D-Link®

Gigabit Switch Series

DGS-3224TG

DGS-3224TG rack-mount managed switch with 20 10/100/1000Mbps Gigabit ports and 4 GBIC ports.

20-port Copper Gigabit Switch + 4 GBIC & Network Management

This SNMP managed switch provides 20 copper Gigabit ports and 4 GBIC ports, allowing 20 workstations and servers to run at the Gigabit speed on your existing Cat. 5 twisted-pair network cable. The GBIC ports allow flexible connection to the fiber backbone. Advanced features like port trunking, VLANs and priority queues are provided, allowing a department to effectively deploy a bottleneck-free switching network for easy integration with a larger enterprise or campus network.

20 Copper Gigabit Ports for Server & Departmental Connection

20 copper Gigabit ports provide an inexpensive alternative solution to fiber-optic. Using your existing low-cost Cat. 5 copper twisted-pair wires as the transmission media, these ports allow you to instantly upgrade your servers to Gigabit capability without requiring you to install new, expensive fiber cables. All ports support 10/100/1000Mbps network speed auto-sensing and full/half duplex auto-negotiation. For downstream network expansion, you can also attach these Gigabit ports to 10/100Mbps switches, from which workstations can access the network.

4 GBIC-based Ports for Fiber Backbone Connection

For flexible fiber connection, 4 GBIC-based ports are provided for installation of 1000BASE-SX short/medium-distance and 1000BASE-LX long-distance fiber. An optional PHY module must be inserted in each of these ports.

802.3x Flow Control

This function support allows your servers to directly connect to the switch for fast, reliable data transfer. At 2000Mbps full duplex, the switch provides high-speed data pipes to your servers with minimum data transfer loss.

Auto-negotiation of MDI/MDIX Cross Over

All copper Gigabit ports support auto-negotiation of MDI/MDIX cross over. This eliminates the need for cross over cables or uplink ports. Any port can simply plug to a server, a hub or a switch, using the usual straight-through twisted-pair cable.

VLANs for Enhanced Security & Performance

VLANs improve security and bandwidth utilization by limiting the broadcast domains and confining intra-group traffic within their segments. To segment up the network, nodes supporting IEEE 802.1Q VLAN Tagging connected to the switch can be grouped into different Virtual LANs (VLANs). The switch also supports GVRP (GARP VLAN Registration Protocol) for automatic VLAN configuration distribution.

Priority Queues for QoS

The switch supports Layer 2 802.1p Priority Queue control. Each packet going through the switch can be assigned a queue priority number (in the priority bit). Packets with a higher priority number are allowed to pass first. This function support allows you to attach video servers to the switch to run delay-sensitive applications like video conference.

IGMP Snooping for Broadcast Control

The switch listens to IGMP (Internet Group Management Protocol) messages to build mapping table and associate forwarding filters. It dynamically configures the switch ports to forward IP multicast traffic only to those ports associated with multicast hosts.

Port Mirroring

This function allows you to mirror adjacent ports for the purpose of analyzing incoming and outgoing packets where packet patterns can be studied.

Key Features

- *20 10/100/1000Mbps copper Gigabit ports*
- *4 GBIC-based fiber Gigabit ports*
- *Auto MDI/MDIX for all twisted-pair ports*
- *802.3x Flow Control for protection against data loss*
- *802.1Q and port-based VLANs for enhanced performance and security*
- *QoS with 802.1P Priority Queues for multimedia applications*
- *IGMP snooping (multicasting) for multimedia application support*
- *802.1D Spanning Tree for redundant backup bridge paths*
- *SNMP management, RMON monitoring, Telnet support, log file*
- *IP filtering on management interface*

DGS-3224TG

Technical Specifications

Gigabit Switch Series

General

Standards
- IEEE 802.3 10BASE-T Ethernet (twisted-pair copper)
- IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)
- IEEE 802.3ab 1000BASE-T Gigabit Ethernet (twisted-pair copper)
- IEEE 802.3z standard
- ANSI/IEEE 802.3 NWay auto-negotiation
- IEEE 802.3x Flow Control

Number of Ports
- 20 10BASE-T/100BASE-TX/1000BASE-T ports
- 4 GBIC-based ports

Protocol
CSMA/CD

Data Transfer Rates
- Ethernet:
  10Mbps (half duplex)
  20Mbps (full duplex)
- Fast Ethernet:
  100Mbps (half duplex)
  200Mbps (full duplex)
- Gigabit Ethernet:
  2000Mbps (full duplex)

Topology
Star

Network Cables
- 10BASE-T:
  UTP Cat. 3, 4, 5 (100 m max.)
  EIA/TIA-586 100-ohm STP (100 m max.)
- 100BASE-TX, 1000BASE-T:
  UTP Cat. 5, Cat. 5e (100 m max.)
  EIA/TIA-568 100-ohm STP (100 m max.)
- IEEE 802.3z:
  Single-mode and multi-mode fiber

Full/half Duplex
- Full/half duplex for 10/100Mbps speeds
- Full duplex for Gigabit speed

Media Interface Exchange
Auto MDI-II/MDI-X adjustment for all copper Gigabit ports

LED Indicators
- Per copper Gigabit port:
  10Mbps speed, 100Mbps speed, 1000Mbps speed
  Full/half Duplex
  Link/Act
- Per GBIC port:
  Link/Act
- Per device: Power, Status

Performance

Transmission Method
Store-and-forward

MAC Address Table
32K entries per device

MAC Address Learning
- Automatic update
- Max Age: 300 sec.

Packet Filtering/Forwarding Rates (half duplex)
- Ethernet: 14,880 pps per port
- Fast Ethernet: 148,810 pps per port
- Gigabit Ethernet: 1,488,100 pps per port

RAM Buffer
2Mbytes per device

Software

VLAN
- IEEE 802.1Q Tagged VLAN
- Port-based VLAN
- Number of VLANs: 4K per device (max.)

Priority Queues (QoS)
- Standard: IEEE 802.1P
- Number of queues: 4

Spanning Tree
Standard: IEEE 802.1D

Multicast
- IGMP v.1, v.2
- IGMP v.1, v.2 Snooping

Access Security
- MAC based: user-specified MAC addresses
- VLAN based: ingress checking enable/disable
- IEEE 802.1x Port-based Network Access Control

Configuration & Management

Management Support
- SNMP v.1
- RMON monitoring
- Telnet
- Log file

MIBs
- MIB-II (RFC 1213)
- Bridge MIB (RFC 1493)
- RMON MIB (RFC 1757)
- 802.1Q VLAN MIB (RFC 2674)
- IGMP MIB (RFC 2833)
- If MIB (RFC 2233)
- Ethernet-like MIB (RFC 2358)
- dot3statsTable
- D-Link enterprise MIB

RMON Groups
1, 2, 3, 9 (Alarm, Statistics, History, Event)

IP Number Self-identification
Through DHCP client, Bootp client

Firmware Upgrade
TFTP

Console Port
DB-9 RS-232 DCE

Physical & Environmental

AC Input
100 - 240 VAC, 50/60 Hz
Internal universal power supply

Power Consumption
79 watts (max.)

Ventilation
50 x 50 x 15 mm DC fans x 4

Operating Temperature
0° - 50°C (32° - 122°F)

Storage Temperature
-25° - 55°C (-60° - 133° F)

Humidity
5% - 95% non-condensing

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Technical Specifications

Gigabit Switch Series

Dimensions
441 (W) x 388 (D) x 66 (H) mm
(17.36 x 15.27 x 2.59 inches)
19-inch standard rack-mount width, 1.5 U height

Weight
6 kg (12 lb.)

Emission (EMI)
- FCC Class A
- CE Class A
- C-Tick Class A
- BSMI Class A

Safety
- CSA international

ACN 052 202 838

CSA60950
UL 60950
IEC 60950
EN 60950

Ordering Information

SNMP Managed Copper Gigabit Switch

DGS-3224TG	20 10/100/1000Mbps ports 4 GBIC-based ports

Optional Modules for GBIC Ports

DGS-701	For 1000BASE-SX, Wave length 850m, Fiber type 50um/125um 500 MHz-km multimode fiber, distance 550m max.
DGS-702	For 1000BASE-LX, Wave length 1310m, Fiber type 9um single-mode fiber, distance 5km max.

D-Link®

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