



DGS-1510 Series - Gigabit Stackable Switches



Product Highlights:

Flexible Choices

- 24, 48 10/100/1000Mbps and 16 SFP uplinks for connections either in cabinets or metropolitan areas.
- Selectable software images provide sophisticated feature set for your environment.
- 802.3af and 802.3at Power Over Ethernet support¹

High Bandwidth Physical/Virtual Stacking²

- 2 x10 Gigabit stacking ports per switch
- Up to 40 Gbps Full-Duplex Stacking Bandwidth
- Up to 6 units (288 Gigabit ports) per stack
- Linear or Fault Tolerant Ring Stacking Topology
- Virtual Stacking of up to 32 units
- Embedded D-Link SIM for integration of all the switches

Reliability

- Redundant Power Supply (RPS) support
- 802.1D/802.1w/802.1s Spanning Tree
- Loopback Detection (LBD)
- Ethernet Ring Protection Switching (ERPS)

Security

- Access Control List (ACL)
- IP-MAC-Port Binding (IMPB)
- D-Link Safeguard Engine
- DHCP Server Screening
- BPDU Attack Protection
- ARP Spoofing Prevention

Triple Play

- IGMP/MLD Snooping
- IGMP Snooping Layer (ISM) VLAN
- Port/Flow- based bandwidth control
- Granular Bandwidth Control Down to 64Kbps

The DGS-1510 Series are enhanced L2 access stackable switches designed to connect end-users in a secure business network. These switches support physical stacking², Layer and enhanced security, making them an ideal Gigabit access layer solution. The DGS-1510-24TC/48TC provides 20 or 44 10/100/1000 Mbps Gigabit Ethernet ports and 4 combo 1000BASE-T/SFP Gigabit Ethernet ports. The DGS-1510-24PC/48PC provides 24 or 48 10/100/1000 Mbps PoE Gigabit Ethernet ports and 4 combo 1000BASE-T/SFP Gigabit Ethernet ports. The DGS-1510-24SC provides 16 SFP Gigabit Ethernet ports and 8 combo 1000BASE-T/SFP Gigabit ports. Each 10/100/1000 Mbps port of DGS-1510-24PC/48PC supports 802.3af and 802.3at Power over Ethernet standard. The default power budget is 370 Watts and can be expanded to 740 Watts with the DPS-700 RPS. The switches are also equipped with an SD Card slot³, allowing the user to boot images and upload configuration files directly from an SD Card³. Furthermore, syslog files can also be conveniently saved to a card.

Standard and Enhanced Images

The DGS-1510 Series is embedded with two different software images - Standard Image (SI) and Enhanced Image (EI). The Standard Image provides sophisticated features for businesses. It includes advanced Quality of Service (QoS), traffic shaping, L2 Layering and robust security features. The Enhanced Image supports ERPS, Double VLAN (Q-in-Q), Ethernet OAM, Static Route, IMPB, sFlow, IPv4 features which are suitable for the next generation IPv4 networks or triple play applications in Metro Ethernet.

Enhanced Network Reliability

The DGS-1510 Series targets businesses and customers who require a high level of network security and maximum uptime. All the models in DGS-1510 Series support an external redundant power supply so that continued operation can be assured.

They also include other features, such as 802.1D Spanning Tree (STP), 802.1w Rapid Spanning Tree (RSTP) and 802.1s Multiple Spanning Tree (MSTP), Loopback Detection (LBD), and Broadcast Storm Control, that enhance network resilience. The G.8032 Ethernet Ring Protection Switching (ERPS) function minimises the recovery time to 50 ms. For load sharing and redundancy backup in switch cascading/server attachment configuration, the DGS-1510 Series provides dynamic 802.3ad Link Aggregation Port Trunking.

Comprehensive Security

The DGS-1510 Series provides users with the latest security features such as Multi-layer and Packet Content Access Control Lists (ACL), Storm Control, and IP-MAC-Port Binding (IMPB) with DHCP Snooping. The IP-MAC-Port Binding feature allows administrators to bind a source IP address with an associated MAC and also define the port number to enhance user access control. With the DHCP Snooping feature, the switch automatically learns IP/MAC pairs by snooping DHCP packets and saving them to the IMPB white list. In addition, the D-Link Safeguard Engine™ identifies and prioritises “CPU interested” packets to prevent malicious traffic from interrupting normal network flows, and to protect switch operation.

Identity Driven Network Policies

The DGS-1510 Series supports authentication mechanisms such as 802.1X, Web-based Access Control (WAC), and MAC-based Access Control (MAC) for strict access control and easy deployment. After authentication, individual policies such as VLAN membership, QoS policies, and ACL rules can be assigned to each host. In addition, the switch also supports Microsoft® NAP (Network Access Protection). NAP is a policy enforcement technology that allows customers to protect network assets from unhealthy computers by enforcing compliance with network health policies.

² Stacking cables not included. Purchase separately, DEM-CB50 and DEM-CB100.
³ SD Card not included. Purchase separately.

DGS-1510 Series



If the worst should happen to your network you need the very best support and fast. Downtime costs your business money. D-Link Assist maximises your uptime by solving technical problems quickly and effectively. Our highly-trained technicians are on standby around the clock, ensuring that award-winning support is only a phone call away.

With a choice of three affordable service offerings covering all D-Link business products, you can select the package that suits you best:

D-Link Assist Gold - for comprehensive 24-hour support

D-Link Assist Gold is perfect for mission-critical environments where maximum uptime is a high priority. It guarantees four hour around-the-clock response. Cover applies 24/7 for every day of the year including holidays.

D-Link Assist Silver - for prompt same-day assistance

D-Link Assist Silver is designed for 'high availability' businesses that require rapid response within regular working hours. It provides a four hour response service Monday to Friday from 8am to 5pm, excluding holidays.

D-Link Assist Bronze - for guaranteed response on the next business day

D-Link Assist Bronze is a highly cost-effective support solution for less critical environments. Response is guaranteed within eight business hours Monday to Friday from 8am to 5pm, excluding holidays.

D-Link Assist can be purchased together with any D-Link business product. So whether you're buying switching, wireless, storage, security or IP Surveillance equipment from D-Link, your peace of mind is guaranteed. D-Link Assist also offers installation and configuration services to get your new hardware working quickly and correctly.

Traffic for Triple Play

The DGS-1510 Series implements a rich set of multilayer QoS/CoS features to ensure that critical network services like VoIP, video conference, IPTV and IP Surveillance are served with high priority. The Traffic Shaping features guarantee bandwidth of these services when the network is busy. With L2 Layer support, the DGS-1510 Series shows its ability to handle growing IPTV applications. Host-based IGMP/MLD Snooping allows multiple Layer subscribers per physical interface and ISM VLAN sends Layer streams in a Layer VLAN to save bandwidth and to provide better security to the backbone network. The ISM VLAN profiles allow system administrators to bind/replace the pre-defined Layer registration information to subscriber ports quickly and easily.

Proactive, Effective Network

To uphold business customers' Service Level Agreements (SLA), service providers must reduce the Mean Time to Repair (MTTR) and increase service availability. Ethernet OAM features address these challenges and enable service providers to offer carrier-grade services. The DGS-1510 Series supports industry-standard OAM tools, including IEEE 802.3ah, IEEE802.1ag, and ITU-T Y.1731. Connectivity Fault (CFM) provides tools to monitor and troubleshoot end-to-end Ethernet networks, allowing service providers to check connectivity, isolate network issues, and identify customers affected by network issues.

IPv4 Technology

The DGS-1510 Series is fully compliant with the future IPv4 networks. It supports remote IPv4 manageability from telnet, HTTP, or SNMP. To create secure IPv4 networks, the DGS-1510

Series uses IPv4 ACL, DHCPv6 Snooping and Neighbour Discovery (ND) Snooping functions to protect the network from illegal IPv4 clients. The DGS-1510 Series has been certified with IPv4 Ready Logo Phase 2 from the IPv4 forum, a worldwide IPv4 advocacy consortium. The IPv4 Ready Logo Program provides conformance and interoperability of IPv4 products.

Speed Up

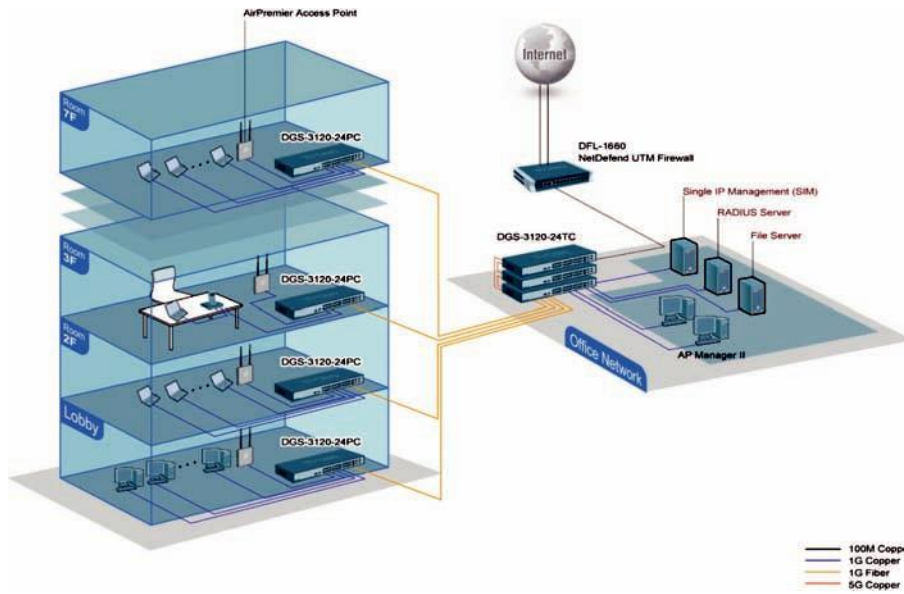
D-Link's Single IP (SIM) simplifies and speeds up tasks, allowing multiple switches to be configured from any workstation running a web browser through one unique IP address. This virtual stack is unmanaged as a single object, having all units maintained by one IP address. The DGS-1510 Series also supports standard-based management protocols such as SNMP, RMON, Telnet, Console, Web-based GUI and SSH/SSL security authentication.

D-Link Green Technology

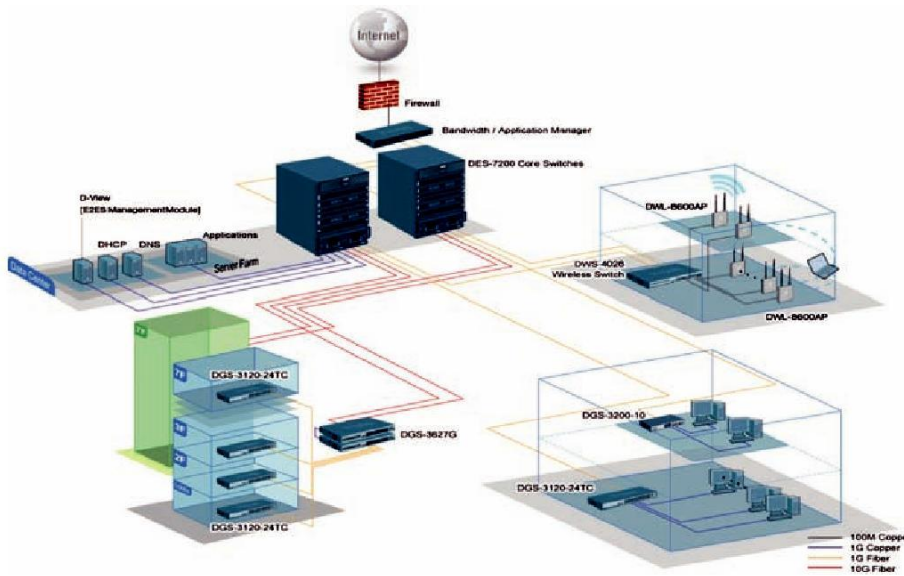
D-Link is striving to take the lead in developing innovative and power-saving technology that does not sacrifice functionality. The DGS-1510 Series implements the D-Link Green Technology, which includes a power saving mode, smart fan, reduced heat dissipation, and cable length detection. The power saving feature automatically powers down ports that have no link or link partner. The Smart Fan feature allows for the built-in fans to automatically turn on at a certain temperature, providing continuous, reliable and eco-friendly operation of the switch.

DGS-1510 Series

Deploying the DGS-1510 Series in a small to medium sized network



Deploying the DGS-1510 Series in an enterprise network



DGS-1510 Series

Technical Specifications

		DGS-1510-08	DGS-1510-16	DGS-1510-28	DGS-1510-48	DGS-1510-48B
General	Interface	20 10/100/1000BASE-T 4 Combo 10/100/1000BASE-T/SFP	44 10/100/1000BASE-T 4 Combo 10/100/1000BASE-T/SFP	28 10/100/1000BASE-T 4 Combo 10/100/1000BASE-T/SFP	44 10/100/1000BASE-T 4 Combo 10/100/1000BASE-T/SFP	16 SFP 8 Combo 10/100/1000Base-T/SFP
	Optional Redundant Power Supply	DPS-200	DPS-500/DPS-500DC	DPS-700	DPS-700	DPS-200
	Console Port	RJ-45				
	Stacking Port ⁵	2				
	SD Card Slot ⁶	1				
Performance	Switching Capacity	88 Gbps	136 Gbps	89 Gbps	136 Gps	88 Gps
	64-Byte Packet Forwarding Rate	65.48 Mpps	101.19 Mpps	65.48 Mpps	101.19 Mbps	65.48 Mbps
	Packet Buffer Memory	2 MB				
	Flash Memory	32 MB				
PoE	PoE Standard			802.3af and 802.3at	802.3af and 802.3at	
	PoE Power Budget			370 watts 740 watts (with DPS-700 RPS)	370 watts 740 watts (with DPS-700 RPS)	
MTBF (Hours)	TBD	TBD	TBD	TBD	TBD	
Acoustics	Max: 49.8 db; Min: 37.7 db	Max: 44.6 db; Min: 36.4 db	TBD	TBD	TBD	
Heat Dissipation	138.105 BTU/h	228.811 BTU/h	1646.007 BTU/h (with 370W PoE load) 3188.691 BTU/h (with 740W PoE load)	1761.265 BTU/h (with 370 W PoE load) 3310.428 BTU/h (with 740W PoE load)	116.281 BTU/h	
Power Input	100 to 240 VAC, 50 to 60 Hz Internal Universal Power Supply					
Max Power Consumption	40.5 Watts	67.1 Watts	482.7 Watts (with 370W PoE load); 935.1 Watts (with 740W PoE load)	516.5 Watts (with 370W PoE load) 970.8 Watts (with 740W PoE load)	34.1 Watts	
Dimensions (W x D x H)	440 x 210 x 44 mm	440 x 310 x 44 mm	440 x 310 x 44 mm	440 x 380 x 44mm	440 x 210 x 44mm	
Weight	2559 g	TBD	TBD	TBD	TBD	
Ventilation	Smart Fan ⁴ (> 40° C: High Speed; < 35° C: Low Speed)					
Operating Temperature	0 to 50 °C					
Storage Temperature	-40 to 70 °C					
Operating Humidity	10% to 90% RH					
Storage Humidity	5% to 90% RH					
Emission (EMI)	FCC Class A, CE Class A, VCCI Class A, IC, C-Tick					
Safety	CB, cUL, LVD					
Certification	Ready Logo Phase 2					

⁴By default, the fan speed is low. When over 40 °C, the fan switches to high speed and remains high until the temperature is down to 35 °C.

⁵Stacking cables not included. Purchase separately, DEM-CB50 and DEM-CB100.

⁶SD Card not included. Purchase separately.

DGS-1510 Series

Software Features

Standard Image (SI) Features

Stackability⁷

- Physical Stacking
 - Up to 40G Stacking Bandwidth
 - Up to 6 units per Stack
- Virtual Stacking
 - D-Link Single IP (SIM)
 - Up to 32 units per Virtual Stack

L2 Features

- MAC Address Table: 16K
- Flow Control
 - 802.3x Flow Control
 - HOL Blocking Prevention
- Jumbo Frame up to 13K Bytes
- Spanning Tree Protocols
 - 802.1D STP
 - 802.1w RSTP
 - 802.1s MSTP
 - BPDU Filtering
 - Root Restriction
- Loopback Detection
- 802.3ad Link Aggregation
 - Max. 32 groups per device/ 8 Gigabit ports per group
- Port Mirroring
 - One-to-One
 - Many-to-One
 - Flow-based
 - RSPAN Mirroring

L2 Layering

- IGMP Snooping
 - IGMP v1/v2/v3 Snooping
 - Supports 1024 IGMP groups
 - Port/Host-based IGMP Snooping Fast Leave

Limited IP Layer

- Up to 24 IGMP filtering profiles, 32 ranges per profile
- MLD Snooping
 - MLD v1/v2 Snooping
 - Support 1024 MLD Groups
 - Host-based MLD Snooping Fast Leave

VLAN

- VLAN Group
 - Max. 4K VLAN Groups
- GVRP
 - Max. 255 Dynamic VLAN Groups
- 802.1Q Tagged VLAN
- Port-based VLAN
- 802.1v Protocol VLAN
- Voice VLAN
- MAC-based VLAN
- ISM VLANAsymmetric VLAN
- Private VLAN
- VLAN Trunking

QoS (Quality of Service)

- 802.1p
- 8 queues per port
- Queue Handling
 - Strict Priority
 - Weighted Round Robin (WRR)
 - Strict + WRR
- CoS based on
 - Switch Port
 - VLAN ID
 - 802.1p Priority Queues
 - MAC Address
 - IPv4 Address
 - DSCP
 - Protocol Type
 - TCP/UDP Port
 - User-Defined Packet Content
 - IPv4 Address
 - IPv4 Traffic Class
 - IPv4 Flow Label
- Supports following actions for flows Remark
 - 802.1p Priority Tag
 - Remark TOS/DSCP Tag
 - Bandwidth Control
- Bandwidth Control
 - Port-based (Ingress/Egress, Min. Granularity 64 Kbps)
 - Flow-based (Ingress/Egress, Min. Granularity 64 Kbps)

Access Control List (ACL)

- Supports up to 1.5K Ingress access rules
- ACL based on
 - 802.1p Priority
 - VLAN ID
 - MAC Address
 - Ether Type
 - IPv4 Address
 - DSCP
 - Protocol Type
 - TCP/UDP Port Number
 - User-Defined Packet Content
 - IPv4 Address
 - IPv4 Flow Label
 - IPv4 Traffic Class
- Time-based ACL
- CPU Interface Filtering

Security

- SSH v2
- SSL v1/v2/v3
- Port Security
 - Up to 64 MAC addresses per port/VLAN
- Broadcast/Layer/Unicast Storm Control
- Traffic Segmentation
- D-Link Safeguard Engine™
- NetBIOS/Net
- BEUI Filtering
- DHCP Server Screening
- ARP Spoofing Prevention
- BPDU Attack Protection

AAA

- 802.1X:
 - Port-based Access Control
 - Host-based Access Control
 - Identity-driven Policy (VLAN, ACL or QoS Assignment)
 - Authentication Database Failover
- Web-based Access Control (WAC):
 - Port-based Access Control
 - Host-based Access Control
 - Identity-driven Policy (VLAN, ACL or QoS Assignment)
 - Authentication Database Failover
- MAC-based Access Control (MAC):
 - Port-based Access Control
 - Host-based Access Control
 - Identity-driven Policy (VLAN, ACL or QoS) Assignment
 - Authentication Database Failover
- Japan Web-based Access Control (Host-based JWAC)⁸
- Guest VLAN
- Microsoft® NAP
 - Support 802.1X NAP
 - Support DHCP NAP
- RADIUS Accounting
- RADIUS and TACACS authentication for switch access
- 4 Level User Account

D-Link Green Features

- Compliant with RoHS
- Power Saving by Link Status
- Power Saving by Cable Length
- Time-based PoE⁹

Operation, Administration (OAM)

- Cable Diagnostics

Interface

- Web-based GUI (Supports IPv4)
- Command Line Interface (CLI)
- Telnet Server(Supports IPv4)
- Telnet Client(Supports IPv4)
- TFTP Client(Supports IPv4)ZModem
- SNMP v1/v2c/v3
- SNMP Traps
- System Log (Supports IPv4 Log Server)
- RMON v1:
 - Supports 1,2,3,9 groups
- RMON v2:
 - Supports Probe
- Config groupLLDP
- BootP/DHCP Client
- DHCP Auto-Configuration
- DHCP RelayDHCP Relay Option 12
- DHCP Relay Option 82
- Flash File System
- Multiple Images
- Multiple ConCPU Monitoring
- Debug Command

⁷ Stacking cables not included. Purchase separately, DEM-CB50 and DEM-CB100.

⁸ Supported from firmware R2.0 SI and above.

⁹ Supported in DGS-1510-24PC and DGS-1510-48PC only.

DGS-1510 Series

Software Features

- Password Recovery
- Password Encryption
- Trusted Host
- Microsoft NLB (Network Load Balancing) Support

MIB

- RFC 1213 MIB II
- RFC 4188 Bridge MIB
- RFC 1157, 2571-2576 SNMP MIB
- RFC 1907 SNMPv2 MIB
- RFC 1757, 2819 RMON MIB
- RFC 2021 RMONv2 MIB
- RFC 1398, 1643, 1650, 2358, 2665 Ether-like MIB
- RFC 2674 802.1p MIB
- RFC 2233, 2863 IF MIB
- RFC 2618 RADIUS Authentication Client MIB
- RFC 2620 RADIUS Accounting Client MIB
- RFC 2925 PING & TRACEROUTE MIB
- RFC 2674, 4363 802.1p MIB
- RFC 1215 MIB Traps Convention

RFC Standard Compliance

- RFC 768 UDP
- RFC 791 IP
- RFC 792, 2463, 4443 ICMP
- RFC 793 TCPRFC 826 ARP
- RFC 3513, 4291, IPv4 Addressing Architecture
- RFC 2893, 4213 IPv4/IPv4 dual stack function
- RFC 2463, 4443 ICMPv6
- RFC 2462, 4862 IPv4 Stateless Address Auto Configuration
- RFC 2464 IPv4 Ethernet and definition

- RFC 1981 Path MTU Discovery for IPv4
- RFC 2460 IPv4
- RFC 2461, 4861 Neighbor Discovery for IPv4
- RFC 783 TFTP RFC 854 Telnet
- RFC 951, 1542 BootP
- RFC 2068 HTTP
- RFC 1492 TACACS
- RFC 2866 RADIUS Accounting
- RFC 2474, 3260 DiffServ
- RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)
- RFC 2571, 2572, 2573, 2574, SNMP
- IPv4 Ready Logo Phase 2

Enhanced Image (EI) Features

L2 Features

- Ethernet Ring Protection Switching (ERPS)

VLAN

- Double VLAN (Q-in-Q)
 - Port-based Q-in-Q

- ARP Packet Inspection
- IP Packet Inspection
- DHCP Snooping
- IPv4 ND Snooping
- Support up to 510 Address Binding Entries per Device

AAA

- Compound Authentication

Operation, Administration & (OAM)

- 802.3ah Ethernet Link OAM
- 802.3ah D-Link Extension: D-link Unidirectional Link Detection (DULD)¹⁰
- 802.1ag Connectivity Fault (CFM)
- ITU-T Y.1731¹⁰

Interface

- SNMP v1/v2c/v3 - SNMP over IPv4
- sFlow
- ICMPv6
- Web-based GUI (Supports IPv4)
- Telnet Server(Supports IPv4)¹⁰
- Telnet Client(Supports IPv4)¹⁰
- TFTP Client(Supports IPv4)¹⁰

For further information: www.dlink.eu

¹⁰ Supported from firmware R2.0 SI and above.



