# modem with Auto-Reliable feature. This feature must be turned off
# for Catcher calls. This example uses the AT&F reset command to
# choose the factory defaults.
#
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# Licensed Materials - Property of IBM
#
# US Government Users Restricted Rights - Use, duplication or
# disclosure restricted by GSA ADP Schedule Contract with IBM Corp.
#
#
# The modem has configuration switches. They should be set to the
# factory default settings, except switches 11 and 12. These must be
# to UP ("AT" responses) and DOWN (Asynchronous operation), respectively.

ICDelay 1
DefaultT0 10
CallDelay 120
#
# %N Call-Out phone number %R Return phone number
#
#
# PROGRAMMING NOTE: No blanks between double quote marks (").

condout: send "AT&F&E2E0T\r" # Reset to factory defaults
# Reliable mode
# Echo off
ignore "0\r" or "OK\r\n" timeout 2 # Ignore modem response.
send "AT&E12&E14\r" # Disable pacing
# Disable data compression
expect "0\r" or "OK\r\n" timeout 2 # Confirm commands successful.
send "AT&SF1&S0S9=1\r" # DSR independent of CD
# Force DSR on.
# CD respond time=100ms
expect "0\r" or "OK\r\n" timeout 2 # Confirm commands successful.
send "ATV0S0=0\r" # Numeric response code
# Auto-Answer off
expect "0\r" or "OK\r\n" timeout 2 # Confirm commands successful.
done

connect: send "ATDT%N\r" # Tone dialing command.
# %N from Call Home setup.
```

```

                                # Expect a connection response.
                                expect "33\r" or "31\r" or "28\r" or "26\r" or "24\r" or "21\r" or
"19\r" or "13\r" or "12\r" or "1\r" busy "7\r"
                                timeout 60
                                done

retry:      send "A/"                                # Repeat the previous command.
                                # Expect a connection response.
                                expect "33\r" or "31\r" or "28\r" or "26\r" or "24\r" or "21\r" or
"19\r" or "13\r" or "12\r" or "1\r" busy "7\r"
                                timeout 60
                                done

disconnect:
delay 2                                # Separate from previous data.
send "+++"                              # Assure command mode.
delay 2                                # Allow mode switching delay.
send "ATH0\r"                            # Set modem switch-hook down
                                           # (i.e., hang up).
ignore "0\r" or "OK\r" timeout 2        # Ignore modem response.
send "ATE0Q1\r"                          # Initialize modem: Echo OFF,
                                           # Disable responses.

ignore "0\r" timeout 1
done

condin:   send "AT&F&E2E0\r"              # Reset to factory defaults.
                                           # Reliable mode
                                           # Echo off
ignore "0\r" or "OK\r\n" timeout 2      # Ignore modem response.
send "AT&E12&E14\r"                    # Disable pacing
                                           # Disable data compression
expect "0\r" or "OK\r\n" timeout 2      # Confirm commands successful
send "AT&SF1&S0S9=1\r"                  # DSR independent of CD.
                                           # Force DSR on.
                                           # CD respond time=100ms
expect "0\r" or "OK\r\n" timeout 2      # Confirm commands successful.
send "ATV0S0=2\r"                       # Numeric response code
                                           # Answer on 2nd ring
expect "0\r" timeout 2                  # Confirm commands successful.
done

waitcall: ignore "2\r" timeout 1          # Ignore first ring.
           expect "2\r" timeout 10        # Pickup 2nd ring or timeout
                                           # Expect a connection response.
           expect "33\r" or "31\r" or "28\r" or "26\r" or "24\r" or "21\r" or
"19\r" or "13\r" or "12\r" or "1\r" busy "7\r"
           timeout 60
           done

page:     send "ATDT%N,,,,%R;\r"         # %N = pager call center number
                                           # Add enough commas to wait for
                                           # time to enter paging number.

```

```

                                # %R = paging number
                                # Confirm successful command.
                                # Wait before hanging up.
                                # Hang up.
                                # Confirm successful command.
expect "0\r" timeout 60
delay 2
send "ATH0\r"
expect "0\r" timeout 2
done

ripo:   send "AT&F&E2E0T\r"          # Reset to factory defaults.
                                # Reliable mode
                                # Echo off
                                # Ignore modem response.
                                # Disable pacing
                                # Disable data compression
                                # Confirm successful command.
                                # DSR independent of CD.
                                # Force DSR on.
                                # CD respond time=100ms
                                # Confirm commands successful.
                                # Numeric response code
                                # Auto Answer OFF
                                # Confirm commands successful.
                                #
                                #
ignore "0\r" or "OK\r\n" timeout 2
send "AT&E12&E14\r"

expect "0\r" or "OK\r\n" timeout 2
send "AT&SF1&S0S9=1\r"

expect "0\r" or "OK\r\n" timeout 2
send "ATV0S0=0\r"

expect "0\r" timeout 2
done

error:                                     # Handle unexpected modem
                                             # responses.
expect "8\r" or "7\r" or "6\r" or "4\r" or "3\r"
delay 2
done

```

## modem\_m1.cfg

```
#
# COMPONENT_NAME: (ESPSETUP) ENTRY SERVICE PROCESSOR SETUP modem_m1
#
# FUNCTIONS: Modem configuration file specifically for IBM 7857-017 modem with
# Auto-Reliable feature. This feature must be turned off for Catcher calls.
# This example uses the AT&F reset command to choose the factory defaults.
#
# To allow dial commands for digital pagers, it is necessary to reduce
# the number of characters in the dial command. Each comma (delay) has
# been set to 6 seconds (S8=6) for that reason.
#
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#

ICDelay 1
DefaultT0 10
CallDelay 120
#
# %N Call-Out phone number %R Return phone number
#
#
# PROGRAMMING NOTE: No blanks between double quote marks (").

condout: send "AT&F*E0E0\r" # Reset to factory defaults.
# *E0=data compression disabled
# E0=echo disabled
ignore "0\r" or "OK\r\n" timeout 2 # Ignore modem response.
send "AT#F0*Q2S8=6\r" # Trellis modulation disabled
# Retrain with adaptive rate
# Set ,=6second
expect "0\r" or "OK\r\n" timeout 2 # Confirm commands successful
send "ATV0X0S0=0\r" # Numeric response code
# AT compatible messages
# Auto-Answer disabled
expect "0\r" or "OK\r\n" timeout 2 # Confirm commands successful.
done

connect: send "ATDT%N\r" # Tone dialing command.
# %N from Call Home setup.
expect "1\r" busy "7\r" timeout 60 # Expect a connection response.
done

retry: send "A/" # Repeat the previous command.
expect "1\r" busy "7\r" timeout 60 # Expect a connection response.
```

```

done

disconnect:
delay 2 # Separate from previous data.
send "+++"># Assure command mode.
delay 2 # Allow mode switching delay.
send "ATH0\r"># Set modem switch-hook down
# (i.e., hang up).

ignore "0\r" or "OK\r" timeout 2 # Ignore modem response.
send "ATE0Q1\r"># Initialize modem: Echo OFF,
# Disable responses.

ignore "0\r" timeout 1
done

condin: send "AT&F*E0E0\r"# Reset to factory defaults.
# *E0=data compression disabled
# E0=echo disabled

ignore "0\r" or "OK\r\n" timeout 2 # Ignore modem response.
send "AT#F0*Q2\r"# Trellis modulation disabled
# Retrain with adaptive rate

expect "0\r" or "OK\r\n" timeout 2 # Confirm commands successful
send "ATV0X0S0=2\r"# Numeric response code
# AT compatible messages
# Answer on 2nd ring

expect "0\r" timeout 2 # Confirm commands successful.
done

waitcall: ignore "2\r" timeout 1 # Ignore first ring.
expect "2\r" timeout 10 # Pick up second ring
# or timeout.
# Expect a connection response.

expect "1\r" timeout 60
done

page: send "ATD%N,%R\r"# %N = pager call center number
# commas=6sec wait time to
# enter paging number.
# %R = return number

expect "0\r" or "3\r" timeout 30 # Confirm successful command.
delay 2 # Wait before hanging up.
send "+++"># Assure command mode.
delay 2 # Allow mode switching delay.
send "ATH0\r"># Hang up.
expect "0\r" timeout 2 # Confirm successful command.
done

ripo: send "AT&F*E0E0\r"# Reset to factory defaults.
# *E0=data compression disabled
# E0=echo disabled

ignore "0\r" or "OK\r\n" timeout 2 # Ignore modem response.
send "AT#F0*Q2\r"# Trellis modulation disabled
# Retrain with adaptive rate

```

```
expect "0\r" or "OK\r\n" timeout 2 # Confirm successful command.
send "ATV0X0S0=0\r"                # Numeric response code
                                     # AT compatible messages
                                     # Auto-Answer disabled
expect "0\r" timeout 2              # Confirm commands successful.
done                                  #

error:                                # Handle unexpected modem
                                     # responses.
expect "8\r" or "7\r" or "4\r" or "3\r"
delay 2
done
```



---

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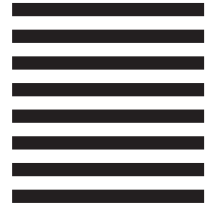
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