

## 10/16/24/48-Port Web Smart Switch

D-Link's DGS-1210 Series is the latest generation of Web Smart Switches featuring D-Link Green Technology. The series integrates advanced management and security functions that provide performance and scalability. Additionally, the DGS-1210-10P's 10/100/1000 Mbps ports are PoE-enabled, offering ease-of-use and green features like time-based PoE, which allows for the power to be shut off at a predetermined time. Compliant with 802.3af and 802.3at Pre-Standard, this switch is capable of feeding power to devices up to 30 Watts. Management options for the switches include SNMP, Web Management, SmartConsole Utility, and Compact Command Lines. The series also supports ACL filtering and D-Link's Safeguard Engine. The DGS-1210 Series uses Auto Voice VLAN, ensuring higher priority for voice traffic. The DGS-1210-10P comes with a fanless design in a compact 13" desktop enclosure, the DGS-1210-16 and DGS-1210-24 feature a fanless design in 19" metal cases. The DGS-1210-48 is equipped with two smart fans which are set to low speed by default and will automatically switch to high speed once the temperature threshold is reached. A fanless design allows for quieter operation and guarantees an extended lifetime, while smart fans help to save power.

### **D-Link Green**

D-Link is constantly striving to take the lead in developing innovative technology that allows for power-saving without sacrificing operational performance or functionality. The DGS-1210 Series automatically detects the length of connected cables and can adjust power usage by saving energy on shorter cable connections of up to 20 meters. Link status drastically reduces power consumption by automatically toggling ports without a link to sleep mode. The DGS-1210 Series takes the approach to green IT one step further by incorporating a special chipset with advanced silicon technology.

### **Seamless Integration**

The DGS-1210 Series comes with Ethernet and Gigabit copper ports capable of connecting to existing Cat.5 twisted-pair cables. Additionally, the last 2 or 4 ports of the DGS-1210 Series combine SFP and copper connectivity into one port and therefore provide a more flexible solution for upstream or downstream server connections via fiber interface. Using the default presets, the administrator can quickly set up the switch without reconfiguring any settings.

### **Extensive Layer 2 Features**

Equipped with a complete lineup of L2 features, these switches include IGMP Snooping, Port Mirroring, Spanning Tree and Link Aggregation Control Protocol (LACP). The IEEE 802.3x Flow Control function allows servers to directly connect to the switch for fast, reliable data transfer. At 2000 Mbps Full Duplex, the Gigabit ports provide high-speed data pipes to servers with minimum data transfer loss. Network maintenance features include Loopback Detection and Cable Diagnostics. Loopback Detection is used to detect loops created by a specific port and automatically shut down the affected port. The Cable Diagnostic feature, designed primarily for administrators and customer service representatives, can rapidly discover the type of error and determine the cable quality.

### **QoS, Bandwidth Control**

The switches are perfect for deployment in a VoIP environment, as they support Auto Voice VLAN and Differentiated Services Code Point (DSCP) QoS for VoIP. Auto Voice VLAN will automatically place voice traffic from an IP phone to an assigned VLAN and by doing so enhance the VoIP service. With a higher priority and individual VLAN, this feature guarantees the quality and security of VoIP traffic. DSCP marks parts of an IP packet, enabling different levels of service to be assigned for network traffic. With Bandwidth Control, network administrators can

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### **Secure your Network**

D-Link's innovative Safeguard Engine protects the switches against traffic flooding caused by virus attacks. The switches also support 802.1X port-based authentication, allowing the network to be authenticated through external RADIUS servers. In addition, the Access Control List (ACL) feature enhances network security and helps to protect the internal IT network. The DGS-1210 Series includes ARP Spoofing Prevention, which protects from attacks on the Ethernet network that may allow an intruder to sniff data frames, modify traffic, or bring traffic to a halt altogether by sending fake ARP messages to the network. To prevent ARP Spoofing attacks, the switch uses Packet Control ACLs to block invalid packets that contain fake ARP messages. For added security, the DHCP Server Screening feature screens rogue DHCP server packets from user ports to prevent unauthorized IP assignment.

### **Versatile Management**

The DGS-1210 series provides a SmartConsole utility and a web-based management interface that enables administrators to remotely control their network down to the port level. The SmartConsole easily allows customers to discover multiple D-Link Web Smart Switches within the same L2 network segment. With this utility, users do not need to change the IP address of their PC. It also simplifies the initial setup of the Smart Switches. Switches within the same L2 network segment that are connected to the user's PC are displayed on screen for instant access. This allows extensive switch configuration and basic setup of discovered devices including password changes and firmware upgrades. The DGS-1210 Series also supports D-View 6.0 and Compact Command Line Interface (CLI) through Telnet. D-View 6.0 is a Network Management System that allows for the central management of critical network characteristics such as availability, reliability, resilience, and security. CLI management of the switches is possible via Telnet. This makes it possible to adjust basic settings, passwords, configuration files, and firmware with ease.

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#### Technical Specifications

|             |                                         |                                                                                                                                                                                                                                                                              |
|-------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General     | Port Standards & Functions              | IEEE 802.3 10BASE-T Ethernet (twisted-pair copper)<br>IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)<br>IEEE 802.3ab 1000BASE-T Gigabit Ethernet (twisted-pair copper)<br>Auto-negotiation<br>IEEE 802.3x Flow Control                                           |
|             | Number of Ports                         | DGS-1210-10P: 8 PoE 10/100/1000 Mbps, 2 combo 10/100/1000BASE-T/SFP<br>DGS-1210-16: 12 10/100/1000 Mbps, 4 combo 10/100/1000BASE-T/SFP<br>DGS-1210-24: 20 10/100/1000 Mbps, 4 combo 10/100/1000BASE-T/SFP<br>DGS-1210-48: 44 10/100/1000 Mbps, 4 combo 10/100/1000BASE-T/SFP |
|             | Network Cables                          | UTP Cat. 5, Cat. 5e (100 m max.)<br>EIA/TIA-568 100-ohm STP (100 m max.)                                                                                                                                                                                                     |
|             | Full/Half Duplex                        | Full/half duplex for 10/100 Mbps speeds<br>Full duplex for Gigabit speed                                                                                                                                                                                                     |
|             | Media Interface Exchange                | Auto MDI/MDIX adjustment for all twisted-pair ports                                                                                                                                                                                                                          |
| Performance | Switching Capacity                      | DGS-1210-10P: 20 Gbps<br>DGS-1210-16: 32 Gbps<br>DGS-1210-24: 48 Gbps<br>DGS-1210-48: 96 Gbps                                                                                                                                                                                |
|             | Transmission Method                     | Store-and-forward                                                                                                                                                                                                                                                            |
|             | MAC Address Table                       | 8 K entries per device                                                                                                                                                                                                                                                       |
|             | MAC Address Update                      | Up to 256 static MAC entries<br>Enable/disable auto-learning of MAC addresses                                                                                                                                                                                                |
|             | Maximum 64 bytes packet forwarding rate | DGS-1210-10P: 14.88 Mpps<br>DGS-1210-16: 23.8 Mpps<br>DGS-1210-24: 35.7 Mpps<br>DGS-1210-48: 71.4 Mpps                                                                                                                                                                       |
|             | RAM Buffer                              | DGS-1210-10P: 512 KB per device<br>DGS-1210-16: 512 KB per device<br>DGS-1210-24: 512 KB per device<br>DGS-1210-48: 1 MB per device                                                                                                                                          |

\* PoE features available on DGS-1210-10P only

## 10/16/24/48-Port Web Smart Switch

|                          |                           |                                                                                                                                                                                                                                                                                                                                            |
|--------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical & Environmental | AC Input                  | 100 to 240 VAC 50/60 Hz internal universal power supply                                                                                                                                                                                                                                                                                    |
|                          | Maximum Power Consumption | DGS-1210-10P: 109.6 W (PoE on), 14.45 W (PoE off)<br>DGS-1210-16: 17.4 W<br>DGS-1210-24: 24.1 W<br>DGS-1210-48: 59.1 W                                                                                                                                                                                                                     |
|                          | Standby Power Consumption | DGS-1210-10P: 7 W/110 V, 7.8 W/240 V<br>DGS-1210-16: 4.9 W/110 V, 5 W/240 V<br>DGS-1210-24: 6 W/110 V, 6.2 W/240 V<br>DGS-1210-48: 19.2 W/110 V, 20.1 W/240 V                                                                                                                                                                              |
|                          | Fan Quantity              | DGS-1210-10P: 0<br>DGS-1210-16: 0<br>DGS-1210-24: 0<br>DGS-1210-48: 2 smart fans (default fan speed is low, fans switch to high speed automatically at 33 degrees Celsius ambient temperature)                                                                                                                                             |
|                          | Acoustics                 | DGS-1210-10P: 0 dBA<br>DGS-1210-16: 0 dBA<br>DGS-1210-24: 0 dBA<br>DGS-1210-48: 46.2 dBA (max.)                                                                                                                                                                                                                                            |
|                          | Heat Dissipation          | DGS-1210-10P: 373.96 BTU/hr<br>DGS-1210-16: 59.23 BTU/hr<br>DGS-1210-24: 82.23 BTU/hr<br>DGS-1210-48: 201.65 BTU/hr                                                                                                                                                                                                                        |
|                          | Operating Temperature     | 0° to 40° C                                                                                                                                                                                                                                                                                                                                |
|                          | Storage Temperature       | -10° to 70° C                                                                                                                                                                                                                                                                                                                              |
|                          | Operating Humidity        | 10% to 95% non-condensing                                                                                                                                                                                                                                                                                                                  |
|                          | Storage Humidity          | 5% to 95% non-condensing                                                                                                                                                                                                                                                                                                                   |
|                          | Dimensions                | DGS-1210-10P: 330 mm x 180 mm x 44 mm (13" desktop enclosure, 1U height)<br>DGS-1210-16: 440 mm x 210 mm x 44 mm (19" standard rack mounting width, 1U height)<br>DGS-1210-24: 440 mm x 210 mm x 44 mm (19" standard rack mounting width, 1U height)<br>DGS-1210-48: 440 mm x 250 mm x 44 mm (19" standard rack mounting width, 1U height) |
|                          | Weight                    | DGS-1210-10P: 1.84 kg<br>DGS-1210-16: 2.87 kg<br>DGS-1210-24: 2.97 kg<br>DGS-1210-48: 4.04 kg                                                                                                                                                                                                                                              |
|                          | Diagnostic LEDs           | Power (Per device)<br>Fan error (Per device, optional)<br>Link/Activity/Speed (Per 10/100/1000 Mbps port)<br>Link/Activity/Speed (Per SFP port)                                                                                                                                                                                            |
|                          | Emission (EMI)            | FCC Class A<br>CE Class A<br>IC Class A<br>VCCI Class A<br>C-Tick                                                                                                                                                                                                                                                                          |
|                          | MTBF                      | DGS-1210-10P: 205,249 hours<br>DGS-1210-16: 799,491 hours<br>DGS-1210-24: 410,948 hours<br>DGS-1210-48: 322,402 hours                                                                                                                                                                                                                      |
|                          | Safety                    | cUL, LVD                                                                                                                                                                                                                                                                                                                                   |

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## Software Features

### L2 Features

- MAC Address Table
  - 8 K
- Flow Control
  - 802.3x Flow Control
  - HOL Blocking Prevention
- IGMP Snooping
  - IGMP v1/v2 Snooping
  - Supports 256 IGMP groups
  - Supports at least 64 static multicast addresses
  - IGMP per VLAN
  - Supports IGMP Snooping Querier
- Spanning Tree Protocol
  - 802.1D STP
  - 802.1w RSTP
- Loopback Detection
- 802.3ad Link Aggregation
  - DGS-1210-10P:
    - Max. 5 groups per device/8 ports per group
  - DGS-1210-16/DGS-1210-24/DGS-1210-48:
    - Max. 8 groups per device/8 ports per group
- Port Mirroring
  - One-to-One
  - Many-to-One
  - Supports Mirroring for Tx/Rx/Both
- Cable Diagnostics
- Configurable Auto MDI/MDIX
- Multicast Filtering
  - Forwards all unregistered groups
  - Filters all unregistered groups

### VLAN

- 802.1Q
- VLAN Group
  - Max. 256 static VLAN groups
  - Max. 4094 VIDs
- Management VLAN
- Asymmetric VLAN
- Auto Voice VLAN
  - Max. 10 user defined OUI
  - Max. 8 default OUI

### QoS (Quality of Service)

- 802.1p Quality of Service
- 4 queues per port
- Queue Handling
  - Strict
  - Weighted Round Robin (WRR)
- CoS based on
  - 802.1p Priority Queues
  - DSCP
- Bandwidth Control
  - Port-based (Ingress/Egress, min. granularity 64 Kb/s)

### Access Control List (ACL)

- Max. 50 profiles
- Max. 240 rules shared by profiles
- ACL based on
  - MAC Address
  - IPv4 Address (ICMP/IGMP/TCP/UDP)
  - VLAN ID
  - 802.1p Priority
  - DSCP
- ACL Actions
  - Permit
  - Deny

### Security

- 802.1X
- Port Security
  - Supports up to 64 MAC addresses per port
- Broadcast/Multicast/Unicast Storm Control
- Static MAC
- D-Link Safeguard Engine
- DHCP Server Screening\*
- ARP Spoofing Prevention\*
  - Max. 64 entries
- SSL\*
  - Supports v1/v2/v3
  - Supports IPv4

### MIB

- 1213 MIB II
- 1493 Bridge MIB
- 1907 SNMP v2 MIB
- 1215 Trap Convention MIB
- 2233 Interface Group MIB
- D-Link Private MIB

### RFC Standard Compliance

- RFC 768 UDP
- RFC 791 IP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 854 Telnet Server
- RFC 855 Telnet Server
- RFC 856 Telnet Binary Transmission
- RFC 858 Telnet Server
- RFC 896 Congestion Control in TCP/IP Network
- RFC 903 Reverse Address Resolution Protocol
- RFC 951 BootP Client
- RFC 1155 MIB
- RFC 1157 SNMP v1
- RFC 1191 Path MTU Discovery
- RFC 1212 Concise MIB Definition
- RFC 1213 MIB II, IF MIB
- RFC 1215 Traps for use with the SNMP

- RFC 1239 Standard MIB
- RFC 1350 TFTP
- RFC 1493 Bridge MIB
- RFC 1519 CIDR
- RFC 1945 HTTP/1.0
- RFC 2131 DHCP
- RFC 2132 DHCP Options and BOOTP Vendor Extensions
- RFC 2138 Radius Authentication
- RFC 2233 Interface MIB
- RFC 2578 Structure of Management Information Version 2 (SMIPv2)
- RFC 2647 802.1p
- RFC 3416 SNMP
- RFC 3417 SNMP
- RFC 3621 Power Ethernet

### Management

- Web-based GUI
- Compact CLI through Telnet
- Telnet Server
- TFTP Client
- SNMP
  - Supports v1/v2/v3\*
- SNMP Trap
- Trap for SmartConsole Utility
- System Log
  - Max. 500 log entries
  - Supports IPv4 log server
- BootP/DHCP Client
- Time Setting
  - SNTP
- LLDP, LLDP-MED
- Time-based PoE

\* Available in future release

### Optional Products

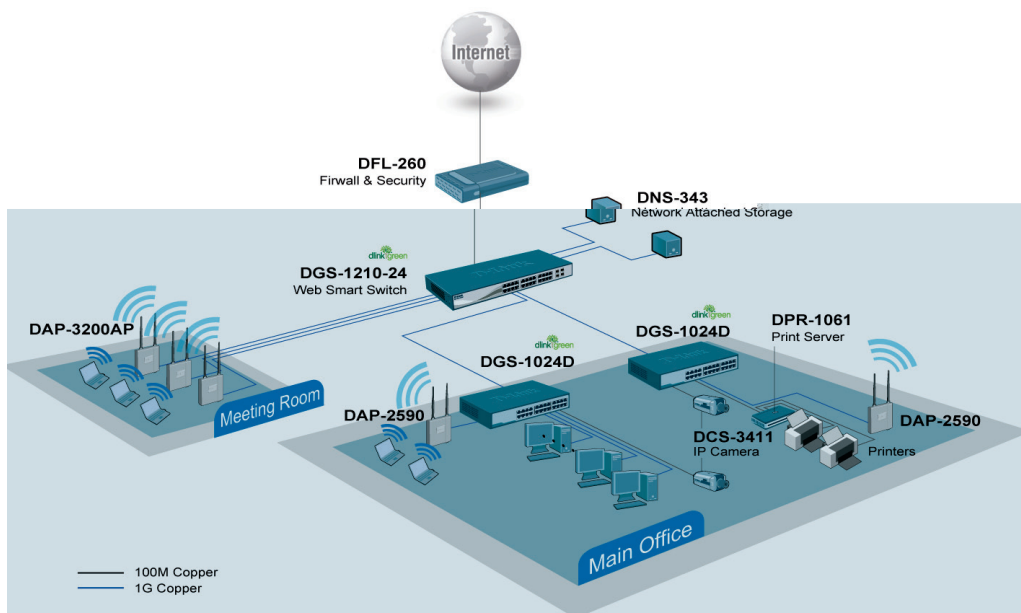
#### Optional SFP Transceivers

|            |                                 |
|------------|---------------------------------|
| DEM-310GT  | 1000BASE-LX, Single-mode, 10 km |
| DEM-311GT  | 1000BASE-SX, Multi-mode, 550 m  |
| DEM-312GT2 | 1000BASE-SX, Multi-mode, 2 km   |
| DEM-314GT  | 1000BASE-LX, Single-mode, 50 km |
| DEM-315GT  | 1000BASE-LX, Single-mode, 80 km |
| DEM-210    | 100BASE-FX, Single-mode, 15 km  |
| DEM-211    | 100BASE-FX, Multi-mode, 2 km    |

#### Optional WDM SFP Transceivers

|          |                                                                         |
|----------|-------------------------------------------------------------------------|
| DEM-220R | 100BASE-BX, Wavelength<br>Tx:1550 nm Rx:1310 nm,<br>Single-mode, 20 km  |
| DEM-220T | 100BASE-BX, Wavelength<br>Tx:1550 nm Rx:1310 nm,<br>Single-mode, 20 km  |
| DEM-330T | 1000BASE-LX, Wavelength<br>Tx:1550 nm Rx:1310 nm,<br>Single-mode, 10 km |
| DEM-330R | 1000BASE-LX, Wavelength<br>Tx:1310 nm Rx:1550 nm,<br>Single-mode, 10 km |
| DEM-331T | 1000BASE-LX, Wavelength<br>Tx:1550 nm Rx:1310 nm,<br>Single-mode, 40 km |
| DEM-331R | 1000BASE-LX, Wavelength<br>Tx:1310 nm Rx:1550 nm,<br>Single-mode, 40 km |

### Deploying the DGS-1210 Series in an Office Environment



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