A Network Systems Solution

UNICOM ™

DynaGST/2402G

24 Port 10/100/1000Base-T Gigabit Ethernet
Switch with two SFP (mini) GBIC Slots

PN: GEP-33224T-1

USER'S MANUAL

Content

1. Introduction

Gigabit Ethernet over copper technology is a proven cost-effective way for network equipment to be upgraded from Fast Ethernet to Gigabit speeds. Standard 4-pair Category 5e/6 copper cabling eliminates the need for expensive fiber optic cabling for Gigabit speeds. This technology creates high-speed backbone connections between switches, servers, databases, and workstations.

The DynaGST/2402G Gigabit Ethernet switch is an ideal solution for solving traffic congestion at the core of the network. It offers auto-negotiation 10/100/1000Base-T Gigabit Ethernet ports that can significantly improve your network backbone performance. It will also fit into any enterprise level network as an exit to the backbone switch. The DynaGST/2402G provides two mini GBIC Gigabit slots for Gigabit speed network connection.

The DynaGST/2402G Gigabit Ethernet switch features **Auto MDI/MDIX** function for each port and features a store-and-forward switching. It auto-learns and stores source address on an 8K MAC address table.

UNICOM
*A Network Systems Solution*

Features

- Compatible with IEEE 802.3 10Base-T, IEEE802.3u 100Base-TX, IEEE802.3z Gigabit fiber and IEEE802.3ab 1000Base-T
- 24 Port Gigabit switch with two Mini SFP GBIC ports
- Automatic MDIX for all ports
- 48Gbps Back plane
- 8K entry MAC address table
- 500byte Memory buffer
- IEEE802.3x flow control:
  - ➤ Pause frame for 10/100/1000Mbps full duplex
  - ➤ Backpressure for 10/100 Mbps half duplex
- Store-and-Forward architecture support
- 10K Jumbo Frame supported
- Support 802.1p Class of Service
- One DC fan provides proper ventilation and increases system heat sink performance
- 19" Rack mount design

Package Contents

- ■ DynaGST/2402G Gigabit Ethernet switch
- ■ Power Cord
- ■ Four Rubber Feet
- ■ User Manual
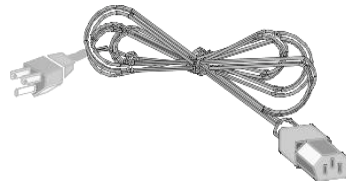
DynaGST/2402G Gigabit Ethernet switch   **Power Cord**

User Guide   **Rubber Feet**

Figure 1-1. Package Contents

Compare the contents of your DynaGST/2402G Gigabit Ethernet switch package with the standard checklist above. If any item is missing or damaged, please contact your local dealer for service.

2. Hardware Description

This Section describes the hardware of the DynaGST/2402G Gigabit Ethernet switch.

The physical dimensions of the DynaGST/2402G Gigabit Ethernet switch is:
440 x 161 x 44 mm (W x D x H)

Front Panel

The Front Panel of the DynaGST/2402G Gigabit Ethernet switch consists of twenty four (24) auto-negotiation 10/100/1000Mbps Ethernet RJ-45 connectors (with **Automatic MDI/MDIX** support), two Mini GBIC slots, and LED indicators (1000, Link/Activity, Full duplex/Collision) for each Gigabit port and power for the unit.

Figure 2-1. The Front Panel of the DynaGST/2402G Gigabit Ethernet switch

■ **RJ-45 Ports (Auto MDI/MDIX):** Twenty-four (24) auto-negotiation 10/100/1000 Mbps Ethernet RJ-45 connectors

■ **Mini GBIC ports:** Ports 23 and 24 auto-detect between the Gigabit copper ports and the Mini GBIC (Gigabit fiber) ports. They support 3.3V Mini SFP GBIC modules. These modules are optional. There are two LED indicators for the Mini GBIC ports – LNK and ACT. If a Mini GBIC module is not installed, ports 23 and 24 operate in Gigabit copper mode only.

[Note] When the Mini GBIC module *is* installed, the Mini GBIC (Gigabit fiber) ports have higher priority than the Gigabit copper ports and supercede

them. It doesn't matter if the Gigabit copper port is connected before or after the Mini GBIC port is connected. The Mini GBIC port always has higher priority for connection. When the Mini GBIC port is connected, the Gigabit copper ports are disabled.

Rear Panel

The 3-pronged power plug, on/off switch, and Ventilation fan are located at the rear Panel of the DynaGST/2402G Gigabit Ethernet switch as shown in Figure 2-2. The Switch will work with AC in the range 100-240V AC, 50-60Hz.

Figure 2-2. Rear panel of the DynaGST/2402G Gigabit Ethernet switch

LED Indicators

The LED Indicators give a real-time indication of system operating status. There are three LED-indicators (1000, LNK/ACT) for each Gigabit port and one Power LED for the entire unit. The following table provides descriptions of LED status.
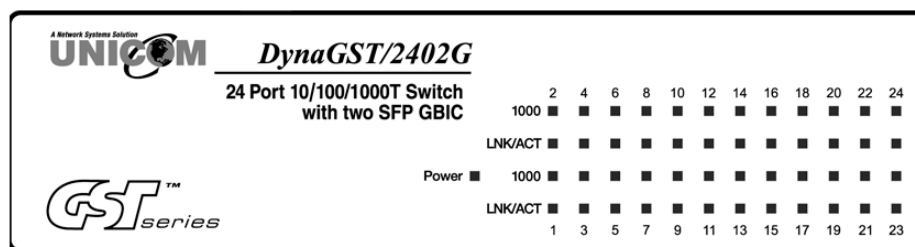
Figure 2-3. LED Indicators

LED	Status	Description
Power	Green	Power On
	Off	Power is not connected
1000	Green	Port is operating at 1000Mbps.
	Off	No device attached or in 10/100Mbps mode
LNK/ACT	Green	Port is connecting with the device.
	Blinking	Port is receiving or transmitting data.
	Off	No device attached.

Table 2-1. The Descriptions of LED Indicators

Mini GBIC LED

Each Mini GBIC port has an LED indicator – LNK /ACT. The following table provides descriptions of LED status.

Figure 2-4. Mini GBIC Port LED Indicators

LED	Status	Description
LNK/ ACT	Green	The port is connecting with device
	Blinking	The port is transmitting or receiving the data
	Off	No data transmitting or receiving or No device attached

Table 2-2. The Descriptions of Mini GBIC LED Indicators

3. Installation

Set the Switch on a sufficiently large flat space with a power outlet nearby. The surface should be clean, smooth, level, and sturdy. Ensure there is enough clearance around the Switch to allow air circulation and the attachment of the power cord and cables.

Attaching Rubber Feet

- ■ Make sure mounting surface on the bottom of the Switch is grease and dust free.
- ■ Remove adhesive backing from your Rubber Feet.
- ■ Apply the Rubber Feet to each corner on the bottom of the Switch. These footpads protect the Switch from shock and vibration.

Power On

Connect the power adapter cable to the power socket on the rear panel of the Switch. The other end of the power cord connects to the power outlet. Check the power indicator on the front panel to make sure if power is properly supplied.

4. Network Application

This section provides a sample of network topology in which the DynaGST/2402G is used. In general, the DynaGST/2402G Gigabit Ethernet switch is designed as a high-bandwidth backbone switch.

You can use the DynaGST/2402G to connect servers, switches, workstations, and PCs to each other by connecting these devices directly to the Switch. The Switch automatically learns node addresses, which are subsequently used to filter and forward all traffic based on the destination address. The Gigabit fiber port is designed to connect the Ethernet network with a fiber network.

For enterprise networks where large data broadcasts are constantly processed, this switch is an ideal link between departmental switches and the core switch. All workstations can connect to departmental switches and those switches are then connected to the DynaGST/2402G Gigabit Ethernet switch. Now all the devices in this network can communicate with each other. Connecting servers to the core switch is important because it allows each workstation to access the server's data.

This switch is a perfect for backbone connectivity.

5. Troubleshooting

The Switch can be easily monitored through panel indicators to assist in identifying problems. This section describes common problems you may encounter and where you can find possible solutions.

- **Diagnosing LED Indicator**

If the Link indicator does not light up after connection, check whether the network interface (e.g., a network adapter card on the attached device), network cable, or switch port is defective. Verify that the switch and attached device are powered on. Ensure the cable is plugged into both the switch and corresponding device. Verify the proper cable type is used and its length does not exceed specified limits.

- **Power**

If the power indicator does turn on when the power cord is plugged in, you may have a problem with power outlet or power cord. However, if the Switch powers off after running for a while check for loose power connections, local power losses, or surges at power outlet. If you still cannot resolve the problem, contact your local dealer for assistance.

- **Transmission Mode**

Each port will automatically set to the same transmission mode used by the attached device (i.e., half or full duplex). The RJ-45 ports use auto-negotiation to set the transmission mode. If the attached device does not support auto-negotiation then this switch will default to the lowest common speed.

■ **Cabling**

RJ-45 ports: Use unshielded twisted-pair (UTP) or shield twisted-pair (STP) cable for RJ-45 connections: 100m. of Category 3,5e, or 6 cable for 10Mbps connections, 100m. of Category 5e/6 cable for 100Mbps connections , or 100m. of 4-pair Category 5e/6 copper cabling for 1000Mbps connection. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

6. Technical Specification

The following table provides the technical specification of the
DynaGST/2402G Gigabit Ethernet switch.

Standard	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3ab 1000Base-T IEEE 802.3z Gigabit Fiber IEEE 802.3x Flow Control and Back-pressure IEEE 802.1p Class of Service
Protocol	CSMA/CD
Technology	Store-and-Forward switching architecture
Transfer Rate	14880 Packets per Second for 10Mbps 148800 Packets per second for 100Mbps 1488000 Packets per second for 1000Mbps
Connector	*RJ-45:* 24 ports with Auto-MDIX *Mini GBIC:* 2 x 3.3V Mini GBIC slot
MAC Address	8K address table
Jumbo packet	10Kbytes Jumbo Packet
Backplane	48Gbps, 71.42 Mpps throughput @ 64bytes
Memory Buffer	500 bytes

Network Cable	*10Base-T*: 2 pairs UTP/STP CAT. 3/4/5 cable
	                   EIA/TIA 568 100 Ohm (up to 100m)
	100Base-TX: 2 pairs UTP/STP CAT. 5/5e cable
	                   EIA/TIA 568 100Ohm (up to 100m)
	Gigabit Copper: 4 pairs UTP/STP CAT. 5e/6 cable
	                   EIA/TIA 568 100Ohm (up to 100m)

LED	*Per RJ-45 port:* 1000 (green) Link/Activity (Green) *Per MINI GBIC:* Link/Activity (Green) *Per unit:* Power
Power Supply	Internal power supply, AC 100~240VAC, 50/60 Hz
Power Consumption	26.5 Watts (Maximum)
Operation Temperature	0° to 45°C (32° to 113° F)
Operation Humidity	10% to 90% (Non-condensing)
Dimension	440mm x 161mm x 44mm (W x D x H) 17.3" x 6.34" x 1.73"
EMI & Safety	FCC Class A, CE, UL, cUL

7. Related Products

GEP-22000S-L   SFP (mini) GBIC Transceiver, 1000SX (LC/MM/500m)

GEP-22100L-L   SFP (mini) GBIC Transceiver, 1000LX (LC/SM/10Km)

UNIDOC021005 rev.071306