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Product Highlights

Multicast Capability

Comprehensive multicast functions enable various channel program designs for IPTV providers

Fully IPv6 Compatible

IPv6 compatibility ensures continued reliable usage by Internet Service Providers (ISPs) when migrating to next-generation IP networks

Gigabit Ethernet Connection

Gigabit Ethernet ensures that high-bandwidth demand can be fulfilled easily
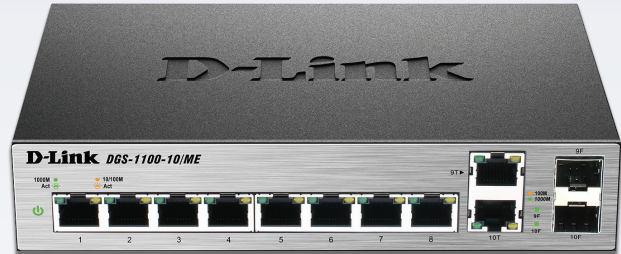
DGS-1100-10/ME

Managed L2 Metro Ethernet Switch

Features

Physical
- Eight 10/100/1000 Mbps Ports
- Two combo 100/1000 Mbps/SFP Ports
- Ethernet Port supports 6 kV Surge Protection

Multicasting Features
- IGMP Snooping/MLD Snooping
- IGMP Authentication
- Limited IP Multicast
- Multicast VLAN

Authentication Authorization and Accounting (AAA)
- Port/Host-based 802.1X Access Control
- RADIUS/Local Authentication Database

Operations, Administration and Management (OAM)
- Cable Diagnostics
- IEEE 802.3ah

Management Features
- SNMP v1/v2c/v3
- RMON v1
- Link Layer Discovery Protocol (LLDP)
- DHCP Auto Configuration
- Neighbor Discovering

D-Link's DGS-1100-10/ME Managed L2 Metro Ethernet Switch is a managed Gigabit Ethernet switch with eight 10/100/1000Base-T ports and two combo ports. It is designed to be used as a high-end residential switch or access layer switch in a Metro Ethernet. Targeted at IPTV applications, it provides complete multicast functions in a reliable hardware design. The Ethernet port can sustain 6 kV voltage surges so the device can be protected from being damaged by events such as lightning striking outdoor wires. The combo uplink port design makes it suitable for both ETTH or FTTB/FTTH application.

Multicast Capability

With the growing demands of IPTV usage, the DGS-1100-10/ME is ideal as it provides a variety of functions to enhance transmission quality and management efficiency, such as IGMP Snooping, Limited IP Multicast, ISM VLAN, and MLD Snooping for an IPv6 environment. In Limited IP Multicast, users can set Multicast Address profiles and associate them to a port or multiple ports, allowing the switch to permit or deny join requests sent by subscribers. The ability to set a profile eases the management effort required to add or delete subscribers from a channel package. ISM VLAN (IGMP Snooping Multicast VLAN) needs configuration on both the access switch and the uplink aggregation L3 switch, and the duplicated stream can be eliminated in the uplink when users in different VLANs are watching the same channel. While migrating to IPv6, MLD Snooping takes over and ensures that multicast quality stays high in the future when IPv6 becomes widely used.

Security

The DGS-1100-10/ME also enables security functions to keep the network devices in control. Through Static MAC, administrators can filter packets sent by non-registered devices. Port Security can limit the number of MAC addresses learned per port and prevent MAC address flooding attacks.

Strong Performance and Redundancy

As a metro access switch, the DGS-1100-10/ME is equipped with functions that help networks remain stable and easy to manage. Supporting Loopback Detection, it can easily prevent data loops from happening and minimize the risk of breaking down the network. The DGS-1100-10/ME also supports QoS (Quality of Service). Packets can be classified based on contents, and assigned to different queues. The prioritization mechanism helps users to differentiate traffic in terms of service packages and customer levels. The bandwidth control feature allows network administrators to define the ingress/egress throughput levels for each port with granularity down to 16 kpbs. The switch also supports the storm control feature which minimizes problems from excessive traffic within the network.

Authentication

The DGS-1100-10/ME supports port-based and host-based 802.1X access control with local server or RADIUS server. Administrators can also put unauthorized users into Guest VLAN and give them limited access rights.

Management

The switch features a variety of management tools and supports several communications standards. Configuration can be done through Telnet, SNMP, and HTTP. The graphical web user interface provides administrators a straightforward and convenient way to manage their networks. The Link Layer Discovery Protocol (LLDP) allows the switch to advertise its identity and capabilities on the local network and to detect neighboring devices, so that the devices can provide topology information to management software applications.

Troubleshooting

The DGS-1100-10/ME helps administrators do quick troubleshooting and diagnostics. The Cable Diagnostics function can detect the cable length of connected cables and display the cable status. This saves administrators a lot of inconvenience in looking for network problems and conducting repairs. The DGS-1100-10/ME also supports IEEE802.3ah, a data link layer protocol which provides network administrators the ability to monitor the health of the network and quickly determine the location of failing links or fault conditions on point-to-point and emulated point-to-point Ethernet links.

Technical Specifications

General

Number of Ports	• Eight 10/100/1000BASE-TX ports • 2 combo 100/1000Base-T/SFP ports
Standards	• IEEE 802.3 compliance • IEEE 802.3u compliance • IEEE 802.3ab compliance • IEEE 802.3x Flow Control • IEEE 802.3az compliance

Performance

Switching Capacity	• 20 Gbps
64-byte Maximum Forwarding Rate	• 14.88 Mbps (based on 64 Bytes)
MAC Address Table Size	• 8K Entries
DRAM for CPU	• 128 MB
Packet Buffer	• 4.1 Mbit
Flash Memory	• 16 MB
Jumbo Frame	• Up to 10 KBytes

LEDs

Power (per device)	✓
Link/Activity/Speed (per port)	✓

Power Consumption

Standby Mode	• 3.4 watts
Maximum	• 7.9 watts

Physical

Power Input	• External Power Adapter: 100 to 240 V AC, 50 to 60 Hz • Output: 12 V/1 A
Size	• 190 x 120 x 38 mm (7.48 x 4.72 x 1.50 inches)
MTBF	• 706,061 hours
Acoustics	• 0 dB
Heat Dissipation	• 26.97 BTU/hr
Weight	0.63 kg
Ventilation	Fanless
Operating Temperature	-5 to 50 °C (23 to 122 °F)
Storage Temperature	-40 to 70 °C (-40 to 158 °F)
Operating Humidity	10% to 90%
EMI	CE Class B, FCC Class B, VCCI, BSMI
Safety	CE LVD, UL/cUL, CB, BSMI

Software Features

L2 Features	• MAC Address Table: 8K
	• 802.3x Flow Control
	  • HOL Blocking Prevention
	• Loopback Detection
		• Port Mirroring
		  • Max 4 Mirror sessions
		  • One-to-One
		  • Many-to-One

L2 Multicasting	• IGMP Snooping
	  • IGMP Snooping v1/v2, v3 Awareness
	  • Supports 256 IGMP snooping groups
	    (shared with MLD Snooping)
	  • Host-based IGMP snooping Fast Leave
	• IGMP Authentication
		• MLD Snooping
		  • MLD Snooping v1, v2
		  • Supports 256 MLD snooping groups
		    (shared with IGMP Snooping)
		  • Host-based MLD Snooping Fast Leave
		• Limited IP Multicast

VLAN	• 802.1Q Tagged VLAN
	• VLAN Group
	  • Supports 32 static VLAN groups
	• Management VLAN
		• Port-based VLAN
		• ISM VLAN
		• Double VLAN (Q-in-Q)
		  • Port-based Q-in-Q

Quality of Service (QoS)	• 8 queues per port
	• Queue Handling
	  • Strict Priority
	  • Weighted Round Robin (WRR)
		• Bandwidth Control
		  • Port-based (Ingress/Egress, min. granularity 16 Kb/s)
		• CoS Based on:
		  • 802.1p
		  • DSCP

Security	• Port Security • Up to 64 MAC addresses per port • Traffic Segmentation	• Broadcast/Multicast/Unknown Unicast Storm Control • D-Link Safeguard Engine

AAA	• 802.1X
	  • Port-based Access Control
	  • Host-based Access Control
	• Supports Guest VLAN
		• Support Local/RADIUS Servers
		• Support RADIUS Accounting
		• 3 Levels of User Accounts

OAM	• Cable Diagnostics	• 802.3ah
Management	• Web-based GUI • Command Line Interface (CLI) • Telnet Server • TFTP Client • SNMP v1/v2c/v3 • SNMP Traps • System Log • RMON v1 • Support 1,2,3,9 Groups • LLDP	• DHCP Client • DHCP Auto-Configuration • DHCP Relay for IPv4/IPv6 • DHCP Relay Option 82 • DHCP Relay Option 37 • PPPoE Circult-ID Tag Insertion • SNTP • CPU Monitoring • Password Encryption

MIB	• RFC1213 MIB II • RFC1493 Bridge MIB • RFC1907 SNMPv2 MIB • RFC1398, 1643, 1650, 2358, 2665 Ether-like MIB	• RFC 2233, 2863 IF MIB • RFC 2618 RADIUS Authentication Client MIB • RFC2620 RADIUS Accounting Client MIB • Private MIB
IETF Standard	• RFC768 UDP • RFC791 IP • RFC792,2463, 4443 ICMPv4 • RFC793 TCP • RFC826 ARP • RFC 2474, 3260 Definition of the DS Field in the IPv4 and IPv6 Header	• RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP) • RFC2571, RFC2572, RFC2573, RFC2574 SNMP • RFC1981, RFC2460, RFC2461,4861, RFC2462,4862, RFC2464, RFC3513,4291, RFC2893,4213

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-LHX, single-mode, 50 km
DEM-315GT	1000BASE-ZX, single-mode, 80 km
DEM-210	100BASE-FX, single-mode, 15 km
DEM-211	100BASE-FX, multi-mode, 2 km
DEM-302S-LX	1000BASE-LX, Single-Mode, 2km
DGS-712	1000 BASE-T Copper SFP Transceiver

Optional WDM SFP Transceivers

DEM-330T	1000BASE-BX-D Single-Mode, 10KM(TX-1550/RX-1310 nm)
DEM-330R	1000BASE-BX-U Single-Mode, 10KM(TX-1310/RX-1550 nm)
DEM-331T	1000BASE-BX-D Single-Mode, 40KM(TX-1550/RX-1310 nm)
DEM-331R	1000BASE-BX-U Single-Mode, 40KM(TX-1310/RX-1550 nm)
DEM-220T	100BASE-BX-D Single-Mode, 20KM(TX-1550/RX-1310 nm)
DEM-220R	100BASE-BX-U Single-Mode, 20KM(TX-1310/RX-1550 nm)
DEM-302S-BXD	1000BASE-BX-D Single-Mode, 2KM(TX-1550/RX-1310 nm)
DEM-302S-BXU	1000BASE-BX-U Single-Mode, 2KM(TX-1310/RX-1550 nm)

Order Information

DGS-1100-10/ME	Managed L2 Metro Ethernet Switch

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