16/24/48-Port Gigabit Web Smart Switches

Optimize Performance using Jumbo Frames
- Supports up to 10,240bytes Jumbo Frames for 16T/24T/24TP, and 9220bytes for 48T

Unique Power Saving Functionality
- Automatically powers down ports that have no link

Simplified Network Deployment
- Supports 802.3af Power Over Ethernet1 for easy installation

Enhanced Security Features
- Access Security with 802.1X Port-based Authentication
- Broadcast Storm Control
- Safeguard Engine feature guarantees switch performance

Static Port Trunking
- Up to 6 trunk groups supported for Server Connection or Switch Cascading, and each trunk supports up to 8 ports

Intuitive Centralized Management
- SmartConsole utility for auto-discovery of all the D-Link smart switches
- Web-based GUI for easy management
- A Smart Wizard (built-in the Web GUI) for initial configuration
- MIB browser for SNMP management

[1]Available on DGS-1224TP only

[2]Available on DGS-1216T/24T only

D-Link's latest generation Gigabit Web Smart Switch series is designed mainly to enhance the performance and security of small business networks. With four models to choose from, the DGS-1216T/1224T/1224TP/1248T brings Gigabit speeds to support bandwidth-intensive applications and further expand your network of switches. Enhanced features include Gigabit uplink combo ports, Power over Ethernet[1], QoS and versatile management functions. Power over Ethernet easily allows you to install and power wireless access points, network cameras, VoIP phones and other network equipment for simplified and reduced deployment costs. Total PoE power budget on 24 10/100/1000 ports for the DGS-1224TP is 180watts. Therefore, the maximum output power per PoE port is up to 15.4W on 11 ports or 7.5W on 24 ports simultaneously.

The switches are housed in a new style 19"rack-mount metal case with an easy-to-view front panel and diagnostic LEDs and feature an innovative fanless design[2]. A user-friendly web-based management is supported for easy configuration and flexibility for different network requirements.

D-Link Green Technology
D-Link is striving to take the lead in developing innovative and power-saving technology that does not sacrifice operational performance or functionality. The DGS-1216T/1224T/1224TP/1248T web smart switches implement the D-Link Green Technology, which include *Green* features such as the power saving mode, reduced power consumption and reduced heat dissipation. The switches adopt the latest silicon technology, which helps lower your power consumption usage. The power saving feature automatically powers down ports that have no links or link partners.

Protecting The Environment For A Better Tomorrow
The incorporation of the D-Link Green technology into these switches re-emphasizes D-Link's strong commitment to protecting the environment, leading the development of eco-friendly products. These switches comply with RoHS (Restriction of Hazardous Substances) and WEEE (Waste Electrical and Electronic Equipment) directives. RoHS directives restrict the use of specific hazardous materials during the manufacture of electrical and electronic goods, while WEEE applies standards for proper disposal and recyclable packaging to help reduce wastage.

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Superior VLAN Features
- 802.1Q: VLAN Tagging for Traffic Segmentation, and 256 VLAN groups
- Asymmetric VLAN: For more efficient use of shared resources such as server or gateway devices

Advanced QoS
- Ensures efficient time-sensitive data delivery, even during bursts of high traffic
- Supports IEEE 802.1p QoS up to four 802.1p Priority Queues and DSCP QoS for VoIP applications
- Ensures optimal experience for gamers and other requirements by prioritizing network traffic

Seamless Integration
The switches offer Gigabit copper ports that are capable of connecting to your existing Cat.5 twisted-pair cables. This eliminates the need of a complex re-configuration process. Each switch model of the Gigabit series provides two or four combo SFP slots to form a multi-level network structure consisting of a high-speed backbone and centralized servers. In addition, all the ports support auto-negotiation and MDI/MDIX crossover function. So do away with cross over cables or uplink ports and bring inexpensive Gigabit connection to your desktop.

Extensive Layer 2 Features
The switches offer superior performance and availability through features such as Jumbo Frames, IGMP Snooping, Port Mirroring, Spanning Tree and Port Trunking. IEEE 802.3x Flow Control allows your servers to directly connect to the switch for fast, reliable data transfer. The Gigabit ports provide dedicated bandwidths for your desktops running at 2000Mbps full duplex, with minimum data transfer loss.

Traffic Prioritization
802.1Q VLAN tagging prioritizes traffic, enhances network security and performance while 802.1p enables you to run bandwidth-sensitive applications such as streaming multimedia and VoIP in network. These functions allow switches to work seamlessly in the network.

Cable Diagnostics
Gigabit networks use 8-wire CAT 5 RJ-45 cables. However, networks in older buildings could still be using 4-wire CAT 3/5 RJ-45 cables. The Cable Diagnostics function assists you to effectively detect the RJ-45 cable condition while migrating from an existing network to a Gigabit-capable one, and minimizing service calls during migration. Other cable-related problems are, an RJ-45 cable with an open circuit (a lack of continuity between the pins at each end of an Ethernet cable or a disconnected cable) or a short circuit between two or more conductors.

Network Security
The switches provide MAC address filters screen, for easy access to the network. They support 802.1X port-based authentication, allowing the network to be configured with external RADIUS servers. Enhance your network security with the Asymmetric VLAN feature. With this feature, you can segregate ports into different virtual LAN groups to enhance security and prevent data leaks. This feature also increases the efficiency of sharing resources such as servers or gateway devices.

D-Link Safeguard Engine identifies and prioritizes "CPU interested" packets to prevent malicious traffic from interrupting normal network flows and protects switch operation.

Versatile Management
The switches' web-based SmartConsole Utility is as easy to use as surfing the web. The utility includes useful features that automatically discover and display all web smart switches on the same L2 network segment connected to a local PC. The web-based GUI allows for easy access to a switch from anywhere without having to remember IP addresses or subnets. The GUI also includes a wizard that allows you to pre-configure basic functions such as passwords, system information and SNMP settings. Users can also use the built-in MIB browser to poll the switches for information about their status and send trap messages of abnormal events. The MIB browser allows users to integrate the switches with the third-party devices for management in an SNMP environment.

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Technical Specifications

General

Port Standards & Functions	▪ 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 Gigabit Ethernet (fiber) ANSI/IEEE 802.3 ▪ NWay Auto-Negotiation ▪ IEEE 802.3x Flow Control ▪ 802.3af Power over Ethernet (for DGS-1224TP only)
Number of Ports	▪ DGS-1216T: 16 10/100/1000BASE-T ports, 2 combo SFP slots ▪ DGS-1224T: 24 10/100/1000BASE-T ports, 2 combo SFP slots ▪ DGS-1224TP: 24 10/100/1000BASE-T PoE ports, 4 combo SFP slots ▪ DGS-1248T: 48 10/100/1000BASE-T ports, 4 combo SFP slots * Use of SFP will disable their corresponding 10/100/1000BASE-T connections

SFP Modules	▪ Optional SFP Transceivers:
	   DEM-310GT 1000BASE-LX, Single-mode, 10km
	   DEM-311GT 1000BASE-SX, Multi-mode, 500m
	   DEM-312GT2 1000BASE-SX, Multi-mode, 2km
	   DEM-314GT 1000BASE-LX, Single-mode, 50km
	   DEM-315GT 1000BASE-LX, Single-mode, 80km
	▪ Optional WDM Transceivers:
	   DEM-330T (1000BASE-LX, wavelength Tx: 1550nm, Rx: 1310nm, Single-mode, 10km)
	   DEM-330R (1000BASE-LX, wavelength Tx: 1310nm, Rx: 1550nm, Single-mode, 10km)
	   DEM-331T (1000BASE-LX, wavelength Tx: 1550nm, Rx: 1310nm, Single-mode, 40km)
	   DEM-331R (1000BASE-LX, wavelength Tx: 1310nm, Rx: 1550nm, Single-mode, 40km)

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	▪ UTP Cat. 5, Cat. 5e (100 meters max.) ▪ EIA/TIA-568 100-ohm STP (100 meters max.)
Full/half Duplex	▪ Full/half duplex for 10/100Mbps speeds ▪ Full duplex for Gigabit speeds
Media Interface Exchange	▪ Auto MDI/MDIX adjustment for all twisted-pair ports

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LED Indicators	▪ DGS-1216T, DGS-1224T:
	    Per device: Power/CPU
	    Per 10/100/1000BASE-T port: Link/Act, 100/1000Mbps
	    Per SFP slot: Link/Act, 1000Mbps
	▪ DGS-1224TP:
	    Per device: Power/PWR Max/CPU/Fan Error
	    Port LED Mode Indicator: Link/Act Mode/PoE Mode
	    Per 10/100/1000BASE-T port: Link/Act, 100/1000Mbps
	    Per SFP slot: Link/Act, 1000Mbps
	▪ DGS-1248T:
	    Per device: Power/CPU
	    Per 10/100/1000BASE-T port: 10/100Mbps, 1000Mbps
	    Per SFP slot: Link/Act, 1000Mbps

Software

L2 Features	▪ IGMP v1/2 Snooping: supports 64 multicast groups ▪ 802.1D Spanning Tree ▪ Static Port trunk (Link Aggregation): up to 6 groups per device, up to 8 ports per group

Green Ethernet	▪ Power Saving Mode (as compared with previous models)
	    Full Load/Max. Power Consumption
	    DGS-1216T: 24%
	    DGS-1224T: 11%
	    DGS-1248T: 24%
	    Link Down Power Consumption
	    DGS-1216T: 32%
	    DGS-1224T: 23%
	    DGS-1248T: 21%
	    Note: The Power Saving percentage cannot be applied for DGS-1224TP, since there is no previous version of this model.

VLAN	▪ 802.1Q VLAN (VLAN Tagging) ▪ Up to 256 static VLAN groups ▪ Management VLAN ▪ Asymmetric VLAN
QoS (Quality of Service)	▪ 802.1p Priority Queues ▪ Up to 4 queues per port ▪ DSCP-based QoS ▪ Supports WRR or Strict Mode in Queue Handling
Security	▪ 802.1X Port-based Access Control ▪ Broadcast Storm Control: threshold of 8K, 16K, 32K, 64K, 128K, 256k, 512K, 1024K, 2048K, 4096K bytes per second ▪ D-Link Safeguard Engine to protect CPU from broadcast / multicast / unicast flooding ▪ Trusted Host ▪ Cable Diagnostics function

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Management	▪ Web-based GUI ▪ SNMP v1 support ▪ DHCP Client ▪ Trap setting for destination IP, system events, fiber port events, twisted-pair port events ▪ Port Access Control ▪ Web-based: Configuration backup/restoration ▪ Web-based: Firmware backup/upload ▪ Firmware upgrade using SmartConsole Utility ▪ System Reboot using web-based interface ▪ SmartConsole Utility
MIB	▪ RFC 1213 MIB-II ▪ D-Link Enterprise Private MIB

Performance

Switch Capacity	▪ DGS-1216T: 32Gbps ▪ DGS-1224T: 48Gbps ▪ DGS-1224TP: 48Gbps ▪ DGS-1248T: 96Gbps
Transmission Method	▪ Store-and-forward
MAC Address Table	▪ 8K entries per device
MAC Address Update	▪ Up to 256 static MAC entries ▪ Enable/disable auto-learning of MAC addresses
Maximum 64 bytes packet forwarding rate	▪ DGS-1216T: 23.8Mpps ▪ DGS-1224T: 35.7Mpps ▪ DGS-1224TP: 35.7Mpps ▪ DGS-1248T: 71.4Mpps
RAM Buffer	▪ DGS-1216T: 512Kbytes per device ▪ DGS-1224T: 512Kbytes per device ▪ DGS-1224TP: 512Kbytes per device ▪ DGS-1248T: 1Mbytes per device
Jumbo Frame	▪ DGS-1216T, DGS-1224T, DGS-1224TP: 10,240bytes ▪ DGS-1248T: 9,220bytes

Physical & Environmental

AC Input	▪ 100 to 240 VAC 50/60Hz internal universal power supply
Power Consumption	▪ DGS-1216T: 23W ▪ DGS-1224T: 31.2W ▪ DGS-1224TP: 250.3W ▪ DGS-1248T: 76.2W
PoE Budget	▪ DGS-1224TP: 180watts
DC Fans	▪ DGS-1216T: 0 ▪ DGS-1224T: 0 ▪ DGS-1224TP: 2pcs ▪ DGS-1248T: 3pcs

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Heat Dissipation	▪ DGS-1216T: 78.48BTU/hr ▪ DGS-1224T: 106.45BTU/hr ▪ DGS-1224TP: 854.02BTU/hr ▪ DGS-1248T: 259.99BTU/hr
Acoustic Value	▪ DGS-1216T: 0 dB(A) ▪ DGS-1224T: 0 dB(A) ▪ DGS-1224TP: 47 dB(A) ▪ DGS-1248T: 51.6 dB(A)
Operating Temperature	▪ 0˚ to 40˚ C
Storage Temperature	▪ -10˚ to 70˚ C
Operating Humidity	▪ 10% to 90% non-condensing
Storage Humidity	▪ 5% to 90% non-condensing
Dimensions	▪ DGS-1216T: 440 x 210 x 44 (mm) ▪ DGS-1224T: 440 x 210 x 44 (mm) ▪ DGS-1224TP: 440 x 210 x 44 (mm) ▪ DGS-1248T: 441 x 309 x 44 (mm) ▪ 19-inch standard rack mounting width, 1U height
Weight	▪ DGS-1216T: 2.72 kg ▪ DGS-1224T: 2.80 kg ▪ DGS-1224TP: 3.6 kg ▪ DGS-1248T: 4.46g
EMI	▪ FCC Class A ▪ CE Class A ▪ VCCI Class A
MTBF	▪ DGS-1216T: 228,450hrs ▪ DGS-1224T: 215,976hrs ▪ DGS-1224TP: 173,467 hours ▪ DGS-1248T: 186,656hrs
Safety	▪ cUL, LVD

SWITCH