D-Link®

Limited Lifetime Warranty

DGS-1510 Series

Gigabit Stackable SmartPro Switches with 10G Uplinks

Features

Advanced Features
- Single IP Management (Virtual Stacking), stack up to 32 devices
- Physical Stacking via 2 10G ports, stack up to 6 devices
- Static Routing
- IPv6 Management Support
- Auto Surveillance VLAN
- Auto Voice VLAN
- Loopback Detection automatically disables a port or VLAN when a loop is detected
- Configurable MDI/MDIX
- LLDP/LLDP-MED

Security Features
- Access Control List
- D-Link Safeguard Engine
- Port Security
- ARP Spoofing Prevention
- IP-MAC-Port Binding
- DoS Attack Prevention

Intuitive Management
- D-Link Network Assistant Utility or Multi-language Web-based GUI
- Built-in SNMP MIB for remote NMS (D-View 6.0)
- Full CLI via console port
- IPv4/IPv6 Stack
- Dual Image

Green Technology
- IEEE 802.3az Energy Efficient Ethernet
- D-Link Green 3.0 power-saving features

Overview

The DGS-1510 Series is D-Link's latest generation of SmartPro switches with 10G port connectivity, making them ideal for deployment in SME/SMB core environments. The DGS-1510 Series provides a reliable, scalable, and modular interconnection between core switches and edge switches with rich capabilities and simplified flexibility. Available in 16, 24 and 48 10/100/1000 Mbps port models, these switches also include four optical ports – including 2 Gigabit SFP and 2 10G SFP+ ports. The 24 and 48 port versions are also available with 4 10G SFP+ ports instead of the 2 Gigabit plus 2 10G configuration.

Power over Ethernet

The DGS-1510-28P's 10/100/1000 Mbps ports are PoE-enabled for powering devices such as IP cameras, VoIP phones and wireless access points. Compliant with 802.3af and 802.3at, the DGS-1510-28P supports up to 30W of power output on any particular PoE port up to 193W, providing flexibility in power allocation for a variety of powered devices, including new 802.11ac wireless access points that require 802.3at power for full functionality. Time-based PoE enables power to a port to be shut off at a scheduled time, reducing power usage and increasing security by powering off devices that should not be in use during non-business hours.

10G SFP+ Stacking/Uplink Ports

Depending on whether linear or fault-tolerant ring stacking is implemented, users can use one or two 10-Gigabit SFP+ ports to create a physical stack. Six units or 288 Gigabit ports can be configured as a stack using optional direct attach cables to provide high bandwidth on the DGS-1510 Series with cost efficiency. Users can mix from any of the DGS-1510 SmartPro series in a single stack to allow simultaneous and easy configuration, management and troubleshooting.

Flexibility and Scalability

The DGS-1510 Series supports virtual stacking via D-Link's Single IP Management (SIM), allowing up to 32 devices to be managed via a single IP. This simplifies management of small workgroups or wiring closets while allowing the network to be scaled to handle increased bandwidth demand. SIM reduces the number of IP address needed in the network and allows switches to be stacked together over Ethernet instead of using physical uplink or stacking ports. This eliminates the need for specialized stacking cables and removes distance barriers that can limit topology options when using other stacking technology.

Extensive Layer 2 Features

The DGS-1510 Series switches are equipped with a complete lineup of Layer 2 features including IGMP Snooping, Port Mirroring, Spanning Tree, and Link Layer Discovery Protocol (LLDP). 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 or VLAN and automatically shut down the affected port or VLAN. The Cable Diagnostics feature, designed primarily for administrators and customer service representatives, can quickly discover the type of error on cables and determine the cable quality.

QoS, Bandwidth Control

The DGS-1510 Series supports Auto Surveillance VLAN (ASV) and Auto Voice VLAN, which are best suited for VoIP and video surveillance deployments. Auto Surveillance VLAN is a new, industry-leading technology built into D-Link Smart Switches. This technology consolidates data and surveillance video transmission through a single SmartPro switch, sparing businesses the expense of maintaining expensive dedicated hardware and facilities. ASV also ensures the quality of real-time video for monitoring and control without compromising the transmission of conventional network data. The Auto Voice VLAN technology enhances VoIP service by automatically placing voice traffic from an IP phone to an assigned VLAN. With higher priority and an individual VLAN, these features guarantee the quality and security of VoIP traffic. Furthermore, the DSCP markings on Ethernet packets enable different levels of service to be assigned to network traffic. As a result, these voice and video packets take precedence over other packets. In addition, with Bandwidth Control, network administrators can reserve bandwidth for important functions that require more bandwidth or might require high priority.

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 by screening ingress traffic based on MAC or IP addresses. The DGS-1510 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.

IPv6 Ready

The DGS-1510 Series is IPv6 ready and supports various IPv6 functions such as MLD Snooping, IPv6 ACL/QoS, and IMPBv6 to ensure seamless integration of next generation networks. The DGS-1510 Series also supports a IPv4/v6 dual stack function that allows the switch to act as a bridge between IPv4 and IPv6 networks. Finally, all DGS-1510 Series are certified to be IPv6 Ready Logo Phase 2, which guarantees interoperability for IPv6 environments.

Versatile Management

The DGS-1510 Series provides a D-Link Network Assistant Utility and a web based management interface that enables administrators to remotely control their network down to the port level. The D-Link Network Assistant Utility allows customers to easily discover multiple D-Link SmartPro 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 SmartPro 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-1510 Series also supports D-View 6.0 and a fully featured Command Line Interface (CLI) via dedicated out-of-band console port. 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 console port and Telnet interfaces. This makes it possible to adjust basic settings, passwords, configuration files, and firmware with ease.

Layer 3 Traffic Management

The DGS-1510 Series supports advanced traffic management features, including static routing. In static routing, IP routes are manually entered into a routing table, which allows for communication between different user groups in different VLAN segments in a network. The switch can directly handle inter VLAN routing using multiple interfaces, making the network run faster and more efficiently. Because the switches can manage internal routing, the network router can be assigned to handle external traffic routing only.

Energy Saving

DGS-1510 switches are capable of conserving power without sacrificing operational performance or functionality by using D-Link Green 3.0 technology. Using the 802.3az Energy Efficient Ethernet standard, the network will automatically decrease the power usage when traffic is low with no setup required. For environments not fully supporting the standard, DGS-1510 switches offer advanced power-saving settings including port shutoff, LED shutoff, and system hibernation based on custom scheduling profiles. The profiles can also be applied to the PoE switch so that there is no unnecessary power consumption during off hours.

DGS-1510-20

DGS-1510-28

DGS-1510-28P

DGS-1510-28X

DGS-1510-52

DGS-1510-52X

Technical Specifications

General	DGS-1510-20	DGS-1510-28	DGS-1510-28P	DGS-1510-28X	DGS-1510-52	DGS-1510-52X
Port Standards & Functions	IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, 802.3ae 10 GbE, IEEE 802.3x Flow Control for Full-Duplex Mode, Auto-negotiation					
Number of Ports: 10/100/1000 Mbps Gigabit SFP 10G SFP+	16 2 2	24 2 2	24 2 2	24 - 4	48 2 2	48 - 4
Network Cables	UTP Cat. 5, Cat. 5e (100 m max.) EIA/TIA-568 100-ohm STP (100 m max.)					
Full/Half Duplex	Full/half duplex for 10/100 Mbps and Gigabit speed					
Media Interface Exchange	Auto or configurable MDI/MDIX					
Performance						
Switching Capacity	76 Gbps	92 Gbps	92 Gbps	128 Gbps	140 Gbps	176 Gbps
Transmission Method	Store-and-forward					
MAC Address Table	16,000 entries per device					
MAC Address Update	Up to 512 static MAC entries, Enable/disable auto-learning of MAC addresses					
Maximum 64 bytes Packet Forwarding Rate	56.54 Mpps	68.45 Mpps	68.45 Mpps	95.24 Mpp	104.16 Mpps	130.95 Mpps
Packet Buffer Memory	1.5 MB per device	1.5 MB per device	1.5 MB per device	1.5 MB per device	3 MB per device	3 MB per device
PoE						
PoE Standard	-	-	IEEE 802.3af, 802.3at	-	-	-
PoE Capable Ports	-	-	Ports 1 to 24: Up to 30 W	-	-	-
PoE Power Budget	-	-	Max. 193 W	-	-	-

Physical & Environment	DGS-1510-20	DGS-1510-28	DGS-1510-28P	DGS-1510-28X	DGS-1510-52	DGS-1510-52X
AC Input	100 to 240 VAC 50/60 Hz internal universal power supply					
Maximum Power Consumption	20.3 W	24 W	238.7 W (PoE on), 29 W (PoE off)	22.3 W	38.4 W	44.2 W
Standby Power Consumption	11.4 W / 100V 12.2 W / 240V	14.6 W / 100V 15.2 W / 240V	22.7 W / 100V 21.0 W / 240V	14.6 W / 100V 15.2 W / 240V	27.3 W / 100V 27.6 W / 240V	28.6 W / 100V 28.9 W / 240V
Smart Fan Quantity	1	1	2	1	2	2
Acoustics	43.8 dB(A)	43.8 dB(A)	46.4 dB(A)	42.7 dB(A)	44.2 dB(A)	45.8 dB(A)
Heat Dissipation	41.6 BTU/hr	72.3 BTU/hr	814.0 BTU/hr	76.0 BTU/hr	130.9 BTU/hr	138.8 BTU/hr
Operation Temperature	23 to 122 ˚F (-5 to 50 ˚C)					
Storage Temperature	-4 to 158 ˚F (-20 to 70˚C)					
Operation Humidity	0% to 95% non-condensing					
Storage Humidity	0% to 95% non-condensing					
Dimensions	11 x 7.09 x 1.73 in. (280 x 180 x 44 mm) 19" standard rack mounting width, 1U height	17.36 x 8.26 x 1.73 in. (440 x 210 x 44 mm) 19" std rack mtg width 1U height			17.36 x 9.84 x 1.73 in. (440 x 250 x 44 mm) 19" std rack mtg width 1U height	
Weight	2.7 lbs (1.24 kg)	4.4 lbs (2.00 kg)	5.6 lbs (2.54 kg)	4.4 lbs (2.00 kg)	5.3 lbs (2.40 kg)	5.3 lbs (2.40 kg)
Diagnostic LEDs	Power/Stacking ID/Fan (per device), Link/Activity/Speed (per 10/100/1000 Mbps port), Link/ Activity/Speed (per Gigabit SFP port), Link/ Activity/Speed (per 10G SFP+ port)					
Certifications	CE, FCC, C-Tick, VCCI, BSMI, CCC					
Safety	cUL, CB					

Software Features

Stackability	• Virtual Stacking Support
	  • D-Link Single IP Management
	  • Up to 32 devices per virtual stack
		• Physical Stacking
		  • Supports Duplex Chain/Ring topology
		  • Up to 40G stacking bandwidth full duplex
		  • Up to 6 units per stack

L2 Features	• MAC Address Table: 16K
	• Flow Control
	  • 802.3x Flow Control
	  • HOL Blocking Prevention
	• Jumbo Frame up to 9000 Bytes
	• IGMP Snooping
	  • IGMP v1/v2 Snooping
	  • IGMP v3 awareness
	  • Supports 512 IGMP groups
	  • Supports 128 static multicast addresses
	  • IGMP per VLAN
	  • Supports IGMP Snooping Querier
	  • Host-based IGMP Snooping Fast Leave
	• MLD Snooping
	  • Supports MLD v1/v2 awareness
	  • Supports 512 groups
	  • Supports 128 Static Multicast Addresses
	  • Per VLAN MLD Snooping
	  • Host-based MLD Fast Leave
	  • MLD Snooping Querier
		• Spanning Tree Protocol
		  • 802.1D STP
		  • 802.1w RSTP
		  • 802.1s MSTP
		• Loopback Detection
		• 802.3ad Link Aggregation
		  • Max. 32 groups per device/8 ports per group
		• Port Mirroring
		  • Support 4 mirroring groups
		  • One-to-One, Many-to-One
		  • Supports Mirroring for Tx/Rx/Both
		• Multicast Filtering
		  • Forwards all unregistered groups
		  • Filters all unregistered groups
		• LLDP, LLDP-MED

VLAN	• 802.1Q Tagged VLAN • 4K VLAN Groups • Configurable VID: 0~4094 • GVRP	• Asymmetric VLAN • Auto Voice VLAN • Auto Surveillance VLAN

Quality of Service (QoS)	• 802.1p Quality of Service
	• Queue Handling
	  • Strict Priority Queue (SPQ)
	  • Weighted Round Robin (WRR)
	  • Deficit Round Robin (DRR)
	  • SPQ + WRR
	• 8 queues per port
	• Bandwidth Control
	  • Port-based (Ingress/Egress, min. granularity for 10/100/1000 BASE-T ports is 64 Kb/s)
		• CoS based on
		  • 802.1p priority
		  • VLAN
		  • MAC address
		  • Ether type
		  • IP address
		  • DSCP
		  • Protocol type
		  • TCP/UDP port number
		  • DSCP of IPv6 Traffic Class
		  • IPv6 flow label

L3 Features	• ARP
	  • 256 Static ARP
	  • Supports Gratuitous ARP
	• IPv6 Neighbour Discovery (ND)
	• 8 IP Interfaces
		• Default Routing
		• Static Routing
		  • 64 IPv4 Static Route Entries
		  • 32 IPv6 Static Route Entries

Access Control List (ACL)	• ACL based on
	  • 802.1p priority
	  • VLAN
	  • MAC address
	  • Ether type
	  • IP address
	  • DSCP
	  • Protocol type
	  • TCP/UDP port number
	  • DSCP of IPv6 Traffic Class
	  • IPv6 flow label
		• ACL Actions
		  • Permit
		  • Deny
		• Max. 256 access list
		• Max. 768 rules
		• Single or multiple ports (each rule)
		• Time-based ACL
		• ACL Statistics

Security	• Port Security
	  • Supports up to 128 MAC addresses per port
	• Broadcast/Multicast/Unicast Storm Control
	• Dynamic ARP Inspection
	• Static MAC
	• D-Link Safeguard Engine
	• DHCP Server Screening
	• ARP Spoofing Prevention
	  • Max. 64 entries
	• SSH
	  • Supports v2
	  • Supports IPv4/IPv6
	• BPDU Attack Protection
		• SSL
		  • Supports v1/v2/v3
		  • Supports IPv4/IPv6
		• Traffic Segmentation
		• IP-MAC-Port Binding
		  • DHCP snooping
		  • IP Source Guard
		  • Dynamic ARP inspection
		  • DHCPv6 Guard
		  • RA Guard
		  • IPv6 Snooping
		  • IPv6 Source Guard
		• DoS Attack Prevention

AAA	• Compound Authentication
	• 802.1X Port and MAC-based Authentication
	  • Supports RADIUS and Local Server
	  • Supports EAP, OTP, TLS, TTLS, PEAP
	• Web-based Access Control (WAC)
	  • Port-based Access Control
	  • Host-based Access Control
	  • Dynamic VLAN Assignment
	• Guest VLAN
		• MAC-based Access Control (MAC)
		  • Port-based Access Control
		  • Host-based Access Control
		  • Dynamic VLAN Assignment
		• Japan Web-based Access Control (JWAC)
		  • Port-based Access Control
		  • Host-based Access Control
		  • Dynamic VLAN Assignment

OAM	• Cable Diagnostics	• Factory Reset

Management	• CLI
	• Telnet Server
	• TFTP Client
	• IPv6 Neighbor Discovery
	• Configurable MDI/MDIX
	• SNMP
	  • Supports v1, v2c, v3
	• SNMP Trap
	• System Log
	  • Max. 10,000 log entries
		• DHCP Client
		• D-Link Network Assistant support
		• SNTP
		• ICMPv6
		• IPv4/v6 Dual Stack
		• DHCP Auto Configuration
		• RMON v1
		• Debug Command
		• Dual Image
		• Web Based GUI

D-Link Green 3.0 Technology	• Power Saving by:
	  • Link Status
	  • LED or Port Shutoff
		• System Hibernation mode
		• Time-based PoE (PoE model only)

Optional SFP Transceivers	
DEM-310GT	1000BASE-LX, single-mode, 10 km
DEM-311GT	1000BASE-SX, multi-mode, 550 m
DGS-712	1000BASE-T to SFP transceiver
Optional SFP+ Transceivers	
DEM-431XT-DD	10GBASE-SR SFP+ Transceiver (with DDM), 80m: OM1 & OM2 MMF, 300m: OM3 MMF
DEM-432XT-DD	10GBASE-LR SFP+ Transceiver (with DDM), 10km
DEM-435XT-DD	10GBASE-LRM SFP+ Transceiver (with DDM), 220m
Optional SFP+ Direct Attach Stacking Cables	
DEM-CB100S	10-GbE SFP+ 1 m Direct Attach Cable
DEM-CB300S	10-GbE SFP+ 3 m Direct Attach Cable
DEM-CB700S	10-GbE SFP+ 7m Direct Attach Cable

Ordering Information		
Model number	*Description*	*Warranty*
DGS-1510-20	20-port Gigabit Stackable SmartPro Switch including 2 SFP ports & 2 10GbE SFP+ ports	Limited Lifetime[1]
DGS-1510-28	28-port Gigabit Stackable SmartPro Switch including 2 SFP ports & 2 10GbE SFP+ ports	Limited Lifetime[1]
DGS-1510-28P	28-port Gigabit Stackable SmartPro PoE Switch including 2 SFP ports & 2 10GbE SFP+ ports	Limited Lifetime[1]
DGS-1510-28X	28-port Gigabit Stackable SmartPro Switch including 4 10GbE SFP+ ports	Limited Lifetime[1]
DGS-1510-52	52-port Gigabit Stackable SmartPro Switch including 2 SFP ports & 2 10GbE SFP+ ports	Limited Lifetime[1]
DGS-1510-52X	52-port Gigabit Stackable SmartPro Switch including 4 10GbE SFP+ ports	Limited Lifetime[1]

[1] Limited Lifetime Warranty Available in the U.S.A. only.

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For more information

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