





# XGS2220 Series

# 24/48-port GbE L3 Access Switch with 6 10G Uplink

The XGS2220 Series is a family of Layer 3 access Switch that consists of six models, including PoE, Non-PoE and fiber options. In addition to four 10G SFP+ uplink, all of them come with two additional 10G Multi-Gigabit (1G/2.5G/5G/10G) RJ-45 ports for more flexible connectivity. Non-PoE models XGS2220-30 and XGS2220-54 provide 24 or 48 Gigabit desktop ports for every day network access. PoE models XGS2220-30HP, XGS2220-54HP and XGS2220-54FP provide additional power over Ethernet capability and ready for WiFi 6/6E connectivity. The fiber option XGS2220-30F provides 24 SFP port, all serving the purpose to achieve business connectivity based on the flexibility of variety option of media interfaces and make itself an ideal choice for increasing business productivity. This Series is built with smart fan designed to automatically adjust speeds based on the device temperature, offering near silence while the Switch is in operation.

#### **Benefits**

# Sufficient and flexible 10G support – ideal for converged networking applications

The XGS2220 provides up to six high performance 10 Gigabit connectivity including two 10G Multi-Gigabit ports and four SFP+ ports for Layer 3 access network. These 10G uplinks offer the flexibility to connect to servers, network storages, or other high-speed network devices with either 10G copper or fiber connection. In addition, the SFP+ ports can be used to connect to aggregation switches for backbone services or resiliency. This series switch has a full Layer 2 feature set that can shape the traffic for diverse VoIP, video conference, IPTV and networked AV deployments. Advanced traffic control features such as L2 multicast, IGMP snooping, Multicast VLAN Registration (MVR) provide hotels, businesses and educational institutions greater agility and more effective traffic management for the converged applications of today.



Handles the latest high-bandwidth applications easily with up to six 10G connectivity



NebulaFlex Pro allows users to switch between standalone management and intuitive Nebula cloud managed mode with 1-YEAR Pro Pack bundled



Tailor-made Networked AV mode brings efficiency to professional AVoIP networking setups and monitoring services



Support both PoE++ and PoE+ providing 60W and 30W for each port respectively with high power budget of up to 960W



Support Multi-Gigabit: 100M/1G/2.5G/5G/10G connections



L2 multicast, IGMP snooping, MVR and voice VLAN for convergence





#### **Dedicated networked AV mode**

The standard switch interface includes an abundance of generic networking features to address a wide variety of applications, making it a challenge for traditional AV system integrators to setup an IP-based network that needs to run Audio and Video services. The tailor-made networked AV mode begins with an intuitive wizard that prompts for high-level requirement for network infrastructure, followed up with AI-intelligent to apply all the necessary details to setup a professional AVoIP system. With the intuitive graphical status overview of the key AV network elements such as IGMP and IP information, accompanied with condensed function menu helps you manage and monitor the system with ease. With built-in support for Dante and AES67 profiles in the setup wizard, the XGS2220 further enhances audio performance and interoperability in professional AV environments.

# NebulaFlex Pro – simply manage it your way!

The NebulaFlex Pro provides extended flexibility, especially for those who hesitate to step up for cloud networking. You can switch easily between Cloud Managed or Standalone Management. Included with a 1-Year Pro Pack License Bundled, the NebulaFlex Pro even allows you to change your mind at any time without additional cost while protecting previous investments on wired technology. You can have the privilege to use advanced features with professional pack for one year upon registration on Nebula; these features include advanced IGMP technology, comprehensive IPTV reports that provide insights to channel usage information, network analytics alert to optimize network performance along with more upcoming new features on NCC and its app.

#### **High-powered Power over Ethernet (PoE)**

The XGS2220 PoE Switches come with 10 ports of IEEE 802.3bt (PoE++) offering up to 60W per port, as well as 16/40 ports of IEEE 802.3at delivering up to 30W per port to meet a variety of WiFi 6/6E AP adoptions. Maximize the performance of the 400W/600W/960W system power budget with a wide range of choices from Zyxel WiFi 6/6E AP family, as well as VoIP, surveillance and even high-density networked AV applications. Especially in consumption mode, the XGS2220 PoE switches deliver only the actual power required by the networked devices, reserves the rest and maximize its power budget. This capability increases the number of devices connected and ensures a better ROI for the business.

#### Resiliency and availability

XGS2220 Series allows creating a physical stack through the last two or four 10-Gigabit fiber ports. Four units can be configured as one stack to provide high bandwidth on XGS2220 for more flexible management. The stacking topology under the ring architecture provides high redundancy in case one of the stacking links fail. The system can quickly recover through another stacking connection.

#### **Model List**

#### XGS2220-30

24-port GbE L3 Access Switch with 6 10G Uplink



- 24 x Gigabit RJ-45 ports
- 2 x 10G Multi-Gigabit (1G/2.5G/5G/10G) RJ-45 ports
- 4 x 1G SFP/10G SFP+ slots

# XGS2220-54

48-port GbE L3 Access Switch with 6 10G Uplink



- 48 x Gigabit RJ-45 ports
- 2 x 10G Multi-Gigabit (1G/2.5G/5G/10G) RJ-45 ports
- 4 x 1G SFP/10G SFP+ slots

## XGS2220-30F

24-port GbE L3 Access Fiber Switch with 6 10G Uplink



- 24 x Gigabit SFP ports
- 2 x 10G Multi-Gigabit (1G/2.5G/5G/10G) RJ-45 ports
- 4 x 1G SFP/10G SFP+ slots

## XGS2220-54HP

48-port GbE PoE L3 Access Switch with 6 10G Uplink (600W)



- 40 x Gigabit RJ-45 PoE+ ports
- 8 x Gigabit RJ-45 PoE++ (60W) ports
- 2 x 10G Multi-Gigabit (1G/2.5G/5G/10G) RJ-45 PoE++ (60W) ports
- 4 x 1G SFP/10G SFP+ slots
- PoE power budget: 600W

#### XGS2220-30HP

24-port GbE PoE L3 Access Switch with 6 10G Uplink (400W)



- 16 x Gigabit RJ-45 PoE+ ports
- 8 x Gigabit RJ-45 PoE++ (60W) ports
- 2 x 10G Multi-Gigabit (1G/2.5G/5G/10G) RJ-45 PoE++ (60W) ports
- 4 x 1G SFP/10G SFP+ slots
- PoE power budget: 400W

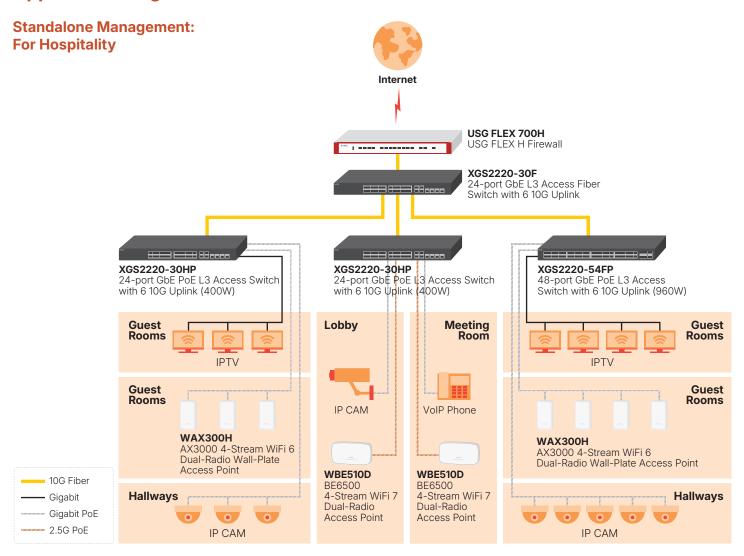
#### XGS2220-54FP

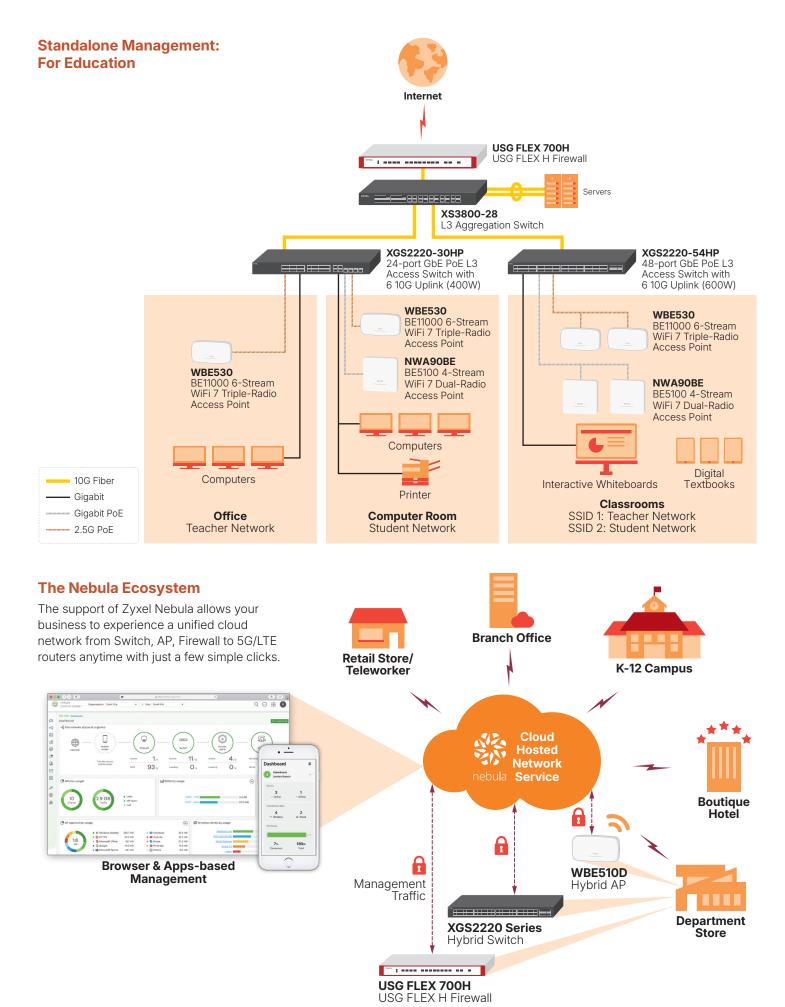
48-port GbE PoE L3 Access Switch with 6 10G Uplink (960W)



- 40 x Gigabit RJ-45 PoE+ ports
- 8 x Gigabit RJ-45 PoE++ (60W) ports
- 2 x 10G Multi-Gigabit (1G/2.5G/5G/10G) RJ-45 PoE++ (60W) ports
- 4 x 1G SFP/10G SFP+ slots
- PoE power budget: 960W

# **Application Diagram**





# **Specifications**

Model		XGS2220-30	XGS2220-30HP	XGS2220-30F
Product name	)	24-port GbE L3 Access Switch with 6 10G Uplink	24-port GbE PoE L3 Access Switch with 6 10G Uplink (400W)	24-port GbE L3 Access Fiber Switch with 6 10G Uplink
Switch class		Layer 3 Access	Layer 3 Access	Layer 3 Access
Port Density				
Total port cou		30	30	30
10M/100M/1G		24	24	-
1G/2.5G/5G/1	0G (RJ-45)	2	2	2
Gigabit SFP		-	-	24
10 Gigabit SFI	P+	4	4	4
PoE			00	
PoE ports		-	26 400	-
Total PoE bud		_		_
IEEE 802.3at	(PoE++, 60W)		Port 1-16 100/1000Mbps: Port 17 - 24	
	(POE++, 60W)	-	1G/2.5G/5G/10G: Port 25 - 26	-
Performance	(Olama)	100	100	100
Switching cap		168	168	168
Forwarding ra		125	125	125
Packet buffer MAC address		2M 32K	2M 32K	2M 32K
Jumbo frame		9K	9K	9K
L3 forwarding		Max. 2K* IPv4 entries; Max. 2K* IPv6 entries	Max. 2K* IPv4 entries; Max. 2K* IPv6 entries	Max. 2K* IPv4 entries; Max. 2K* IPv6 entries
Routing table		Max. 2K* IPv6 entries	Max. 2K* IPv6 entries	Max. 2K* IPv6 entries
VLAN routing		Yes	Yes	Yes
IP interface		32	32	32
Flash/RAM		64MB/1GB	64MB/1GB	64MB/1GB
Power		OHIVID/ 10D	CHIVIDI TOD	OHIVID/ TOD
Input		100 to 240V AC, 50/60Hz	100 to 240V AC, 50/60Hz	100 to 240V AC, 50/60Hz
	onsumption (watts) oort connection	19.3	23.5	29.2
Max. power consumption (watts) All ports full load without PoE		37.62	38.577	66
	onsumption (watts)	-	477	-
Physical Spec				
Item	Dimensions	441 x 270 x 44/	441 x 330 x 44/	441 x 270 x 44/
	(WxDxH)(mm/in.)	17.36 x 10.63 x 1.73	17.36 x 12.99 x 1.73	17.36 x 10.63 x 1.73
	Weight (kg/lb.)	3.4/7.5	4.35/9.59	3.5/7.72
Packing	Dimensions (WxDxH)(mm/in.)	616 x 355 x 107/ 24.25 x 13.98 x 4.21	580 x 503 x 95/ 22.83 x 19.8 x 3.74	616 x 355 x 107/ 24.25 x 13.98 x 4.21
	Weight (kg/lb.)	4.73/10.43	5.77/12.72	4.83/10.65
Included acce		Power cord     Rack mounting kit	Power cord     Rack mounting kit	Power cord     Rack mounting kit
ESD/Surge Pr	otection	- Nack mounting kit	- Nack mounting kit	- Nack modifiing kit
Ethernet port	surge protection	2KV	2KV	2KV
Power	Line-GND	2KV	2KV	2KV
supply surge protection	Line-Line	1KV	1KV	1KV
<u> </u>	ESD protection	8KV/6KV	8KV/6KV	8KV/6KV
` '	al Specifications			
Operating	Temperature	-20°C to 50°C/-40°F to 122°F	-20°C to 50°C/-40°F to 122°F	-20°C to 50°C/-40°F to 122°F
-	Humidity	10% to 95% (non-condensing)	10% to 95% (non-condensing)	10% to 95% (non-condensing)
Storage	Temperature	-40°C to 70°C/-40°F to 158°F	-40°C to 70°C/-40°F to 158°F	-40°C to 70°C/-40°F to 158°F
	Humidity	10% to 90% (non-condensing)	10% to 90% (non-condensing)	10% to 90% (non-condensing)
MTBF (hr)		520,185	268,305	352,923
Heat dissipation (BTU/hr)		128.28	1626.57	225.06
Acoustic noise @ 25°C		27.19/47.88	30.21/50.21	28.82/48.97
(min/max, dB	arted starting from 7vNOS			

<sup>\* 2</sup>K entries supported starting from ZyNOS 5.00

Model		XGS2220-54	XGS2220-54HP	XGS2220-54FP
Product name		48-port GbE L3 Access Switch	48-port GbE PoE L3 Access	48-port GbE PoE L3 Access
Product name		with 6 10G Uplink	Switch with 6 10G Uplink (600W)	Switch with 6 10G Uplink (960W)
Switch class		Layer 3 Access	Layer 3 Access	Layer 3 Access
<b>Port Density</b>				
Total port cour	nt	54	54	54
10M/100M/1G		48	48	48
1G/2.5G/5G/10		2	2	2
Gigabit SFP	70 (NO 40)	-	-	-
10 Gigabit SFP		4	4	4
PoE	<del>T</del>	4	4	4
			50	50
PoE ports		-	50	50
Total PoE budg		-	600	960
IEEE 802.3at (F		-	Port 1-40	Port 1-40
IEEE 802.3bt (I	PoE++, 60W)	-	100/1000Mbps: Port 41 - 48 1G/2.5G/5G/10G: Port 49 - 50	100/1000Mbps: Port 41 - 48 1G/2.5G/5G/10G: Port 49 - 50
Performance			16/2.36/36/106. Port 49 - 30	16/2:36/36/106: Port 49 - 30
Switching capa	acity (Gbps)	216	216	216
Forwarding rat	te (Mpps)	161	161	161
Packet buffer (	(byte)	2M	2M	2M
MAC address t	table	32K	32K	32K
Jumbo frame (	byte)	9K	9K	9K
L3 forwarding	table	Max. 2K* IPv4 entries; Max. 2K* IPv6 entries	Max. 2K* IPv4 entries; Max. 2K* IPv6 entries	Max. 2K* IPv4 entries; Max. 2K* IPv6 entries
Routing table		64	64	64
VLAN routing		Yes	Yes	Yes
IP interface		32	32	32
Flash/RAM		64MB/1GB	64MB/1GB	64MB/1GB
Power		O-IVID/ IOD		OHIVID/ TOB
		100 to 240V AC FO/60H7	100 to 240V AC FO/60Hz	100 to 240V/ AC F0/60H7
	nsumption (watts)	100 to 240V AC, 50/60Hz 22.7	100 to 240V AC, 50/60Hz 30.8	100 to 240V AC, 50/60Hz 36.7
Without any port connection  Max. power consumption (watts)  All ports full load without PoE		53.9	52.47	66.236
	nsumption (watts)	-	754.11	1161.6
Physical Speci				
Item	Dimensions	441 x 270 x 44/	441 x 330 x 44/	441 x 330 x 44/
item	(WxDxH)(mm/in.)	17.36 x 10.63 x 1.73	17.36 x 12.99 x 1.73	17.36 x 12.99 x 1.73
	Weight (kg/lb.)	3.85/8.49	5/11.02	5/11.02
Packing	Dimensions	616 x 355 x 107/	580 x 503 x 95/	580 x 503 x 95/
9	(WxDxH)(mm/in.)	24.25 x 13.98 x 4.21	22.83 x 19.8 x 3.74	22.83 x 19.8 x 3.74
	Weight (kg/lb.)	5.18/11.42	6.33/13.96	6.33/13.96
Included acces		Power cord	Power cord	Power cord
		Rack mounting kit	Rack mounting kit	<ul> <li>Rack mounting kit</li> </ul>
ESD/Surge Pro				
	surge protection	2KV	2KV	2KV
Power	Line-GND	2KV	2KV	2KV
supply surge protection	Line-Line	1KV	1KV	1KV
Ethernet port E (air/contact)	ESD protection	8KV/6KV	8KV/6KV	8KV/6KV
	Specifications			
Operating	Temperature	-20°C to 50°C/-40°F to 122°F	-20°C to 50°C/-40°F to 122°F	-20°C to 50°C/-40°F to 122°F
. 3	Humidity	10% to 95% (non-condensing)	10% to 95% (non-condensing)	10% to 95% (non-condensing)
Storage	Temperature	-40°C to 70°C/-40°F to 158°F	-40°C to 70°C/-40°F to 158°F	-40°C to 70°C/-40°F to 158°F
Juliago	Humidity	10% to 90% (non-condensing)	10% to 90% (non-condensing)	10% to 90% (non-condensing)
MTDE /b=\	riumaity			
MTBF (hr)		298,735	214,388	227,352
Heat dissipation (BTU/hr)		195.43	2571.52	3961.06
Acoustic noise (min/max, dBA		27.0/49.95	25.21/50.23	47.57/67.11 

<sup>\* 2</sup>K entries supported starting from ZyNOS 5.00

#### **Features**

#### **Standard Compliance**

- IEEE 802.3z 1000BASE-X\*
- IEEE 802.3ab 1000BASE-T Ethernet\*
- IEEE 802.3an 10G BASE-T Ethernet\*
- IEEE 802.3ae 10 Gbit/s Ethernet over fiber\*
- IEEE 802.3af PoE\*
- IEEE 802.3at PoE plus\*
- IEEE 802.3bt (60W) PoE over 4 pair\*
- IEEE 802.3az EEE\*
- IEEE 802.3x flow control\* (support on Nebula Cloud mode from ZyNOS 5.00)
- IEEE 802.1AB LLDP/LLDP-MED\*
- IEEE 802.1Q VLAN tagging\*
- IEEE 802.1p Class of Service (CoS) prioritization\*
- IEEE 802.1X port authentication\*

#### **Resilience and Availability**

- IEEE 802.1D Spanning Tree Protocol (STP)\*
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)\*
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- Static port trunking\*
- IEEE 802.3ad LACP\*
- Loop guard\* (with broadcast packet detection mechanism)
- Root guard\*
- BPDU guard\*
- ErrDisable recovery
- MRSTP (Zyxel Proprietary)
- Dual configuration files
- Dual images\*
- ZULD
- Flex link
- Physical stacking up to 4 units\*
- Flexible stacking via 2 or 4 ports\*

#### **Traffic Control**

- 802.1Q static VLANs\*/dynamic VLANs: 4K/4K
- Port-based VLAN
- VLAN isolation (non-stacking mode only)
- Vendor ID based VLAN\*
- Protocol-based VLAN
- IP subnet-based VLAN
- MAC-based VLAN
- Private VLAN
- Voice VLAN\*
- Independent VLAN Learning (IVL)
- VLAN Translation
- VLAN trunking
- VLAN mapping

- IEEE 802.1AD VLAN stacking (QinQ)
- VLAN ingress filtering\*
- LACP algorithm of source/ destination
   IP or MAC\*
- GVRP
- L2PT

#### **Security**

- Port security\*
- Layer 2 MAC filtering\*
- · Layer 3 IP filtering
- Layer 4 TCP/UDP socket filtering
- Static MAC forwarding
- Multiple RADIUS servers\*
- Multiple TACACS+ servers
- 802.1x VLAN\* and 802.1p assignment by RADIUS
- Login authentication by RADIUS
- Login authentication by TACACS+
- TACACS+ accounting
- RADIUS accounting
- Authorization on RADIUS
- Compound authentication
- Authorization on TACACS+
- SSH v2\*
- SSL
- MAC freeze
- IP source guard (IPv4\*/IPv6)
- DHCP snooping
- DHCP Server Guard
- ARP inspection
- ARP freeze
- Anti-ARP scan
- Static IP-MAC-Port binding
- Policy-based security filtering
- Port isolation\*
- MAC search\*
- Guest VLAN\*
- ACL packet filtering\* (IPv4/IPv6)
- CPU protection
- Interface related trap enable/disable (by port)
- MAC-based authentication per VLAN
- BPDU transparency
- PPPoE relay agent/option82
- WoL/WoL Relay
- New for ZyNOS 5.00 Password encryption
- New for ZyNOS 5.00 Password complexity
- New for ZyNOS 5.00 Brute-force attack protection
- New for ZyNOS 5.00 SSH public key authentication

#### **Quality of Service (QoS)**

- No. of hardware queues per port (Standalone/stacking): 8\*/6
- Storm control and event log: Broadcast, multicast, unknown unicast (DLF)\*
- Port-based rate limiting\* (ingress/ egress)
- Rate limiting per IP/TCP/UDP per port
- · Policy-based rate limiting
- 802.1p Class of Service (SPQ, WFQ, WRR, hybrid-SPQ combination capable)
- DiffServ (DSCP)
- Storm Control: Broadcast/Unknown Multicast/Unknown Unicast (DLF)

#### **Layer 2 Multicast**

- L2 multicast\*
- IGMP snooping (v1, v2, v3)\*
- IGMP snooping fast leave\*
- IGMP snooping immediate leave\*
- Configurable IGMP snooping timer and priority\*
- IGMP snooping statistics\*
- IGMP throttling\*
- IGMP filtering\*
- IGMP proxy mode & snooping mode selection\*
- Multicast load sharing over trunking port
- Static mulitcast
- MVR support
- MLD snooping (MLD v1/v2)

### Routing

- Static route
- IP port moving
- New for ZyNOS 5.00 Policy-based route

#### Manageability

- SNMP\* v1, v2c, v3
- SNMP trap group
- RMON (1, 2, 3, 9)
- ICMP echo/echo reply
- Syslog\*
- IEEE 802.1AB LLDP\*/LLDP-MED\*
- Custom default
- Syslog (IPv4/IPv6)
- Display port utilization\*
- Support NebulaFlex Pro for Cloud Management
- DHCP relay per VLAN
- DHCP smart relay
- New for ZyNOS 5.00 DHCP relay option 82\*
- New for ZyNOS 5.00 SSH Remote Command Execution

#### **IPv6 Management**

- IPv6 over Ethernet (RFC 2464)
- IPv6 addressing architecture (RFC 4291)
- Dual stack (RFC 4213)
- ICMPv6 (RFC 4443)
- Path MTU (RFC 1981)
- Minimum path MTU size of 1280 (RFC 5095)
- Encapsulation for maximum PMTU of 1500
- Neighbor discovery (RFC 4861)
- DHCPv6 snooping
- IPv6 binding- static/dynamic
- Extend Radius server
- DHCPv6 relay
- Default DHCP client mode\*

## **Device Management**

- Standalone management by Web interface
- Cloud management by Nebula Control Center\*
- Networked AV mode by Web Interface
- New for ZyNOS 5.00 Optimized Dante and AES67 in Networked AV mode
- Intuitive Cloud connection status
- Zyxel iStacking™
- Management through Console, Telnet, SNMP
- Remote firmware upgrade by FTP/ Web/TFTP
- Configuration saving and retrieving\*
- Multiple logins supported
- Configure clone\*
- Custom default Configuration
- Multilevel CLI\*
- CLI (Cisco-like)
- DHCP client IPv4\*/IPv6
- Daylight saving\*
- Auto PD Recovery\*
- NTP supports IPv4/IPv6
- Port mirroring\*
- Policy-based mirroring
- Mirror CPU
- VLAN-based mirroring

- USB-C out-of-band console port
- Scheduled PoE\*
- PoE default consumption mode\*
- Auto PD Recovery\*
- Continuous PoE
- LLDP power via MDI
- sFlow
- Fiber Module Rescue
- New for ZyNOS 5.00 SSH Remote Command Execution

#### **MIB**

- Zyxel Private MIB
- Zyxel Common MIB
- RFC 1066 TCP/IP-based MIB
- RFC 1213, 1157 SNMPv2c/v3 MIB
- RFC 1493, 4188 bridge MIB
- RFC 1643 Ethernet MIB
- RFC 1757 RMON group 1, 2, 3, 9
- RFC 2011, 2012, 2013 SNMPv2 MIB
- RFC 2233 SMIv2 MIB
- RFC 2358 Ethernet-like MIB
- RFC 2674 bridge MIB extension
- RFC 2819, 2925 remote management MIR
- RFC 3621 power Ethernet MIB
- RFC 4022 management information base for transmission control protocol
- RFC 4113 management information base for user datagram protocol
- RFC 4292 IP forwarding table MIB
- RFC 4293 Management Information Base (MIB) for IP
- Cable diagnostic MIB

#### Certifications

#### Safety

- LVD
- BSMI

#### **EMC**

- FCC Part 15 (Class A)
- CE EMC (Class A)
- BSMI EMC

#### **RoHS**

• Level A

#### **Zyxel One Network**

#### **ZON Utility\***

- Discovery of Zyxel switches, APs and gateways
- Centralized and batch configurations:
  - IP configuration
  - IP renew
  - Device factory reset
  - Device reboot
  - Device locating
  - Web GUI access
  - Password configuration
  - One-click quick association with Zyxel AP Configurator (ZAC)
- Automatic detection of the latest firmware
- Displays device serial number and hardware version
- Cloud mode on/off option for Hybrid series devices
- Intuitive Cloud connection status

## Smart Connect

- Discover neighboring devices
- One-click remote management access to the neighboring Zyxel devices
- Reset neighboring devices remotely to factory defaults
- Power cycle neighboring powered devices (PoE switches only)

#### Warranty

- Limited life-time warranty\*\*
- \* Nebula Cloud and Standalone modes supported features. Some Nebula features may need an extra license to work. For more details on the features and licenses, check **Nebula Licensing Table**.
- \*\* Warranty terms, service availability, and service response times may vary from country or region to country or region.

## **Accessories**

# **Transceivers (Optional)**

Model	Speed	Connector	Wavelength	Max. Distance	DDMI
SFP10G-T*	10-Gigabit SFP+	RJ-45	-	0.03km (32.8yd)	Yes
SFP10G-SR	10-Gigabit SFP+	Duplex LC	850nm	0.3km (328yd)	Yes
SFP10G-SR-E	10-Gigabit SFP+	Duplex LC	850nm	0.3km (328yd)	Yes
SFP10G-LR	10-Gigabit SFP+	Duplex LC	1310nm	10km (10936yd)	Yes
SFP10G-LR-E	10-Gigabit SFP+	Duplex LC	1310nm	10km (10936yd)	Yes
SFP-1000T	Gigabit	RJ-45	-	0.1km (109yd)	-
SFP-SX-D	Gigabit	Duplex LC	850nm	0.55km (601yd)	Yes
SFP-SX-D-E	Gigabit	Duplex LC	850nm	0.55km (601yd)	Yes
SFP-LX-10-D	Gigabit	Duplex LC	1310nm	10km (10936yd)	Yes
SFP-LX-10-D-E	Gigabit	Duplex LC	1310nm	10km (10936yd)	Yes
SFP-LHX1310-40-D	Gigabit	Duplex LC	1310nm	40km (43744yd)	Yes
SFP-ZX-80-D	Gigabit	Duplex LC	1550nm	80km (87488yd)	Yes
SFP-BX1310-10-D	Gigabit	Single LC	1310nm (Tx); 1490nm (Rx)	10km (10936yd)	Yes
SFP-BX1310-E	Gigabit	Single LC	1310nm (Tx); 1550nm (Rx)	20km (21872yd)	Yes
SFP-BX1490-10-D	Gigabit	Single LC	1490nm (Tx); 1310nm (Rx)	10km (10936yd)	Yes
SFP-BX1550-E	Gigabit	Single LC	1550nm (Tx); 1310nm (Rx)	20km (21872yd)	Yes

# **Direct Attach Cables (Optional)**

Model	Connector	Cable Length
DAC10G-1M	SFP+ to SFP+	1m (39.37 inch)
DAC10G-3M	SFP+ to SFP+	3m (118.11 inch)



<sup>\*</sup>Note: Connecting copper transceivers to your switches

1. Works with Cat6a/7 Cable up to 30m. Please ensure the switch has proper ventilation to dissipate extra heat from the 10G BASE-T transceiver.

2. It is recommended to use no more than two 10GbE copper module simultaneously to avoid overheating and ensure reliable operation.

3. Ensure adequate spacing between connected 10GbE copper devices, and maintain sufficient airflow and cooling around the switch to optimize performance and longevity.