# NE20E-S Series Universal Service Routers

Product Overview

The Huawei ® NetEngine20E-S Universal Service Router (NE20E-S) series is a series of medium- to high-end network routers developed by Huawei for transportation, finance, energy, government, education, enterprise and Internet service provider (ISP) networks. NE20E-S series routers typically serve as aggregation nodes on wide area networks (WANs) or egress nodes on enterprise or campus networks.

The NE20E-S series includes the NE20E-S2E, NE20E-S2F, NE20E-S4, NE20E-S8, NE20E-S8A, NE20E-S16, and NE20E-S16A.
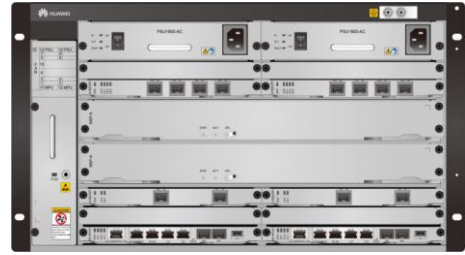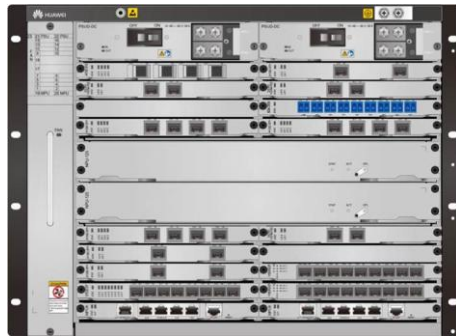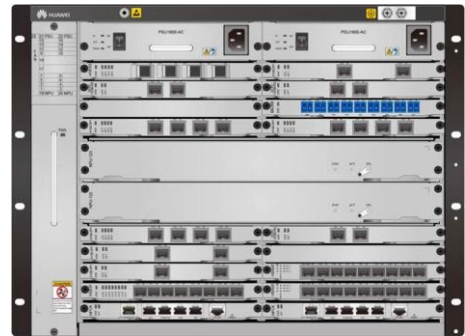
Figure 1 Huawei NE20E-S Series routers

NE20E-S2E-DC	NE20E-S2E-AC
NE20E-S2F-DC	NE20E-S2F-AC
NE20E-S4-DC	NE20E-S4-AC
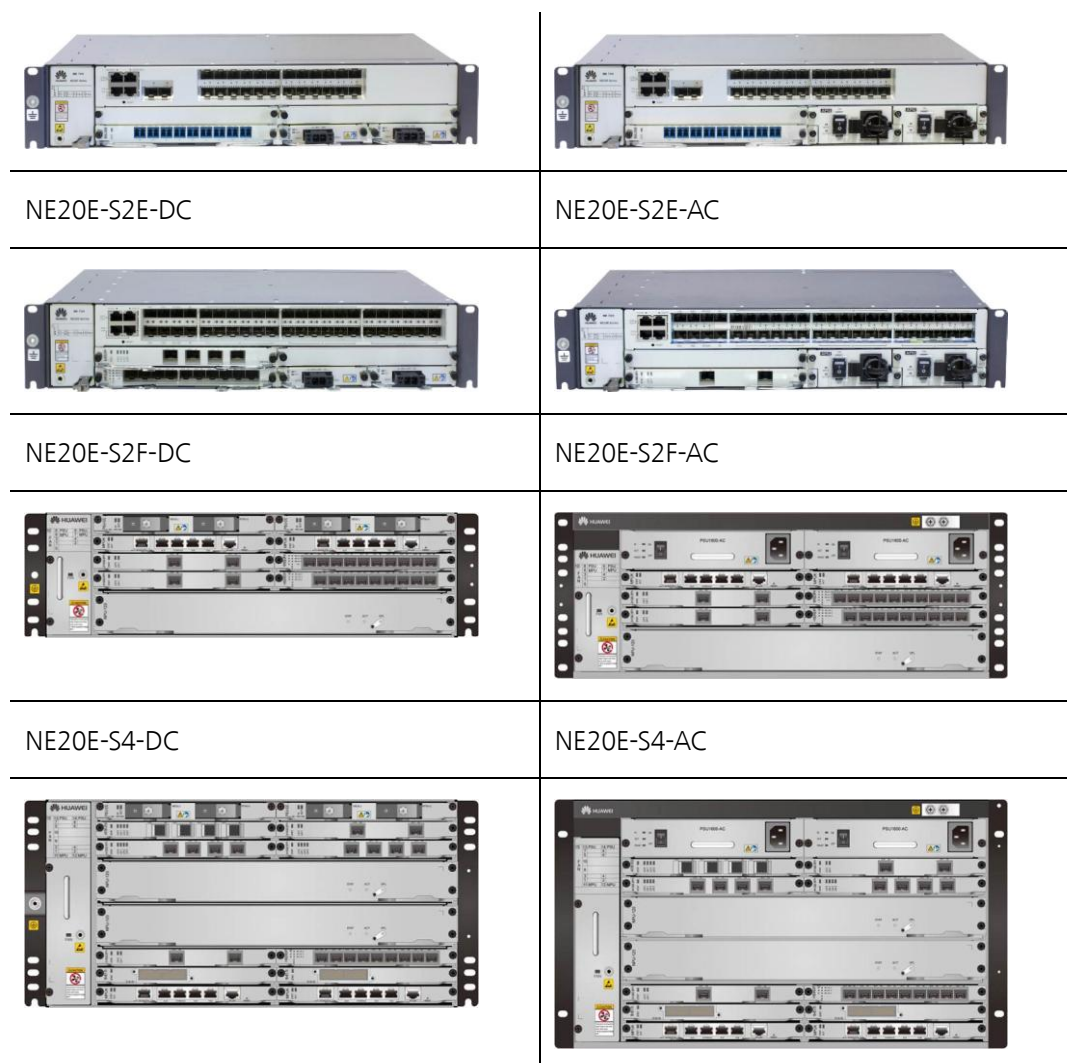
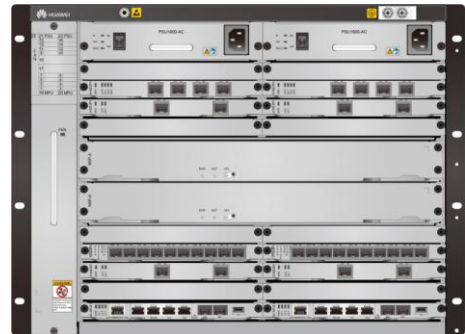| NE20E-S8-DC	NE20E-S8-AC
NE20E-S8A-DC	NE20E-S8A-AC
NE20E-S16-DC	NE20E-S16-AC
NE20E-S16A-DC	NE20E-S16A-AC
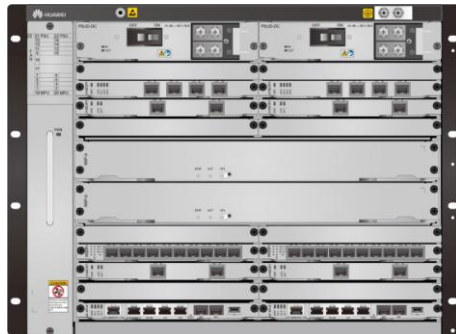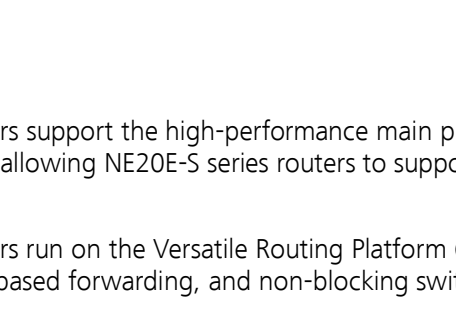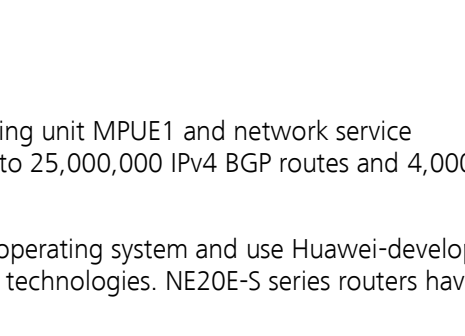
NE20E-S series routers support the high-performance main processing unit MPUE1 and network service processors NSP-A/B, allowing NE20E-S series routers to support up to 25,000,000 IPv4 BGP routes and 4,000,000 IPv4 FIB entries.

NE20E-S series routers run on the Versatile Routing Platform (VRP) operating system and use Huawei-developed NP chips, hardware-based forwarding, and non-blocking switching technologies. NE20E-S series routers have the following features:

- Line speed forwarding capabilities, industry-leading reliability, excellent scalability, a well-designed quality of service (QoS) mechanism, and strong service processing capabilities

- Powerful service access and aggregation capabilities and features, such as Layer 2 virtual private network (L2VPN), L3VPN, multicast, multicast VPN (MVPN), and Multiprotocol Label Switching - Traffic Engineering (MPLS-TE)

- Service features, such as Generic Routing Encapsulation (GRE), IP Security (IPSec), Network Address Translation (NAT), and NetStream

- Support for IPv6 and smooth transition from IPv4 to IPv6

The NE20E-S series routers can be flexibly deployed at the access and aggregation layer of IP/MPLS networks and work with other NE routers to provide an all-around network solution for enterprise users, satisfying diversified service requirements in the future.

NE20E-S Series routers can be used in the following scenarios:

- NE20E-S series routers can function as egress routers on large-scale campus networks or small-scale data centers, access or aggregation routers on large-scale WANs, backbone routers on small-scale WANs, and network probes.

- As network load increases and service types diverisify, device performance becomes insufficient for live network configuration, causing user experience to deteriorate. In this case, NE20E-S series routers can be used for network expansion to improve the bearing capability of networks and maintain sustainable development for networks.

- Old switches that function as aggregation nodes on the live network are about to experience end of production or end of maintenance. In this case, NE20E-S series routers can be used to replace these old switches. NE20E-S series routers can support up to 25,000,000 IPv4 BGP routes and 4,000,000 IPv4 FIB entries, and multiple services, such as QinQ, L2VPN, L3VPN, and MVPN services.

- The existing SDH leased line network has the following characteristics: CAPEX and OPEX are high; access services are limited; service provisioning is slow; the scalability is poor. To better serve users, services are migrated to an IP network that boasts low costs, great scalability, and flexible service access. NE20E-S series routers support multiple interfaces, such as E1, POS, CPOS, CWDM, GE, 10GE, and 40GE interfaces, and support the IP hard pipe function and the OAM and protection mechanism. NE20E-S series routers help IP networks provide leased line services similar to SDH, providing the IP network with high security, high bandwidth, low delay, and excellent OAM capabilities.

Product Features

Table 1 lists the features of the Huawei NE20E-S Series Routers.

Table 1. Features of Huawei NE20E-S Series Routers

Features	Description
Powerful Service Support	
Comprehensive access and aggregation capabilities	The NE20E-S supports various interface types (E1, POS, CPOS, GE, 10GE, and 40GE) and high-density fixed ports to provide access and aggregation WAN services as well as Ethernet multi-service transmission platform (MSTP) aggregation services, satisfying various service requirements.
Powerful routing capabilities	Service support: - User Types: individual or home users that access through Layer 2 or Layer 3 devices, Layer2 leased line, Layer 3 leased line, PPP leased line. - Access Link: xDSL, Ethernet, IPv4, and IPv4/IPv6 dual-stack. - Access protocol: IPoE, PPPoE, IPoEoVLAN, PPPoEoVLAN, IpoEoQ, PPPoEoQ, ND, etc. - Authentication methods: PPP (PAP and CHAP) authentication, Web (Portal)

Features	Description
	authentication, bind authentication, fast authentication, etc. And NE20E-S supports the information such as, DHCP Option, VBAS, VLAN, PPPOE+, for authentication and accounting. The authentication modes can be non-authentication, local authentication, remote authentication, and their combinations.
	● Authorization and Accounting: supports direct authorization, local authorization, RADIUS authorization. Dynamic authorization for online users is also supported.
	● Security: supports insulating and bounding-check users by VLAN or VPN.
	📖 **NOTE**
	NE20E-S2E/S2F do not support.
L2TP function	Service support:
	● NE20E-S can be an L2TP Access Concentrator (LAC), an L2TP Network Server (LNS) or an L2TP Tunnel Switch L2TP (LTS).
	● Supports backup LNS. When the master LNS becomes unavailable, the backup LNS sets up a connection with the LAC, therefore enhancing the reliability and fault tolerance ability of the L2TP services.
	● Supports load balancing on an LNS. When an L2TP connection is set up on a LAC, the LAC can be configured with or obtain from a RADIUS server multiple LNSs' IP addresses. The LAC then allocates sessions to these LNSs.
	📖 **NOTE**
	NE20E-S2E/S2F do not support.
Powerful routing capabilities	The NE20E-S supports various routing protocols, such as Routing Information Protocol (RIP), Open Shortest Path First (OSPF), Intermediate System-to-Intermediate System (IS-IS), Border Gateway Protocol version 4 (BGP4), and multicast routing protocols. The NE20E-S supports plaintext and ciphertext authentication as well as fast convergence. These features ensure network stability and security in complex routing environments.
Strong service bearer capabilities	The NE20E-S can have L2VPN, L3VPN, and MVPN deployed at the same time, as networks require. The NE20E-S also supports TE, selective 802.1Q-in-802.1Q (QinQ), Dynamic Host Configuration Protocol (DHCP), Layer Two Tunneling Protocol (L2TP), and NetStream. The NE20E-S can provide access for both traditional and newly emerging services, satisfying the needs of multiple service environments.
Powerful and expansible	The NE20E-S supports IPv4/IPv6 multicast protocols, including Protocol Independent Multicast - Sparse Mode (PIM-SM), PIM - Source Specific Multicast (PIM-SSM), Multicast Listener Discovery Version 1 (MLDv1), MLDv2, Internet Group Membership Protocol Version 3 (IGMPv3), and IGMP snooping. The NE20E-S has the flexibility to carry video services, such as Internet Protocol Television (IPTV), and satisfy multicast service requirements on networks of any scale.
High Availability	
Equipment-level reliability	The NE20E-S provides redundancy backup for key components. These key components support hot swap and hot backup. The NE20E-S also uses technologies, such as Non-Stop Routing (NSR), Non-Stop Forwarding (NSF), and In-Service Software Upgrade (ISSU), to ensure uninterrupted service forwarding.
Network-level reliability	The NE20E-S uses the following technologies to provide network-level reliability: IP fast reroute (FRR), Label Distribution Protocol (LDP) FRR, VPN FRR, TE FRR, hot standby, fast convergence of Interior Gateway Protocols (IGP), BGP, and multicast routes, Virtual Router Redundancy Protocol (VRRP), trunk load balancing and backup, hardware-based Bidirectional

Features	Description
	Forwarding Detection (BFD) of 3.3 ms, MPLS OAM, and Ethernet OAM. The NE20E-S provides an end-to-end protection switching speed of 200 ms with no service interruption.
Service-level reliability	The NE20E-S uses the following technologies to provide service-level reliability for L2VPNs and L3VPNs: VPN FRR, E-VRRP, VLL FRR, Ethernet OAM, and PW redundancy. These technologies ensure stable and reliable service operation with no service interruption.
High Security	
Device security	The NE20E-S supports multiple security mechanisms to ensure that the packets sent for central processing (CP) conform to the configured specifications. The NE20E-S can filter the spoofing and malformed packets sent for CP through unicast reverse path forwarding (URPF) on an interface and TCP/IP attack defense, discard packets with invalid TTLs through Generalized TTL Security Mechanism (GTSM) detection of TTLs of packets sent for CP, classify packets sent for CP according to protocol granularities and restrict the bandwidth, protect management interfaces and service interfaces through management plane protection. The NE20E-S also supports Management Plane Access Control (MPAC) function to protect devices from attacks. MPAC enables devices to filter packets destined for the CPU based on rules specified in an MPAC policy and discard unnecessary packets, which helps prevent attacks to the CPU.
Service security	The NE20E-S supports IPSec tunnel to provide high quality, interoperable and cryptology-based security for IP protocol packets. The NE20E-S supports National encryption and decryption algorithm. The NE20E-S supports Unicast Reverse Path Forwarding (URPF) to defend a network against attacks that are based on source address spoofing. The NE20E-S supports Layer 2 loop detection, which is a security mechanism used to detect loops on a Layer 2 network. The NE20E-S supports keychain that provides authentication functionality to applications such as Routing Protocol Application (RPA), Transmission Control Protocol (TCP), and signaling protocols (such as LDP). It also provides dynamic authentication key changes to all required applications. Keychain supports the Message Digest 5 (MD5), Secure Hash Algorithm-1 (SHA-1)-12, Hash Message Authentication Code for Message Digest 5 (HMAC-MD5), HMAC-SHA1-12, HMAC-SHA1-20, SHA2-256, and HMAC-HA2-256 authentication algorithms.
Flexible VS technologies	The NE20E-S supports flexible virtual system (VS) technologies. A physical router can be divided into multiple logical routers between which resources are separated. Services can be deployed on different VSs to form a multi-service network with service separation. Using VSs enhances security and reliability.

Features	Description
Flexible and Scalable, Investment Protection	
Control- and forwarding-plane separation	The NE20E-S uses a centralized routing engine and a distributed forwarding architecture, providing rich and flexible services and allowing for high-capacity forwarding. The NE20E-S has a monitoring plane, which helps ensure stable addressing and forwarding performance.
	The data, control, and monitoring planes are separated and each plane can be upgraded separately.
Advanced VRP platform	The NE20E-S uses the latest VRPv8 platform, which is also used by the NE5000E core router. The VRP uses the Resilient Distributed Framework (RDF), with separate management, service, data, and monitor planes. This greatly increases system flexibility, reliability, manageability, and expansibility.
	The VRP has grown mature and stable over years of use. So far, more than 7 million sets are running on live networks. Its rich features and stability have proven themselves through its wide application.
Huawei-developed chips, service on demand	The NE20E-S uses built-in Huawei-developed NP chips, giving it a flexible programmable architecture. Microcode programming can be used for new service deployment without the need to replace hardware, reducing cost. In addition, this architecture drastically shortens the technological innovation cycle and accelerates new service launch speed, helping customers build flexible and scalable networks.
Industry-leading Original Technology	
IP hard pipe	IP hard pipe is an IP network-based access technology newly developed by Huawei. It works with MPLS-TE and HQoS and reserves hardware resources to implement dedicated use of bandwidth for leased line services, ensuring low delay and high reliability.
	The NE20E-S supports IP hard pipe, providing a high-quality IP leased line solution for enterprises. IP hard pipe strictly isolates soft and hard pipes using hardware so that soft and hard pipe bandwidths are isolated and cannot be preempted. A hard pipe is similar to a synchronous digital hierarchy (SDH) rigid pipe. IP hard pipe uses IP Flow Performance Measurement (FPM) to measure service quality of flows. It uses the NMS and uTraffic to display the measurement result and real-time service operating status, making IP leased line services controllable, manageable, and visible.
OAM	The NE20E-S supports P2P Ethernet in the First Mile (EFM), E2E Connectivity Fault Management (CFM), E2E Y.1731, and their combinations to provide a complete Ethernet OAM solution.
	In addition, it supports IP FPM developed by Huawei to measure IP network performance. IP FPM directly measures IP service packets and monitors service changes online for fast fault locating. IP FPM provides highly-accurate measurements. It can be flexibly deployed and has no impact on services.

Features	Description
Less Investment	
Dynamic energy-saving design	The NE20E-S can dynamically change the number of forwarding chip processing cores, frequency, and bus bandwidth to compensate for service traffic changes, reducing boards' power consumption.
Reducing installation space	The NE20E-S series routers are only 220 mm deep and the lowest one is only 2 U height, reducing the required installation space.
Wide temperature range design	The NE20E-S can be used when the ambient temperature is between –40°C and +65°C, applicable to outdoor deployment.

Product Specification

Table 2 lists the specifications of Huawei NE20E-S Series Routers.

Table 2. Specifications of Huawei NE20E-S Series Routers

Item	NE20E-S2E	NE20E-S2F	NE20E-S4	NE20E-S8	NE20E-S16	NE20E-S8A	NE20E-S16A
Switching capacity	160 Gbit/s	320 Gbit/s	480 Gbit/s	960 Gbit/s	960 Gbit/s	2 Tbit/s	2 Tbit/s
Forwarding performance	120 Mpps	160 Mpps	360 Mpps	360 Mpps	360 Mpps	452 Mpps	452 Mpps
Fixed ports support	2*10GE (SFP+) + 24*GE (SFP)	4*10GE (SFP+) + 40*GE (SFP)	None	None	None	None	None
Slot quantity	2	2	4	8	16	8	16
Redundant MPUs	Unpluggable, no backup	Unpluggable, no backup	1:1	1:1	1:1	1:1	1:1
Redundant NSPs	Unpluggable, no backup	Unpluggable, no backup	1	1:1	1:1	1:1	1:1
MTBF	59.2 years	59.2 years	31.07 years	138.61 years	138.61 years	138.61 years	138.61 years
MTTR	2 hours	2 hours	0.5 hours	0.5 hours	0.5 hours	0.5 hours	0.5 hours
Availability	0.99999961 43	0.99999961 43	0.99999816 3	0.99999958 8	0.99999958 8	0.99999958 8	0.99999958 8

Item	NE20E-S2E	NE20E-S2F	NE20E-S4	NE20E-S8	NE20E-S16	NE20E-S8A	NE20E-S16A
Dimensions (H x W x D)	88.1 mm x 442 mm x 220 mm (3.47 in. x 17.40 in. x 8.66 in.)(2U)	88.1 mm x 442 mm x 220 mm (3.47 in. x 17.40 in. x 8.66 in.)(2U)	• DC: 132 mm x 442 mm x 220 mm (5.2 in. x 17.40 in. x 8.66 in.)(3U) • AC: 175 mm x 442 mm x 220 mm (6.89 in. x 17.40 in. x 8.66 in.)(4U)	• DC: 222 mm x 442 mm x 220 mm (8.74 in. x 17.40 in. x 8.66 in.)(5U) • AC: 264 mm x 442 mm x 220 mm (10.39 in. x 17.40 in. x 8.66 in.)(6U)	353 mm x 442 mm x 220 mm (13.9 in. x 17.40 in. x 8.66 in.)(8U)	• DC: 222 mm x 442 mm x 220 mm (8.74 in. x 17.40 in. x 8.66 in.)(5U) • AC: 264 mm x 442 mm x 220 mm (10.39 in. x 17.40 in. x 8.66 in.)(6U)	353 mm x 442 mm x 220 mm (13.9 in. x 17.40 in. x 8.66 in.)(8U)
Weight (empty)	• 2.2 kg (4.85 lb)	• 2.2 kg (4.85 lb)	• DC:4.4 kg (9.68 lb) • AC:5.5 kg (12.13 lb)	• DC:7.1 kg (15.66 lb) • AC:8.5 kg (18.74 lb)	• 11.5 kg (25.36 lb)	• DC:7.1 kg (15.66 lb) • AC:8.5 kg (18.74 lb)	• 11.5 kg (25.36 lb)
Weight (full configuration)	• DC:9.4 kg (20.73 lb) • AC:10.4 kg (22.93 lb)	• DC:9.5 kg (20.95 lb) • AC:10.5 kg (23.15 lb)	• DC:13.7 kg (30.21 lb) • AC:18.1 kg (39.91 lb)	• [NSP-A]: DC:21.5 kg (47.41 lb) • [NSP-A]: AC:26.5 kg (58.43 lb) • [NSP-C]: DC:24.1 kg (53.14 lb) • [NSP-C]: AC:28.8 kg (63.5 lb)	• [NSP-A]: DC:32.6 kg (71.88 lb) • [NSP-A]: AC:34.6 kg (76.29 lb) • [NSP-C]: DC:34.8 kg (76.73 lb) • [NSP-C]: AC:36.8 kg (81.14 lb)	• [NSP-A]: DC:21.6 kg (47.63 lb) • [NSP-A]: AC:26.5 kg (58.43 lb) • [NSP-C]: DC:24.5 kg (54.02 lb) • [NSP-C]: AC:29.1 kg (64.17 lb)	• [NSP-A]: DC:32.6 kg (71.79 lb) • [NSP-A]: AC:34.5 kg (76.07 lb) • [NSP-C]: DC:35.4 kg (77.97 lb) • [NSP-C]: AC:37.3 kg (82.25 lb)
Cabinet installation standard	ETSI 21-inch; IEC 19-inch	ETSI 21-inch; IEC 19-inch	ETSI 21-inch; IEC 19-inch	ETSI 21-inch; IEC 19-inch	ETSI 21-inch; IEC 19-inch	ETSI 21-inch; IEC 19-inch	ETSI 21-inch; IEC 19-inch

Item	NE20E-S2E	NE20E-S2F	NE20E-S4	NE20E-S8	NE20E-S16	NE20E-S8A	NE20E-S16A
Typical power consumption	DC:195 W AC:219 W	DC:259 W AC:285 W	DC:398 W AC:456 W	DC:645 W(NSP-A full configuration) AC:703 W(NSP-A full configuration)	DC:696 W(NSP-A full configuration) AC:740 W(NSP-A full configuration)	DC:997 W(NSP-C full configuration) AC:1105 W(NSP-C full configuration)	DC:1060 W(NSP-C full configuration) AC:1100 W(NSP-C full configuration)
Typical heat dissipation	DC:632.7 BTU/hour AC:710.5 BTU/hour	DC:840.3 BTU/hour AC:924.7 BTU/hour	DC:1291.3 BTU/hour AC:1479.5 BTU/hour	DC:2092.7 BTU/hour(NSP-A full configuration) AC:2280.8 BTU/hour(NSP-A full configuration)	DC:2258.1 BTU/hour(NSP-A full configuration) AC:2400.9 BTU/hour(NSP-A full configuration)	DC:3233.4 BTU/hour(NSP-C full configuration) AC:3583.8 BTU/hour(NSP-C full configuration)	DC:3437.8 BTU/hour(NSP-C full configuration) AC:3567.6 BTU/hour(NSP-C full configuration)
DC input voltage	input voltage range:-40V to -72V input rated voltage: -48V/-60V	input voltage range:-40V to -72V input rated voltage: -48V/-60V	input voltage range:-40V to -72V input rated voltage:-48V/-60V	input voltage range:-40V to -72V input rated voltage:-48V/-60V	input voltage range:-40V to -72V input rated voltage:-48V/-60V	input voltage range:-40V to -72V input rated voltage:-48V/-60V	input voltage range:-40V to -72V input rated voltage:-48V/-60V

Item	NE20E-S2E	NE20E-S2F	NE20E-S4	NE20E-S8	NE20E-S16	NE20E-S8A	NE20E-S16A
AC input voltage	• input voltage range:180V-264V • input rated voltage:200V-240V	• input voltage range:180V-264V • input rated voltage:200V-240V	• input voltage range:180V-264V • input rated voltage:200V-240V/100V-127V(dual-live-wire)	• input voltage range:180V to 264V • input rated voltage:200V-240V/100V-127V(dual-live-wire)	• input voltage range:180V to 264V • input rated voltage:200V-240V/100V-127V(dual-live-wire)	• [PSU1600–AC]:input voltage range:180V to 264V • [PSU1600–AC]:input rated voltage:200V-240V/100V-127V(dual-live-wire) • [PSU2400–AC]:input voltage range:90V AC to 290V AC/190V DC to 400V DC • [PSU2400–AC]:input rated voltage:200V-240V/100V-127V(dual-live-wire)/240VHVDC	• [PSU1600–AC]:input voltage range:180V to 264V • [PSU1600–AC]:input rated voltage:200V-240V/100V-127V(dual-live-wire) • [PSU2400–AC]:input voltage range:90V AC to 290V AC/190V DC to 400V DC • [PSU2400–AC]:input rated voltage:200V-240V/100V-127V(dual-live-wire)/240VHVDC
Redundant powers	1+1	1+1	1+1	1+1	1+1	1+1	1+1
Redundant fans	The device can work properly for a short time at 40°C if a single fan fails.	The device can work properly for a short time at 40°C if a single fan fails.	The device can work properly for a short time at 40°C if a single fan fails.	The device can work properly for a short time at 40°C if a single fan fails.	The device can work properly for a short time at 40°C if a single fan fails.	The device can work properly for a short time at 40°C if a single fan fails.	The device can work properly for a short time at 40°C if a single fan fails.

Item	NE20E-S2E	NE20E-S2F	NE20E-S4	NE20E-S8	NE20E-S16	NE20E-S8A	NE20E-S16A
Operating temperature	• Long-term:DC: -5 °C to 65 °C (23°F to 149°F) AC: 0 °C to 45 °C (32°F to 113°F) • Short-term:AC: -5 °C to 55 °C (23°F to 131°F) • Remark:Restriction on the temperature variation rate: 30 °C/hour	• Long-term:DC: -5 °C to 65 °C (23°F to 149°F) AC: 0 °C to 45 °C (32°F to 113°F) • Short-term:AC: -5 °C to 55 °C (23°F to 131°F) • Remark:Restriction on the temperature variation rate: 30 °C/hour	• Long-term: 0 °C to 45 °C (32°F to 113°F) • Short-term: -5 °C to 55 °C (23°F to 131°F) • Enhance: DC:-40°C to 65°C, -20°C start • Remark:Restriction on the temperature variation rate: 30 °C/hour	• Long-term: 0 °C to 45 °C (32°F to 113°F) • Short-term: -5 °C to 55 °C (23°F to 131°F) • Enhance: DC:-40°C to 65°C, -20°C start • Remark:Restriction on the temperature variation rate: 30 °C/hour	• Long-term: 0 °C to 45 °C (32°F to 113°F) • Short-term: -5 °C to 55 °C (23°F to 131°F) • Remark:Restriction on the temperature variation rate: 30 °C/hour	• Long-term: 0 °C to 45 °C (32°F to 113°F) • Short-term: -5 °C to 55 °C (23°F to 131°F) • Enhance: DC: -5°C to 65°C • Remark:Restriction on the temperature variation rate: 30 °C/hour	• Long-term: 0 °C to 45 °C (32°F to 113°F) • Short-term: -5 °C to 55 °C (23°F to 131°F) • Remark:Restriction on the temperature variation rate: 30 °C/hour
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)	−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)	−40°C to +70°C (−40°F to +158°F)
Relative operating humidity	• Long term: 5% to 85% RH, non-condensing • Short term: 5% to 95% RH, non-condensing	• Long term: 5% to 85% RH, non-condensing • Short term: 5% to 95% RH, non-condensing	• Long term: 5% to 85% RH, non-condensing • Short term: 5% to 95% RH, non-condensing	• Long term: 5% to 85% RH, non-condensing • Short term: 5% to 95% RH, non-condensing	• Long term: 5% to 85% RH, non-condensing • Short term: 5% to 95% RH, non-condensing	• Long term: 5% to 85% RH, non-condensing • Short term: 5% to 95% RH, non-condensing	• Long term: 5% to 85% RH, non-condensing • Short term: 5% to 95% RH, non-condensing
Relative storage humidity	5% to 95% RH, non-condensing	5% to 95% RH, non-condensing	5% to 95% RH, non-condensing	5% to 95% RH, non-condensing	5% to 95% RH, non-condensing	5% to 95% RH, non-condensing	5% to 95% RH, non-condensing
Long-term operating altitude	3000m @ 40°C	3000m @ 40°C	3000m @ 40°C	3000m @ 40°C	3000m @ 40°C	3000m @ 40°C	3000m @ 40°C

Item	NE20E-S2E	NE20E-S2F	NE20E-S4	NE20E-S8	NE20E-S16	NE20E-S8A	NE20E-S16A
Storage altitude	Less than 5000 m (16404 ft.)	Less than 5000 m (16404 ft.)	Less than 5000 m (16404 ft.)	Less than 5000 m (16404 ft.)	Less than 5000 m (16404 ft.)	Less than 5000 m (16404 ft.)	Less than 5000 m (16404 ft.)
Regulatory compliance	**EMC** • FCC Part15 Class A • ICES-003 Class A • AS/NZS CISRP22 Class A • VCCI Class A • BSMI（CNS 13438） Class A • IEC/EN 61000-3-2 • IEC/EN 61000-3-3 • IEC/EN 61000-3-12 • IEC/EN 61000-3-11 • ETSI EN 300 386 • ETSI EN 201 468 • ETSI EN 300 253 • CISPR22/EN55022 Class A • CISPR32/EN55032 Class A • CISPR24/EN55024 • IEC/EN-61000-4-2、GB17626.2 • IEC/EN-61000-4-3、GB17626.3 • IEC/EN-61000-4-4、GB17626.4 • IEC/EN-61000-4-5、GB17626.5 • IEC/EN-61000-4-6、GB17626.6 • IEC/EN-61000-4-8、GB17626.8 • IEC/EN-61000-4-11、GB17626.11 • IEC/EN-61000-4-29 • IEC/EN 61000-6-1 • IEC/EN 61000-6-2 • IEC/EN 61000-6-4 • ITU K.27 • ITU K.44 • EN 301 605						

Item	NE20E-S2E	NE20E-S2F	NE20E-S4	NE20E-S8	NE20E-S16	NE20E-S8A	NE20E-S16A
	Environment • IEC 60068-2-1 • IEC 60068-2-2 • IEC 60068-2-6 • IEC 60068-2-14 • IEC 60068-2-27 • IEC 60068-2-30 • IEC 60068-2-31 • IEC 60068-2-64 • IEC 60068-2-78 • ETSI EN 300 019-1-1 • ETSI EN 300 019-1-2 • ETSI EN 300 019-1-3 • ETSI EN 300 019-2-1 • ETSI EN 300 019-2-2 • ETSI EN 300 019-2-3 • ETSI EN 300 753 • ISTA 2B • IEC 60721-1 • IEC 60721-2 • IEC 60529 • IEC 721 • IEC 68 **Safety** • IEC/EN/AS/NZS 60950-1 • UL/CSA 60950-1 • IEC/EN 60825 • AS/NZS 60950 • FDA rules, 21 CFR 1040.10 and 1040.11 • IEC/EN 60825-1 • IEC/EN 60825-2 **Environmental protection** • 2011/65/EU(RoHS) • Regulation(EC)No.1907/2006(REACH) • 2012/19/EU(WEEE) **Operator** • VZ.TPR.9205: Verizon TEEER • ATIS-0600015.03.2013						

📖 **NOTE**

1. In the physical dimensions shown in the table, the width (W) does not include the rack-mounting ears.

2. 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.

3. "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

To place an order, visit the UniSTAR SCT Workspace.

Basic Hardware Configurations

Table 3. NE20E-S2E Basic Configuration Bundle

BOM Number	Order Name	Description	Remarks
02311ARG	CR2P2EBASD10	NE20E-S2E Basic Configuration (Includes NE20E-S2E Chassis,2*10GE-SFP+ and 24*GE-SFP fixed interface,2*DC Power,Fan Box,Power cord,without Software Charge and Document)	
02311ARH	CR2P2EBASA10	NE20E-S2E Basic Configuration (Includes NE20E-S2E Chassis,2*10GE-SFP+ and 24*GE-SFP fixed interface,2*AC Power,Fan Box,Power cord,without Software Charge and Document)	
02311BHJ	CR5B2PWRDC00	DC Power Supply Unit 600W	Two for each device.
02311BLJ	CR5B2PWRAC00	AC Power Supply Unit 500W	Two for each device.

Table 4. NE20E-S2F Basic Configuration Bundle

BOM Number	Order Name	Description	Remarks
02311ARQ	CR2P2FBASD10	NE20E-S2F Basic Configuration (Includes NE20E-S2F Chassis,4*10GE-SFP+ and 40*GE-SFP fixed interface,2*DC Power,Fan Box,Power cord,without Software Charge and Document)	
02311ARR	CR2P2FBASA10	NE20E-S2F Basic Configuration (Includes NE20E-S2F Chassis,4*10GE-SFP+ and 40*GE-SFP fixed interface,2*AC Power,Fan Box,Power cord,without Software Charge and Document)	
02311BHJ	CR5B2PWRDC00	DC Power Supply Unit 600W	Two for each device.
02311BLJ	CR5B2PWRAC00	AC Power Supply Unit 500W	Two for each device.

Table 5. NE20E-S4 Basic Configuration Bundle

BOM Number	Order Name	Description	Remarks
02357980	CR2M04BASD01	NE20E-S4 DC Basic Configuration (Includes NE20E-S4 Chassis,1*MPUE,2*DC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02357978	CR2M04BASD02	NE20E-S4 DC Basic Configuration (Includes NE20E-S4 Chassis,2*MPUE,2*DC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350DWY	CR2M04BASA01	NE20E-S4 AC Basic Configuration (Includes NE20E-S4 Chassis,1*MPUE,2*AC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350DXA	CR2M04BASA02	NE20E-S4 AC Basic Configuration (Includes NE20E-S4 Chassis,2*MPUE,2*AC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350FVB	CR2M04BASD11	NE20E-S4 DC Basic Configuration (Includes NE20E-S4 Chassis,1*MPUE1,2*DC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350FVD	CR2M04BASD12	NE20E-S4 DC Basic Configuration (Includes NE20E-S4 Chassis,2*MPUE1,2*DC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350FVL	CR2M04BASA11	NE20E-S4 AC Basic Configuration (Includes NE20E-S4 Chassis,1*MPUE1,2*AC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350FVP	CR2M04BASA12	NE20E-S4 AC Basic Configuration (Includes NE20E-S4 Chassis,2*MPUE1,2*AC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02351RKC	CR2P04BASD01	NE20E-S4 DC Basic Configuration (Includes NE20E-S4 Chassis,2*MPUEA,2*DC Power,Power cord,without Software Charge and Document)	
02351RKE	CR2P04BASA02	NE20E-S4 AC Basic Configuration (Includes NE20E-S4 Chassis,2*MPUEA,2*AC Power,Power cord,without Software Charge and Document)	
03030QCX	CR2D00MPUE10	Main Processing Unit E	Equipped with a 2GB memory.
03031EDQ	CR2D0MPUE110	Main Processing Unit E1	Equipped with an 8GB memory.
03032TUK	CR2D0MPUEA00	Main Processing Unit EA	
02310MSU	CR2M004FBX10	NE20E-S4 Fan Box	Universal fan box for AC or DC subracks; included in the chassis components.
03030QAS	CR5D00PSUC70	DC Power Supply Unit 1200W (with black box)	Two for each device.
02310RBJ	CR5D0PSUAC00	AC Power Supply Unit 1600w	Two for each device.

BOM Number	Order Name	Description	Remarks
02310TLW	CR2M0DPUDC10	NE20E-S4/S8 DC Power Distribution Unit	

Table 6. NE20E-S8 Basic Configuration Bundle

BOM Number	Order Name	Description	Remarks
02357981	CR2M08BASD02	NE20E-S8 DC Basic Configuration (Includes NE20E-S8 Chassis,2*MPUE,2*DC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02357982	CR2M08BASA02	NE20E-S8 AC Basic Configuration (Includes NE20E-S8 Chassis,2*MPUE,2*AC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350FVR	CR2M08BASD12	NE20E-S8 DC Basic Configuration (Includes NE20E-S8 Chassis,2*MPUE1,2*DC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350FVS	CR2M08BASA12	NE20E-S8 AC Basic Configuration (Includes NE20E-S8 Chassis,2*MPUE1,2*AC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02351RKF	CR2P08BASD01	NE20E-S8 DC Basic Configuration (Includes NE20E-S8 Chassis,2*MPUEA,2*DC Power,Power cord,without Software Charge and Document)	
02351RKG	CR2P08BASA02	NE20E-S8 AC Basic Configuration (Includes NE20E-S8 Chassis,2*MPUEA,2*AC Power,Power cord,without Software Charge and Document)	
03030QCX	CR2D00MPUE10	Main Processing Unit E	Equipped with a 2GB memory.
03031EDQ	CR2D0MPUE110	Main Processing Unit E1	Equipped with an 8GB memory.
03032TUK	CR2D0MPUEA00	Main Processing Unit EA	
02310MSV	CR2M008FBX10	NE20E-S8 DC Fan Box	Included in the DC chassis components.
02310SFU	CR2M008FBX11	NE20E-S8 AC Fan Box	Included in the AC chassis components
03030QAS	CR5D00PSUC70	DC Power Supply Unit 1200W (with black box)	Two for each device.
02310RBJ	CR5D0PSUAC00	AC Power Supply Unit 1600w	Two for each device.
02310TLW	CR2M0DPUDC10	NE20E-S4/S8 DC Power Distribition Unit	

Table 7. NE20E-S16 Basic Configuration Bundle

BOM Number	Order Name	Description	Remarks
02357983	CR2M16BASD02	NE20E-S16 DC Basic Configuration (Includes NE20E-S16 Chassis,2*MPUE,2*DC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02357984	CR2M16BASA02	NE20E-S16 AC Basic Configuration (Includes NE20E-S16 Chassis,2*MPUE,2*AC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350FVT	CR2M16BASD12	NE20E-S16 DC Basic Configuration (Includes NE20E-S16 Chassis,2*MPUE1,2*DC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350FVU	CR2M16BASA12	NE20E-S16 AC Basic Configuration (Includes NE20E-S16 Chassis,2*MPUE1,2*AC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02351RKH	CR2P16BASD01	NE20E-S16 DC Basic Configuration (Includes NE20E-S16 Chassis,2*MPUEA,2*DC Power,Power cord,without Software Charge and Document)	
02351RKJ	CR2P16BASA02	NE20E-S16 AC Basic Configuration (Includes NE20E-S16 Chassis,2*MPUEA,2*AC Power,Power cord,without Software Charge and Document)	
03030QCX	CR2D00MPUE10	Main Processing Unit E	Equipped with a 2GB memory.
03031EDQ	CR2D0MPUE110	Main Processing Unit E1	Equipped with an 8GB memory.
03032TUK	CR2D0MPUEA00	Main Processing Unit EA	
02310QMQ	CR2M016FBX10	NE20E-S16 Fan Box	Included in the chassis components.
03030RFQ	CR5D00PSUD71	DC Power Supply Unit 1600w (with black box)	Two for each device.
02310RBJ	CR5D0PSUAC00	AC Power Supply Unit 1600w	Two for each device.
02310TLX	CR2M0DPUDC11	NE20E-S16 DC Power Distribution Unit	

Table 8. NE20E-S8A Basic Configuration Bundle

BOM Number	Order Name	Description	Remarks
02350QWR	CR2M08BASD13	NE20E-S8A DC Basic Configuration (Includes NE20E-S8A Chassis,2*MPUE1,2*DC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350QWS	CR2M08BASA13	NE20E-S8A AC Basic Configuration (Includes NE20E-S8A Chassis,2*MPUE1,2*AC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.

BOM Number	Order Name	Description	Remarks
02351RKK	CR2P08BASA01	NE20E-S8A AC Basic Configuration (Includes NE20E-S8A Chassis,2*MPUE1,2*AC Power,Power cord,without Software Charge and Document)	
02351RKR	CR2B0BKP0814	NE20E-S8A Integrated AC 2400W Chassis Components	
03031EDQ	CR2D0MPUE110	Main Processing Unit E1	Equipped with an 8GB memory.
02310MSV	CR2M008FBX10	NE20E-S8 DC Fan Box	Included in the DC chassis components.
02310SFU	CR2M008FBX11	NE20E-S8 AC Fan Box	Included in the AC chassis components
03032CYL	CR5D00PSUC71	DC Power Supply Unit	Two for each device.
02310RBJ	CR5D0PSUAC00	AC Power Supply Unit 1600w	Two for each device.
02311URB	PAC2400D5303-CL	2400W AC Power Module	

Table 9. NE20E-S16A Basic Configuration Bundle

BOM Number	Order Name	Description	Remarks
02350QWT	CR2M16BASD13	NE20E-S16A DC Basic Configuration (Includes NE20E-S16A Chassis,2*MPUE1,2*DC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02350QWU	CR2M16BASA13	NE20E-S16A AC Basic Configuration (Includes NE20E-S16A Chassis,2*MPUE1,2*AC Power,Power cord,without Software Charge and Document)	NSPs are configured additionally.
02351RKL	CR2P16BASA01	NE20E-S16A AC Basic Configuration (Includes NE20E-S16A Chassis,2*MPUE1,2*AC Power,Power cord,without Software Charge and Document)	
03031EDQ	CR2D0MPUE110	Main Processing Unit E1	Equipped with an 8GB memory.
02350RGG	CR2B0BKP1611	NE20E-S16A Integrated Chassis Components	
02311MUS	CR2M016FBX12	NE20E-S16A Fan Box	Included in the chassis components;
03032CYM	CR5D00PSUD72	DC Power Supply Unit	Two for each device.
02310RBJ	CR5D0PSUAC00	AC Power Supply Unit 1600w	Two for each device.
02311URB	PAC2400D5303-CL	2400W AC Power Module	

Network Service Processor

Table 10. NE20E Series Network Service Processor("●" indicates "support", and "-" indicates "not support")

BOM	Order Name	Description	S2E	S2F	S4	S8	S16	S8A	S16A	Remarks
03030QGY	CR2D0NSP5010	Network Service Processor (NSP-50)	-	-	●	●	●	●	●	50Gbps line speed forwarding.
03030QHA	CR2DNSPE5010	Network Service Processor (NSP-50-E)	-	-	●	●	●	●	●	50Gbps line speed forwarding, supporting wide temperature range.
03030RFH	CR2DNSP12010	Network Service Processor (NSP-120)	-	-	●	●	●	●	●	120Gbps line speed forwarding.
03030RFG	CR2DNSP1201E	Network Service Processor (NSP-120-E)	-	-	●	●	●	●	●	120Gbps line speed forwarding, supporting wide temperature range.
03031DBV	CR2DNSPA0010	Network Service Processor（NSP-A)	-	-	●	●	●	●	●	120Gbps line speed forwarding, supporting NAT/IPSec.
03031DBX	CR2DNSPB0010	Network Service Processor（NSP-B)	-	-	●	●	●	●	●	240Gbps line speed forwarding, supporting NAT/IPSec.
03031YCJ	CR2DNSPC0010	Network Service Processor（NSP-C)	-	-	-	●	●	●	●	
03032SKX	CR2DNSPD0010	Network Service Processor（NSP-D)	-	-	-	-	-	●	●	

□ NOTE

NE20E-S4 supports only one NSP.

It is recommended to configure two NSPs of the same type for NE20E-S8/S8A/S16/S16A to support 1:1 NSP backup.

Line Cards

Table 11. NE20E Series 100GE/40GE Line Cards("●" indicates "support", and "-" indicates "not support")

BOM	Order Name	Description	S2E	S2F	S4	S8	S16	S8A	S16A	Remarks
03032TTW	CR2D00E2NF10	2-Port 100GBase-QSFP28 Physical Interface Card(PIC)	-	-	-	-	-	●	-	
03032TTY	CR2D00E1NC11	1-Port 100GBase-CFP2Physical Interface Card(PIC)	-	-	-	-	●	●	●	
03032AML	CR2D00E1NC10	1-Port 100GBase-CFP2 Physical Interface Card(PIC)	-	-	-	-	●	●	●	
03031LPW	CR2D00E1MF70	1-Port 40GBase-CFP Physical Interface Card(PIC)	-	●	●	●	●	●	●	Occupies one slot and must be installed on an NSP-120/A/B.

Table 12. NE20E Series Ethernet Line Cards("●" indicates "support", and "-" indicates "not support")

BOM	Order Name	Description	S2E	S2F	S4	S8	S16	S8A	S16A	Remarks
03032TTX	CR2D00LAXF11	10-Port 10GBase LAN/WAN-SFP+ Physical Interface Card(PIC)	-	-	-	-	●	●	●	
03032AMM	CR2D00LAXF10	10-Port 10GBase LAN/WAN-SFP+ Physical Interface Card(PIC)	-	-	-	-	●	●	●	
03031DJP	CR2D00L4XF11	4-Port 10GBase LAN/WAN-SFP+ Physical Interface Card	-	●	●	●	●	●	●	Occupies one slot and must be installed on an NSP-120/A/B.
03032KLS	CR2D0L2XFE10	2-Port 10GBase LAN/WAN-SFP+ Physical Interface Card E(PIC-E)	-	-	●	●	●	●	●	
03030WGQ	CR2D00L2XF12	2-Port 10GBase LAN/WAN-SFP+ Physical Interface Card	●	●	●	●	●	●	●	Occupies one slot.
03031DJQ	CR2DL1XE8G11	1-Port 10GBase LAN/WAN-SFP+ + 8-Port 100/1000Base-X-SFP Physical Interface Card	●	●	●	●	●	●	●	Occupies one slot.
03032KLT	CR2D00EEGF11	20-Port 100/1000Base-X-CSFP Physical Interface Card(PIC)	-	●	●	●	●	●	●	
03032KLR	CR2D0EAGFE10	10-Port 100/1000Base-X-SFP Physical Interface Card E(PIC-E)	-	-	●	●	●	●	●	
03031DJK	CR2D00EAGF10	10-Port 100/1000Base-X-SFP Physical Interface Card	●	●	●	●	●	●	●	Occupies one slot.
03031DHB	CR2D00E8GE12	8-Port 100/1000Base-RJ45 Physical Interface Card	●	●	●	●	●	●	●	Occupies one slot.

Table 13. NE20E Series Low-Speed Line Cards("●" indicates "support", and "-" indicates "not support")

BOM	Order Name	Description	S2E	S2F	S4	S8	S16	S8A	S16A	Remarks
03032TGP	CR2D00MPAA90	4-Channel FXS/FXO+2-Channel E&M+2-Channel RS232+2-Channel RS485 Board	●	●	●	●	●	●	●	
03032TGR	CR2D000SA890	8-Channel V.35/X.21/V.24 Board	●	●	●	●	●	●	●	
03032TGS	CR2D00MP8A90	4 Channels C37.94 Optical Interface and 4 Channels CoDir64K Electric Interface Board	●	●	●	●	●	●	●	
03030QCQ	CR2D000IE110	32-Port E1 Physical Interface Card(75ohm)	●	●	●	●	●	●	●	Occupies one slot.
03030QCP	CR2D000IE111	32-Port E1 Physical Interface Card(120ohm)	●	●	●	●	●	●	●	Occupies one slot.
03030RFA	CR2D000DE110	16-Port E1 Physical Interface Card(75ohm)	●	●	●	●	●	●	●	Occupies one slot.
03030REY	CR2D000DE111	16-Port E1 Physical Interface Card(120ohm)	●	●	●	●	●	●	●	Occupies one slot.
03030QCN	CR2D00C4CF11	4-Port Channelized STM-1c POS-SFP Physical Interface Card(PIC)	●	●	●	●	●	●	●	Occupies one slot.
03030RET	CR2D00P4CF11	4-Port OC-3c/STM-1c POS-SFP Physical Interface Card	●	●	●	●	●	●	●	Occupies one slot.
03031DKA	CR2DP2C1HF11	2-Port OC-3c/STM-1c (or 1-Port OC-12c/STM-4C) POS-SFP Physical Interface Card	●	●	●	●	●	●	●	Occupies one slot. Commands can be used to switch the interface rate between 622 Mbps and 155 Mbps.
03031DKB	CR2D00C1CF11	1-Port Channelized STM-1c POS-SFP Physical Interface Card	●	●	●	●	●	●	●	Occupies one slot.
03031WDR	CR2D00A2CF10	2-Port OC-3c/STM-1c ATM-SFP Physical Interface Card	●	●	●	●	●	●	●	

Table 14. NE20E Series WDM Line Cards("●" indicates "support", and "-" indicates "not support")

BOM	Order Name	Description	S2E	S2F	S4	S8	S16	S8A	S16A	Remarks
03030RJQ	CR5D08CWDM70	8-Channel CWDM Multiplexing & Demultiplexing (1471/1491/1511/1531/1551/1571/1591/1611nm) Physical Interface Card(PIC)	●	●	●	●	●	●	●	Occupies one slot. Not applicable to outdoor deployment.

Table 15. NE20E Series IP Hard Pipe Line Cards("●" indicates "support", and "-" indicates "not support")

BOM	Order Name	Description	S2E	S2F	S4	S8	S16	S8A	S16A	Remarks
03031DKC	CR2D0L2XFH10	2-Port 10GBase LAN/WAN-SFP+ Physical Interface Card H	-	●	●	●	●	●	●	
03031DKK	CR2D0EAGFH10	10-Port 100/1000Base-X-SFP Physical Interface Card H	-	●	●	●	●	●	●	
03032CRN	CR2D0L2XFH11	2-Port 10GBase LAN/WAN-SFP+ Physical Interface Card H	-	●	●	●	●	●	●	Is a hard pipe card that occupies one slot and must be installed on an NSP-A/B.
03032CRP	CR2D0E8GFH10	8-Port 100/1000Base-X-SFP Physical Interface Card H	-	●	●	●	●	●	●	Is a hard pipe card that occupies one slot and must be installed on an NSP-A/B.

Software Configuration

Table 16. Software License

BOM Number	Order Name	Description	Remarks
88034LAY	CR2S20BS8A00	NE20E-S Series Base SW,VRP8,V800R010	
88034PBE	CR2P20SWF891	NE20E-S BRAS Bundle Function License	
88034LYV	CR2P20SWF890	NE20E-S VRP8 V800R009 Software Bundle	
88033VWN	CR2S20BS8900	NE20E-S Series Base SW,VRP8,V800R009	
81400417	CR2S20CLCK01	NE20E-S Series 1588v2 Function License	(Optional) one for each device.
81400574	CR2S200FPM00	NE20E-S Series IP Performance Measure License（IP FPM）	(Optional) one for each device.
81400679	CR2S200VXL00	NE20E-S Series VxLan Function License	(Optional) one for each device and must be installed on an NSP-120/A/B.
81400827	CR2S20L2TP00	NE20E-S Series L2TP Function License	One for an NE20E-S. This license is supported only on the S4/S8/S16/S8A/S16A equipped with the MPUE1+NSP-A/B+ Ethernet board.
81400828	CR2S20BRAS00	NE20E-S Series PPPoE/IPoE Function License	One for an NE20E-S. This license is supported only on the S4/S8/S16/S8A/S16A equipped with the MPUE1+NSP-A/B+ Ethernet board.
82400841	CR2S20QS0100	NE20E-S Series Subscribers Quantity(1k Subscribers)	At most 16 for an NE20E-S. This license is supported only on the S4/S8/S16/S8A/S16A equipped with the MPUE1+NSP-A/B+ Ethernet board.
88031TXA	CR2S20EF0001	NE20E-S Series Rn to R(n+1) Software Release Entitlement from Rn to R(n+1)	
81400989	CR2S20DAA090	NE20E-S Series DAA Function License	
88034LBA	CR2S30BS8A00	NE20E-S Series Base SW,VRP8,V800R010	
88034LBA	CR2S30BS8A00	NE20E-S Series Base SW,VRP8,V800R010	
88034PBF	CR2P30SWF891	NE20E-S2 BRAS Bundle Function License	
88034LYW	CR2P30SWF890	NE20E-S2 VRP8 V800R009 Software Bundle	

BOM Number	Order Name	Description	Remarks
88033VWM	CR2S30BS8900	NE20E-S2 Series Base SW,VRP8,V800R009	
81400825	CR2S30ACTP02	NE20E-S2F Enable Fixed Interface 2*10GE License	Only supports S2F.
81400629	CR2S30CLCK01	NE20E-S2 Series 1588v2 Function License	(Optional) one for each device.
81400630	CR2S3000FQ00	NE20E-S2 Series H-QoS Function License	(Optional) one for each device.
81400631	CR2S300FPM00	NE20E-S2 Series IP Performance Measure License（IP FPM）	(Optional) one for each device.
81400650	CR2S30IPHF01	NE20E-S2 Series Fixed Interface IP Harden Pipe Function License	(Optional) one for each device. The license controls the IP hard pipe function of all fixed interfaces. Only supports S2F.
81400678	CR2S300VXL00	NE20E-S2 Series VxLan Function License	(Optional) one for each device. The license controls the IP hard pipe function of all fixed interfaces. Only supports S2F.
81400889	CR2S30L2TP00	NE20E-S2 Series L2TP Function License	
81400890	CR2S30BRAS00	NE20E-S2 Series PPPoE/IPoE Function License	
82400871	CR2S30QS0100	NE20E-S2 Series Subscribers Quantity(1k Subscribers)	
88032UDT	CR2S30EF0000	NE20E-S2 Series Rn to R(n+1) Software Release Entitlement from Rn to R(n+1)	Version upgrade fees.
81400988	CR2S30DAA090	NE20E-S2 Series DAA Function License	

Documents

Table 17. Documents for NE20E

BOM Number	Order Name	Description	Remarks
31189899	CR2I8ADOCE91	HUAWEI NE20E-S Universal Service Router Product Documentation-(V800R010C00_01)	
31189901	CR2I8ADOCE90	HUAWEI NE20E-S2 Universal Service Router Product Documentation-(V800R010C00_01)	

Optical/Electrical Transceivers

Table 18. Ethernet 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	

Table 19. GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
S4016955	OMU0D5002	Optical Transceiver(eSFP,850nm,2.125Gb/s(Multi rate) ,-9.5~-2.5dBm,-17dBm,LC,MM,0.5km,Data China Special)	
S4016067	eSFP-1310nm-1000Base-Lx SM	Optical transceiver(eSFP,1310nm,1.25Gb/s,-9dBm~-3dBm,-20dBm, LC,SM,10km)	

BOM Number	Order Name	Description	Remarks
S4016954	OSG040002	Optical Transceiver(eSFP,1310nm,1.25Gb/s,-5~0dBm,-23dBm,LC,SM,40km)	
02310RAW	OSG080N01	Optical Transceiver,eSFP,1550nm,1.25Gb/s,-2~5dBm,-23dBm,LC,SM,80km	
02310RAX	OSG100N01	Optical Transceiver,NetEngine40E,CR5M1SF29,Optical Transceiver,eSFP,1550nm,1.25Gb/s,0~5dBm,-30dBm,LC,SM,100km	

Table 20. 155M Optical Transceiver

BOM Number	Order Name	Description	Remarks
02310WQY	OECD01N03	Electrical Active Module-Copper Transceiver,SFP,STM-1e	
S4015731	SFP-FE-SX-MM1310	Optical Transceiver(SFP,1310nm,STM1,-19dBm~-14dBm,-30dBm,Multimode,LC,2km)	
S4015755	eSFP-FE-LX-SM1310	Optical Transceiver(eSFP,1310nm,STM1,-15dBm~-8dBm,-31dBm,Singlemode,LC,15Km)	
S4015715	eSFP-FE-LH40-SM1310	Optical Transceiver(eSFP,1310nm,STM1,-5dBm~0dBm,-37dBm,Singlemode,LC,40Km)	
S4015716	eSFP-FE-LH80-SM1550	Optical Transceiver(eSFP,1550nm,STM1,-5dBm~0dBm,-37dBm,Singlemode,LC,80Km)	

Table 21. 622M Optical Transceiver

BOM Number	Order Name	Description	Remarks
S4015760	OSH015N05	Optical Transceiver(eSFP,1310nm,STM4,-15dBm~-8dBm,-30dBm,Singlemode,LC,15Km)	
S4015713	eSFP-1310nm-L-4.1	Optical Transceiver(eSFP,1310nm,STM4,-3dBm~2dBm,-30dBm,Singlemode,LC,40km)	
02310QXT	OSH080N01	Optical Transceiver,NetEngine40E,CR5M1SF21,Optical Transceiver,eSFP,1550nm,STM4,-3~2dBm,-30dBm,LC,SM,80km	

Table 22. 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)	

Table 23. 40GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
02310WUV	OSMD10N02	High Speed Transceiver,CFP,850nm,4*10.3125Gb/s,-7.6dBm,2.4dBm,-5.4dBm,mpo,0.1km	Not applicable to outdoor deployment.
S4017471	OSM010C02	High Speed Transceiver,CFP,1271~1331nm CWDM-41.25Gb/s--1dBm-3dBm--11.5dBm-LC-SM-10km	Not applicable to outdoor deployment.
02311BLM	OSM040C01	High Speed Transceiver,CFP,4*10Gb/s(1310 NM BAND),41.25Gb/s,-1.1dBm,3.8dBm,-18dBm,straight LC,SMF,40km,OMA OPTICAL POWER,40GBASE-ER4	Not applicable to outdoor deployment.
02311AYS	OSX080N05	High Speed Transceiver,CFP,4*10Gb/s(1550 NM BAND),41.25Gb/s,-0dBm,4.5dBm,-22dBm,straight LC,SMF,80km	Not applicable to outdoor deployment.

Table 24. 100GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
02310WUR	OSN010N09	High Speed Transceiver,CFP2,4*25Gb/s(1310nm Band),103.125Gb/s,-2.5dBm,4.5dBm,-8.6dBm,LC straight,SMF,10km	
02311FAP	OSN040N03	High Speed Transceiver,CFP2,1310nm Band,103.125Gb/s,-2.9dBm,2.9dBm,-21.4dBm,Straight LC,SMF,40km,OMA OPTICAL POWER,100GBASE-ER4	
45030021	SS-OP-ATN-LC-5	Fixed Optical Attenuator,1260nm~1620nm-5dB-LC/PC-45dB	
45030022	SS-OP-ATN-LC-10	Fixed Optical Attenuator,1260nm~1620nm-10dB-LC/PC-45dB	
02311NTX	OSN010N15	High Speed Transceiver,QSFP28,1310nm,100G,-4.3dBm,4.5dBm,-8.6dBm,LC,SMF,10km	
02311NTY	OMND10N13	High Speed Transceiver,QSFP28,850nm,100G,-8.4dBm,2.4dBm,-10.3dBm,MPO,MM,0.1km,OM4	

Table 25. GE CWDM Optical Transceiver

BOM Number	Order Name	Description	Remarks
S4017301	OSG080201	Optical transceiver(eSFP,1471nm,100M~2.67Gbps,0dBm,5dBm,-28dBm,LC,SM,80Km)	
S4017299	OSG080202	Optical transceiver(eSFP,1491nm,100M~2.67Gbps,0dBm,5dBm,-28dBm,LC,SM,80Km)	
S4017297	OSG080203	Optical transceiver(eSFP,1511nm,100M~2.67Gbps,0dBm,5dBm,-28dBm,LC,SM,80Km)	
S4017300	OSG080204	Optical transceiver(eSFP,1531nm,100M~2.67Gbps,0dBm,5dBm,-28dBm,LC,SM,80Km)	
S4017296	OSG080205	Optical transceiver(eSFP,1551nm,100M~2.67Gbps,0dBm,5dBm,-28dBm,LC,SM,80Km)	
S4017294	OSG080206	Optical transceiver(eSFP,1571nm,100M~2.67Gbps,0dBm,5dBm,-28dBm,LC,SM,80Km)	
S4017295	OSG080207	Optical transceiver(eSFP,1591nm,100M~2.67Gbps,0dBm,5dBm,-28dBm,LC,SM,80Km)	
S4017298	OSG080208	Optical transceiver(eSFP,1611nm,100M~2.67Gbps,0dBm,5dBm,-28dBm,LC,SM,80Km)	

Table 26. BIDI Optical Transceiver

BOM Number	Order Name	Description	Remarks
02310QNG	OSC015B01	Optical transceiver,eSFP,Tx 1310nm/Rx 1550nm,155M,-8dBm,-15dBm,-32dBm,LC/PC,SM,15km	
02310QNH	OSC015B02	Optical transceiver,eSFP,Tx 1550nm/Rx 1310nm,STM1,-8dBm,-15dBm,-32dBm,LC/PC,SM,15km	
34060639	eSFP-1550/1310-L1.1-BIDI	Optical Transceiver,eSFP,Tx1550/Rx1310,0.1~1.25Gb/s,-3~2dBm,-25dBm,LC,SM,40km	
34060638	eSFP-1310/1550-L1.1-BIDI	Optical Transceiver,eSFP,Tx1310/Rx1550,0.1~1.25Gb/s,-3~2dBm,-25dBm,LC,SM,40km	
34060544	OSX010B10	BiDi Transceiver,SFP+,1270nm(Tx)/1330nm(Rx),2.5~11.3Gb/s,-8.2dBm,0.5dBm,-14.4dBm,LC,SM,10km	
34060546	OSX010B11	BiDi Transceiver,SFP+,1330nm(Tx)/1270nm(Rx),2.5~11.3Gb/s,-8.2dBm,0.5dBm,-14.4dBm,LC,SM,10km	
02310VPT	OEGD01N02	Optical functional module,1000BASE-T -SFP RJ45Electrical Module,Auto Negotiate,100m ,-40~85degC	
02310WQT	OMGD55N03	Transceiver,ESFP,850nm,1.25Gb/s,-2.5dBm,-10dBm,-17dBm,LC(-40~85),0.55km,multimode	
02310WQW	OSG010N03	Optical Transceiver,eSFP,1310nm,1.25Gb/s,-9.5~-3dBm,-20dBm,LC(-40~85),SM,10km	
02310WQX	OSG040N03	Optical transceiver,eSFP,1310nm,1.25Gb/s,3dBm,-4.5dBm,-22.5dBm,LC(-40~85),40km	
02310WRA	OSC015N03	Optical Transceiver,eSFP(industry),1310nm,STM1,-15~-8dBm,-31dBm,LC,SM,15km	
02310WRB	OSC040N03	Optical Transceiver,eSFP(industry),1310nm,STM1,-5~0dBm,-37dBm,LC,SM,40km	
02310WRC	OSC080N03	Optical Transceiver,eSFP(industry),1550nm,STM1,-5~0dBm,-37dBm,LC,SM,80km	
02310WRD	OMXD10N02	Optical Transceiver,SFP+,850nm,9.8G,-5dBm,-1dBm,-11.1dBm,LC,MMF,0.1km	
02310WRF	OSX040N08	Optical transceiver,SFP+,1550nm,9.95~11.1Gb/s,-4.7~4dBm,-14.1dBm,LC,SM,40km	

Table 27. CSFP GE Optical Transceiver

BOM Number	Order Name	Description	Remarks
34060894	OSG040008	BiDi Transceiver,CSFP,Tx1490/Rx1310nm,1.25G,-5dBm,0dBm,-25dBm,LC(-40~85),SM,40km	
34060803	OSG010005	BiDi Transceiver,CSFP,Tx1490/Rx1310nm,125M~1.25Gbps,-9dBm,-3dBm,-24dBm,LC,SM,10km,-40~85degC	
34061329	OSG010007	BiDi Transceiver,CSFP,1310(Tx)/1490(Rx)nm,1.25Gb/s,-9dBm,-3dBm,-24dBm,LC,SMF,10km	

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HUAWEI TECHNOLOGIES CO., LTD.

Huawei Industrial Base

Bantian, Longgang

Shenzhen 518129, P.R. China

Tel: +86-755-28780808

www.huawei.com