Product Highlights

Feature-Rich Software

An integrated software image provides powerful L2 features to fulfill different application requirements

Embedded 25G Ports

Four embedded high-speed 25G ports simplify the network deployment by providing versatile options for uplink connections

DXS-1250-28YP

10G Layer 2 Standard Smart Switch

Features

High Availability and Flexibility

- Variety of high-speed interface combinations to meet different network requirements
- Smart fan design
  - 5-speed smart fan design automatically adjusts according to device operating temperature
- IEEE 802.3bt PoE with up to 60 W per port output and 470 W total power budget

Reliability

- Ethernet Ring Protection Switching (ERPS)
- Embedded 6 kV surge protection on all Ethernet ports
- IEEE 802.1D/802.1w/802.1s Spanning Tree
- Loopback Detection (LBD)

L3 Features

- Static Route

The DXS-1250-28YP 10G Layer 2 Standard Smart Switch is designed for secure connectivity in an enterprise or metro Ethernet access network and supports both multicasting and enhanced security, making it an ideal 10G/multi-Gigabit access layer solution. The DXS-1250-28YP features 24 10G/multi-Gigabit 802.3bt 60W PoE++ ports and 4 10/25G SFP28 ports. The DXS-1250-28YP is equipped with 24 PoE ports, supporting 802.3af, 802.3at, and 802.3bt 60W PoE++ standards. It offers a default power budget of 470 watts. Additionally, the switch features four 10/25G SFP28 ports for enhanced speed and versatility.

Enhanced Network Reliability

The DXS-1250-28YP targets customers who require a high level of network security and maximum uptime. The DXS-1250-28YP incorporates essential reliability features to enhance network resilience, including 802.1D Spanning Tree (STP), 802.1w Rapid Spanning Tree (RSTP), 802.1s Multiple Spanning Tree (MSTP), Loopback Detection (LBD), and Broadcast Storm Control. G.8032 Ethernet Ring Protection Switching (ERPS) minimizes recovery time to 50 ms. For load sharing and redundancy backup in a switch cascading/server attachment configuration, the DXS-1250-28YP provides dynamic 802.3ad Link Aggregation Port Trunking.

Comprehensive Security

The DXS-1250-28YP 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 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.

Intelligent Fan Operation

The DXS-1250-28YP has built-in internal fans which can automatically start working to prevent the device from overheating. The fan speed will be gradually adjustedbetween 5 levels of cooling according to the operating temperature of the switch. Administrators can also configure the operation state of internal fans through Web UI or command line interface (CLI).

DXS-1250-28YP 10G Layer 2 Standard Smart Switch

Easy Access Control Policies

The DXS-1250-28YP 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.

Versatile Traffic Management

The DXS-1250-28YP implements a rich set of multi-layer QoS/CoS features to ensure that critical network services such as VoIP, video conferences, IPTV, and IP surveillance are always given high priority. Traffic Shaping features guarantee bandwidth for these services when the network is busy. L2 Multicast support enables the DXS-1250-28YP to handle growing IPTV applications.

6 kV Surge Protection

The DXS-1250-28YP features built-in 6 kV surge protection on all Ethernet access ports, and requires no external surge protection equipment. This effectively protects the switches against sudden electrical surges caused events such as lightning strikes or unstable electrical current. Built-in 6 kV surge protection significantly reduces the chances of equipment being damaged from electrical surges, and effectively lowers maintenance costs by minimizing the need for expensive equipment repairs or replacement.

Power over Ethernet (PoE)

The DXS-1250-28YP features Power over Ethernet, which allows PoE-powered devices to be powered by the switch through a standard Ethernet cable. It supports the IEEE 802.3af PoE, IEEE 802.3at PoE+ and IEEE 802.3bt PoE++ standards, providing up to 60 W of power per port. PoE effectively reduces deployment time for PoE devices such as IP cameras, VoIP phones, and access points and eliminates the cost for additional electrical cabling.

Perpetual PoE and Fast PoE are also available with the DXS-1250-28YP. Perpetual PoE delivers uninterrupted power to connected powered devices (PD) even when the power sourcing equipment (PSE) switch is booting. Fast PoE enables the switch to supply power to connected endpoint devices in a relatively short time without waiting for the operating system to boot up.

The DXS-1250-28YP features a 470 W PoE power budget allows the switches to power even more devices. Additionally, an extended Link Layer Discovery Protocol (LLDP) automatically negotiates and manages the power feed to IEEE 802.3bt 60W powered devices for optimal power distribution.

D-Link®

DXS-1250-28YP 10G Layer 2 Standard Smart Switch

Technical Specifications

Interfaces	DXS-1250-28YP	
Ports	• 24 x 100M/1G/2.5G/5G/10GBASE-T 60W PoE++ ports • 4 x 10/25G SFP28 ports	
Console Port	10/100/1000BASE-T RJ-45 port for out-of-band CLI management	
Performance		
Switching Capacity	680 Gbps	
64-Byte Packet Forwarding Rate	505.92 Mpps	
Packet Buffer Memory	4 MB	
PoE		
PoE Standards	• IEEE 802.3af • IEEE 802.3at	• IEEE 802.3bt
PoE Power Budget	470 W	
Physical		
MTBF (Hours)	240,231.32 hours	
Acoustics	• Max: 63.9 dB (fan high speed)	• Min: 62.1 dB (fan low speed)
Heat Dissipation	2152.699 BTU/hr @ 470 W	
Power Input	100 to 240 VAC, 50 to 60 Hz	

Max Power Consumption	• Max:
	  • PoE On: 630.92 W
	  • PoE Off : 96.468 W
		• Standby: 49.033 W

Dimensions (W xD x H)	440 x 470 x 44 mm (17.32 x 18.50 x 1.73 in)	
Weight	6.483 kg	
Ventilation	2 x smart fans	
Power Surge Protection	All Ethernet ports support IEC61000-4-5 6 kV surge protection	
Operation Temperature	0 to 50 ˚C (32 to 122 °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 Class A • VCCI Class A	• IC • RCM • BSMI
Safety	• CB • cUL	• BSMI

DXS-1250-28YP 10G Layer 2 Standard Smart Switch

Software Features

L2 Features

- MAC Address Table: 32K (32,768) entries
- Flow Control
  - 802.3x Flow Control
  - HOL Blocking Prevention
- Jumbo Frames up to 12 Kbytes
- 802.1AX/802.3ad Link Aggregation
  - Max. 8 groups per device, 8 ports per group
- Spanning Tree Protocols
  - 802.1D STP
  - 802.1w RSTP
  - 802.1s MSTP
  - BPDU Filtering
  - Root Guard
  - Loop Guard
- Loopback Detection
- Port Mirroring
  - Supports One-to-One, Many-to-One
  - Supports Mirroring for both Tx/Rx
  - Supports 4 mirroring groups
- Flow mirroring
  - Supports Mirroring for Tx/Rx
- VLAN Mirroring
- RSPAN
- L2 Protocol Tunneling
- Ethernet Ring Protection Switching (ERPS) v1/v2

L2 Multicasting

- IGMP Snooping
  - IGMP v1/v2/v3 Snooping
  - Supports 256 IGMP groups
  - IGMP Snooping Fast Leave
  - Supports 256 static IGMP groups
  - Per VLAN IGMP Snooping
  - Data Driven Learning
  - IGMP Snooping Querier
  - IGMP Authentication
  - IGMP Accounting
- Report Suppression
- MLD Snooping
  - MLD v1/v2 Snooping
  - Support 256 MLD Groups
  - MLD Snooping Fast Leave
  - Supports 64 static MLD groups
  - MLD Snooping Querier
  - Per VLAN MLD Snooping
  - MLD Proxy Reporting

VLAN

- VLAN Group
  - Max. 4K VLAN groups
  - Max. 1~4094 VIDs
- GVRP
  - Max. 4K dynamic VLAN groups
- Double VLAN (Q-in-Q)
  - Port-based Q-in-Q
  - Selective Q-in-Q
- 802.1Q
- Auto Surveillance VLAN
- Port-based VLAN
- 802.1v Protocol-based VLAN
- Voice VLAN
- MAC-based VLAN
- VLAN translation
- Multicast VLAN (ISM VLAN for IPv4/IPv6)
- Asymmetric VLAN
- Private VLAN
- VLAN Trunking
- Super VLAN

Quality of Service

- 802.1p
- 8 queues per port
- Queue Handling
  - Strict Priority
  - Weighted Round Robin (WRR)
  - Strict + WRR
  - Weighted Deficit Round Robin (WDRR)
- Policy Map
  - Remark 802.1p priority
  - Remark IP precedence/DSCP
- Congestion Control
  - Weighted Random Early Detection (WRED)
- Bandwidth Control
  - Port-based (ingress/egress, min. granularity 8 Kbps)
  - Flow-based (ingress/egress, min. granularity 8 Kbps)
  - Per queue bandwidth control (min. granularity 8 Kbps)
- Three Color Marker
  - CIR/PIR minimum granularity: 8 kbps
  - trTCM
  - srTCM

Access Control List (ACL)

- ACL based on
  - 802.1p priority
  - VID
  - MAC address
  - Ether Type
  - LLC
  - VLAN
  - IP address
  - IP preference/ToS
  - DSCP mask
  - Protocol type
  - TCP/UDP port number
  - IPv6 Traffic Class
  - IPv6 Flow Label
- Max. ACL entries:
  - Ingress (hardware entries): 3072
  - MAC: 2304 rules
  - IPv4: 1152 rules
  - IPv6: 512 rules
  - Expert: 1024 rules
- CoS based on
  - Switch port
  - Inner/Outer VID
  - Inner 802.1p Priority
  - MAC address
  - IP address
  - DSCP
  - Protocol type
  - TCP/UDP port
  - IPv6 traffic class
  - IPv6 flow label
- Time-based ACL
- CPU Interface Filtering

DXS-1250-28YP 10G Layer 2 Standard Smart Switch

Security	• Port Security
	  • Supports up to 64 MAC addresses per port
	• Broadcast/Multicast/Unicast Storm Control
	• D-Link Safeguard Engine
	• DHCP Server Screening
	• IP Source Guard
	• DHCP Snooping
	• IPv6 Snooping
	• Dynamic ARP Inspection (DAI)
	• DHCPv6 Guard
	• IPv6 Route Advertisement (RA) Guard
	• IPv6 ND Inspection
	• Duplicate Address Detection (DAD)
		• ARP Spoofing Prevention
		  • Max. 64 entries
		• L3 Control Packet Filtering
		• Traffic Segmentation
		• SSL
		  • Supports TLS 1.0/1.1/1.2
		  • Supports IPv4/IPv6 access
		• SSH
		  • Supports SSH v2
		  • Supports IPv4/IPv6 access
		• BPDU Attack Protection
		• DoS Attack Prevention

PoE Features	• Perpetual PoE • Fast PoE • Time-based PoE	• PD Alive • Auto PoE PD Discovery

AAA	• Guest VLAN
	• 802.1X Authentication
	  • Supports port/host-based access control
	  • Identity-driven Policy Assignment
	  • Dynamic VLAN Assignment
	  • Ingress/Egress Bandwidth Control
	  • ACL Assignment
	• Privilege Level for Management Access
	• Trusted Host
	• RADIUS/TACACS+ Accounting
	• Web-based Access Control (WAC)
	  • Supports port/host-based access control
	  • Identity-driven Policy Assignment
	  • Dynamic VLAN Assignment
	  • Support IPv4 access
	  • Ingress/Egress Bandwidth Control
	  • ACL Assignment
		• RADIUS and TACACS+ Authentication
		• Authentication Database Failover
		• Compound Authentication
		• MAC-based Access Control (MAC)
		  • Supports port/host-based access control
		  • Identity-driven Policy Assignment
		  • Dynamic VLAN Assignment
		  • Ingress/Egress Bandwidth Control
		  • ACL Assignment

Green Features	• Energy-Efficient Ethernet (EEE) • Power saving by link status • Power saving by LED shut-off	• Power saving by port shut-off • Power saving by system hibernation • Time-based PoE
OAM (Operations, Administration and Maintenance)	• 802.3ah Ethernet Link OAM • D-Link Unidirectional Link Detection (DULD) • Dying Gasp	• 802.1ag Connectivity Fault Management (CFM) • Y.1731 OAM

Management	• Web-based GUI
	  • Support IPv4/IPv6 access
	  • Support SSL (HTTPS)
	• Command Line Interface (CLI)
	• Telnet Server for IPv4/IPv6
	• Telnet Client for IPv4/IPv6
	• TFTP Client for IPv4/IPv6
	• DNS Client for IPv4/IPv6
	• Secure FTP Server for IPv4/IPv6
	• SNMP
	  • Support v1/v2c/v3
	  • Support for IPv4/IPv6 access
	• SNMP Traps
	• System Log for IPv4/IPv6 Syslog Server
	• sFlow
	• Multiple images/ Multiple Configurations
	• RMON v1:
	  • Supports 1, 2, 3, 9 groups
	• RMON v2:
	  • Supports ProbeConfig group
		• LLDP/LLDP-MED
		• BootP/DHCP Client
		• DHCP Auto-Configuration
		• DHCP/DHCPv6 Local Relay
		• DHCP Relay Option 60/61/82/125
		• Flash File System
		• PPPoE Circuit-ID Tag Insertion
		• D-Link Discover Protocol (DDP)
		• Debug command
		• Support IPv4/v6 SNTP Server
		• Password recovery/ encryption
		• Command Logging
		• SMTP
		• Ping/ Traceroute for IPv4/IPv6
		• PD Alive

DXS-1250-28YP 10G Layer 2 Standard Smart Switch

L3 Features	• IPv4 ARP Entries 768
	  • 768 Static ARP
	• IPv6 ND Entries: 384
	  • 128 Static ND Entries
	• IP Interface
	  • Supports 8 interfaces
		• Gratuitous ARP
		• Static Route
		• IP Helper

MIB	• RFC1065, RFC1066, RFC1155, RFC1156, RFC2578 MIB Structure • RFC1212 Concise MIB Definitions • RFC1213 MIBII • RFC1215 MIB Traps Convention • RFC1493, RFC4188 Bridge MIB • RFC1157, RFC2571, RFC2572, RFC2573, RFC2574, RFC2575, C2576 SNMP MIB • RFC1442, RFC1901, RFC1902, RFC1903, RFC1904, RFC1905, RFC1906, RFC1907, RFC1908, RFC2578, RFC3418, RFC3636 SNMPv2 MIB • RFC271, RFC1757, RFC2819 RMON MIB • RFC2021 RMONv2 MIB • RFC1398, RFC1643, RFC1650, RFC2358, RFC2665, RFC3635 Etherlike MIB • RFC2668 802.3 MAU MIB • RFC2674, RFC4363 802.1p MIB • Interface Group MIB	• RFC2618 RADIUS Authentication Client MIB • RFC4022 MIB for TCP • RFC4113 MIB for UDP • RFC2620 RADIUS Accounting Client MIB • RFC2925 Ping & TRACEROUTE MIB • TFTP uploads and downloads (D-Link MIB) • Trap MIB (D-Link MIB) • Entity MIB • RFC4293 IPv6 SNMP Mgmt Interface MIB • DDM MIB (D-Link MIB) • Private MIB • MIB for D-Link Zone Defense • RFC3621 Power Ethernet MIB • DDP MIB • LLDP-MED MIB • PoE MIB
RFC Standard Compliance	• RFC 768 UDP • RFC 791 IP • RFC 793 TCP • RFC 826 ARP • RFC 3513, 4291, IPv6 Addressing Architecture • RFC2474, RFC3168, RFC3260 Definition of the DS Field in the IPv4 and IPv6 Headers • RFC1321, RFC2284, RFC2865, RFC2716, RFC1759, RFC3580, RFC3748 Extensible Authentication Protocol (EAP) • RFC2571 SNMP Framework • RFC 2068, 2616 HTTP • RFC 2866 RADIUS Accounting • RFC792 ICMPv4 • RFC2463, RFC4443 ICMPv6	• RFC4884 Extended ICMP to support Multi-Part Messages • RFC1338, RFC1519 CIDR • RFC2574 User-based Security Model for SNMPv3 • RFC1981 Path MTU Discovery for IPv6 • RFC2460 IPv6 • RFC 2571, 2572, 2573, 2574, SNMP • RFC 854 Telnet • RFC 951, 1542 BootP • RFC2461, RFC4861 Neighbor Discovery for IPv6 • RFC2462, RFC4862 IPv6 Stateless Address Auto-configuration (SLAAC) • RFC2464 IPv6 over Ethernet and definition • RFC1886 DNS extension support for IPv6

Order Information

DXS-1250-28YP	24 Ports 10G/MultiGig PoE(60W) + 4 Ports 25G SFP28 Smart Managed Switches, 470W

Optional Accessories

DEM-CB100S	1 m 10G SFP+ Direct Attach Cable (DAC)
DEM-CB300S	3 m 10G SFP+ Direct Attach Cable (DAC)
DEM-CB100S28	1 m 25G SFP28 Direct Attach Cable (DAC)

Optional SFP+ Transceivers

DEM-410T	10GBASE-T Copper SFP+ Transceiver, 30 m
DEM-431XT	10GBASE-SR Multi-Mode, OM1:33M/OM2:82M/OM3:300M
DEM-432XT	10GBASE-LR Single-Mode, 10 km

Optional 25 Gigabit Ethernet SFP28 Transceivers

DEM-S2801SR	25G SFP28 Multi-Mode, 100 m Transceiver
DEM-S2810LR	25G SFP28 Single-Mode 10 km Transceiver