

## Flexible Choices

- 20/48 10/100/1000BASE-T ports or 20 SFP slots
- 4 Combo 10/100/1000BASE-T/SFP ports<sup>1</sup>
- 4 10-Gigabit SFP+ uplink ports
- 802.3af and 802.3at Power Over Ethernet support<sup>2</sup>
- Optional External Redundant Power Supply

## High Bandwidth Physical/Virtual Stacking

- Physical stack of up to 12 units, 576 Gigabit ports
- Stackable through 2 10-Gigabit SFP+ ports
- Up to 40 Gbps Full-Duplex Stacking Bandwidth
- Virtual Stack of up to 32 units using single IP Management

## L3 Features

- IPv4/v6 Static Routing
- RIP/RIPng

## Quality of Service

- 802.1p Priority Queues/Multi-Layer CoS
- Time-based QoS

## Reliability

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

## Security

- L2/L3/L4 Multi-Layer Access Control
- External RADIUS/TACACS+ Authentication
- SSH/SSL support
- 802.1X Guest VLAN
- Web-based Access Control (WAC)
- MAC-based Access Control (MAC)
- D-Link Safeguard Engine
- Supports Microsoft® NAP

## Traffic Monitoring/Bandwidth Control

- Traffic Segmentation
- Granular Bandwidth Control Down to 8 Kbps per port<sup>3</sup>
- Granular Broadcast Storm Control Down to 1 pps per port
- 802.3ad Link Aggregation
- RMON support
- Port mirroring

## OAM

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

## Configuration/Management

- Web-based GUI
- Command Line Interface (CLI)
- SNMP v1, v2c, v3
- D-Link Single IP Management (SIM)
- Telnet
- Multiple Images/Configurations
- DHCP Server
- sFlow
- LLDP, LLDP-MED

## Green

- Time-based PoE<sup>2</sup>
- Power Saving

<sup>1</sup> For DGS-3420-28TC/28SC/26SC/28PC models

<sup>2</sup> For DGS-3420-28PC/52P models

<sup>3</sup> Supported by R1.5 Firmware

# xStack L2+ Managed Stackable Gigabit Switches



# XSTACK™

The xStack DGS-3420 series of next generation Layer 2+ Gigabit switches delivers performance, flexibility, security, multi-layer QoS, and accessibility, along with redundant power solutions for SMBs and enterprises. With high Gigabit port densities, Gigabit SFP, 10-Gigabit SFP+ support, and advanced software solutions, these switches can act as either departmental access layer devices or aggregation switches to form a multilevel network structured with backbone and centralized high-speed servers.

Service providers can take advantage of the high SFP density switches (such as DGS-3420-28SC/26SC) to structure the aggregation of Fiber to the Building (FTTB) networks that are extended to the subscribers' sites.

## Unparalleled Flexibility

Easily deployed and simple to manage, the DGS-3420 can be stacked with any switch that supports D-Link's Single IP Management to form a multi-level network structured with backbone and centralized high-speed servers. The virtual stack can include units located anywhere on the same network domain, and uses optional 10-Gigabit uplinks to move intra-stack traffic at 20 Gbps full duplex speeds.

## Redundant Ring Stacking

Alternatively, 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. 12 units or 576 Gigabit ports can be configured for a stack using direct attach cables to provide high bandwidth on the DGS-3420 Series with cost efficiency.

## Security, Performance & Availability

The DGS-3420 Series provides a complete set of security features including L2/L3/L4 multi-layer Access Control Lists and 802.1X user authentication via TACACS+ and RADIUS servers.




The DGS-3420 Series offers extensive VLAN support including GVRP and 802.1Q VLAN to enhance security and performance. A robust set of L2/L3/L4 QoS/CoS solutions help ensure that critical network services such as VoIP, ERP, Intranet, and video conferencing are served with proper priority. The series also provides D-Link's Safeguard Engine to increase the switch's reliability, serviceability, and availability to prevent malicious flooding traffic caused by worms or virus infections. Bandwidth Control can be flexibly set for each port using pre-defined thresholds to assure a committed level of service for endusers. For advanced applications, flow-based bandwidth control allows easy fine-tuning of service types based on specific IP addresses or protocols.

## IPv6 Technology

The DGS-3420 Series also features comprehensive IPv6 support, including IPv6 Tunnel, ICMPv6, DHCPv6, RIPng, IPv4/IPv6 dual stack, and more. With 10-Gigabit connectivity and IPv6 support, the series enables you to future-proof your network for cost efficiency and longevity while meeting the requirements that future IPv6-capable network devices require.

## D-Link Green Technology

D-Link is striving to take the lead in developing innovative and power-saving technology that does not sacrifice operational performance or functionality. The DGS-3420 Series implements D-Link Green technology, which includes power saving through link status, smart fan design, increased heat dissipation, and cable length detection. The power-saving feature automatically powers down ports that have no link or link partner. The Smart Fan design allows the built-in fans to automatically turn on only at a certain temperature, providing continuous, reliable, and eco-friendly operation of the switch.

Technical Specifications		DGS-3420-28TC	DGS-3420-26SC	DGS-3420-28SC
				
General	Interfaces	20 10/100/1000BASE-T ports 4 Combo 10/100/1000BASE-T/SFP ports 4 SFP+ ports	20 SFP ports 4 Combo 10/100/1000BASE-T/SFP ports 2 SFP+ ports	20 SFP ports 4 Combo 10/100/1000BASE-T/SFP ports 4 SFP+ ports
	Optional Redundant Power Supply	DPS-500	DPS-500	DPS-500
	Console Port	RJ-45		
	Management Port	10/100BASE-T		
	Alarm Port	1		
	SD Card Slot	1		
Performance	Switch Fabric	128 Gbps	88 Gbps	128 Gbps
	Packet Forwarding Rate	95.24 Mpps	65.47 Mpps	95.24 Mpps
	Packet Buffer	2 MB		
	MAC Address Table	16K Entries		
	IP v4 Routing Table	1K Entries		
	IP v6 Routing Table	512 Entries		
	IP v4 Forwarding Table	2K Entries		
	IP v6 Forwarding Table	1K Entries		
	Jumbo Frame Size	13000 bytes		
PoE	PoE Standard	-		
	PoE Power Budget	-		
Physical	MTBF (Hours)	287763 hours	301667 hours	300371 hours
	Acoustics	Max: 46.5 dB	Max: 47.7 dB	Max: 46.3 dB
	Heat Dissipation	173.2 BTU/hr	187.6 BTU/hr	205.3 BTU/hr
	Power Input	100 to 240 V AC, 50/60Hz		
	Max Power Consumption	50.8 watts	60.3 watts	60.3 watts
	Dimensions (W x D x H)	441 x 310 x 44 mm	441 x 310 x 44 mm	441 x 310 x 44 mm
	Weight	4.12 kg	4.04 kg	4.06 kg
	Ventilation	via Temperature Controlled Smart Fan (> 39 °C: High Speed; < 36 °C: Low Speed) <sup>3</sup>		
	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	IPv6 Ready Logo Phase 2		

### Technical Specifications

#### DGS-3420-28PC

#### DGS-3420-52T

#### DGS-3420-52P



General		DGS-3420-28PC	DGS-3420-52T	DGS-3420-52P
General	Interfaces	20 10/100/1000BASE-T PoE ports 4 Combo 10/100/1000BASE-T PoE/SFP ports 4 SFP+ ports	48 10/100/1000BASE-T ports 4 SFP+ ports	48 10/100/1000BASE-T PoE ports 4 SFP+ ports
	Optional Redundant Power Supply	DPS-700	DPS-500	DPS-700
	Console Port	RJ-45		
	Management Port	10/100BASE-T		
	Alarm Port	1		
	SD Card Slot	1		
Performance	Switch Fabric	128 Gbps	176 Gbps	176 Gbps
	Packet Forwarding Rate	95.24 Mpps	130.95 Mpps	130.95 Mpps
	Packet Buffer	2 MB		
	MAC Address Table	16K Entries		
	IP v4 Routing Table	1K Entries		
	IP v6 Routing Table	512 Entries		
	IP v4 Forwarding Table	2K Entries		
	IP v6 Forwarding Table	1K Entries		
	Jumbo Frame Size	13000 bytes		
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)
Physical	MTBF (Hours)	230906 hours	255608 hours	202462 hours
	Acoustics	Max: 52.8 dB	Max: 51.1 dB	Max: 55.4 dB
	Heat Dissipation	1630.0 BTU/hr	276.2 BTU/hr	1723.4 BTU/hr
	Power Input	100 to 240 V AC, 50/60Hz	100 to 240 V AC, 50/60Hz	100 to 240 V AC, 50/60Hz
	Max Power Consumption	478.0 watts	81.0 watts	505.4 watts
	Dimensions (W x D x H)	441 x 380 x 44 mm	441 x 380 x 44 mm	441 x 380 x 44 mm
	Weight	5.75 kg	5.07 kg	6.24 kg
	Ventilation	via Temperature Controlled Smart Fan (> 39 °C: High Speed; < 36 °C: Low Speed) <sup>3</sup>		
	Operating Temperature	0-50 °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	IPv6 Ready Logo Phase 2		

<sup>3</sup> By default, the fan speed is low. When the temperature inside the chassis is over 39 °C, the fan switches to high speed and remains high until the temperature is down to 36 °C.



## xStack L2+ Managed Stackable Gigabit Switches

### Software Features

- Stackability**
  - Virtual Stacking Support
    - D-Link Single IP Management
    - Up to 32 devices per virtual stack
    - Up to 20G stacking bandwidth
  - Physical Stacking
    - Supports Duplex Chain/Ring topology
    - Up to 40G stacking bandwidth
    - Up to 12 units per stack
- L2 Features**
  - MAC Address Table: 16K
  - Flow Control
    - 802.3x Flow Control
    - HOL Blocking Prevention
  - Jumbo Frames up to 13,000 bytes
  - IGMP snooping
    - IGMP v1/v2/v3 Snooping
    - Supports 960 groups
    - Port/Host-based
    - IGMP Snooping Fast Leave
  - MLD Snooping
    - MLD v1/v2 Snooping
    - Supports 480 groups
    - Host-based MLD Snooping Fast Leave
  - Spanning Tree
    - 802.1D-2004 STP
    - 802.1w RSTP
    - 802.1Q-2005 MSTP
    - BPDU filtering
    - Root Restriction
  - Loopback Detection
  - 802.3ad Link Aggregation
  - Max. 32 groups per device
    - 8 Gigabit ports or 2 10-Gigabit ports per group
  - Port Mirroring
    - Supports 4 Mirroring Groups
    - Supports One-to-One, Many-to-One, Flow-based, and RSPAN mirroring
  - L2 Protocol Tunneling
  - ERPS (Ethernet Ring Protection Switching)
- VLAN**
  - VLAN Group
    - Max. 4K Static VLAN Groups
    - Max. 255 Dynamic VLAN Groups
  - 802.1Q Tagged VLAN
  - 802.1v Protocol VLAN
  - GVRP
  - Double VLAN (Q-in-Q)
    - Port-based Q-in-Q
  - MAC-based VLAN
  - VLAN Trunking
- L3 Features**
  - 256 IP interfaces
    - Loopback interface
  - IPv6 Tunneling
  - Proxy ARP
  - Gratuitous ARP
  - VRRP<sup>3</sup>
- L3 Routing**
  - 1K routing entries shared by IPv4/v6
    - Max. 1K IPv4 routes
    - Max. 512 IPv6 routes
  - 2K L3 forwarding entries shared by IPv4/v6
    - Max. 2K IPv4 entries
    - Max. 1K IPv6 entries
  - 256 static routing entries for IPv4, 128 entries for IPv6
  - RIP v1/v2
  - RIPng
  - Policy-based Routing
  - Route Redistribution
- QoS (Quality of Service)**
  - 802.1p Class of Service (CoS)
  - 8 queues per port
  - Queue Handling
    - Strict
    - Weighted Round Robin (WRR)
    - Strict + WRR
  - CoS based on
    - Switch Port
    - VLAN
    - 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
  - Supports following actions for flows:
    - Remark 802.1p Priority Tag
    - Remark TOS/DSCP Tag
    - Bandwidth Control
    - Flow Statistics
    - Committed Information Rate (CIR), min. granularity 1 Kbps.
    - Bandwidth Control
    - Port-based (Ingress/Egress, min. granularity 8 Kbps)
    - Flow-based (Ingress, min. granularity 8 Kbps)
  - Time-based QoS
  - Congestion Control - WRED<sup>3</sup>
- ACL (Access Control List)**
  - Ingress ACL: support up to 6 profiles and 256 rules per profile
  - Egress ACL: support up to 4 profiles and 128 rules per profile
  - ACL based on
    - 802.1p Priority
    - VLAN ID
    - MAC Address
    - Ether Type
    - IPv4/v6 Address
    - DSCP
    - Protocol Type
    - TCP/UDP Port Number
    - IPv6 Traffic Class
    - IPv6 Flow Label
    - User-defined Packet Content
  - ACL Statistics
  - Time-based ACL
- Security**
  - SSH v2
  - SSL v1/v2/v3
  - Port Security for up to 3328 MAC addresses for port/system/VLAN
  - Broadcast/Multicast/Unicast Storm Control
  - Traffic Segmentation
  - IP-MAC-Port Binding
    - ARP Packet Inspection
    - IP Packet Inspection
    - DHCP Snooping
    - DHCPv6 and NDP Snooping
    - Supports up to 500 Address Binding Entries per device
  - D-Link Safeguard Engine
  - DHCP Server Screening
  - CPU Interface Filtering
  - ARP Spoofing Prevention
  - BPDU Attack Protection
  - Secure FTP<sup>3</sup>
  - NetBIOS/NetBEVI Filtering
- AAA**
  - 802.1X
    - Port-based Access Control
    - Host-based Access Control
    - Dynamic VLAN Assignment
  - Web-based Access Control (WAC)
    - Port-based Access Control
    - Host-based Access Control
    - Dynamic VLAN Assignment
  - MAC-based Access Control (MAC)
    - Port-based Access Control
    - Host-based Access Control
- Dynamic VLAN Assignment
- Japan Web-based Access Control (JWAC)
  - Host-based Access Control
- Microsoft® NAP
  - Supports 802.1X NAP
  - Supports DHCP NAP
- Guest VLAN
- RADIUS and TACACS+ authentication for switch access
- 4-Level user account

### Management

- Web-based GUI
- Command Line Interface (CLI)
- Telnet Server
- Telnet Client
- TFTP Client
- ZModem
- SNMP v1/v2c/v3
- SNMP Trap
- System Log
- RMON v1
  - Supports 1,2,3,9 Groups
- RMON v2
  - Supports ProbeConfig Group
- sFlow
- LLDP/LLDP-MED
- BootP/DHCP Client
- DHCP Auto-Configuration
- DHCP Relay
- DHCP Relay Option 60; 61
- DHCP Relay Option 82
- DHCP Server
- Flash File System
- Multiple Images
- Multiple Configurations
- CPU Monitoring
- Debug Command
- SNTP
- ICMPv6
- DHCPv6 Client
- DHCPv6 Relay
- DHCPv6 Server
- Trusted Host
- MTU Setting
- Microsoft® NLB Support
- UDP helper

### OAM

- 802.3ah Ethernet Link OAM
- 802.3ah D-Link Extension: D-Link Unidirectional Link Detection (DULD)

- IEEE1588 Precision Time Protocol (PTP)
- Cable Diagnostics
- Connectivity Fault Management (CFM)
- ITU-T Y.1731

### MIB/IETF Standards

- RFC1213 MIB-II
- RFC1493, 4188 Bridge MIB
- RFC1907 SNMPv2 MIB
- RFC2571-2576 SNMP MIB
- RFC1271, 2819 RMON MIB
- RFC2021 RMON v2 MIB
- RFC1398, 1643, 1650, 2358, 2665 Ether-like MIB
- RFC2668 MAU MIB
- RFC2674, 4363 802.1p MIB
- RFC2233, 2863 IF MIB
- RFC2618 RADIUS Authentication Client MIB
- RFC1724 RIP v2 MIB

- RFC2096 IP Forwarding Table MIB (CIDR)
- RFC2620 RADIUS Accounting Client MIB
- RFC2925 Ping MIB
- RFC2925 Traceroute MIB
- D-Link Private MIB
- RFC 2787 VRRP MIB<sup>3</sup>
- RFC768 UDP
- RFC783 TFTP
- RFC791 IP
- RFC793 TCP
- RFC826 ARP
- RFC854 Telnet
- RFC951, 1542, 2131 BootP

- RFC2068, 2618 HTTP
- RFC3056, 5214 IPv6 Tunnel
- RFC2138 RADIUS
- RFC2139 RADIUS Accounting
- RFC1492 TACACS
- RFC3176 sFlow
- RFC2598 DiffServ Expedited Forwarding
- RFC4213 IPv4/IPv6 Dual Stack

### Green

- Power saving by Link Status
- Power saving by Cable Length
- Power saving by LED Shut-off<sup>3</sup>
- Power saving by Port Shut-off<sup>3</sup>
- Power saving by System Hibernation<sup>3</sup>
- Time-based PoE

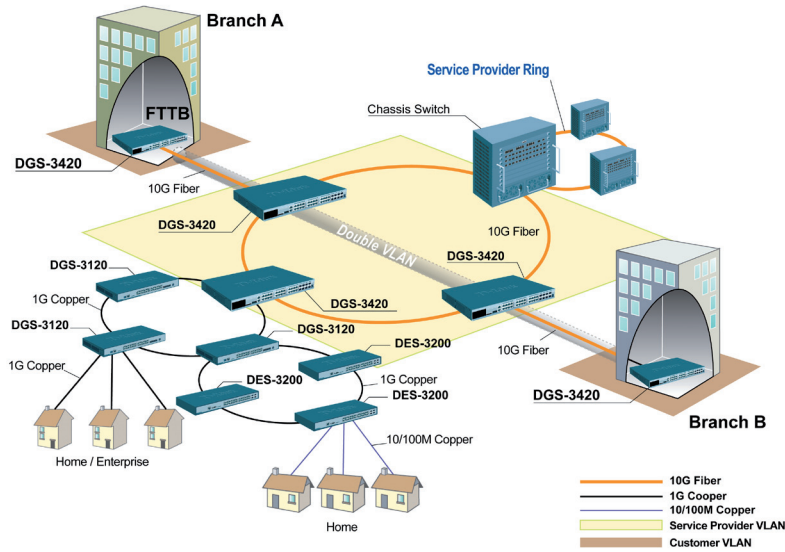
## Ordering Information

DGS-3420-28TC	20 10/100/1000BASE-T and 4 Combo 10/100/1000BASE-T/SFP and 4 SFP+ <sup>4</sup>
DGS-3420-26SC	20 SFP and 4 Combo 10/100/1000BASE-T/SFP and 2 SFP+ <sup>4</sup>
DGS-3420-28SC	20 SFP and 4 Combo 10/100/1000BASE-T/SFP and 4 SFP+ <sup>4</sup>
DGS-3420-28PC	20 10/100/1000BASE-T PoE and 4 Combo 10/100/1000BASE-T PoE/SFP and 4 SFP+ <sup>4</sup>
DGS-3420-52T	48 10/100/1000BASE-T and 4 SFP+ <sup>4</sup>
DGS-3420-52P	48 10/100/1000BASE-T PoE and 4 SFP+ <sup>4</sup>

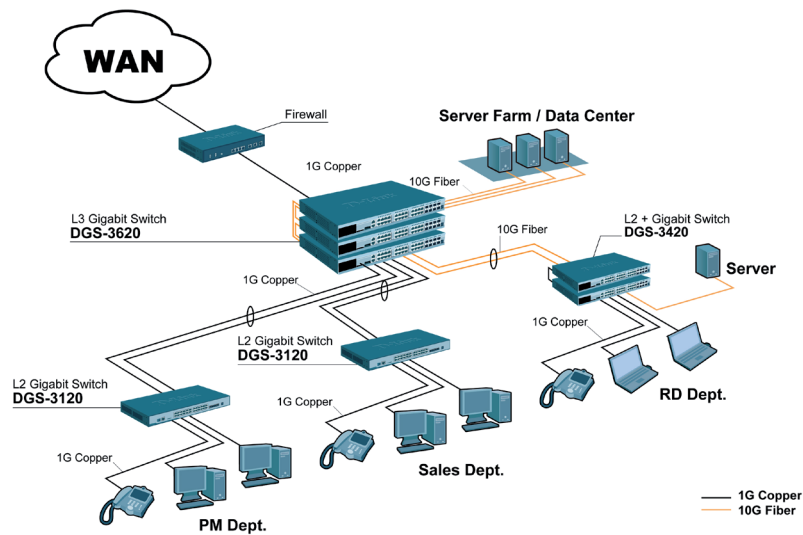
<sup>3</sup> Supported by R1.5 Firmware

<sup>4</sup> Stacking cable and SD card are not included

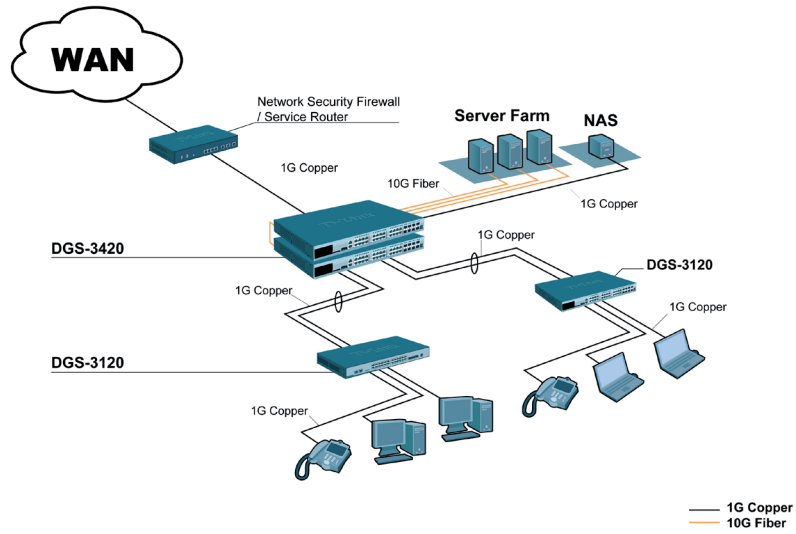
## xStack DGS-3420 Series in Service Provider Networks



## xStack DGS-3420 Series in Large Enterprise Networks



### SMB Network Deployment



### Optional Products

#### 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

#### Optional 10 Gbps SFP+ Transceivers

DEM-431XT	10 GBASE-SR SFP+ Transceiver (w/o DDM), 80 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-431XT-DD	10GBASE-SR SFP+ Transceiver (with DDM), 80 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-432XT	10GBASE-LR SFP+ Transceiver (w/o DDM), 10 km
DEM-432XT-DD	10GBASE-LR SFP+ Transceiver (with DDM), 10 km
DEM-433XT	10GBASE-ER SFP+ Transceiver (w/o DDM), 40 km
DEM-433XT-DD	10GBASE-ER SFP+ Transceiver (with DDM), 40 km
DEM-434XT	10GBASE-ZR SFP+ Transceiver (w/o DDM), 80 km
DEM-435XT	10GBASE-LRM SFP+ Transceiver (w/o DDM), 220 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-435XT-DD	10GBASE-LRM SFP+ Transceiver (with DDM), 220m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-436XT-BXU	10GBASE-LR BiDi SFP+ Transceiver (w/o DDM) 20 km, TX: 1270 nm, RX: 1330 nm
DEM-436XT-BXD	10GBASE-LR BiDi SFP+ Transceiver (w/o DDM) 20 km, TX: 1330 nm, RX: 1270 nm

#### Optional 1 Gbps SFP Transceivers

DEM-310GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage
DEM-311GT	SFP transceiver, 1000BASE-SX standard, multi-mode fiber, max. distance 550 m, 3.3 V operating voltage
DEM-312GT2	SFP transceiver 1000BASE-SX standard, multi-mode fiber, max. distance 2 km, 3.3 V operating voltage
DEM-314GT	SFP transceiver, 1000BASE-LHX standard, single-mode fiber, max. distance 50 km, 3.3 V operating voltage
DEM-315GT	SFP transceiver, 1000BASE-ZX standard, single-mode fiber, max. distance 80 km, 3.3 V operating voltage
DEM-330T	WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm
DEM-330R	WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm
DEM-331T	WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 40 km, 3.3 V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm

DEM-331R	WDM SFP transceiver 1000BASE-LX standard, single-mode fiber, max. distance 40 km, 3.3 V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm
DEM-211	SFP transceiver, 100BASE-FX multi-mode fiber, max. distance 2 km, 3.3 V operating voltage
DEM-210	SFP transceiver, 100BASE-FX single-mode fiber, max. distance 15 km, 3.3 V operating voltage
DEM-220T	100Base-BX, Wavelength Tx:1550 nm, Rx:1310 nm, Single-mode, 20 km
DEM-220R	100Base-BX, Wavelength Tx:1310 nm, Rx:1550 nm, Single-mode, 20 km
DGS-712	1000BASE-TX

#### Optional 10 Gbps SFP+ Direct Attach 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+ 7 m Direct Attach Cable

#### Optional Redundant Power Supplies

DPS-500	140-watt redundant power supply
DPS-500DC	140-watt DC redundant power supply
DPS-700 <sup>5</sup>	589-watt redundant power supply

<sup>5</sup> Supported in DGS-3420-28PC and DGS-3420-52P only



D-Link Corporation  
 No. 289 Xinhua 3rd Road, Neihu, Taipei 114, Taiwan  
 Specifications are subject to change without notice.  
 D-Link is a registered trademark of D-Link Corporation and its overseas subsidiaries.  
 All other trademarks belong to their respective owners.  
 ©2013 D-Link Corporation. All rights reserved.  
 Release 03 (March 2013)