D-Link
Building Networks for People

Product Highlights

High Availability and Easy Maintenance

Make maintenance easier and minimize downtime with easy to access connections, a compact form factor, modular fan & filter, and dual power design

Flexibility

Flexible deployment options with 12 combination Gigabit copper/SFP interfaces and AC or DC power input

Outstanding Triple Play Support

Comprehensive IPTV and QoS features help provide ISP better return on investment per fixed line.

DGS-3710-12C

L2 Managed Gigabit Ethernet Switch

Features

Reliability

- AC/DC dual power support
- Loopback Detection (LBD)
- Ethernet Ring Protection Switching (ERPS)

Security

- IP-MAC-Port Binding (IMPB)
- DHCP Server Screening
- BPDU Attack Protection
- ARP Spoofing Prevention

AAA

- 802.1X, WAC, MAC
- Compound Authentication
- Identity-driven Policies
- RADIUS Accounting

Triple Play

- IGMP/MLD Snooping
- IGMP Snooping Multicast (ISM)
- Three Color Marker

OAM

- 802.3ah Link OAM
- 802.1ag, ITU-T Y.1731 Service OAM
- sFlow

The DGS-3710-12C is D-Link's next generation high-end multiservice Layer 2 switch. The DGS-3710-12C provides 12 combination 1000Base-T/SFP Gigabit Ethernet ports enabling flexible, high speed connections to metro Ethernet access infrastructure. High-density SFP ports built into the DGS-3710-12C allow users to insert different SFP transceivers providing the necessary fiber connections for creating Metropolitan Area Networks (MAN) infrastructure.

Service Provider-Friendly Hardware

The D-Link DGS-3710-12C is designed to be deployed in compact and outdoor Telecom/Network Carriers cabinets. It has a compact 1U rack enclosure form factor with an operating temperature of up to 65˚C. To simplify field installation, and reduce troubleshooting and maintenance, it has all of its access connections located on the front panel. The modular fan and dust filter allows engineers to replace fans and clean the device without having to remove it from the rack or outdoor cabinet. The DGS-3710-12C has all of the features which make network maintenance easier, meaning that the downtime of mission critical services will also be minimized.

Enhanced Network Reliability

The DGS-3710-12C is designed for those who require both a high level of network security and maximum uptime. It supports AC/DC dual power failover, allowing for continued operation regardless of a single power source failure. Other features include 802.1D Spanning Tree (STP), 802.1w Rapid Spanning Tree (RSTP) as well as 802.1s Multiple Spanning Tree (MSTP), Loopback Detection (LBD), and Broadcast Storm Control, which enhance network resilience. The G.8032 Ethernet Ring Protection Switching (ERPS) function minimizes the recovery time to 50ms. For load sharing and redundancy backup in switch cascading/server attachment configuration, the DGS-3710-12C provides dynamic 802.3ad Link Aggregation Port Trunking.

DGS-3710-12C L2 Managed Gigabit Ethernet Switch

Comprehensive Security

Security features such as Multi-layer and Packet Content Access Control Lists (ACL), Storm Control, and IP-MAC-Port Binding with DHCP Snooping, create a comprehensive enterprise ready security suite. 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 prioritizes packets handled by the switch CPU to prevent malicious traffic from interrupting normal network flows and protects switch operation.

Identity Driven Network Policies

Authentication mechanisms such as 802.1X, Web-Based Access Control (WAC), MAC-Based Access Control (MAC), or a combination; provide extra flexibility for client identity control. After authentication, DGS-3710-12C can assign an individual policy for each host such as VLAN membership, QoS policies, and ACL rules. In addition, the Microsoft® NAP feature monitors and controls the health of connected clients continuously. With these advanced client authentication and authorization functions, the DGS-3710-12C reduces the risk of malicious attacks inside the network.

Traffic Management for Triple Play

The DGS-3710-12C implements a rich set of multilayer QoS/CoS features to ensure that critical network services like VoIP, video conferencing, IPTV and IP surveillance are prioritized. The Three Color Marker and Traffic Shaping features guarantee bandwidth for critical services even when the network is under heavy load. With strong L2/L3 Multicast support, the DGS-3710-12C is more than capable at handling the growing number of IPTV applications. The host-based IGMP/MLD Snooping feature allows multiple multicast subscribers per physical interface. ISM VLAN sends multicast streams in a multicast VLAN to save bandwidth and provides better security to the backbone network. The ISM VLAN Profiles features allow administrators to bind and replace pre-defined multicast registration information for subscriber ports easily and quickly.

Proactive, Effective Network Management

In order to uphold enterprise customers' Service Level Agreement (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-3710-12C supports industry-standard OAM tools including IEEE 802.3ah, IEEE802.1ag, and ITU-T Y.1731 Connectivity Fault Management. By providing the 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, the DGS-3710-12C proves itself an efficient solution.

Inter-operating with IPv4 and IPv6

The DGS-3710-12C is fully compliant with the future IPv6 networks and supports remote IPv6 manageability from telnet, HTTP, or SNMP. It also supports the IPv6 static routing function that allows the inter VLAN connections to offload the tasks of L3 switches. For the security of next-generation IPv6 networks, DGS-3710-12C enables IPv6 ACL, and IPv6 RADIUS functions to help protect the network from unwanted IPv6 clients.

Connect to a Telecom Backbone

The DGS-3710-12C is also built to function as a telecom access switch. It supports many advanced features such as VLAN translation and Selective QinQ that allows for L2 VPN tunnels through the telecom MPLS backbone.

Technical Specifications	
Interfaces	
Combo 1000Base-T/SFP Ports	• 12
RS-232 Console Port	• 1
RJ-45 OOB Management Port	• 1
Performance	
Switching Capacity	• 24 Gbps
Packet Performance Rate	• 17.86 Mpps
CPU	• 266 MHz
Packet Buffer	• 1 MB
Flash Memory	• 32 MB
DRAM	• 128 MB
Power	
Internal Power Supply	• AC Power: 90 to 264 V AC, 47/63 Hz • DC Power: -36 to -72 V DC

DGS-3710-12C L2 Managed Gigabit Ethernet Switch

Physical	
Dimensions	• 441x210x44 mm (17.36x8.26x1.73 inches)
Weight	• 3.4 kg (7.49 lbs)
Operating Temperature	• 0 to 65 ˚C (32 to 149 °F)
Storage Temperature	• -40 to 70 ˚C (-40 to 158 °F)
Operating Humidity	• 10% to 90% RH
Storage Humidity	• 5% to 90% RH
Emission (EMI)	• FCC Class A, CE, C-Tick, VCCI
Safety	• CB, cUL
Maximum Power Consumption	• 28 Watts, 110 V AC • 27 Watts, 48 V DC
Certification	• IPv6 Ready Logo Phase 2 • MEF 9&14 EPL, EVPL, ELAN

Software Features			

Stackability	• Virtual Stacking
	  • D-Link Single IP Management (SIM)
	  • Up to 32 units per Virtual Stack		

L2 Features	• MAC Address Table: 16K entries
	• Flow Control
	  • 802.3x Flow Control
	  • HOL Blocking Prevention
	• Jumbo Frames up to 13 Kbytes
	• 802.3ad Link Aggregation
	  • Max. 6 groups per device, 8 ports per group
		• Spanning Tree Protocols
		  • 802.1D STP
		  • 802.1w RSTP
		  • 802.1s MSTP
		  • BPDU Filtering
		  • Root Restriction
		• Loopback Detection
		• L2 Protocol Tunneling
			• Port Mirroring
			  • One-to-One
			  • Many-to-One
			  • Flow-based
			  • RSPAN Mirroring
			• Ethernet Ring Protection Switching (ERPS)

L2 Multicasting	• IGMP Snooping
	  • IGMP v1/v2/v3 Snooping
	  • Supports 1024 IGMP groups
	  • Port/Host-based IGMP Snooping Fast Leave
		• MLD Snooping
		  • MLD v1/v2 Snooping
		  • Support 1024 MLD Groups
		  • Host-based MLD Snooping Fast Leave
			• IGMP/MLD Proxy Reporting
			• IGMP Filtering
			  • Up to 60 IGMP filtering profiles, 128 ranges per profile

VLAN	• VLAN Group
	  • Max. 4K VLAN Groups
	• GVRP
	  • Max. 255 Dynamic VLAN Groups
	• 802.1Q Tagged VLAN
	• Port-based VLAN
	• 802.1v Protocol VLAN
		• Double VLAN (Q-in-Q)
		  • Port-based Q-in-Q
		  • Selective Q-in-Q
		• VLAN Translation for single/double tagged packets
		• Voice VLAN
		• MAC-based VLAN
			• Subnet-based VLAN
			• ISM VLAN
			• Asymmetric VLAN
			• Private VLAN
			• VLAN Trunking

L3 Features	• Max. 32 IPv4/v6 Interfaces	• IPv6 Neighbor Discovery (ND)	
L3 Routing	• 32 IPv4/v6 static route entries		

QoS (Quality of Service)	• IEEE 802.1p
	• DSCP
	• 8 queues per port
	• Queue Handling
	  • Strict Priority
	  • Weighted Round Robin (WRR)
	  • Strict + WRR
	• Supports following actions for flows
	  • Remark 802.1p Priority Tag
	  • Remark TOS/DSCP Tag
	  • Bandwidth Control
	  • Flow Statistics
		• CoS based on
		  • Switch Port
		  • VLAN ID
		  • 802.1p Priority Queues
		  • MAC Address
		  • IPv4/v6 Address
		  • DSCP
		  • Protocol Type
		  • IPv6 Traffic Class
		  • IPv6 Flow Label
		  • TCP/UDP Port
		  • User-Defined Packet Content
			• Three Color Marker
			  • trTCM
			  • srTCM
			• Bandwidth Control
			  • Port-based (Ingress/Egress, Min. Granularity 64 Kbps)
			  • Flow-based (Ingress/Egress, Min. Granularity 64 Kbps)
			  • Per egress queue bandwidth control (Min. Granularity 64Kbps)
			• Time-based QoS

D-Link
Building Networks for People

DGS-3710-12C L2 Managed Gigabit Ethernet Switch

Operation, Administration & Management (OAM)	• D-link Unidirectional Link Detection (DULD) • Broadcast/Multicast/Unicast Storm Control	• Dying Gasp • Loopback Diagnostics • Cable Diagnostics • 802.3ah Ethernet Link OAM	• 802.1ag Connectivity Fault Management (CFM) • ITU-T Y.1731

Access Control List (ACL)	• ACL based on
	  • 802.1p Priority
	  • VLAN ID
	  • MAC Address
	  • Ether Type
	  • IPv4/v6 Address
		• DSCP
		• Protocol Type
		• TCP/UDP Port Number
		• IPv6 Flow Label
		• IPv6 Traffic Class
		• User-Defined Packet Content
			• Supports up to 1.5K Ingress access rules
			• ACL Statistics
			• Time-based ACL
			• CPU Interface Filtering

Security	• IP-MAC-Port Binding
	  • ARP Packet Inspection
	  • IP Packet Inspection
	  • DHCP Snooping
	  • IPv6 ND Snooping
	  • Support up to 500 address binding entries per device
		• SSH v2
		• SSL v3
		• Port Security
		• Broadcast/Multicast/Unicast Storm Control
		• Traffic Segmentation
		• D-Link Safeguard Engine
			• NetBIOS/NetBEUI 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
	• RADIUS
	• TACACS
	• XTACACS
	• TACACS+
	• RADIUS Accounting
		• MAC-based Access Control (MAC):
		  • Port-based Access Control
		  • Host-based Access Control
		  • Identity-driven Policy (VLAN, ACL or QoS) Assignment
		  • Authentication Database Failover
		• Compound Authentication
		• Guest VLAN
		• Microsoft® NAP
		  • Support 802.1X NAP
			• Web-based Access Control (WAC):
			  • Port-based Access Control
			  • Host-based Access Control
			  • Identity-driven Policy (VLAN, ACL or QoS) Assignment
			  • Authentication Database Failover
			• 3 Level User Account
			• Trusted Host

Green Features	• Support Power Saving function on Gigabit ports	• Power Saving by Link Status	• IEEE 802.3az Energy Efficient Ethernet (EEE)

Management	• Web-based GUI (Support IPv4/v6)
	• Command Line Interface (CLI)
	• Telnet Server (Support IPv4/v6)
	• Telnet Client (Support IPv4/v6)
	• TFTP Client (Support IPv4/v6)
	• ZModem
	• SNMP v1/v2c/v3 SNMP over IPv6
	• SNMP Traps
	• System Log
	• RMON v1:
	  • Supports 1,2,3,9 groups
		• RMON v2:
		  • Supports ProbeConfig group
		• sFlow
		• LLDP
		• BootP/DHCP Client
		• DHCP Auto-Configuration
		• DHCP Relay (Support IPv4/v6)
		• DHCP Relay Option 60, 61, 82
		• DHCP Server
		• Dual Image
		• Dual Configuration
			• CPU Monitoring
			• DNS Relay
			• SNTP
			• Password Recovery
			• Password Encryption
			• Microsoft® NLB (Network Load Balancing) Support
			• Ping (Support IPv4/v6)
			• Traceroute (Support IPv4/v6)

MIB	• RFC1065, 1066, 1155, 1156, 2578 MIB Structure • RFC1212 Concise MIB Definitions • RFC1213 MIB II • RFC4022 MIB for TCP • RFC4113 MIB for UDP • RFC4293 IPv6 SNMP Mgmt Interface MIB • RFC1493 Bridge MIB • Link Aggregation LAG-MIB • RFC2571-2576 SNMPv3 MIB • RFC271,1757, 2819 RMON MIB	• RFC2021 RMONv2 MIB • RFC1398, 1643, 1650, 2358, 2665 Ether-like MIB • RFC2668, 4836 802.3 MAU MIB • RFC2674, 4363 Q-Bridge / P-Bridge MIB • RFC4318 RSTP MIB • RFC2233, 2863 Interface Group MIB • IEEE8021 PAE MIB • RFC2618 RADIUS Authentication Client MIB	• RFC2620 RADIUS Accounting Client MIB • RFC2925 Ping & Traceroute MIB • LLDP MIB • LLDP-EXT-DOT1 MIB • LLDP-EXT-DOT3 MIB • LLDP-EXT-MED MIB • DOT3 OAM MIB • IEEE8021 CFM MIB • D-Link Private MIBs
RFC Standard Compliance	• RFC768 UDP • RFC791 IP • RFC792 ICMPv4 • RFC2463, 4443 ICMPv6 • RFC4884 Extended ICMP to Support Multi-Part Messages • RFC793 TCP • RFC826 ARP • RFC1981 Path MTU Discovery for IPv6	• RFC2461, 4861 Neighbor Discovery for IPv6 • RFC2462, 4862 IPv6 Stateless Address Auto-configuration • RFC2464 IPv6 over Ethernet and definition • RFC3513, 4291 IPv6 Addressing Architecture	• RFC2460 IPv6 • RFC2893, 4213 IPv4/IPv6 dual stack function • RFC2474, 3168, 3260 IPv6 Differentiated Services field • IPv6 Ready Logo phase 2 router mode • MEF 9&14 EPL, EVPL, ELAN

DGS-3710-12C L2 Managed Gigabit Ethernet Switch

Order Information	
DGS-3710-12C	12 combo 10/100/1000/ SFP ports. One Fan module and one dust filter module embedded.
Optional Accessories	
DGS-3710-FAN	Replaceable Fan Tray for DGS-3710-12C
DGS-3710-AF	Modular air filtration for DGS-3710-12C
Optional SFP Transceivers	
DEM-310GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3V operating voltage
DEM-311GT	SFP transceiver, 1000BASE-SX standard, multi-mode fiber, max. distance 550m, 3.3V operating voltage
DEM-312GT2	SFP transceiver 1000BASE-SX standard, multi-mode fiber, max. distance 2km, 3.3V operating voltage
DEM-314GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 50km, 3.3V operating voltage
DEM-315GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 80km, 3.3V operating voltage
DEM-211	SFP transceiver, 100BASE-FX standard, up to 2 km multi-mode fiber cable distance, 3.3V operating voltage
DEM-210	SFP transceiver, 100BASE-FX standard, up to 15 km single-mode fiber Cable distance, 3.3V operating voltage
Optional WDM SFP Transceivers	
DEM-330T	WDM SFP transceiver, 1000BASE-BX standard, single-mode fiber, max. distance 10 km, 3.3V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm
DEM-330R	WDM SFP transceiver, 1000BASE-BX standard, single-mode fiber, max. distance 10 km, 3.3V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm
DEM-331T	WDM SFP transceiver, 1000BASE-BX standard, single-mode fiber, max. distance 40 km, 3.3V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm
DEM-331R	WDM SFP transceiver 1000BASE-BX standard, single-mode fiber, max. distance 40 km, 3.3V operating voltage, Tx wavelength 1310 nm, Rx wavelength1550 nm
Optional Management Software	
DV-600S	D-View 6.0 Network Management Software Standard Edition
DV-600P	D-View 6.0 Network Management Software Professional Edition

Updated 2013/04/29

D-Link®
Building Networks for People