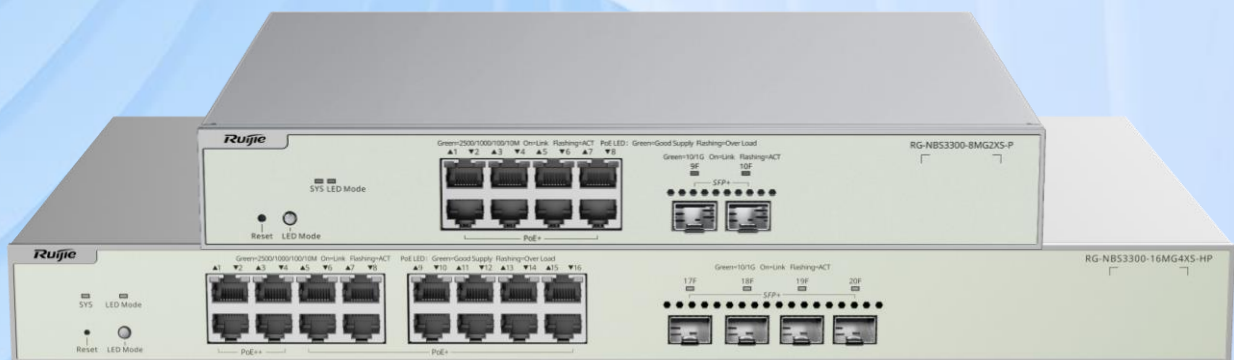# RG-NBS3300 Series

RG-NBS3300 Series Multi-Gigabit Layer 2 Cloud Managed Switch

01 Product Overview

The RG-NBS3300 series switches launched by Ruijie Networks are next-generation multi-gigabit access switches that provide cost-effective, high-speed connectivity.

This series delivers both 1G and 2.5G access capabilities, along with 10G uplink ports to meet the demands of high-density environments.

The RG-NBS3300 series is designed for small and medium-sized enterprises, making it ideal for large-scale, high-density settings such as campuses, offices, and stadiums.

02 Product Appearance

RG-NBS3300-16MG4XS-HP
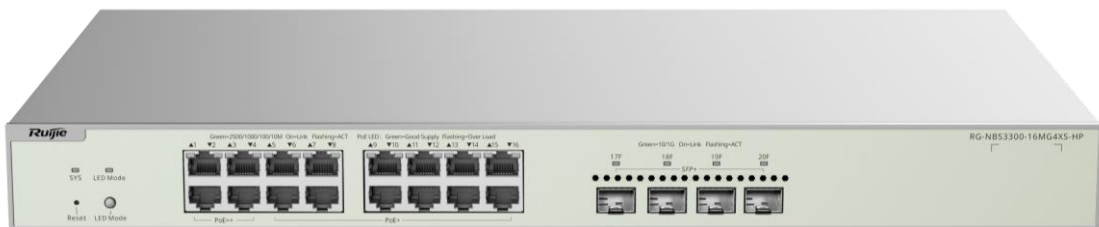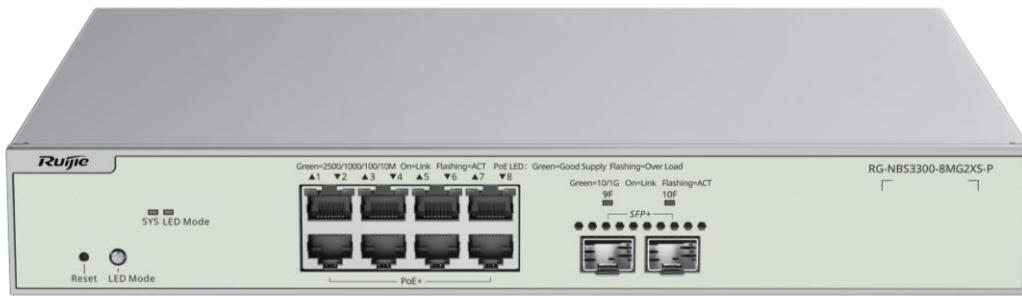
Front View of the RG-NBS3300-16MG4XS-HP

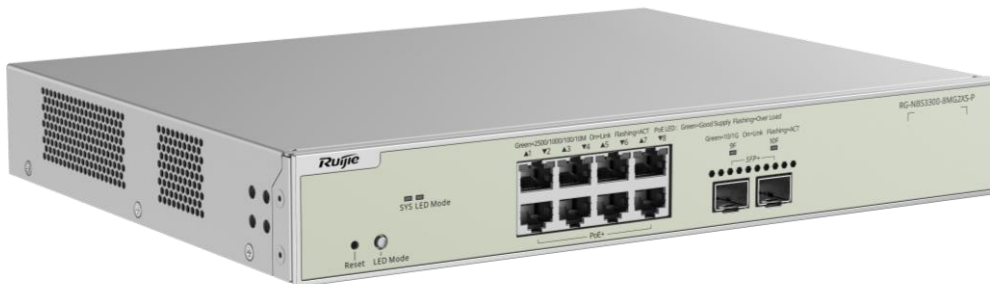Left View of the RG-NBS3300-16MG4XS-HP

Right View of the RG-NBS3300-16MG4XS-HP

RG-NBS3300-8MG2XS-P

Front View of the RG-NBS3300-8MG2XS-P

Left View of the RG-NBS3300-8MG2XS-P

Right View of the RG-NBS3300-8MG2XS-P

03 Product Highlights

- 2.5G ports smash the gigabit barrier, unlocking the full potential of Wi-Fi 6 and 7 access points
- IEEE 802.3bt/at/af-compliant PoE ports provide a power budget of 370 W
- The CPU Protect Policy (CPP) safeguards the CPU against attacks, ensuring CPU performance and stability
- Enterprise-grade quality ensures high performance
- Multiple security policies protect your network
- Ruijie Cloud enables easy management anytime, anywhere

RG-NBS3300-16MG4XS-HP

16-Port Multi-Gigabit Layer 2 Managed Switch, 4 x SFP+ Uplink Ports

4 × 2.5G RJ45 PoE++ Ports

12 × 2.5G RJ45 PoE+ Ports

4 × 10G SFP+ Ports

RG-NBS3300-16MG4XS-HP
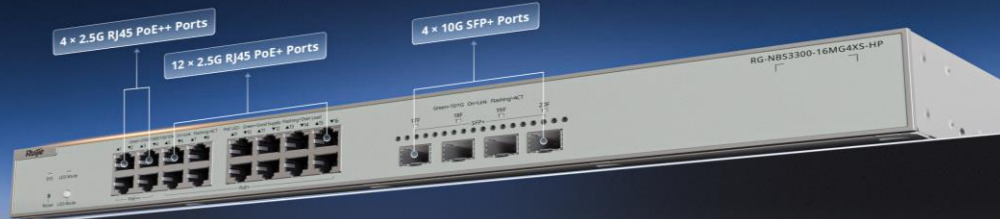
2.5G Ports for Wi-Fi 6/7 APs

4 x PoE++ Ports

PoE Budget 370 W

4 x 10G SFP+ Uplink Ports

Multiple Security Policies

RG-NBS3300-8MG2XS-P

8-Port Multi-Gigabit Layer 2 Managed Switch, 2 x SFP+ Uplink Ports

8 × 2.5G RJ45 PoE+ Ports

2 × 10G SFP+ Ports

RG-NBS3300-8MG2XS-P

2.5G Ports for Wi-Fi 6/7 APs

PoE Budget 240 W

2 x 10G SFP+ Uplink Ports

Multiple Security Policies

Integration with Wi-Fi 6/7 APs, Boosting Network Performance and Efficiency

2.5G

WiFi 6 Wi-Fi 7

**CPP Protects the CPU from Attacks,
Ensuring CPU Performance and Stability**
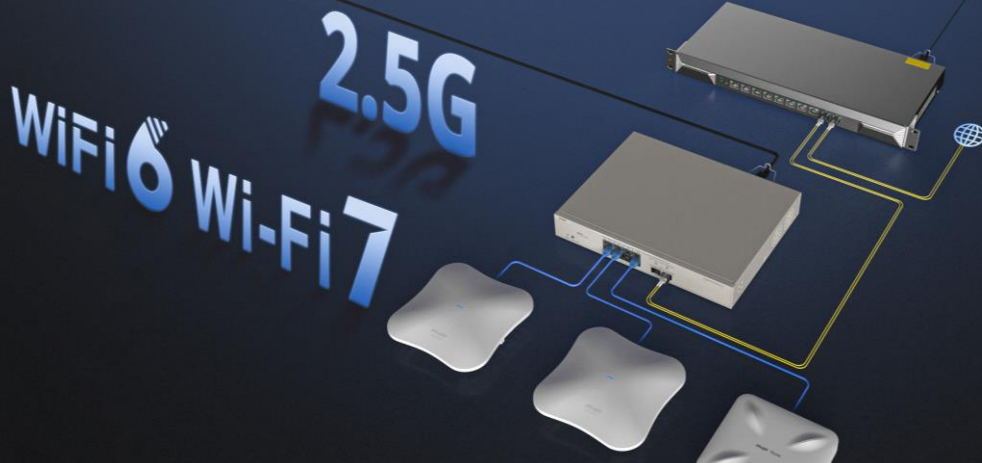
Enterprise-grade Quality Ensures High Performance

Link Aggregation   IGMP Snooping   VLAN

RG-NBS3300-16MG4XS-HP
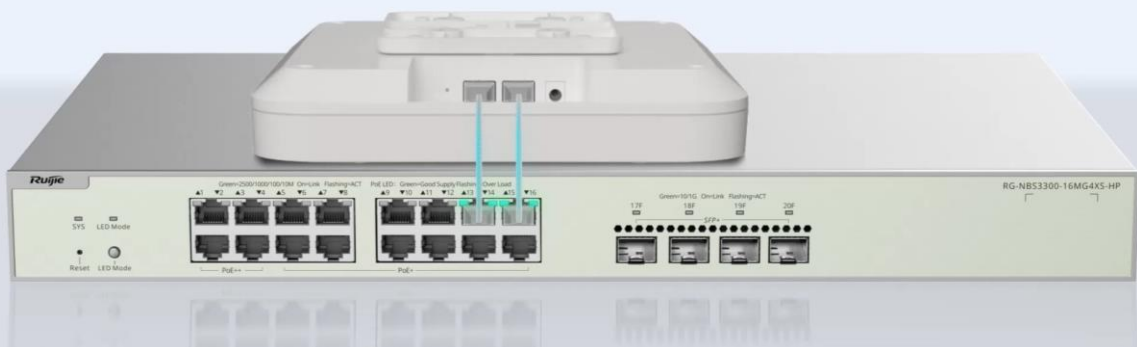
Cloud, Make Your Business Easy

- SON, Zero-Touch Provisioning on Ruijie Cloud
- Configure VLANs Using Ruijie Reyee App
- Monitor Switch Statistics Anytime, Anywhere
- Simplify Maintenance to Save Onsite Time and Costs

04   Product Features

High-Power PoE Power Supply

In previous scenarios involving PoE power supply, only the PoE (IEEE 802.3af) and PoE+ (IEEE 802.3at) standards were available. When power requirements exceed 30 W, PoE is no longer a viable option, necessitating the deployment of power cables for mains electricity and possibly even extra high voltage power. This creates significant challenges related to deployment costs, timelines, maintenance, and security. In compliance with the IEEE 802.3bt standard, the RG-NBS3300-16MG4XS-HP utilizes high-power PoE technology, achieving a maximum PoE output of 90 W per port to significantly enhance user experience.

CPU Protection Policy (CPP)

In a network environment, many malicious attacks are often carried out by forging numerous management and protocol packets. When a switch becomes overwhelmed with attack packets, it is unable to process normal management and protocol packets. This can significantly impact the switch's security and the overall stability of the network.

The CPP function of Ruijie switches offer effective protection against malicious network attacks by identifying and filtering out attack packets, mitigating the impact of attack packets on the switch, and ensuring that packets in different priority queues are handled properly. Additionally, the CPP offers flexible packet policy configuration, allowing network administrators to optimize settings for specific network environments, thereby enhancing both switch security and network stability.

Enterprise-grade Quality Ensures High Performance

Spanning Tree Protocol (STP):

STP prevents broadcast storms caused by loops and provides link redundancy, aiming to eliminate loops on Ethernet networks. It establishes a loop-free logical topology by selecting a primary path while blocking redundant paths.

Rapid Spanning Tree Protocol (RSTP):

RSTP, as an enhanced version of STP, enables faster convergence to meet the demands of modern networks.

Rapid Link Detection Protocol (RLDP):

RLDP is designed to detect link failures and report Ethernet link issues. It automatically shuts down or notifies users to manually shut down relevant ports based on user-configured failure handling methods, preventing erroneous traffic forwarding and avoiding Ethernet Layer 2 loops.

Internet Group Management Protocol (IGMP):

IGMP manages the membership between hosts and multicast groups, allowing hosts to join or leave a multicast group.

IGMP snooping:

IGMP snooping is a feature of network switches that allows them to monitor IGMP traffic, optimizing the forwarding of multicast traffic.

Voice VLAN:

Voice VLAN is a dedicated virtual local area network (VLAN) designed for voice traffic. It separates voice data from regular data traffic, prioritizes voice transmission, and enhances the quality of voice calls.

Multiple Security Policies Protect Your Network

DHCP snooping:

DHCP snooping is a network security feature that protects against Dynamic Host Configuration Protocol (DHCP) attacks by ensuring that only trusted DHCP servers can assign IP addresses to devices on the network. In large enterprise environments, DHCP Snooping effectively prevents internal attacks and enhances network stability and security.

Access Control List (ACL):

An ACL controls data traffic passing through a switch. It filters data packets based on user configurations, thereby enhancing both network security and performance.

IEEE 802.1X:

IEEE 802.1X is a network access control standard used for identity authentication on both wired and wireless networks. It uses port-based access control to ensure that only authenticated devices can access the network.

IP-MAC binding:

IP-MAC binding is a security technology that associates a specified source IP address and source MAC address with a switch port to prevent IP address spoofing and MAC address forgery. Packets can pass through the port only when they match the bound source IP address and MAC address.

ARP anti-spoofing:

ARP Anti-Spoofing is used to prevent ARP spoofing attacks. ARP spoofing occurs when an attacker sends forged ARP messages to intercept, modify, or disrupt network traffic. ARP anti-spoofing methods include: (1) Static ARP entries: ARP entries are manually configured to prevent dynamic updates and ensure consistency; and (2) ARP monitoring tools: Tools are used to monitor ARP traffic in real time, enabling the detection of abnormal activities.

IP source guard:

IP source guard is a security feature that prevents IP address spoofing attacks. It checks the source IP address of a data packet against the bound source MAC address and port to ensure that only valid IP addresses can send data packets through the switch. If the IP address does not match, the switch discards the data packet.

Easy Management

Self-Organizing Network (SON):

SON is an automated network management technology designed to simplify and optimize the deployment, configuration, management, and maintenance of wireless communication networks. SON allows networks to dynamically adapt to actual demands through automated configuration and self-optimization, enhancing both efficiency and user experience.

Management via web interface:

Network devices and services can be configured, monitored, and managed conveniently on a web user interface (UI). It allows network administrators to easily access and manage network resources, whether on a LAN or over the Internet.

Easy cloud management anytime, anywhere

Management via Ruijie Reyee App

SNMP:

Simple Network Management Protocol (SNMP) is a protocol used for managing network devices. It operates on a client/server model that allows for remote monitoring and control of these devices.

SNMP consists of a management station and agents. The management station communicates with the agents using the SNMP protocol to retrieve information such as device status, configuration, and performance data. It can also configure and manage the devices.

SNMP can be used to manage a variety of network devices, including routers, switches, servers, and firewalls. Users can manage user accounts through the SNMP configuration interface and monitor and control devices using third-party software.

05   Product Specifications

Hardware Specifications

Hardware Specifications	RG-NBS3300-16MG4XS-HP	RG-NBS3300-8MG2XS-P
Number of 10/100/1000/2500BASE-T ports	16	8
Number of 10GE SFP+ ports	4	2
Number of PoE Out ports	16	8
Number of PoE/PoE+ Out ports	12	8
Number of PoE/PoE+/PoE++ Out ports	4	No
Fan	2 x fixed fan	2 x fixed fan
Power supply	Fixed power supply	Fixed power supply
Forwarding rate	119.04 Mpps	58.72 Mpps
Switching capacity	160 Gbps(bit/s)	80 Gbps(bit/s)
Product dimensions (W x D x H)	440 mm x 267.5 mm x 43.6 mm (17.32 in. x 10.53 in. x 1.72 in.)	300 mm x 233 mm x 43.6 mm (11.81 in. x 9.17 in. x 1.72 in.)
Weight	3.6 kg (7.94 lbs) (without packaging materials)	2.64 kg (5.82 lbs) (without packaging materials)
Shipping weight	5.24 kg (11.55 lbs)	3.45 kg (7.61 lbs)
Power input	220 V AC power supply: Rated input voltage: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz Maximum input current: 6 A	220 V AC power supply: Rated input voltage: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz Maximum input current: 4.5 A
Maximum power consumption	40 W (with no PoE load) 460 W (with full PoE load)	27 W (with no PoE load) 278 W (with full PoE load)
Maximum PoE output power of the device	370 W	240 W
Cooling	Air cooling, left-to-rear airflow	Air cooling, left-to-right airflow
Operating temperature	0°C to +50°C (32°F to 122°F)	0°C to +50°C (32°F to 122°F)
Storage temperature	–40°C to +70°C (–40°F to +158°F)	–40°C to +70°C (–40°F to +158°F)
Operating humidity	10% RH to 90% RH (non-condensing)	10% RH to 90% RH (non-condensing)

Hardware Specifications	RG-NBS3300-16MG4XS-HP	RG-NBS3300-8MG2XS-P
Storage humidity	5% RH to 95% RH (non-condensing)	5% RH to 95% RH (non-condensing)
Surge protection	Service port: $\pm$6 kV for common mode Power connector: $\pm$6 kV for both common mode and differential mode	Service port: $\pm$6 kV for common mode Power connector: $\pm$6 kV for both common mode and differential mode
Certification	CE, FCC	CE, FCC
CPU	MAC chip, single-core processor, 800 MHz clock frequency	MAC chip, single-core processor, 800 MHz clock frequency
RAM	512 MB	512 MB
Product category	Layer 2+	Layer 2+

Software Specifications

Software Specifications		RG-NBS3300-16MG4XS-HP	RG-NBS3300-8MG2XS-P
Authentication	802.1X authentication	Yes	Yes
	Interface-based 802.1X authentication	Yes	Yes
	MAC address-based 802.1X authentication	Yes	Yes
	Global 802.1X control	Yes	Yes
	Forcible authentication	Yes	Yes
	Forcible non-authentication	Yes	Yes
	Single-user mode	Yes	Yes
	PEAP authentication for Windows 7/8/10/11 clients	Yes	Yes
	PEAP authentication for macOS clients	Yes	Yes
	PEAP authentication for Linux OS clients	Yes	Yes
Ethernet Switching	Maximum number of MAC address entries	16000	16000
	IEEE 802.1Q VLAN	Yes	Yes
	Interface-based VLAN	Yes	Yes
	Voice VLAN	Yes	Yes
	STP (IEEE 802.1d)	Yes	Yes
	RSTP (IEEE 802.1w)	Yes	Yes
	MSTP (IEEE 802.1s)	Yes	Yes
	LLDP	Yes	Yes
	LLDP-MED	Yes	Yes
	Inbound or outbound rate limiting based on interface traffic	Yes	Yes
Gateway Features	802.1p priority-based traffic classification	Yes	Yes
	DSCP priority-based traffic classification	Yes	Yes

Software Specifications		RG-NBS3300-16MG4XS-HP	RG-NBS3300-8MG2XS-P
Gateway Features	Egress queues based on 802.1p and DSCP priorities	Yes	Yes
	SP	Yes	Yes
	WRR	Yes	Yes
	SP+WRR	Yes	Yes
	Congestion avoidance: tail drop	Yes	Yes
	Global QoS	Yes	Yes
Interface	Jumbo frame length (MTU)	9216 bytes (interface configuration mode)	9216 bytes (interface configuration mode)
IP Routing	Maximum number of IPv4 static routes	64	64
	IPv6 routing table size (network route)	128	128
	Maximum number of IPv6 static routes	64	64
	IPv4 static route	Yes	Yes
IP Service	Maximum number of ARP entries	1000	1000
	IPv4 routing table size (host route)	6000	6000
	DHCP relay	Yes	Yes
	DHCP client	Yes	Yes
Multicast	IGMP snooping	Yes	Yes
	IGMPv1 snooping	Yes	Yes
	IGMPv2 snooping	Yes	Yes
	Basic IGMPv3 snooping	Yes	Yes
	Full IGMPv3 snooping	Yes	Yes
	IGMP filtering	Yes	Yes
	IGMP fast leave	Yes	Yes

Software Specifications		RG-NBS3300-16MG4XS-HP	RG-NBS3300-8MG2XS-P
Network Management and Monitoring	HTTP login	Yes	Yes
	HTTPS login	Yes	Yes
	Mirroring	Yes	Yes
	NTP client	Yes	Yes
	SNMPv1, v2c, and v3	Yes	Yes
	MQTT	Yes	Yes
	SON	Yes	Yes
	Ruijie Cloud management	Yes	Yes
	Displaying device information on Ruijie Cloud	Yes	Yes
Reliability	ERPS	Yes	Yes
	System dual backup	Yes (Only supported on devices with a factory-installed software version of ReyeeOS 2.320 or later)	Yes (Only supported on devices with a factory-installed software version of ReyeeOS 2.320 or later)
	Enabling dual backup for the partition Uboot (based on a single flash memory)	Yes	Yes
Security	Maximum number of ACEs	Number of ACEs in the inbound direction of an interface: 1900 Number of ACEs in the outbound direction of an interface: 0	Number of ACEs in the inbound direction of an interface: 1900 Number of ACEs in the outbound direction of an interface: 0
	DHCP snooping	Yes	Yes
	Standard ACL	Yes	Yes
	Extended MAC ACL	Yes	Yes
	Extended IP ACL	Yes	Yes
	IPv6 ACL	Yes	Yes

Software Specifications		RG-NBS3300-16MG4XS-HP	RG-NBS3300-8MG2XS-P
Security	**IP-MAC-port binding**	Yes	Yes
	ARP anti-spoofing	Yes	Yes
	IP source guard	Yes	Yes
	CPU Protection Policy	Yes	Yes

06 Compliance

Model	NBS3300-8MG2XS-P	NBS3300-16MG4XS-HP
Safety	EN 62368-1:2014 IEC 62368-1:2018 UL 62368-1:2019 CSA C22.2 No 62368-1:19	
Emissions	FCC CFR 47 Part 15 Class A EN 55032 Class A EN 300386 Class A ICES-003 Class A	
Immunity		
EMC	EN 55035 EN 300386	
ESD	IEC 61000-4-2	
Radiated	IEC 61000-4-3	
EFT/Burst	IEC 61000-4-4	
Surge	IEC 61000-4-5	
Conducted	IEC 61000-4-6	
Voltage Dips and Short Interruptions	IEC 61000-4-11	
Harmonics	IEC 61000-3-2	
Flicker	IEC 61000-3-3	

07 Ordering Information

Model	Description
RG-NBS3300-16MG4XS-HP	16 x 10/100/1000/2500BASE-T Ethernet ports, 4 x SFP+ ports (non-combo ports) (ports 1 to 4 support PoE/PoE+/PoE++); support full PoE load and half PoE+ load; fixed single power supply
RG-NBS3300-8MG2XS-P	8 x 10/100/1000/2500BASE-T Ethernet ports, 2 x SFP+ ports (non-combo ports), support full PoE load and full PoE+ load; fixed single power supply
Mini-GBIC-GT	1000BASE-GT mini GBIC transceiver
MINI-GBIC-SX-MM850	1000BASE-SX, SFP transceiver, SM (850 nm, 500 m, LC)
MINI-GBIC-LX-SM1310	1000BASE-LX, SFP transceiver, SM (1310 nm, 10 km, LC)
MINI-GBIC-LH40-SM1310	1000BASE-LH, SFP transceiver, SM (1310 nm, 40 km, LC)
MINI-GBIC-ZX80-SM1550	1000BASE-ZX80, SFP transceiver, SM (1550 nm, 80 km, LC)
GE-SFP-LX20-SM1310-BIDI	SFP BiDi transceiver—Tx1310/Rx1550, 20 km, LC
GE-SFP-LX20-SM1550-BIDI	SFP BiDi transceiver—Tx1550/Rx1310, 20 km, LC
GE-SFP-LH40-SM1310-BIDI	SFP BiDi transceiver—Tx1310/Rx1550, 40 km, LC
GE-SFP-LH40-SM1550-BIDI	SFP BiDi transceiver—Tx1550/Rx1310, 40 km, LC
XG-SFP-SR-MM850	10G SFP+ transceiver with LC connector, max. distance: 300 m
XG-SFP-LR-SM1310	10G SFP+ transceiver with LC connector, max. distance: 10 km
XG-SFP-ER-SM1550	10G SFP+ transceiver with LC connector, max. distance: 40 km

08   Package Content

RG-NBS3300-16MG4XS-HP

Item	Quantity
RG-NBS3300-16MG4XS-HP switch	1
Rack-mount brackets	2
M4 x 8 mm Philips countersunk screws	8
User Manual	1
Rubber pads	4
Warranty Card	1
Power cord	1
Yellow/green ground wire	1
Power cord retention clip	1

RG-NBS3300-8MG2XS-P

Item	Quantity
RG-NBS3300-8MG2XS-P switch	1
Rack-mount brackets	2
M3 x 6 mm Philips countersunk screws	8
User Manual	1
Rubber pads	4
Warranty Card	1
Power cord	1
Yellow/green ground wire	1
Power cord retention clip	1

09 | Warranty

For more information about warranty terms and period, contact your local sales agency.

- **Warranty terms:** https://www.ruijienetworks.com/support/servicepolicy

- **Warranty period:** https://www.ruijienetworks.com/support/servicepolicy/Service-Support-Summany/

Note: The warranty terms are subject to the terms of different countries and distributors.

10 | More Information

To learn more about the product, please visit our website or contact your local sales representative.

- https://reyee.ruijie.com/en-global/products/sme/switches/rg-nbs3300-16mg4xs-hp/

- https://reyee.ruijie.com/en-global/products/sme/switches/rg-nbs3300-8mg2xs-p/

Ruijie Networks Co., Ltd.

For more information, visit www.ruijienetworks.com or call 86-400-620-8818.