English

Gigabit Adapter

for Brisque and Server/Timna

version **3.0**

Catalog No. 399Z1N666C

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4558302	5283140	5473733	5650076	5864651	6063528	6189452
4743091	5291273	5481379	5652804	5875288	6063546	6191882
4992864	5296935	5488906	5680129	5894342	6072518	6204874
5049901	5313278	5497252	5691823	5900981	6090529	6208369
5079721	5323248	5508828	5691828	5934196	6096461	6214276
5081617	5325217	5509561	5696393	5942137	6098544	6217965
5103407	5331439	5517359	5699174	5946426	6107011	6252522
5111308	5333064	5519852	5699740	5947028	6112663	6260482
5113249	5339176	5526143	5708736	5958647	6115056	6266080
5122871	5343059	5532728	5713287	5966504	6121996	6266134
5124547	5355446	5561691	5739819	5969872	6130702	6267054
5132723	5359451	5568595	5742743	5973801	6134393	6268948
5150225	5359458	5576754	5764374	5986819	6136509	6283589
5153769	5367360	5579115	5764381	5995475	6137580	6295076
5155782	5367388	5592309	5771794	5996499	6147789	
5157516	5384648	5594556	5785309	5998067	6158345	
5177724	5384899	5600448	5802034	6003442	6159659	
5208818	5412491	5608822	5813346	6014471	6164637	
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Gigabit Adapter Installation on F50 Platform

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Installation Requirements

Overview

The Gigabit Ethernet-SX PCI adapter (14100401) is a 32/64-bit high performance expansion adapter card for systems adhering to the Peripheral Component Interconnect (PCI) and IEEE 802.3z standards. The adapter connects the system to an Ethernet LAN at 1000Mbps data rate and should replace one of the Fast Ethernet 10/100 adapters.

The Gigabit Ethernet-SX PCI adapter provides the following features:

- 33MHz through 66MHz PCI bus speeds.
- 2 LED adapter status indicators.
- Full-duplex operation.
- 1MB on-card FIFO for transmit and receive.
- Fiber SC connector for multimode fiber cabling.
- Surface mount (SMT) and pin-in-hole (PIH) technology.

📖 For more information refer to *Appendix A, Gigabit Adapter Board Specification*.

Methods of Installation

There are two methods for Gigabit adapter installation:

- **Regular Installation** - Gigabit adapter installation on an existing station.
- **Cold Start Installation** - Brisque (or Scitex Server) Cold Start installation followed by Gigabit S/W installation with an adapter board previously installed.

Installation Checklist

Before performing the installation, make sure you have the following items:

- ☐ Gigabit Ethernet-SX PCI Adapter
- ☐ Scitex Gigabit Software CD-ROM
- ☐ This Installation Guide (Cat.No. 399Z1N666A)
- ☐ Flat-blade screwdriver

Limitations

- Generally, F-50 supports only one Gigabit adapter (IBM limitation).
- The Brisque F-50 platform supports up to two Ethernet boards: Fast Ethernet 10/100 and Gigabit adapter.
- The Gigabit Ethernet adapter is **not** supported on the 43P and E30 platform (IBM limitation).
- Slots # 1,2,3 cannot be used for the Gigabit adapter because of the following limitations:

  Slot 1 (20-58) - 64 bit slot used for the SCSI adapter (factory installed).

  Slot 2 (20-60) - empty, 64 bit slot, cannot be used for Gigabit adapter as F50 does not properly support the Gigabit adapter in the 64 bit slot.

  Slot 3 (10-68) - used for the Graphics adapter.

Gigabit Adapter Installation on Brisque F50

Gigabit Adapter Installation on an Existing Station

Prior to Gigabit adapter installation on the Brisque, you should write down the following information:

- Note location and definition of all Ethernet adapters using **lsdev -Cspci**.
- Under **smit tcpip**, copy down parameters for all defined Ethernet boards (en0, en1, etc.) such as: IP Address, mask, nameserver, domain name and default gateway.
- Write down all information found in the *etc/hosts* file.
- Write down all information found in the *scitex/version/config/riprohosts* file.
- Run **zones** command found under the /*usr/local/es* folder and write down all zones found. The zone marked with an asterisk is the default zone that Helios has picked up.
- Run **netconf** command found under the /*usr/local/es* folder and check what is listed under *Configure Zones*. Note what zones are available and which zones are providing ES services. (You may see NONE which is correct).
- Run **cat afpipaccess.xxx** found under the /*usr/local/es/conf* folder and write down what IP address ranges are allowed and/or denied.
- Run **cat atalk.conf** found under the /*usr/local/es* and note which interfaces are enabled for AppleTalk (nif="et0", if="et1").

Gigabit adapter installation on an existing Brisque includes the following steps:

1. Stopping the existing network services.
2. Stopping TCP/IP protocol.
3. Installing a Gigabit adapter board.
4. Installing Gigabit software and driver.
5. Reconfiguring TCP/IP.
6. Reconfiguring the network configuration.
7. Changing the “software transmit queue size”.

Editing the existing network services

1. Logout from Scitex Application and login as **root**.
2. Enter your password.
3. At the command prompt, type **cd /usr/local/es** and press **Enter**.
4. Type **stop-atalk now** and press **Enter**.
5. Type **cd conf** and press **Enter**.
6. Type **vi atalk.conf** and press **Enter**.
7. Edit the line:

   ```
   atalkd: nif="et0", nif="et1", if="et2",
   nif="et3" ...
   ```

   All strings **`if=`** must be changed to **`nif`**, for example **`if="et2"`** should be changed to **`nif="et2"`**.

8. Type **wq** to save the changes and exit.

Stopping TCP/IP protocol

1. Type **smit tcpip** and press **Enter**.
2. Select **Further Configuration** and press **Enter**.
3. Select **Stop TCPIP Daemons** and press **Enter**.

The *Command Status* window appears and displays running until the command is completed and then **OK** is displayed.

4. Press **[F3]**.
5. Select **Static Routes** and press **Enter**.
6. Select **Flush Routing Table** and press **Enter**.
7. Change value of **Flush Routing Table in the Configuration Data Base** to **yes** (the second line on the screen) and press **Enter**.

   The *Command Status* window appears and displays running until the command is completed and then **OK** is displayed.
8. Press **[F3]** three times to back to the *Further Configuration* menu.
9. Select **Network Interfaces** and press **Enter**.
10. Select **Network Interface Selection** and press **Enter**.
11. Select **Change / Show Characteristics of a Network Interface** and press **Enter**.
12. Select **en1 Standard Ethernet Network Interface** and press **Enter**.
13. Change the **Current STATE** to **down** and press **Enter**.

    The *Command Status* window appears and displays running until the command is completed and then **OK** is displayed.
14. Press **[F3]** twice to back to Network Interface Selection menu.
15. Repeat steps 9-13 for each Network Interface.
16. Press **[F10]** to exit from Smit.
17. Remove all obsolete Fast Ethernet adapters from the configuration: **rmdev -l entx -d**, where “x” is the adapter’s logical name.

Installing a Gigabit adapter board

1. Shutdown the system.
2. Remove the Fast Ethernet board from slot 2.
3. Insert the Gigabit board into slot **6**.
4. Connect the Gigabit adapter to the Network Switch.

5. Power on the system.

Important: The placement of the Ethernet adapters described above should be done to assign them to the particular logical names, as follows:

En0 - the On-Board adapter

En1 - the Gigabit adapter

En2 - the Fast 10/100 adapter.

Installing Gigabit software and driver

1. Login as **root**.
2. Enter your password.
3. Insert the Scitex Gigabit SW CD-ROM into the CD-ROM device.
4. At the command prompt, type **smit install_latest** and press **Enter**.
5. Press **[F4]** to list input devices, and use the arrow keys to select the CD-ROM drive and press **Enter.**
6. Press **[F4]** to *SOFTWARE to install* list, highlight **UpdGigabit_drivers** and press **Enter.**
7. Press **Enter** three times.

   The *Command Status* window appears and displays running until the installation is completed and then **OK** is displayed.
8. Press **[F10]** to return to the command line.
9. Type **shutdown -Fr** and press **Enter** to reboot the system.
10. Login as **root** and enter your password.
11. Type **lsdev -Cs pci** to make sure if the **Gigabit Ethernet-SX PCI Adapter (14100401)** available.

Reconfiguring TCP/IP

1. At the command prompt, type **smit tcpip** and press **Enter.**
2. Select **Minimum Configuration & Startup** and press **Enter** to list *Available Network Interfaces*.
3. Select **Standard Ethernet Network Interface** and then **Gigabit Ethernet-SX PCI Adapter (14100401)** and press **Enter**.

4. Change all the values of HOSTNAME, Internet ADDRESS (dotted decimal), Network MASK (dotted decimal) and Default GATEWAY Address if presented, and then press **Enter**.

   The *Command Status* window appears and displays running until the installation is completed and then **OK** is displayed.

5. Press **[F10]** to return to the command line.
6. **Ping** to other station for testing.

Reconfiguring the network configuration

1. At the command prompt, type **cd /usr/local/es** and press **Enter**.
2. Type **stop-talk now** and press **Enter**.
3. Type **/usr/local/es/netconf** and press **Enter**.
4. Select **Configure Adapter** and press **Enter**.
5. Select the **et** interface, then **Gigabit Ethernet-SX PCI Adapter** and activate it by pressing <space>.
6. Make sure the rest of **et** network interfaces deactivated.
7. Select **OK** and press **Enter** two times to save and exit.
8. Select **Quit** to return to the command line and press **Enter**.
9. Type **shutdown -Fr** and press **Enter** to reboot the system.
10. Login as **cdesci**.

Changing the “software transmit queue size”

1. From the Smit main menu, execute the following sequence: **Smit Devices→Communication→Ethernet Adapter→Adapter →Change/Show characteristics of an Ethernet Adapter.**
2. Select the **Gigabit adapter (14100401)**.
3. Change the *software transmit queue size* to **2048**.
4. Change *apply change to DATABASE only* to **yes** by using **[F4]** and press **Enter**, then **OK**.
5. Press **[F10]** and at the command prompt type **shutdown -Fr**.

Installing Gigabit Adapter in Brisque F50 Connected to Lotem

> 📖 For detailed instructions on setting up the TCP/IP connection between the Brisque F50 and the Lotem refer to *Brisque Installation Guide - F-50 Platform, Chapter 2, Connecting Output Devices to the F-50, section 2.4, Setting up TCP/IP Connectivity, Cat. No. 399Z51293B*.

There are two methods of setting up the TCP/IP connection between the Brisque F50 and the Lotem:

- **Point-to-point -** connecting the Brisque directly to the Lotem using the special network cable supplied with the Lotem.

  The Gigabit adapter installation should be performed according to the procedure described in *section, Gigabit Adapter Installation on an Existing Station on pages 4-8*.

- **Via the network -** connecting both the Brisque and the Lotem to the site network infrastructure.

  In this case, the Gigabit adapter should be connected to the network.

  The Gigabit adapter installation should be performed according to the procedure described in *section, Gigabit Adapter Installation on an Existing Station on pages 4-8*.

Connecting Brisque F50 with Gigabit Adapter Installed to Lotem

- **Point-to-point**
  - ➢ Connect the On-Board adapter to the Lotem using the cross network cable.
- **Via the network**
  - ➢ Connect the Gigabit adapter in slot **6** to the network (*see section, Installing a Gigabit adapter board on page 6*).

Gigabit Cold Start Installation

➢ Verify that the Gigabit adapter is installed in slot 6.

Gigabit adapter Cold Start Installation includes the following steps:

1. Performing Brisque Cold Start installation.
2. Installing Gigabit software and driver.
3. Changing the “software transmit queue size”.

Performing Brisque Cold Start installation

➢ Perform Brisque Cold Start installation.

📖 For detailed instructions on the Cold Start procedure refer to *Brisque Installation Guide F-50 Platform*, *Cat. No. 399Z51293B.*

Installing Gigabit software and driver

1. Login as **root**.
2. Enter your password.
3. Insert the Scitex Gigabit SW CD-ROM into the CD-ROM device.
4. At the command prompt, type **smit install_latest** and press **Enter**.
5. Press **[F4]** to list input devices, and use the arrow keys to select the CD-ROM drive and press **Enter.**
6. Press **[F4]** to *SOFTWARE to install* list, highlight **UpdGigabit_cold** and press **Enter.**

   The *Command Status* window appears and displays running until the installation is completed and then **OK** is displayed.
7. **Reboot** the system.
8. At the command prompt, type **smit tcpip** and press **Enter.**
9. Select **Minimum Configuration & Startup** and press **Enter** to list *Available Network Interfaces*.
10. Select **en1** and press **Enter.**

11. Change all the values of HOSTNAME, Internet ADDRESS (dotted decimal), Network MASK (dotted decimal) and Default GATEWAY Address if presented, and then press **Enter**.

    The *Command Status* window appears and displays running until the installation is completed and then **OK** is displayed. Enter the Brisque station parameters.

12. Configure and set up the Fast Ethernet 10/100 adapter using the **Further Configuration** option.

13. Run **lsdev -Cs pci** to verify the Gigabit adapter is installed properly. The list should contain the following records, for example:

    ```
    en0 Available 10-80 IBM PCI Ethernet Adapter
    (22100020)

    en1 Available 30-60 Gigabit Ethernet -Sx PCI
    Adapter (14100401)
    ```

Changing the "software transmit queue size"

1. From the Smit main menu, execute the following sequence: **Smit Devices→ Communication →Ethernet Adapter →Adapter → Change/Show characteristics of an Ethernet Adapter**.

2. Select the **Gigabit adapter (14100401)**.

3. Change the *software transmit queue size* to **2048**.

4. Change *apply change to DATABASE only* to **yes** by using **[F4]** and press **Enter**, then **OK**.

5. Press **[F10]** and at the command prompt type **shutdown -Fr**.

Gigabit Adapter Installation on Scitex Server F50

Gigabit Adapter Installation on an Exiting Station

Prior to Gigabit adapter installation on the Scitex Server 5000, you should write down the following information:

- Note location and definition of all Ethernet adapters using **lsdev -Cspci**.
- Under **smit tcpip**, copy down parameters for all defined Ethernet boards (en0, en1, etc.) such as: IP Address, mask, nameserver, domain name and default gateway.
- Write down all information found in the *etc/hosts* file.
- Write down all information found in the *scitex/version/config/riprohosts* file.
- Run **zones** command found under the /*usr/local/es* folder and write down all zones found. The zone marked with an asterisk is the default zone that Helios has picked up.
- Run **netconf** command found under the /*usr/local/es* folder and check what is listed under *Configure Zones*. Note what zones are available and which zones are providing ES services. (You may see NONE which is correct).
- Run **cat afpipaccess** found under the /*usr/local/es/conf* folder and write down what IP address ranges are allowed and/or denied.
- Run **cat atalk.conf** found under the /*usr/local/es* and note which interfaces are enabled for AppleTalk (nif="et0", if="et1").

Gigabit adapter installation on an existing Scitex Server includes the following steps:

1. Stopping the existing network services.
2. Stopping TCP/IP protocol.
3. Installing a Gigabit adapter board.
4. Installing Gigabit software and driver.
5. Reconfiguring TCP/IP.
6. Reconfiguring the network configuration.
7. Changing the “software transmit queue size”.

Editing the existing network services

1. Logout from Scitex CDE and login as **root**.
2. Enter your password.
3. At the command prompt, type **cd /usr/local/es** and press **Enter**.
4. Type **stop-atalk now** and press **Enter**.
5. Type **cd conf** and press **Enter**.
6. Type **vi atalk.conf** and press **Enter**.
7. Edit the line:

   ```
   atalkd: nif="et0", nif="et1", if="et2",
   nif="et3" ...
   ```

   All strings **`if=`** must be changed to **`nif`**, for example **`if="et2"`** should be changed to **`nif="et2"`**.

8. Type **wq** to save the changes and exit.

Stopping TCP/IP protocol

1. Type **smit tcpip** and press **Enter**.
2. Select **Further Configuration** and press **Enter**.
3. Select **Stop TCPIP Daemons** and press **Enter**.

The *Command Status* window appears and displays running until the command is completed and then **OK** is displayed.

4. Press **[F3]**.
5. Select **Static Routes** and press **Enter**.
6. Select **Flush Routing Table** and press **Enter**.
7. Change value of **Flush Routing Table in the Configuration Data Base** to **yes** (the second line on the screen) and press **Enter**.

   The *Command Status* window appears and displays running until the command is completed and then **OK** is displayed.
8. Press **[F3]** three times to back to the *Further Configuration* menu.
9. Select **Network Interfaces** and press **Enter**.
10. Select **Network Interface Selection** and press **Enter**.
11. Select **Change / Show Characteristics of a Network Interface** and press **Enter**.
12. Select **en0 Standard Ethernet Network Interface** and press **Enter**.
13. Change the **Current STATE** to **down** and press **Enter**.

    The *Command Status* window appears and displays running until the command is completed and then **OK** is displayed.
14. Press **[F3]** twice to back to Network Interface Selection menu.
15. Repeat steps 9-13 for each Network Interface.
16. Press **[F10]** to exit from Smit.

Installing a Gigabit adapter board

1. Run **lsdev -Cspci** and check for the first Fast Ethernet 10/100 board to be removed according to the *AIX and Physical location code* reference table (see Appendix A*)*.
2. Shutdown the system.
3. Remove the Fast Ethernet board according to reference table.
4. Insert the Gigabit board instead of it.

5. Connect the Gigabit adapter to the Network Switch.
6. Power on the system.

Installing Gigabit software and driver

1. Login as **root**.
2. Enter your password.
3. Insert the Scitex Gigabit SW CD-ROM into the CD-ROM device.
4. At the command prompt, type **smit install_latest** and press **Enter**.
5. Press **[F4]** to list input devices, and use the arrow keys to select the CD-ROM drive and press **Enter.**
6. Press **[F4]** to *SOFTWARE to install* list, highlight **UpdGigabit_drivers** and press **Enter.**
7. Press **Enter** three times.

   The *Command Status* window appears and displays running until the installation is completed and then **OK** is displayed.
8. Press **[F10]** to return to the command line.
9. Type **shutdown -Fr** and press **Enter** to reboot the system.
10. Login as **root** and enter your password.
11. Type **lsdev -Cs pci** to make sure if the **Gigabit Ethernet-SX PCI Adapter (14100401)** available.

Reconfiguring TCP/IP

1. At the command prompt, type **smit tcpip** and press **Enter.**
2. Select **Minimum Configuration & Startup** and press **Enter** to list *Available Network Interfaces*.
3. Select **Standard Ethernet Network Interface** and then **Gigabit Ethernet-SX PCI Adapter (14100401)** and press **Enter**.
4. Change all the values of HOSTNAME, Internet ADDRESS (dotted decimal), Network MASK (dotted decimal) and Default GATEWAY Address if presented, and then press **Enter**.

The *Command Status* window appears and displays running until the installation is completed and then **OK** is displayed.

5. Press **[F10]** to return to the command line.
6. **Ping** to other station for testing.

Reconfiguring the network configuration

1. At the command prompt, type **cd /usr/local/es** and press **Enter**.
2. Type **stop-talk now** and press **Enter**.
3. Type **/usr/local/es/netconf** and press **Enter**.
4. Select **Configure Adapter** and press **Enter**.
5. Select the **et** interface, then **Gigabit Ethernet-SX PCI Adapter** and activate it by pressing <space>.
6. Make sure the rest of **et** network interfaces deactivated.
7. Select **OK** and press **Enter** two times to save and exit.
8. Select **Quit** to return to the command line and press **Enter**.
9. Type **shutdown -Fr** and press **Enter** to reboot the system.
10. Login as **cdesci**.

Changing the "software transmit queue size"

1. From the Smit main menu, execute the following sequence: **Smit Devices→Communication→Ethernet Adapter →Adapter → Change/Show characteristics of an Ethernet Adapter.**
2. Select the **Gigabit adapter (14100401)**.
3. Change the *software transmit queue size* to **2048**.
4. Change *apply change to DATABASE only* to **yes** by using **[F4]** and press **Enter**, then **OK**.
5. Press **[F10]** and at the command prompt type **shutdown -Fr**.



Important: After the installation, run **riprohost.sh** to reconfigure the static routing table.

Gigabit Cold Start Installation

➢ Verify that the Gigabit adapter is installed in slot 4 or 5.

Gigabit adapter Cold Start Installation includes the following steps:

1. Performing Scitex Server Cold Start installation.
2. Installing Gigabit software and driver.
3. Changing the “software transmit queue size”.

Performing Scitex Server Cold Start installation

➢ Perform Scitex Server Cold Start installation.

📖 For detailed instructions on the Cold Start procedure refer to *Scitex Server Installation (PCI Model)*, *Cat. No. 399Z50585D*.

Installing Gigabit software and driver

1. Login as **root**.
2. Enter your password.
3. Insert the Scitex Gigabit SW CD-ROM into the CD-ROM device.
4. At the command prompt, type **smit install_latest** and press **Enter**.
5. Press **[F4]** to list input devices, and use the arrow keys to select the CD-ROM drive and press **Enter.**
6. Press **[F4]** to *SOFTWARE to install* list, highlight **UpdGigabit_cold** and press **Enter.**

   The *Command Status* window appears and displays running until the installation is completed and then **OK** is displayed.
7. **Reboot** the system.
8. At the command prompt, type **smit tcpip** and press **Enter.**
9. Select **Minimum Configuration & Startup** and press **Enter** to list *Available Network Interfaces*.
10. Select **en0** and press **Enter.**

11. Change all the values of HOSTNAME, Internet ADDRESS (dotted decimal), Network MASK (dotted decimal) and Default GATEWAY Address if presented, and then press **Enter**.

    The *Command Status* window appears and displays running until the installation is completed and then **OK** is displayed.

12. Configure and set up the Fast Ethernet 10/100 adapter using the **Further Configuration** option.

13. Verify the Gigabit adapter installation by running **lsdev -Cs pci**.

Changing the "software transmit queue size"

1. From the Smit main menu, execute the following sequence: **Smit Devices→Communication→Ethernet Adapter →Adapter → Change/Show characteristics of an Ethernet Adapter.**

2. Select the **Gigabit adapter (14100401)**.

3. Change the *software transmit queue size* to **2048**.

4. Change *apply change to DATABASE only* to **yes** by using **[F4]** and press **Enter**, then **OK**.

5. Press **[F10]** and at the command prompt type **shutdown -Fr**.

Logistics

The Gigabit Adapter Kit Part No. **510K1M297-GB** for the Brisque and the Scitex Server contains the following items:

No.	Description	Part No.
1	Gigabit F.O cable 30m	199O01004
2	Gigabit Ethernet SX adapter	605A00250
3	Gigabit Software for Brisque and Scitex Server CD-ROM	510V1N667
4	Gigabit Installation Guide	399Z1N666A

Appendix A

Gigabit Adapter Board Specification

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Gigabit Board Overview

The Gigabit Ethernet-SX PCI Adapter is a 32/64-bit high performance expansion adapter card for systems adhering to the Peripheral Component Interconnect (PCI) and IEEE 802.3z standards. The adapter connects the system to an Ethernet LAN at 1000Mbps data rate.

The Gigabit Ethernet-SX PCI Adapter provides the following features:

- 33MHz through 66MHz PCI bus speeds.
- 2LED adapter status indicators.
- Full-duplex operation.
- 1MB on-card FIFO for transmit and receive.
- Fiber SC connector for multimode fiber cabling.
- Surface mount (SMT) and pin-in-hole (PIH) technology.

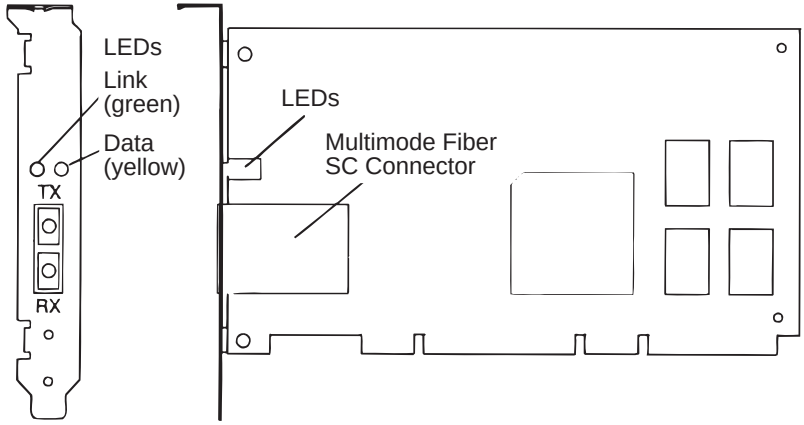


Figure 1. The Gigabit Ethernet-SX PCI Adapter

The following table shows the minimum and maximum allowable cable lengths from the adapter to the gigabit Ethernet switch, including patch cables:

Fiber type	Modal bandwidth	Min range	Max range
62.5 um MMF	160 MHz-km	2 m	220 m
62.5 um MMF	200 MHz-km	2 m	275 m
50 um MMF	400 MHz-km	2 m	500 m
50 um MMF	500 MHz-km	2 m	500 m

Gigabit Ethernet-SX PCI Adapter LEDs

The LEDs on the Gigabit Ethernet-SX PCI Adapter provide information about the card's operation status. The LEDs are visible through the card's mounting bracket and, when lit, indicate the following conditions:

Light	State	Description
Data (yellow)	Blinking	Data detected
	Off	No data detected
Link (Green)	On	Good link
	Off Blinking	No link: could be the result of a bad cable, bad connector or configuration mismatch. Port has been disabled by software.

AIX Physical Location Code Reference Image

