CHAPTER 4

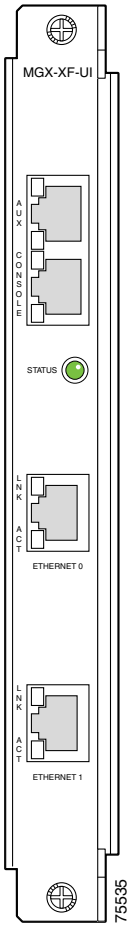
Installing and Configuring the MGX-XF-UI Management Back Card

This chapter describes how to install and configure the MGX-XF-UI management back card that is used in conjunction with and to configure the Cisco Route Processor Module (RPM-XF). This chapter includes the following sections:

Overview and Features

The MGX-XF-UI management back card (Figure 4-1) provides remote management capabilities for the RPM-XF.

Figure 4-1 MGX-XF-UI Management Back Card



The management back card provides the following features:

- Multi-speed auxiliary port—The auxiliary port (AUX) is an asynchronous EIA/TIA-232 serial port used to connect an external terminal for local administrative access. The auxiliary port is capable of operating at a user specified baud rate (1200–115200 baud).

  Note Connecting to the auxiliary port through a modem is not supported.

- Multi-speed console port—The console port (Console) is an asynchronous EIA/TIA-232 serial port used to connect an external terminal for local administrative access. The console port is capable of operating at a user specified baud rate (1200–115200 baud).

  Note It is recommended that the console port speed always be set to 9600 baud.

- Two fast ethernet ports—The MGX-XF-UI contains two IEEE 802.3u-compliant fast ethernet ports (Ethernet 0 and Ethernet 1) used to connect the RPM-XF to a 10BaseT or 100BaseT network management LAN.

Fast Ethernet Overview

Fast Ethernet is commonly used for all carrier sense multiple access/collision detection (CSMA/CD), local-area networks (LANs) that generally conform to Ethernet specifications, including Fast Ethernet under IEEE 802.3u.

IEEE 802.3u is well suited to applications where a local communication medium must carry sporadic, occasionally heavy traffic at high peak data rates. Stations on a CSMA/CD LAN can access the network at any time. Before sending data, the station *listens* to the network to see if it is in use. If it is, the station waits until the network is not in use, then transmits; this is a half-duplex operation. A collision occurs when two stations listen for network traffic, hear none, and transmit very close to simultaneously. When this happens, both transmissions are damaged, and the stations must retransmit. The stations detect the collision and use backoff algorithms to determine when they should retransmit.

Both Ethernet and IEEE 802.3u are broadcast networks, which means that all stations see all transmissions. Each station must examine received frames to determine whether it is the intended destination and, if it is, pass the frame to a higher protocol layer for processing.

Each physical layer protocol has a name that summarizes its characteristics in the format *speed/signaling method/segment length*,

where

- *speed* is the LAN speed in megabits per second (Mbps),
- *signaling method* is either baseband or broadband, and
- *segment length* is typically the maximum length between stations in hundreds of meters.

Therefore, 100BaseT specifies a 100-Mbps, baseband LAN with maximum network segments.

IEEE 802.3u 100BaseT Fast Ethernet Specifications

Each Fast Ethernet port on the MGX-XF-UI back card has an RJ-45 connector to attach to Category 5 UTP for 100BaseTX. Figure 4-1 shows the Fast Ethernet MGX-RJ45-FE back card. Table 4-1 lists the cabling specifications for 100-Mbps Fast Ethernet transmission over UTP cables. Table 4-2 summarizes IEEE 802.3u 100BaseT physical characteristics.

Table 4-1 Specifications and Connection Limits for Fast Ethernet 100-Mbps Transmission

Parameter	RJ-45
Cable specification	Category 5[1] UTP[2], 22 to 24 AWG
Maximum cable length	—
Maximum segment length	328 ft (100 m) for 100BaseTX
Maximum network length	656 ft (200 m) (with 1 repeater)

1. EIA/TIA-568 or EIA-TIA-568 TSB-36 compliant.
2. Cisco Systems does not supply Category 5 UTP RJ-45 cables. They are available commercially.

Table 4-2 EEE 802.3u Physical Characteristics

Parameter	100BaseTX
Data rate (Mbps)	100
Signaling method	Baseband
Maximum segment length	100 m between DTE[1] and repeaters
Media	RJ-45
Topology	Star/Hub

1. DTE = data terminal equipment.

Installation Guidelines

This section contains guidelines for the following procedures:

- New installation
- Replacement installation

The Cisco MGX-XF-UI back cards are cold swappable, which means you can remove and replace the back cards when all interfaces on the back cards are in the shutdown state.

Caution Handling of back cards requires proper observance of ESD practices and procedures. During installation or removal of back cards, the operator must be appropriately grounded and place all sensitive electronics in approved ESD containers or packaging.

New Installation Guidelines

For information on installing the back cards, see the "Installing and Removing Back Cards in the MGX 8850 Midplane" section on page 3-6.

After installing the MGX-XF-UI for the first time, you must configure it by entering the **configure** command. For information about configuring the management back card, see the "Software Configuration" section below.

Replacement Installation Guidelines

For information on removing and installing the back card hardware, refer to the "Installing and Removing Back Cards in the MGX 8850 Midplane" section on page 3-6.

If a management back card is replaced, the system automatically downloads the necessary information from the RPM-XF front card. There is no need to configure the new back card unless the front card has been reloaded or switched over subsequent to the removal of the back card. After the information is downloaded, the system recognizes only those interfaces that match the previous management back card configuration (those configured as Up).

Software Configuration

After the management back card is successfully installed you can configure the interfaces on the card.

Note You do not need to configure the management back card if this is a replacement installation. The system automatically downloads the necessary configuration information from the RPM-XF front card.

This section covers the following topics:

- Configuring the Console and Auxiliary Ports
- Configuring the Fast Ethernet Ports

Configuring the Console and Auxiliary Ports

This section covers the following topics:

- Console and Auxiliary Port Default Values
- Console and Auxiliary Port Syntax
- Configuring the Console Port
- Configuring the Auxiliary Port
- Console and Auxiliary Port Configuration Commands
- Console and Auxiliary Port Example Configuration

Console and Auxiliary Port Default Values

Table 4-3 lists default values for the console and auxiliary port on the management back card. The commands marked with an asterisk (*) are described in the Cisco IOS command reference documentation. The other commands are among those described in this chapter.

Table 4-3 Console/Auxiliary Port Defaults

Command Name	Default Setting	Command Syntax
stopbits	1	**stopbits** [*1* | *1.5* | *2*]
parity	none	**parity** [*even* | *mark* | *none* | *odd* | *space*]
databits	8	**databits** [*5* | *6* | *7* | *8*]
speed	9600	**speed** [*1200* | *2400* | *4800* | *9600* | *19200* | *38400* | *57600* | *115200*]
length*	24	**length** *size*
width*	80	**width** *size*

Console and Auxiliary Port Syntax

To specify a serial port in a configuration command, use the syntax in Table 4-4 to identify the serial interfaces on the management back card.

Table 4-4 Console/Auxiliary Port Syntax

Type of Interface	Port
Console port	0
Auxiliary port	0

The following example shows the syntax for configuring the console port on the management back card.

```
Router(config)# line console 0
```

The following example shows the syntax for configuring the auxiliary port on the management back card.

```
Router(config)# line aux 0
```

Configuring the Console Port

After you verify that the management back card is installed correctly, use the following procedure to configure the console port.

Step 1 At the global configuration prompt, specify the console port by entering **line console 0**. For example,

```
Router(config)# line console 0
```

Step 2 Configure the console port speed. For example,

```
Router(config-line)# speed 9600
```

Step 3 Configure the number of data bits for the console port. For example,

```
Router(config-line)# databits 8
```

Step 4 Configure the number of stop bits for the console port. For example,

```
Router(config-line)# stopbits 1
```

Step 5 Configure the parity for the console port. For example,

```
Router(config-line)# parity none
```

Step 6 Add any other configuration subcommands required.

Step 7 When you have included all of the configuration subcommands to complete the configuration, press **Cntl-Z** to exit the configuration mode.

Step 8 Write the new configuration to memory.

```
Router# copy running-config startup-config
```

The system displays an OK message when the configuration is saved.

After you complete your configuration, check it using **show line console 0**.

Configuring the Auxiliary Port

After you verify that the management back card is installed correctly, use the following procedure to configure the auxiliary port.

Step 1 At the global configuration prompt, specify the auxiliary port by entering **line aux 0**. For example,

```
Router(config)# line aux 0
```

Step 2 Configure the auxiliary port speed. For example,

```
Router(config-line)# speed 9600
```

Step 3 Configure the number of data bits for the auxiliary port. For example,

```
Router(config-line)# databits 8
```

Step 4 Configure the number of stop bits for the auxiliary port. For example,

```
Router(config-line)# stopbits 1
```

Step 5 Configure the parity for the auxiliary port. For example,

```
Router(config-line)# parity none
```

Step 6 Add any other configuration subcommands required.

Step 7 When you have included all of the configuration subcommands to complete the configuration, press **Cntl-Z** to exit configuration mode.

Step 8 Write the new configuration to memory.

```
Router# copy running-config startup-config
```

The system displays an OK message when the configuration is saved.

After you complete your configuration, check it using **show line aux 0**.

Console and Auxiliary Port Configuration Commands

The following sections present some of the commands that you can use to customize your console and auxiliary port configuration.

This section covers the following topics:

- Setting the Port Speed for the Console and Auxiliary Ports
- Setting the Number of Data Bits for the Console and Auxiliary Ports
- Setting the Number of Stop Bits for the Console and Auxiliary Ports
- Setting the Parity for the Console and Auxiliary Ports

Setting the Port Speed for the Console and Auxiliary Ports

You can use the speed command to set the speed for the port.

speed *baud rate*

The default is 9600 baud.

Note Setting the console port speed also adjusts the ROM Monitor configuration register for the console port speed.

Because the ROM Monitor only supports a limited number of console port speeds, it is recommended that the console port speed be set to one of the following baud rates: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.

Because the ROM Monitor only supports the auxiliary port at 9600 baud, it is recommended that the auxiliary port speed be set to 9600 baud.

In this example, the console port is setup to use 9600 baud.

```
Router(config)# line console 0
Router(config-line)# speed 9600
```

Setting the Number of Data Bits for the Console and Auxiliary Ports

You can use the **databits** command to set the number of data bits for the port.

databits [*5* | *6* | *7* | *8*]

The default is 8 data bits.

Note Because the ROM monitor only supports 8 data bits, it is recommended that the number of data bits be set to 8.

In this example, the console port is setup to use 8 data bits.

```
Router(config)# line console 0
Router(config-line)# databits 8
```

Setting the Number of Stop Bits for the Console and Auxiliary Ports

You can use the **stopbits** command to set the number of stop bits for the port.

stopbits [*1* | *1.5* | *2*]

The default is 1 stop bit.

Note Because the ROM monitor only supports 1 stop bit, it is recommended that the number of stop bits be set to 1.

In this example, the console port is setup to use 1 stop bit.

```
Router(config)# line console 0
Router(config-line)# stopbits 1
```

Setting the Parity for the Console and Auxiliary Ports

You can use the **parity** command to set the parity for the port.

parity [*even* | *mark* | *none* | *odd* | *space*]

The default is no parity.

Note Because the ROM monitor does not support parity, it is recommended that parity be set to none.

In this example, the console port is setup to use no parity.

```
Router(config)# line console 0
Router(config-line)# parity none
```

Console and Auxiliary Port Example Configuration

The following is an example of configuration file commands for the console and auxiliary ports on the management back card.

```
line console 0
 databits 8
 stopbits 1
 parity none
 speed 115200
 length 25
 width 80

line aux 0
 databits 8
 stopbits 1
 parity none
 speed 9600
 length 24
 width 80
```

Configuring the Fast Ethernet Ports

This section covers the following topics:

- Fast Ethernet Default Values
- Fast Ethernet Port Syntax
- Configure the Fast Ethernet Port
- Fast Ethernet Port Configuration Commands
- Fast Ethernet Port Example Configuration
- Using show Commands to Check System Status

Fast Ethernet Default Values

Table 4-5 lists the default values for the fast ethernet ports on the management back card. The commands marked with an asterisk (*) are described in the Cisco IOS command reference documentation. The other commands are among those described in this chapter.

The table includes the command used for modifying the default value and indicates whether a value needs to be the same on the remote end of the connection.

Table 4-5 Fast Ethernet Port Defaults

Command Name	Default Setting	Command Syntax	Remote Side Setting
duplex	auto	**duplex** [*auto* | *half* | *full*]	Same.
speed	auto	**speed** [*10* | *100* | *auto*]	Same.
keepalive*	10 second keepalive	[**no**] **keepalive** *period*	Same.
mtu[1]*	1500	**mtu** *size*	Same.
length*	24	**length** *size*	—
width*	80	**width** *size*	—

1. mtu=maximum transmission unit

Fast Ethernet Port Syntax

To specify an interface number in a configuration command, use the syntax in Table 4-6 to identify fast ethernet interfaces on the management back card.

Table 4-6 Fast Ethernet Port Syntax

Type of Interface	Bay (always 2)	Port
Fast Ethernet	2/	[0 | 1]

The following example shows the syntax for configuring the first fast ethernet port on the management back card.

```
Router(config)# interface FastEthernet 2/0
```

Configure the Fast Ethernet Port

After you verify that the management back card is installed correctly, use the following procedure to configure the fast ethernet ports. Be prepared with the information you will need, such as the interface IP address.

The following is for creating a basic configuration—Enabling an interface.

Step 1 At the global configuration prompt, specify the fast ethernet port by entering **interface FastEthernet** ***bay/port***. For example,

```
Router(config)# interface FastEthernet 2/0
```

Step 2 Assign an IP address and a subnet mask to the interface with the **ip address** configuration subcommand. For example,

```
Router(config-if)# ip address 192.168.255.255 255.255.255.0
```

Step 3 Configure the fast ethernet port speed. For example,

```
Router(config-if)# speed auto
```

Step 4 Configure the fast ethernet port duplex. For example,

```
Router(config-if)# duplex auto
```

Step 5 Add any other configuration subcommands required.

Step 6 Enter the **no shutdown** command to enable the interface. For example,

```
Router(config-if)# no shutdown
```

Step 7 When you have included all of the configuration subcommands to complete the configuration, press **Cntl-Z** to exit configuration mode.

Step 8 Write the new configuration to memory.

```
Router# copy running-config startup-config
```

The system displays an OK message when the configuration is saved.

After you complete the configuration, check it using **show interface FastEthernet** ***bay/port***.

Fast Ethernet Port Configuration Commands

The following sections present some of the commands that you can use to customize your fast ethernet port configuration.

This section covers the following topics:

- Setting the Fast Ethernet Port Speed
- Setting the Fast Ethernet Port Duplex

Setting the Fast Ethernet Port Speed

You can use the speed command to set the speed for the port.

```
speed [auto | 10 | 100]
```

The default is auto negotiation.

In this example, fast ethernet port 0 is setup to use auto negotiation.

```
Router(config)# interface FastEthernet 2/0
Router(config-line)# speed auto
```

Setting the Fast Ethernet Port Duplex

You can use the speed command to set the duplex mode for the port.

```
duplex [auto | half| full]
```

The default is auto negotiation.

In this example, fast ethernet port 0 is setup to use auto negotiation.

```
Router(config)# interface FastEthernet 2/0
Router(config-line)# duplex auto
```

Fast Ethernet Port Example Configuration

The following is an example of configuration file commands for the console and auxiliary ports on the management back card.

```
interface FastEthernet2/0
 ip address 10.0.0.1 255.255.255.0
 no shutdown
 duplex auto
 speed auto
end
```

Verifying Ethernet Connectivity

The **ping** command lets you verify that an interface port is functioning and check the path between a specific port and connected network devices. This section provides brief descriptions of the **ping** command. After you verify that the system has booted successfully and is operational, you can use this command to verify the status of interface ports. The remote device can be a server, a router, or a PC.

The **ping** command sends an echo request out to a remote device at an IP address that you specify. After sending a series of signals, the command waits a specified time for the remote device to echo the signals. Each returned signal is displayed as an exclamation point (!) on the console terminal; each signal that is not returned before the specified time-out is displayed as a period (.). A series of exclamation points (!!!!!) indicates a good connection; a series of periods (.....) or the messages [timed out] or [failed] indicate that the connection failed.

The following is an example of a successful **ping** command to a remote server with the address 1.1.1.10.

```
Router#ping 1.1.1.10

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.10, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 1/1/1 ms
Router#
```

If the connection fails, verify that you entered the correct IP address for the remote device and that the remote device is active (powered on). Then repeat the **ping** command.

Using show Commands to Check System Status

Each interface maintains information about its configuration, traffic, errors and so on. You can access this information by entering the **show** commands. Following are descriptions and examples of show commands that display interface information and status.

Enter the **show interface FastEthernet** ***bay/port*** command to show general information about the interface.

```
Router# show interface FastEthernet 2/0
FastEthernet2/0 is up, line protocol is up
  Hardware is GT96k FE, address is 0004.282b.2484 (bia 0004.282b.2484)
  Internet address is 10.0.0.1/24
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, 100BaseTX/FX
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 2d07h, output 00:00:06, output hang never
  Last clearing of "show interface" counters 00:00:37
```

```
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog
     0 input packets with dribble condition detected
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
```

Enter the **show controller FastEthernet** ***bay/port*** command to show controller specific information about the interface. For the fast ethernet port on the management back card this includes information such as error statistics and register settings.

```
Router# show controller FastEthernet 2/0
Interface FastEthernet2/0
Hardware is GT96100A FE

IDB Ptr = 0x41F27050, Instance Ptr = 0x42CA4B28
GT96100A register pointer = 0x15000000
FE register pointer = 0x15088800
PHY register pointer = 0x15080800

GT96100A Registers:
  GPIO 2 Config register = 0xFF7FFF7F (b/s 0x7FFF7FFF)
  GPIO IO register = 0x3D003D00 (b/s 0x003D003D)
  CIU Aributer register = 0xFF030080 (b/s 0x800003FF)
  PHY Address register = 0x01000000 (b/s 0x00000001)
  PHY Data register = 0x8047200E (b/s 0x0E204780)
  Serial Interrupt 0 Mask register = 0xF00F0000 (b/s 0x00000FF0)
  Serial Interrupt 1 Mask register = 0xF00F0000 (b/s 0x00000003)
  Serial Cause register = 0x00000000 (b/s 0x00000000)

FE Registers:
  Port Configuration Register = 0x80000000 (b/s 0x00000080)
    EN HS(8K) HM(0)
  Port Configuration Extend register = 0x00DC0100 (b/s 0x0001DC00)
    PRIOTX=1:1 PRIORX=(00) ~FCTLen ~FLP ~FCTL MFL=64KB MIBclrMode Speed=Auto
  Port Command register = 0x00000000 (b/s 0x00000000)
  Port Status Register = 0x0F000000 (b/s 0x0000000F)
    Speed=100MB Duplex=FD Fctl=DIS Link=UP ~Paused ~TXinProg
  Serial Parameter register = 0x23882100 (b/s 0x00218823)
  Hash table pointer register = 0x003D301F (b/s 0x1F303D00)
  Source Address Low register = 0xF2410000 (b/s 0x000041F2)
  Source Address High register = 0x00010000 (b/s 0x00000100)
  SDMA Configuration register = 0x00220000 (b/s 0x00002200)
    RC=0 BLMR=BE BLMT=BE RIFB BSZ=4
  SDMA Command register = 0x80000300 (b/s 0x00030080)
    STDL STDH ERD
  Interrupt Mask register = 0xCD3D0080 (b/s 0x80003DCD)
  Interrupt Cause register = 0x00000000 (b/s 0x00000000)

  IP Diff Services to Priority 0 Low register = 0x00000000 (b/s 0x00000000)
  IP Diff Services to Priority 0 High register = 0x00000000 (b/s 0x00000000)
  IP Diff Services to Priority 1 Low register = 0x00000000 (b/s 0x00000000)
  IP Diff Services to Priority 1 High register = 0x00000000 (b/s 0x00000000)
  IP VLAN Tag Priority = 0xCCF00000 (b/s 0x0000F0CC)
  First Rx Descriptor Pointer Ring 0 register = 0xA03D341F (b/s 0x1F343DA0)
```

```
  Current Rx Descriptor Pointer Ring 0 register = 0xA03D341F (b/s 0x1F343DA0)
  First Rx Descriptor Pointer Ring 1 register = 0x8041341F (b/s 0x1F344180)
  Current Rx Descriptor Pointer Ring 1 register = 0x8041341F (b/s 0x1F344180)
  First Rx Descriptor Pointer Ring 2 register = 0xC045341F (b/s 0x1F3445C0)
  Current Rx Descriptor Pointer Ring 2 register = 0xC045341F (b/s 0x1F3445C0)
  First Rx Descriptor Pointer Ring 3 register = 0x004A341F (b/s 0x1F344A00)
  Current Rx Descriptor Pointer Ring 3 register = 0x004A341F (b/s 0x1F344A00)
  First Tx Descriptor Pointer Ring 0 register = 0x204F341F (b/s 0x1F344F20)
  First Tx Descriptor Pointer Ring 1 register = 0x8056341F (b/s 0x1F345680)

PHY Registers:
  Register 0x00:   1000  782D  0013  78E2  01E1  41E1  0007  2001
  Register 0x08:   0000  0000  0000  0000  0000  0000  0000  0000
  Register 0x10:   0084  4780  0000  00F4  2040  0000  0000  0000
  Register 0x18:   0000  0000  00C8  0000  0000  0000  0000

Hardware MAC address filter (hash: addr)
  0x112D:  0004.282b.2484
  0x1899:  0100.0ccc.cccc
  0x7FFF:  ffff.ffff.ffff

Software MAC address filter (hash: length/addr/mask/hits):
  0x00:  0  ffff.ffff.ffff  0000.0000.0000         0
  0xAC:  0  0004.282b.2484  0000.0000.0000         0
  0xC0:  0  0100.0ccc.cccc  0000.0000.0000         0

Transmit Descriptor Information:
  Tx ring size = 128
  Tx ring 0 ptr = 0x1F344E40, Tx ring 1 ptr = 0x1F345680
  Malloc Tx ring 0 ptr = 0x1F344E40, Malloc Tx ring 1 ptr = 0x1F345680
  Shadow Tx ring 0 ptr = 0x41F28468, Shadow Tx ring 1 ptr = 0x42CB71C0
  Head Tx ring 0 = 0xE, Head Tx ring 1 = 0x0
  Tail Tx ring 0 = 0xE, Tail Tx ring 1 = 0x0
  Tail Count Tx ring 0 = 0x0, Tail Count Tx ring 1 = 0x0

Receive Descriptor Information:
  Rx ring size = 64
  Rx ring 0 ptr = 0x1F343D40, Rx ring 1 ptr = 0x1F344180
  Rx ring 2 ptr = 0x1F3445C0, Rx ring 3 ptr = 0x1F344A00
  Malloc Rx ring 0 ptr = 0x1F343D40, Malloc Rx ring 1 ptr = 0x1F344180
  Malloc Rx ring 2 ptr = 0x1F3445C0, Malloc Rx ring 3 ptr = 0x1F344A00
  Shadow Rx ring 0 ptr = 0x41F2833C, Shadow Rx ring 1 ptr = 0x42CA52E8
  Shadow Rx ring 2 ptr = 0x42CA5414, Shadow Rx ring 3 ptr = 0x42CA5540
  Head Rx ring 0 = 0x6, Head Rx ring 1 = 0x0
  Head Rx ring 2 = 0x0, Head Rx ring 3 = 0x0
  Tail Rx ring 0 = 0x0, Tail Rx ring 1 = 0x0
  Tail Rx ring 2 = 0x0, Tail Rx ring 3 = 0x0

MIB Counters:
  Filtered packets = 0, Number of Throttles = 0

  Rx framing errors = 0, Rx overflow errors = 0
  Rx buffer errors = 0, Rx end of packet errors = 0
  Rx soft overflow errors ring 0 = 0 Rx soft overflow errors ring 1 = 0
  Rx soft overflow errors ring 2 = 0 Rx soft overflow errors ring 3 = 0
  Rx miss count = 0

  Tx single collision errors = 0, Tx multiple collision errors = 0
  Tx end of packet errors = 0, Tx deferred errors = 0
  Tx underrun errors = 0, Tx late collision errors = 0
  Tx carrier loss errors = 0, Tx excessive collision errors = 0
  Tx buffer errors = 0, Tx fatal errors = 0

  Spurious SMI Interrupts = 0
```

Troubleshooting the Installation

Refer to Table 4-7 for descriptions of the LEDs on the management back card. Follow the instructions in Table 4-8 on the next page to troubleshoot the installation.

Table 4-7 MGX-XF-UI Back Card LED Status and Definitions

LED	Status	Description
STATUS	Green	Back card is operating properly.
	Off	Back card is not detected or a major failure has disabled the card.

Table 4-8 Management Back Card Installation Troubleshooting

Symptom	Possible Cause	Corrective Action
The Status LED does not light during the power-on self-test	The back card is not properly seated.	Be sure the ejector levers are fully closed and that the captive screws have been tightened.
	Bad back card slot or midplane connector.	Remove the back cards (upper and lower slots) and the front card and install them into another chassis slot.
The console or auxiliary port do not work.	Configuration incorrect.	Check the configuration to make sure the baud rate and other settings are correct.
	Bad cable.	Replace the cable.
	Bad back card slot or midplane connector.	Remove the back cards (upper and lower slots) and the front card and install them into another chassis slot.
	Bad back card.	Replace the back card.
	Bad front card.	Replace the front card.
The fast ethernet port(s) does not work.	Configuration incorrect.	Check the configuration to make sure the speed and duplex settings match the remote end. Also try forcing the speed and duplex settings (turn off auto negotiation).
	Bad cable.	Replace the cable.
	Bad back card slot or midplane connector.	Remove the back cards (upper and lower slots) and the front card and install them into another chassis slot.
	Bad back card.	Replace the back card.
	Bad front card.	Replace the front card.