D-Link®

Business
& Enterprise
SOLUTIONS

——— DGS-3224TGR

24-Port Managed Copper Gigabit Switch
With 4 Combo SFP Slots & Redundant Power Support

The DGS-3224TGR is an all-Gigabit Layer 2 switch designed for departmental connection. It provides 24 10/100/1000BASE-T ports for cost-effective copper Gigabit connection, plus 4 combo SFP slots for flexible copper or fiber backbone attachment. Advanced features such as port trunking, VLANs and priority queues in addition to redundant power supply support are provided, allowing a department to effectively and securely deploy a bottleneck-free switching network for easy integration with a larger enterprise or campus network.

24 Copper Gigabit Connections
With 24 10/100/1000BASE-T auto-sensing ports in a low-profile, high-density device, this switch is cost-effective solution for Gigabit networking. All ports support auto MDI/MDIX, allowing you to connect to workstations, servers, or other switches from any port without the need to change your usual straight-through twisted-pair cables.

4 SFP Slots for Flexible Fiber Connection
4 SFP slots are provided for flexible fiber connection. You can select to install optional transceiver modules in these slots for short, medium or long-distance fiber backbone attachment. Use of the SFP will disable their corresponding built-in 10/100/1000BASE-T connections.

Flow Control to Prevent Packet Loss
The switch supports standard IEEE 802.3x Flow Control. Working in conjunction with buffer overrun auto-detection, this full-duplex data transfer mode provides protection against possible data loss for 802.3x supported servers directly connected to the switch.

Port Trunks for Aggregated Bandwidths
With low cost per port, port trunks supporting 802.3ad Link Aggregation standard provide an easy and economical alternative solution for server connection to attain Gigabit bandwidth. Up to 8 10/100/1000BASE-T ports can be combined together to create a multi-link load-sharing aggregated bandwidth to a server.

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, workstations and servers 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.

Advanced Network Access Management
802.1x features enable user authentication for each network access attempt. Port security features allow you to limit the number of MAC addresses per port in order to control the number of stations for each port. Static MAC addresses can be defined for each port to ensure only registered machines are allowed to access. By enabling both of these features, you can establish an access mechanism based on user and machine identities, as well as control the number of access stations.

Multi-layer Access Control List (ACL)
Access Control Lists (ACL) allow the network administrator to define policies on network traffic control. The switch supports comprehensive and multi-layer ACLs, providing a powerful tool for network management. For example, the switch can be set to block malicious bulk traffic from specific clients (based either on MAC or IP addresses), or during a virus attack. The switch can be set to restrict its flooding based on a virus's unique pattern (TCP/UDP port number).

DGS-3224TGR
Technical Specifications

Advanced QoS Support

The switch supports not only Layer 2 802.1p Priority Queue control, but also a variety of ways to prioritize network packets. Multi-layer information from L2 to L4 can be used to classify packet priorities. This function support allows you to attach IP telephony devices or video servers to the switch to run delay-sensitive applications like video conference.

Flexible Transmission Scheduling

The switch supports 2 methods of packet transmission scheduling: Strict scheduling and Weighted Fair Queue (WFQ). You can select to use Strict Scheduling to strictly enforce your priority queues.

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.

Broadcast Storm Control

To limit too many broadcast/multicast flooding in the network, broadcast/multicast storm control is configured to screen excessive traffic. Threshold values are available to control the rate limit for each port. Packets are discarded if the respective count exceeds the configured upper threshold in a given time interval. The possible range of upper threshold is from 0 to 255k packets per second.

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.

802.1D & 802.1w Rapid Spanning Tree

For mission critical environments with multiple switches supporting STP, you can configure the stack of switches with a redundant backup bridge path, so transmission and reception of packets can be guaranteed in event of any fail-over switch on the network.

Multiple Management Interfaces

SNMP network management is supported, using the built-in MIBs. RMON monitoring and SYSLOG are provided for effective central management. The switch also provides a Command Line Interface (CLI) and a Web-based GUI. CLI enables quick system configuration for administrators familiar with command line operation. The embedded Web-based interface allows you to easily access the switch from anywhere on the network and troubleshoot it in real-time. You can, for example, browse the MAC address table via the Web browser and perform searching to identify the location of any workstation. Port utilization graphs provide real-time traffic monitoring and diagnostic information.

Redundant Power Support

The switch can be connected to an external power supply for redundant power backup purposes. In case the built-in internal power supply fails, the redundant power supply unit will automatically provide all the required power to ensure continuous operation. For redundant power supply, a DPS-300 can be deployed.

Features

- 24 10/100/1000BASE-T ports with auto MDI/MDIX
- 4 combo SFP slots
- Redundant power supply support
- 35.7Mpps (48Gbps) switching fabric
- Jumbo frame support (up to 9216 bytes)
- Per-port bandwidth control/traffic segmentation with 802.1Q, GARP/GVRP, asymmetric VLAN
- IGMP snooping, 802.1p Priority Queues, port mirroring support
- Multi-layer (Layer 2 to Layer 4) ACL and CoS based on port and TCP/UDP payload
- Port security, 802.1x port-based/MAC-based access control
- Network access security with RADIUS, TACACS+, SSH/SSL support
- 802.3ad Link Aggregation port trunks (LACP)
- Broadcast storm control
- 802.1D and 802.1w Rapid Spanning Tree for redundant backup bridge paths
- Network management/traffic monitoring: web-based, SNMP, D-Link Single IP Management v.1.0, RMON. CLI, Telnet

DGS-3224TGR

Technical Specifications

Hardware

Device Ports
- 24 10/100/1000BASE-T ports
- 4 combo Mini GBIC (SFP) slots
- RS-232 console port

Standard Support
- IEEE 802.3 10BASE-T/802.3u 100BASE-TX/802.3ab 1000BASE-T
- ANSI/IEEE 802.3 NWay auto-negotiation
- IEEE 802.3x Flow Control
- Auto MDI/MDIX
- Port mirroring

Mini GBIC (SFP) Support
- IEEE 802.3z 1000BASE-LX (DEM-310GT transceiver)
- IEEE 802.3z 1000BASE-SX (DEM-311GT transceiver)
- IEEE 802.3z 1000BASE-LH (DEM-314GT transceiver)
- IEEE 802.3z 1000BASE-ZX (DEM-315GT transceiver)

Switch Fabric
35.7Mpps (48Gbps)

Diagnostic LEDs
Per device:
- Power
- Console
- RPS
Per RJ-45 port:
- Speed
- Link/Act
Per SFP port:
- Link/Act

Software

VLAN
- IEEE 802.1Q Tagged VLAN
- GARP/GVRP
- Asymmetric VLAN
- Number of VLANs: 255 per device (max.) (255 static, 64 dynamic)

Priority Queues (CoS)
- Standard: IEEE 802.1p
- Number of queues: 8 per port

Traffic Classification (CoS)
Can be based on user-definable application types:
- TOS
- Diffserv (DSCP)
- Port-based
- MAC address
- IP address
- TCP/UDP port number

Access Security
- 802.1x port-based access control
- 802.1x MAC-based access control
- Port security
- SSH
- SSL

Access Control List
Multi-layer ACL based on:
- MAC address
- TOS
- Diffserv (DSCP)
- IP address
- Packet protocol type
- TCP/UDP port number (user-definable application types)
- TCP/UDP payload (user-definable packet content)
- Per port ACL definition

Spanning Tree
- 802.1D
- 802.1w Rapid Spanning Tree

Multicast
- IGMP Snooping

Port Trunk
Enables grouping of links between the switch and another switch or a server to provide higher bandwidth of up to 8 10/100 ports or up to 8 Gigabit ports with active redundant links.
- Number of ports per trunk: 8 (max.)
- Operation mode: load sharing
- LACP Link Aggregation support

Performance

Transmission Method
Store-and-forward

MAC Address Table
16K entries per device

MAC Address Learning
- Dynamic entries: automatic update
- Static entries: user-defined

Packet Filtering/Forwarding Rates (half duplex)
1,488,100 pps per port (max.)

RAM Buffer
2MB per device

Jumbo Frame Size
Up to 9216bytes

Broadcast Storm Control
Rate control of Broadcast, unknown Multicast and Unicast packets

Configuration & Management

Management Support
- SNMP v.1, v.2c, v.3
- Web-based management
- CLI (command line interface)
- RMON monitoring
- Telnet server
- SYSLOG
- Web GUI traffic monitoring
- Password enable
- DHCP/Bootp client
- SNTP
- SNMP trap on MAC notification
- Single IP Management v1.0

MIBs
- MIB-II (RFC 1213)
- Bridge MIB (RFC 1493)
- RMON MIB (RFC 1757)
- 802.1Q VLAN/802.1p MIB (RFC 2674)
- IF MIB (RFC 2233)
- Ethernet-like MIB (RFC 1643)
- 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

Power Input
100 to 120 VAC, 50/60 Hz or 200 to 240 VAC, 50/60 Hz
Internal universal power supply

Redundant Power Backup Support
Connector to connect to external redundant power supply

Power Consumption
90 watts (max.)

DGS-3224TGR

Technical Specifications

Ventilation
40 x 40 mm DC fans x 4
60 x 60 mm 5400 RPM fan blower x 1

Operating Temperature
0° to 40 °C

Storage Temperature
-25° to 55 °C

Humidity
5% to 95% non-condensing

Dimensions
441 (W) x 309 (D) x 44 mm (H)
19-inch rack-mount width, 1 U height

Weight
4 kg

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

Safety
CSA International

CE ACN 052 202 838 CSA60950 UL 60950 IEC 60950 EN 60950 C US

Ordering Information

Managed Gigabit Layer 2 Switch
DGS-3224TGR — 24 10/100/1000BASE-T ports, 4 combo Mini GBIC (SFP) slots, redundant power support

Optional Mini GBIC SFP Transceiver
DEM-310GT — SFP transceiver for 1000BASE-LX, single-mode fiber, max. distance 10km, 3.3V
DEM-311GT — SFP transceiver for 1000BASE-SX, multi-mode fiber, max. distance 550m, 3.3V
DEM-314GT — SFP transceiver for 1000BASE-LHX, single-mode fiber, max. distance 40km, 3.3V
DEM-315GT — SFP transceiver for 1000BASE-ZX, single-mode fiber, max. distance 80km, 3.3V

Optional Redundant Power Supply
DPS-300 — Redundant power supply

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	TEL	FAX
U.S.A.	TEL: 1-800-326-1688	FAX: 1-866-743-4905
Canada	TEL: 1-905-8295033	FAX: 1-905-8295223
Europe (U. K.)	TEL: 44-20-8731-5555	FAX: 44-20-8731-5511
Germany	TEL: 49-6196-77990	FAX: 49-6196-7799300
France	TEL: 33-1-30238688	FAX: 33-1-30238689
Netherlands	TEL: 31-10-282-1445	FAX: 31-10-282-1331
Belgium	TEL: 32(0)2-517-7111	FAX: 32(0)2-517-6500
Italy	TEL: 39-02-2900-0676	FAX: 39-02-2900-1723
Sweden	TEL: 46-(0)8564-61900	FAX: 46-(0)8564-61901
Denmark	TEL: 45-43-969040	FAX: 45-43-424347
Norway	TEL: 47-99-300-100	FAX: 47-22-309580
Finland	TEL: 358-9-2707 5080	FAX: 358-9-2707-5081
Spain	TEL: 34-93-4090770	FAX: 34-93-4910795
Portugal	TEL: 351-21-8688493	
Czech Republic	TEL: 420-(603)-276-589	
Switzerland	TEL: 41-(0)-1-832-11-00	FAX: 41(0)-1-832-11-01
Greece	TEL: 30-210-9914 512	FAX: 30-210-9916902
Luxemburg	TEL: 32-(0)2-517-7111	FAX: 32-(0)2-517-6500
Poland	TEL: 48-(0)-22-583-92-75	FAX: 48-(0)-22-583-92-76
Hungary	TEL: 36-(0)-1-461-30-00	FAX: 36-(0)-1-461-30-09
Singapore	TEL: 65-6774-6233	FAX: 65-6774-6322
Australia	TEL: 61-2-8899-1800	FAX: 61-2-8899-1868
India	TEL: 91-022-26526696	FAX: 91-022-26528914
Middle East (Dubai)	TEL: 971-4-3916480	FAX: 971-4-3908881
Turkey	TEL: 90-212-289-56-59	FAX: 90-212-289-76-06
Egypt	TEL: 202-414-4295	FAX: 202-415-6704
Israel	TEL: 972-9-9715700	FAX: 972-9-9715601
LatinAmerica	TEL: 56-2-232-3185	FAX: 56-2-232-0923
Brazil	TEL: 55-11-218-59300	FAX: 55-11-218-59322
South Africa	TEL: 27-12-665-2165	FAX: 27-12-665-2186
Russia	TEL: 7-095-744-0099	FAX: 7-095-744-0099 #350
China	TEL: 86-10-58635800	FAX: 86-10-58635799
Taiwan	TEL: 886-2-2910-2626	FAX: 886-2-2910-1515
Headquarters	TEL: 886-2-2916-1600	FAX: 886-2-2914-6299