

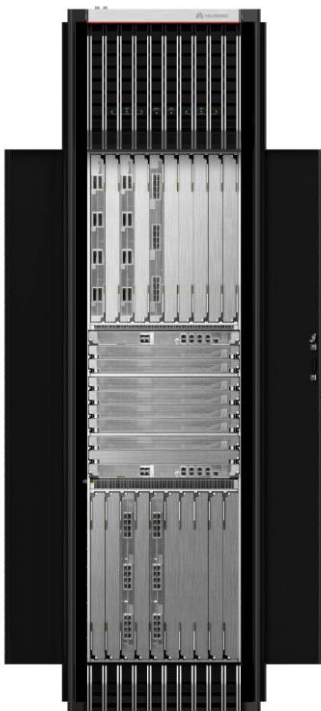
# NE9000 Series Core Routers

## Product Overview

As the Internet enters the cloud era, the meshed nature of cloud services makes network traffic difficult to predict while OTT and 4K video services consume large amounts of bandwidth. To respond to these changes, the backbone network needs higher bandwidth, more flexibility, and the ability to continuously expand. Huawei NetEngine9000 (NE9000) series routers are next-generation integrated backbone routers developed by Huawei for the cloud interconnect era. The NE9000 features large capacity, high stability, and an energy-saving design. The NE9000 is designed to serve as a core node in a large-scale Internet data center (IDC), a large-scale enterprise network, or a metro network, or as a super-core node in a carrier's backbone network.

As the largest petabit backbone router in the industry, the NE9000 uses Huawei-developed Solar 5.0 series NP chips and the industry's first high-speed backplane to provide a capacity of 4 Tbit/s per slot and smooth evolution to 8 Tbit/s in the future. The NE9000 adopts an innovative energy-saving design to reduce its power consumption to 0.4 W/G, which is 50% of the industry average. In addition to all functions of Ps and PEs, the NE9000 provides complete SDN and virtualization functions, which simplifies network architecture, integrates the bearing of multiple services, and enables high reliability and simple O&M.

NE9000-20



NE9000-8



# Product Highlights

## Powerful Forwarding Capability

With Huawei-developed Solar series NP chips, the NE9000 supports full-duplex forwarding of IPv4, IPv6, and MPLS packets at line rate on all interfaces. The NE9000 can also forward multicast traffic at line rate, and its hardware supports two-level multicast traffic replication: replication from switch fabric units (SFUs) to line processing units (LPUs) and replication from an LPU's forwarding engine to interfaces on the LPU. The NE9000 provides the largest port capacity in the industry, with the port capacity of a single chassis reaching 80 to 160 Tbit/s. In addition, the NE9000 supports the use of clustering to expand the capacity to as large as 7.68 Pbit/s, which makes it the largest petabit platform in the industry.

## Cloud-Oriented Agile Open Architecture

The NE9000 supports various technologies that cover multiple scenarios including the WAN backbone network and DCI. In the backbone traffic control solution, the NE9000 supports real-time traffic control, improving link usage. In the IP+Optical solution, the NE9000 allows for consolidation of network resources across layers, simplifying O&M and improving network resource usage. With technologies such as E2E DCI service provisioning, the NE9000 supports rapid deployment and provisioning of new services. The NE9000 adapts to fast changes of backbone network traffic in the cloud era and helps to construct cloud-oriented smart backbone networks.

## Advanced Service Capability

The NE9000 provides the well-designed IPv4/IPv6 solution to support smooth transition from IPv4 networks to IPv6 networks, from VPN over MPLS solution to E2E EVPN over E2E SR-MPLS/SRv6 solution. In addition, the NE9000 offers advanced QoS capabilities, providing different SLAs to meet the development requirements of various services such as Voice over Internet Protocol (VoIP) and over the top (OTT). The NE9000 adopts a robust security design and provides multiple security features to protect the data of Internet service providers (ISPs) and users. These features can protect services against denial of service (DoS) attacks, unauthorized access, and traffic overload on the control plane. In addition, the NE9000's distributed structure, which separates the data plane from the control plane, offers industry-leading security performance.

## Carrier-Class Reliability

The NE9000 provides a comprehensive set of reliability technologies. On the device level, the NE9000 uses a passive backbone design, with all key components supporting hot swap and hot backup, as well as stateful hot switchover, extensive non-stop routing and hot patching technologies, and smooth software upgrade. On the network level, the NE9000 provides multiple protection mechanisms such as fast IGP convergence, IP/LDP/TE/VLL FRR, TI-LFA, Anti-micro-loop, BGP/IS-IS auto FRR, VRRP, BFD/SBFD, and inter-board trunk link bundling, effectively ensuring the high-speed, reliable operation of network-wide services. The system availability exceeds 99.999%.

## Innovative Energy-Saving Design

The NE9000 adopts an energy-saving design, with the Solar chip using the IFA technology, reducing power consumption by 20% compared with traditional static high-frequency running. In addition, the power module design enables on-demand configuration, reducing power consumption by 50% compared with traditional integrated power supply. The NE9000 leads the industry with its compact structure, small size, light weight, and less than 0.4 W/G power consumption, achieving energy-saving design, deployment, and operation in a real sense and dramatically lowering network operation costs.

# Technical Specifications

Item	NE9000-8	NE9000-20
Dimensions (H x W x D)	1016 mm (23 U) x 442 mm x 945 mm (40 in. x 17.4 in. x 37.2 in.)	2200 mm (49.5 U) x 600 mm x 1000 mm (86.61 in. x 23.62 in. x 39.4 in.)
Weight (empty)	159 kg (350.5 lb)	231 kg (509.3 lb)

Item	NE9000-8	NE9000-20
Weight (integrated chassis (cabinet + power supply + fan))	181.0 kg (399.0 lb)	410.0 kg (903.9 lb)
Cabinet installation standard	Can be installed in a 1000 mm-deep standard 19-inch cabinet and is installed in a 2200 mm-high Huawei N610E cabinet by default.	The NE9000 chassis is integrated in a cabinet.
Typical power consumption	Typical 7970W (include 8 PMs, 3 LPU FANs, 2 SFU FANs) 2 MPU + 8 SFU + 8 20x100G QSFP28	Typical 18526W (include 13PMs, 8 LPU FANs, 4 SFU FANs) 2 MPU + 8 SFU + 20 20x100G QSFP28
Typical heat dissipation	25858 BTU/hour (include 8 PMs, 3 LPU FANs, 2 SFU FANs) 2 MPU + 8 SFU + 8 20x100G QSFP28	60106 BTU/hour (include 13PMs, 8 LPU FANs, 4 SFU FANs) 2 MPU + 8 SFU + 20 20x100G QSFP28
DC input voltage	<ul style="list-style-type: none"> <li>input voltage range: -40 V to -72 V</li> <li>input rated voltage: -48 V/-60 V</li> </ul>	<ul style="list-style-type: none"> <li>input voltage range: -40 V to -72 V</li> <li>input rated voltage: -48 V/-60 V</li> </ul>
AC input voltage	<ul style="list-style-type: none"> <li>input voltage range: AC:180 V to 264 V HVDC:192 V to 400 V</li> <li>input rated voltage: AC:200 V to 240 V HVDC:240/380 V</li> </ul>	<ul style="list-style-type: none"> <li>input voltage range: AC:180 V to 264 V HVDC:192 V to 400 V</li> <li>input rated voltage: AC:200 V to 240 V HVDC:240/380 V</li> </ul>
MTBF	18.87 years	18.74 years
MTTR	0.5 hours	0.5 hours
Availability	99.999%	99.999%
Slot quantity	18 slots, including 2 MPU slots, 8 SFU slots, and 8 LPU slots.	32 slots, including 2 MPU slots, 8 SFU slots, 20 LPU slots, and 2 CMU slots.
Redundant MPUs	1:1	1:1
Redundant Switch fabrics	7+1	7+1
Redundant fans	The device has two fan partitions. The LPU partition has three fan assemblies, which support 2+1 fan assembly redundancy. The SFU partition has two fan assemblies, which support 1+1 fan assembly redundancy. Each partition in support for proper fan operation in case of a single fan failure for a short period at 40°C (104°F).	The device has three fan partitions. Each partition has four fan assemblies, which support 3+1 fan assembly redundancy. Each partition in support for proper fan operation in case of a single fan failure for a short period at 40°C (104°F).
Redundant power supply	<ul style="list-style-type: none"> <li>[4T bundle] DC: 5+1</li> <li>[4T bundle] AC: 4+4</li> </ul>	<ul style="list-style-type: none"> <li>[1T bundle] DC: 7+1</li> <li>[1T bundle] AC: 5+5</li> <li>[2T bundle] DC: 8+1</li> <li>[2T bundle] AC: 6+6</li> <li>[4T bundle] DC: 8+1</li> <li>[4T bundle] AC: 6+6</li> </ul>
Forwarding performance	13520 Mpps(LPUI-2T)	33800 Mpps(LPUI-2T)
Switching capacity	83.78 Tbps	209.45 Tbps

Item	NE9000-8	NE9000-20
Operating temperature	<ul style="list-style-type: none"> <li>Long-term: 0°C to 40°C (32°F to 104°F)</li> <li>Short-term: -5°C to +50°C (23°F to 122°F)</li> <li>Remark: Restriction on the temperature variation rate: 30°C/hour (86°F/h)</li> </ul>	<ul style="list-style-type: none"> <li>Long-term: 0°C to 40°C (32°F to 104°F)</li> <li>Short-term: -5°C to +50°C (23°F to 122°F)</li> <li>Remark: Restriction on the temperature variation rate: 30°C/hour (86°F/h)</li> </ul>
Storage temperature	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)
Relative operating humidity	<ul style="list-style-type: none"> <li>Long term: 5% to 85% RH, non-condensing</li> <li>Short term: 5% to 95% RH, non-condensing</li> </ul>	<ul style="list-style-type: none"> <li>Long term: 5% to 85% RH, non-condensing</li> <li>Short term: 5% to 95% RH, non-condensing</li> </ul>
Relative storage humidity	5% to 95% RH, non-condensing	5% to 95% RH, non-condensing
Long-term operating altitude	<= 4000 m (13123.2 ft.) (For the altitude in the range of 1800 m to 4000 m [5905.44 ft. to 13123.2 ft.], the operating temperature of the NEU100 must decrease by 1°C [33.8°F] for every 220 m [721.78 ft.]	<= 4000 m (13123.2 ft.) (For the altitude in the range of 1800 m to 4000 m [5905.44 ft. to 13123.2 ft.], the operating temperature of the NEU100 must decrease by 1°C [33.8°F] for every 220 m [721.78 ft.]
Storage altitude	Less than 5000 m (16404 ft.)	Less than 5000 m (16404 ft.)

#### NOTE

- In the physical dimensions shown in the table, the width (W) does not include the rack-mounting ears.
- Temperature and humidity are measured at 1.5 m (4.92 ft.) above the floor and 0.4 m (1.31 ft.) in front of the cabinet. There should be no protection board on the front or back of the cabinet.
- "Short-term" refers to continuous working time that does not exceed 96 hours and accumulated working time per year that does not exceed 15 days. If the working time exceeds either of these values, it is considered "long-term".

## Ordering Information

### Basic Hardware Configurations

#### NE9000-20 Basic Configurations

BOM Number	Order Name	Description	Remarks
02353VWH	CR9P9KBASD8 B	NE9000-20 Basic Configuration(Include NE9000-20 48V DC Chassis,2*MPUQ2,8*SFU4T-G,4*32G Memory,2*32G SSD Card,9*DC Power Module, without Software Charge and Document)	
02353VWK	CR9P9KBASA8 B	NE9000-20 Basic Configuration(Include NE9000-20 Integrated AC/HVDC Chassis,2*MPUQ2,8*SFU4T-G,4*32G Memory,2*32G SSD Card,7*Dual-input AC/HVDC Power Module, without Software Charge and Document)	
02232KPT	CR9P9KSMKA8 0	NE9000-20 integrated cabinet door and engineering installation kit	
02353VWS	CR9PBKP20D0 4	NE9000-20 Chassis and Cabinet Integrated DC Chassis C(Including the Main Chassis and Power Distribution Frame)	

BOM Number	Order Name	Description	Remarks
02353VWV	CR9PBKPKAD04	NE9000-20 Chassis and Cabinet Integrated AC/HVDC Chassis B(Including the Main Chassis and Power Distribution Frame)	
03050BCB	CR9D0MPUQ280	NE9000-20 Main Processing Unit Q2(MPUQ2)	
03050CKC	CR9D0SFUTG80	NE9000-20 Switch Fabric Unit G for Single Chassis(SFU4T-G)	

#### NE9000-8 Basic Configurations

BOM Number	Order Name	Description	Remarks
02353VWM	CR9P9KBASD8C	NE9000-8 Basic Configuration(Include NE9000-8 48V DC Chassis,2*MPUR2,8*SFU4T-H,4*32G Memory,2*32G SSD Card,6*DC Power Module, without Software Charge and Document)	
02353VWP	CR9P9KBASA8C	NE9000-8 Basic Configuration(Include NE9000-8 Integrated AC/HVDC Chassis,2*MPUR2,8*SFU4T-H,4*32G Memory,2*32G SSD Card,5*Dual-input AC/HVDC Power Module, without Software Charge and Document)	
02352SNE	CR9PBKP8DC00	NE9000-8 Integrated DC Chassis Components B	
02352RNN	CR9PBKP8AD00	NE9000-8 Integrated AC/HVDC Chassis Components	
03050BBY	CR9D0MPUR280	NE9000-8 Main Processing Unit R2(MPUR2)	
03050CKA	CR9D0SFUTH80	NE9000-8 Switch Fabric Unit H for Single Chassis(SFU4T-H)	

#### NE9000 Powers/Fan Tray Assembly/Centralized Monitoring Module/Memory Module

BOM Number	Order Name	Description	Remarks
02313DKT	CR9B0PWRDC03	NE9000-20 DC Power Distribution Frame B	
02313DKU	CR9B0PWRDC04	NE9000-20 AC/HVDC Power Distribution Frame B	
02312GDC	PDC-2200WC	PSU-PDC-2200WC-PM2200W DC Power Supply	
02312JEA	PAH-3000WA	3000W Dual Inputs AC&HVDC Power Module	
02122145	CR5MDPD12500	DPD125-12-24 DC Power Distribution Box	
02232PKN	CR9B0N610E81	NE9000-8 Dust-proof door components	
21242422	CR9XFIXSPO8	Fixing parts for air filter sponge	

BOM Number	Order Name	Description	Remarks
	0		
21012707	TNVBFRACT05	A-type fiber management cabinet (150mmx300mmx2200mm)	
21050672	TNVA63BDO01	Side Door	

## Service Interface Boards

LPUI-4T Series Boards ("●" indicates supported items, "-" indicates unsupported items).

BOM	Order Name	Description	NE9000-8	NE9000-20	Remarks
03050DJC	CR9D00EK NB8S	40-Port 100GE/50GE- QSFP28 Integrated Line Process Unit CM(LPUI-4T- CM)	●	●	
02313MJP	CR9P9KHA LN8F	NetEngine9000 40-Port 100GE/50GE-QSFP28 LPUI-4T-CM Bundle(Including LPUI-4T- CM, 40*100G Port Enable RTU for LPUI-4T-CM, 40*100G L3VPN License)	●	●	Default 40*100GE enable
03050DJE	CR9DE8KE 8N8W	8-Port 400GE-QSFP-DD + 8-Port 100GE-QSFP28 Integrated Line Process Unit CM(LPUI-4T-CM, 8*100G RTU Enabled by default)	●	●	Default 8*100GE enable
02313MJR	CR9P9KHA LN8H	NetEngine9000 8-Port 400GE-QSFP-DD + 8-Port 100GE-QSFP28 LPUI-4T- CM Bundle(Including LPUI- 4T-CM, 8*400G Port Enable RTU for LPUI-4T- CM, 8*400G & 8*100G L3VPN License, 8*100G RTU Enabled by default)	●	●	Default 8*400GE and 8*100GE enable

LPUI-2T Series Boards ("●" indicates supported items, "-" indicates unsupported items).

BOM	Order Name	Description	NE9000-8	NE9000-20	Remarks
03058864	CR9D00EE NB83	20-Port 100GE-QSFP28 FlexE/MACSec Integrated Line Process Unit CM(LPUI-2T-CM)	●	●	
02312NDS	CR9P9KHA LM8A	NetEngine9000 20-Port 100G FlexE/MACSec LPUI- 2T-CM Bundle(Including LPUI-2T-CM, 20*100G Port Enable RTU for LPUI-2T- CM, 20*100G L3VPN	●	●	Default 20*100GE enable

BOM	Order Name	Description	NE9000-8	NE9000-20	Remarks
		License)			
03050DJF	CR9D00EE NB86	20-Port 100GE/50GE- QSFP28 Integrated Line Process Unit CM(LPUI-2T- CM)	•	•	
02313MJS	CR9P9KHA LN8I	NetEngine9000 20-Port 100GE/50GE-QSFP28 LPUI-2T-CM Bundle(Including LPUI-2T- CM, 20*100G Port Enable RTU for LPUI-2T-CM, 20*100G L3VPN License)	•	•	Default 20*100GE enable

LPUI-1T5 Series Boards ("•" indicates supported items, "-" indicates unsupported items).

BOM	Order Name	Description	NE9000-8	NE9000-20	Remarks
03059354	CR9D00EP YF8P	60-Port 25GE- SFP28/10GE-SFP+ LAN/WAN MACSec Integrated Line Process Unit CM(LPUI-1T5-CM)	•	•	
02312RPR	CR9P9KHA LL84	NetEngine9000 25GE- SFP28/10GE-SFP+ LAN/WAN MACSec LPUI- 1T5-CM Bundle(Including LPUI-1T5-CM, 60*10G Port Enable RTU for LPUI-1T5- CM, 60*10G L3VPN License)	•	•	Default 60*10GE enable

LPUI-1T Series Boards ("•" indicates supported items, "-" indicates unsupported items).

BOM	Order Name	Description	NE9000-8	NE9000-20	Remarks
03058834	CR9D00EP XF81	60-Port 10GBase LAN/WAN-SFP+ MACSec Integrated Line Process Unit CM(LPUI-1T-CM)	•	•	
02312NDT	CR9P9KHA LL82	NetEngine9000 60-Port 10G MACSec LPUI-1T-CM Bundle(Including LPUI-1T- CM, 60*10G Port Enable RTU for LPUI-1T-CM, 60*10G L3VPN License)	•	•	Default 60*10GE enable

## Software Configuration

### Software License

BOM Number	Order Name	Description	Remarks
88035VHW	CR9S9KNL3V0 S	NetEngine9000 400G L3VPN Port License(per 400G)	
88035USX	CR9S9KNL3V0 R	NetEngine9000 100G L3VPN Port License(per 100G)	
88035VHX	CR9S9KXL3V0 Q	NetEngine9000 10G L3VPN Port License(per 10G)	
88035VJC	CR9S9KNEVN0 S	NetEngine9000 400G EVPN Port License(per 400G)	
88035VJE	CR9S9KNEVN0 R	NetEngine9000 100G EVPN Port License(per 100G)	
88035VJF	CR9S9KXEVN0 Q	NetEngine9000 10G EVPN Port License(per 10G)	
88035VJJ	CR9S9KNXLA0 S	NetEngine9000 400G VxLAN Port License(per 400G)	
88035VJK	CR9S9KNXLA0 R	NetEngine9000 100G VxLAN Port License(per 100G)	
88035VJL	CR9S9KXXLAQ	NetEngine9000 10G VxLAN Port License(per 10G)	
88036QDB	CR9S9KKLCF8 0	NetEngine9000 400G Slicing Function Package License(per 400G)	
88035NWU	CR9S9KNLCF8 0	NetEngine9000 100G Slicing Function Package License(per 100G)	
88035NWW	CR9S9KXLCF8 0	NetEngine9000 10G Slicing Function Package License(per 10G)	
88035VJP	CR9S9KKSR68 4	NetEngine9000 400G SRv6 Function Package License(per 400G)	
88035VJR	CR9S9KNSR68 2	NetEngine9000 100G SRv6 Function Package License(per 100G)	
88035VJS	CR9S9KXSR68 2	NetEngine9000 10G SRv6 Function Package License(per 10G)	
88035VJV	CR9S9K0NMS8 2	NetEngine9000 100G MACSec Port License(per 100G)	
88035VJW	CR9S9K0XMS8	NetEngine9000 10G MACSec Port License(per 10G)	



BOM Number	Order Name	Description	Remarks
	2		
88036MXB	CR9S9KNBSLO V	NetEngine9000 2*100G Port Enable RTU for LPUI-4T-CM(per 2*100G)	
88036MLU	CR9P00LICS4S	NetEngine9000 40-Port 100GE/50GE-QSFP28 LPUI-4T-CM Enable RTU Setup Bundle(Including 10*100G Port Enable RTU for LPUI-4T-CM)	
82402738	CR9S9KNNRU 81	NetEngine9000 400G Port Enable RTU for LPUI-4T-CM(per 400G)	
88036MLW	CR9P00LICS6 Q	NetEngine9000 8-Port 400GE-QSFP-DD + 8-Port 100GE-QSFP28 LPUI-4T-CM Enable RTU Setup Bundle(Including 2*400G Port Enable RTU for LPUI-4T-CM)	
82401786	CR9S9KMNRU 81	NetEngine9000 100G Port Enable RTU for LPUI-2T-CM(per 100G)	
88035PPL	CR9P0MNLIC8 2	NetEngine9000 Enable RTU Setup Bundle for LPUI-2T-CM(Including 5*100G Port Enable RTU for LPUI-2T-CM)	
88036VCE	CR9P0MNLIC8 5	NetEngine9000 20-Port 100GE/50GE-QSFP28 LPUI-2T-CM Enable RTU Setup Bundle(Including 5*100G Port Enable RTU for LPUI-2T-CM)	
82402162	CR9S9KLXRU8 2	NetEngine9000 10G Port Enable RTU for LPUI-1T5-CM(per 10G)	
82402163	CR9S9KLXRU8 3	NetEngine9000 10G upgrade to 25G Port Enable RTU for LPUI-1T5-CM(per 25G)	
88035YAF	CR9P0LXLIC82	NetEngine9000 LPUI-1T5-CM Enable RTU Setup Bundle(Including 20*10G Port Enable RTU for LPUI-1T5-CM)	
82401787	CR9S9KLXRU8 1	NetEngine9000 10G Port Enable RTU for LPUI-1T-CM(per 10G)	
88035PPM	CR9P0LXLIC81	NetEngine9000 LPUI-1T-CM Enable RTU Setup Bundle(Including 20*10G Port Enable RTU for LPUI-1T-CM)	
88036BLW	CR9S9KBS8C0 0	NetEngine9000 Base SW,VRP8,V800R012	
88036YXC	CR9S9KBS8D0 0	NetEngine9000 Base SW,VRP8,V800R013	
88034BKU	CR9S9KEF000 0	NetEngine9000 Software Release Entitlement from Rn to R(n+1)	

BOM Number	Order Name	Description	Remarks
88035MKJ	CR9S9KCLCF80	NetEngine9000 Clock Function Package License	
88035MKK	CR9S9KOAMF80	NetEngine9000 Enhanced OAM Function Package License	
88035MHM	CR9S9K0MSF80	NetEngine9000 MDS Function Package License	

## Optical/Electrical Transceivers

### 400GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
02313KLT	OSK002N01	High Speed Transceiver, QSFP-DD FR4-4*100Gb/s PAM4(1310nm Band)-425Gb/s--3.3dBm-3.5dBm--7.6dBm-LC straight-SMF-2km	
02312HCM	OSK010N02	High Speed Transceiver, QSFP-DD LR8-8*50Gb/s PAM4(1310nm)-425Gb/s--2.8dbm-5.3dbm--9.1dbm-LC-SMF-10km	
02312YQG	OSK040N02	High Speed Transceiver, QSFP-DD ER8-8*50Gb/s PAM4(1310nm Band),-425Gb/s--0.6dBm-6.4dBm--16.1dBm-LC straight, SMF, 40km	
02313GSB	OSK080N03	High Speed Transceiver, QSFP-DD, Tunable DWDM 191.3-196.1THz, 478.75Gb/s, -10dBm, -6dBm, -12dBm, LC, SMF	
02313GRH	OSK080N02	High Speed Transceiver, QSFP-DD, 193.7THz, 478.75Gb/s, -10dBm, -6dBm, -12dBm, LC, SMF, ZR(with OA)	

### 100GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
02311NTY	OMND10N13	High Speed Transceiver, QSFP28, 850nm, 100G, -8.4dBm, 2.4dBm, -10.3dBm, MPO, MM, 0.1km, OM4	
02311QDH	OSN020N15	High Speed Transceiver, QSFP28, 1310nm, 4*25GBase, -6.5dBm, 2.5dBm, -9.8dBm, LC/PC, 2km (100GBASE-CWDM4)	
02312BSS	OSN010N24	High Speed Transceiver, QSFP28, 1310nm, 100G, -4.3dBm, 4.5dBm, -8.6dBm, LC, SMF, 10km	
02312AUE	OSN030N05	High Speed Transceiver, QSFP28, 1310nm, 100G, -2.5dBm, 2.9dBm, -21.4dBm, LC, SMF, 30km(NO	

BOM Number	Order Name	Description	Remarks
		FEC),40km(FEC)	
02312NVQ	QSFP28-100G-1310nm-40km-SM	High Speed Transceiver, QSFP28, 1310nm, 100G, -2.9dBm, 2.9dBm, -20.9dBm, LC, 40km	
02312NCX	QSFP28-100G-1310nm-80km-SM	High Speed Transceiver, QSFP28, 1310nm, 100G, 3dBm, 6.5dBm, -30dBm, LC, SMF, 80km	

#### 50GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
02311YNR	OSL010N01	High Speed Transceiver, QSFP28, 1311nm, 50Gb/s, -4dBm, 4.2dBm, -8.8dBm, LC, SMF, 10km	
02312AXF	QSFP28-50G-1311nm-40km-SM	High Speed Transceiver, QSFP28, 1310nm, 53.125G, 1.5dBm, 8dBm, -15dBm, Stright LC, SMF, 40km	
02312MLF	QSFP28-50G-1310nm-80km-SM-01	High Speed Transceiver-QSFP28-1310nm-50G-9.5dBm--30dBm-LC-SMF-80km	
02312EVV	QSFP28-50G-BIDI-10km-SM-1	BiDi Transceiver, QSFP28, 1331nm(TX)/1271nm(RX), 50G, -4.5dBm, 4.2dBm, -8.9dBm, LC, 10km	
02312EVW	QSFP28-50G-BIDI-10km-SM-2	BiDi Transceiver, QSFP28, 1271nm(TX)/1331nm(RX), 50G, -4.5dBm, 4.2dBm, -8.9dBm, LC, 10km	
02312EVX	QSFP28-50G-BIDI-40km-SM-2	BiDi Transceiver, QSFP28, 1295nm(TX)/1309nm(RX), 50G, 1.5dBm, 8dBm, -13.5dBm, LC, 40km	
02312EVY	QSFP28-50G-BIDI-40km-SM-1	BiDi Transceiver, QSFP28, 1309nm(TX)/1295nm(RX), 50G, 1.5dBm, 8dBm, -13.5dBm, LC, SMF, 40km	

#### 40GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
02310WUT	OMXD30009	High Speed Transceiver, QSFP+, 1310nm, 41.25Gbps, -7dBm, 2.3dBm, -11.5dBm, LC, SMF, 10km	
02310WUU	OMXD30010	High Speed Transceiver, QSFP+, 850nm, 41.25Gbps, -7.6dBm, -1dBm, -9.5dBm, MPO, MMF, 0.15km	

BOM Number	Order Name	Description	Remarks
02311NUA	OSM010N11	High Speed Transceiver,QSFP+,1310,41.25Gbps,-8.2dBm,0.5dBm,-12.6dBm,MPO,SM,10km	

#### 25GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
02310WUT	OMXD30009	High Speed Transceiver,QSFP+,1310nm,41.25Gbps,-7dBm,2.3dBm,-11.5dBm,LC,SMF,10km	
02310WUU	OMXD30010	High Speed Transceiver,QSFP+,850nm,41.25Gbps,-7.6dBm,-1dBm,-9.5dBm,MPO,MMF,0.15km	
02311NUA	OSM010N11	High Speed Transceiver,QSFP+,1310,41.25Gbps,-8.2dBm,0.5dBm,-12.6dBm,MPO,SM,10km	

#### 10GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
S4017482	OSX040N03	Optical Transceiver(SFP+,850nm,10Gb/s,-7.3~-1dBm,-11.1dBm,LC, MM,0.3km)	
S4017483	OSX001002	Optical Transceiver(SFP+,1310nm,10Gb/s,-8.2~0.5dBm,-12.6dBm,LC,SM,10km)	
S4017484	OMXD30002	Optical Transceiver(SFP+,1550nm,9.95~11.1Gb/s,-4.7~4dBm,-14.1dBm,LC,SM,40km)	
02310PVU	OSX080N04	Optical Transceiver(SFP+,1550nm,9.953~10.3125Gb/s,0~4dBm,-24dBm,LC,SM,80km)	

#### GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
02310RAV	OEGD01N01	Optical Functional Module,1000BASE-T-SFP Module,RJ45 Electrical Module,Auto Negotiate,Longest Transimission Distance 100m	
34060286	eSFP-850nm-1000Base-Sx/FC200 MM	Optical Transceiver,eSFP,850nm,2.125Gb/s(Multi rate) ,-9.5~-2.5dBm,-17dBm,LC,MM,0.5km	
S4016067	OSG010N05	Optical transceiver,eSFP,1310nm,1.25Gb/s,-9~-3dBm,-20dBm,LC,Single Mode,10km	
S4016954	OSG040002	Optical Transceiver(eSFP,1310nm,1.25Gb/s,-5~0dBm,-23dBm,LC,SM,40km)	

BOM Number	Order Name	Description	Remarks
34060360	eSFP-1550nm-1000Base-Zx/FC100	Optical Transceiver,eSFP,1550nm,1.25Gb/s,-2~-5dBm,-23dBm,LC,SM,80km	

## Software Upgrade Paths

Visit [Software Upgrade Paths](#) to get VRP software release version or patches.

## For More Information

For more information about the Series Routers, visit <http://e.huawei.com> or contact us in the following ways:


- Global service hotline: <http://e.huawei.com/en/service-hotline>
- Logging into the Huawei Enterprise technical support web: <http://support.huawei.com/enterprise/>
- Sending an email to the customer service mailbox: support\_e@huawei.com

---

**Copyright © Huawei Technologies Co., Ltd. 2021. All rights reserved.**

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

### Trademarks and Permissions

 HUAWEI and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

### Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

### Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base Bantian,  
Longgang Shenzhen 518129 People's  
Republic of China

Website: [www.huawei.com](http://www.huawei.com)