

NE40E Series 480G Flexible Card Line Processing Units Data Sheet



Product Overview

Huawei® NE40E Series Universal Service Routers support 480 Gbps flexible card line processing units (LPUF-480 Series). The LPUF-480 Series line processing units handle all the network data-plane traffic-processing tasks of Huawei NE40E series universal service routers.

Figure 1. 480G Flexible Card Line Processing Units



Flexible Card Line Processing Unit (LPUF-480)



Flexible Card Line Processing Unit B (LPUF-480-B)



2-Port 100GBase-CFP2 Flexible Card A (P480-A)



24-Port 10GBase LAN/WAN-SFP+ Flexible Card A (P480-A)



Flexible Card Line Processing Unit E (LPUF-480-E)



2-Port 100GBase-CFP2 Flexible Card E (P480-E)



20-Port 10GBase LAN/WAN-SFP+ Flexible Card E (P480-E)



2-Port 100GBase-QSFP28 Flexible Card A (P480-A)



2-Port 100GBase-QSFP28 Flexible Card E(P480-E)



Flexible Card Line Processing Unit E(LPUF-480-E)



Flexible Card Line Processing Unit(LPUF-480)



Flexible Card Line Processing Unit B(LPUF-480-B)



2-Port 100GBase-CFP2 Flexible Card A(P480-A)

Product Features

The LPUF-480 supports 2-port 100GE flexible cards and 24-port 10GE flexible cards. 2-port 100GE flexible cards have industry-leading 100G line-rate Ethernet interfaces, which can replace a large number of 10GE link aggregation bundles to simplify network operations. The 24-port 10GE flexible card boasts industry-leading high interface density and supports large-scale aggregation for scalable Ethernet and IP/Multiprotocol Label Switching (IP/MPLS) networks. The two flexible cards can be installed in any slot on the NE40E-X8A and NE40E-X16A series. These high-capacity line cards are designed to remove bandwidth bottlenecks that are caused by next-generation high-speed and high-requirement computing applications and technologies. These line cards provide economical, scalable, and reliable line-rate Ethernet and IP/MPLS services.

The LPUF-480 uses Huawei-developed Solar chips and provides powerful service capability. The LPUF-480 supports the combination of IP, MPLS, Ethernet, L2VPN, and L3VPN services. In addition, the LPUF-480 supports the 1588v2 feature, which allows for submicrosecond time synchronization based on specific hardware to ensure high-precision time synchronization between devices for applications and services that require 1588v2 clock synchronization, such as IP RAN and TDM migration. The LPUF-480 supports IPv6, which helps implement smooth IPv4-to-IPv6 transition. The LPUF-480 has a flexible programmable architecture. Microcode programming can be used for new service deployment, without the need to replace hardware, which reduces investments. In addition, this architecture drastically shortens the technological innovation cycle and accelerates new service rollout, helping customers build flexible and scalable networks.

LPUF-480 Series line processing units use Huawei-developed Solar chips and can dynamically change the number of forwarding chip processing cores, frequency, and bus bandwidth to compensate for service traffic changes, reducing boards' power consumption. The LPUF-480 Series line processing units also support dynamic

frequency adjustment and intelligent fan speed adjustment, which significantly reduces power consumption, with less than 0.9 W for each gigabit, lowest in the industry.

LPUF-480 Series line processing units and flexible cards support for online insertion and removal (OIR) without system impact, which offers maximum investment protection and flexibility by allowing operators to upgrade to future LPU on NE40E.

Product Compatibility

Table 1. 480G Flexible Card Line Processing Units Compatible Chassis ("●" indicates supported items, "-" indicates unsupported items).

BOM	Order Name	Description	X3	X8	X16	X3A	X8A	X16A
03055820	CR5DLPUFM070	Flexible Card Line Processing Unit(LPUF-480)	-	-	-	-	●	●
03057035	CR5DLPUFM07B	Flexible Card Line Processing Unit B(LPUF-480-B)	-	-	-	-	●	●
03057313	CR5DLPUFM E70	Flexible Card Line Processing Unit E(LPUF-480-E)	-	-	-	-	●	●
03030SWH	CR5D00E2NC72	2-Port 100GBase-CFP2 Flexible Card A(P480-A)	-	-	-	-	●	●
03030SWL	CR5D00LFXF74	24-Port 10GBase LAN/WAN-SFP+ Flexible Card A(P480-A)	-	-	-	-	●	●
03032DJE	CR5D0E2NCE70	2-Port 100GBase-CFP2 Flexible Card E(P480-E)	-	-	-	-	●	●
03032DJH	CR5D0LEXFE70	20-Port 10GBase LAN/WAN-SFP+ Flexible Card E(P480-E)	-	-	-	-	●	●
03032KKL	CR5D00E2NF70	2-Port 100GBase-QSFP28 Flexible Card A(P480-A)	-	-	-	-	●	●
03032LCN	CR5D0E2NFE70	2-Port 100GBase-QSFP28 Flexible Card E(P480-E)	-	-	-	-	●	●
03057842	CR5DLPUFM E71	Flexible Card Line Processing Unit E(LPUF-480-E)	-	-	-	-	●	●
03057844	CR5DLPUFM071	Flexible Card Line Processing Unit(LPUF-480)	-	-	-	-	●	●
03057845	CR5DLPUFM17B	Flexible Card Line Processing Unit B(LPUF-480-B)	-	-	-	-	●	●
03032TGQ	CR5D00E2NC77	2-Port 100GBase-CFP2 Flexible Card A(P480-A)	-	-	-	-	●	●

Table 2. 480G Flexible Card Line Processing Units Compatible Optical/Electrical Modules

BOM	Order Name	Board Name	Optical type supported
03030SWH	CR5D00E2NC72	2-Port 100GBase-CFP2 Flexible Card A(P480-A)	100Gbps CFP2 optical module NOTE Modules with the BOM number 02311LYG are not supported.
03030SWL	CR5D00LFXF74	24-Port 10GBase LAN/WAN-SFP+ Flexible Card A(P480-A)	10Gbps SFP+ optical module 10Gbps SFP+ CWDM optical module 10Gbps SFP+ BIDI optical module 10Gbps SFP+ DWDM optical module
03032DJE	CR5D0E2NCE70	2-Port 100GBase-CFP2 Flexible Card E(P480-E)	100Gbps CFP2 optical module NOTE Modules with the BOM number 02311LYG are not supported.
03032DJH	CR5D0LEXFE70	20-Port 10GBase LAN/WAN-SFP+ Flexible Card E(P480-E)	10Gbps SFP+ optical module 10Gbps SFP+ CWDM optical module 10Gbps SFP+ BIDI optical module 10Gbps SFP+ DWDM optical module
03032TGQ	CR5D00E2NC77	2-Port 100GBase-CFP2 Flexible Card A(P480-A)	100Gbps CFP2 optical module NOTE When optical modules with the BOM number 02311LYG are used, 2x40G breakout optical fibers are not supported.
03032KKL	CR5D00E2NF70	2-Port 100GBase-QSFP28 Flexible Card A(P480-A)	100Gbps QSFP28 optical module 40Gbps QSFP+ optical module
03032LCN	CR5D0E2NNE70	2-Port 100GBase-QSFP28 Flexible Card E(P480-E)	100Gbps QSFP28 optical module 40Gbps QSFP+ optical module

Product Specifications

Table 3. Flexible Card Line Processing Unit E(LPUF-480-E) Specifications

Item	Specification
Order Name	CR5DLPUFME70
Silkscreen	LPUF-480-E
Dimensions (H x W x D)	40.1 mm x 399.2 mm x 535.6 mm (1.58 in. x 15.72 in. x 21.09 in.)

Item	Specification
Weight	7.6 kg (16.76 lb)
Typical power consumption	236.2 W
Typical heat dissipation	766.3 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Reliability and availability	Hot swappable.

Table 4. Flexible Card Line Processing Unit(LPUF-480) Specifications

Item	Specification
Order Name	CR5DLPUFM070
Silkscreen	LPUF-480
Dimensions (H x W x D)	40.1 mm x 399.2 mm x 535.6 mm (1.58 in. x 15.72 in. x 21.09 in.)
Weight	7.6 kg (16.76 lb)
Typical power consumption	236.2 W
Typical heat dissipation	766.3 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Reliability and availability	Hot swappable.

Table 5. Flexible Card Line Processing Unit B(LPUF-480-B) Specifications

Item	Specification
Order Name	CR5DLPUFM07B
Silkscreen	LPUF-480-B
Dimensions (H x W x D)	40.1 mm x 399.2 mm x 535.6 mm (1.58 in. x 15.72 in. x 21.09 in.)
Weight	7.6 kg (16.76 lb)
Typical power consumption	236.2 W
Typical heat dissipation	766.3 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)

Item	Specification
Reliability and availability	Hot swappable.

Table 6. Flexible Card Line Processing Unit E(LPUF-480-E) Specifications

Item	Specification
Order Name	CR5DLPUFME71
Silkscreen	LPUF-480-E
Dimensions (H x W x D)	40.1 mm x 399.2 mm x 535.6 mm (1.58 in. x 15.72 in. x 21.09 in.)
Weight	8.2 kg (18.08 lb)
Typical power consumption	290.0 W
Typical heat dissipation	940.9 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Reliability and availability	Hot swappable.

Table 7. Flexible Card Line Processing Unit(LPUF-480) Specifications

Item	Specification
Order Name	CR5DLPUFM071
Silkscreen	LPUF-480
Dimensions (H x W x D)	40.1 mm x 399.2 mm x 535.6 mm (1.58 in. x 15.72 in. x 21.09 in.)
Weight	8.2 kg (18.08 lb)
Typical power consumption	290.0 W
Typical heat dissipation	940.9 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Reliability and availability	Hot swappable.

Table 8. Flexible Card Line Processing Unit B(LPUF-480-B) Specifications

Item	Specification
Order Name	CR5DLPUFM17B
Silkscreen	LPUF-480-B
Dimensions (H x W x D)	40.1 mm x 399.2 mm x 535.6 mm (1.58 in. x 15.72 in. x 21.09 in.)
Weight	8.2 kg (18.08 lb)
Typical power consumption	290.0 W
Typical heat dissipation	940.9 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Reliability and availability	Hot swappable.

Table 9. 2-Port 100GBase-CFP2 Flexible Card A(P480-A) Specifications

Item	Specification
Order Name	CR5DooE2NC72
Silkscreen	P480-2x100G LAN-CFP2
Dimensions (H x W x D)	37.2 mm x 178.7 mm x 193.3 mm (1.46 in. x 7.04 in. x 7.61 in.)
Weight	0.9 kg (1.98 lb)
Typical power consumption	85.8 W
Typical heat dissipation	278.4 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Connector type	CFP2
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Table 10. 2-Port 100GBase-CFP2 Flexible Card A(P480-A) Specifications

Item	Specification
Order Name	CR5DooE2NC77

Item	Specification
Silkscreen	P480-2x100G LAN-CFP2
Dimensions (H x W x D)	37.2 mm x 178.7 mm x 193.3 mm (1.46 in. x 7.04 in. x 7.61 in.)
Weight	0.9 kg (1.98 lb)
Typical power consumption	89.0 W
Typical heat dissipation	288.8 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Connector type	CFP2
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Table 11. 2-Port 100GBase-QSFP28 Flexible Card A(P480-A) Specifications

Item	Specification
Order Name	CR5DooE2NF70
Silkscreen	P480-2x100GBase-QSFP28-A
Dimensions (H x W x D)	37.2 mm x 178.7 mm x 193.3 mm (1.46 in. x 7.04 in. x 7.61 in.)
Weight	1.2 kg (2.65 lb)
Typical power consumption	73.0 W
Typical heat dissipation	236.8 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Connector type	QSFP28/QSFP+
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Table 12. 24-Port 10GBase LAN/WAN-SFP+ Flexible Card A(P480-A) Specifications

Item	Specification
Order Name	CR5DooLFXF74
Silkscreen	P480-24x10G LAN/WAN-SFP+
Dimensions (H x W x D)	37.2 mm x 178.7 mm x 193.3 mm (1.46 in. x 7.04 in. x 7.61 in.)
Weight	0.9 kg (1.98 lb)
Typical power consumption	96.4 W
Typical heat dissipation	312.8 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Connector type	SFP+
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Table 13. 2-Port 100GBase-CFP2 Flexible Card E(P480-E) Specifications

Item	Specification
Order Name	CR5DoE2NCE70
Silkscreen	P480-2x100G LAN-CFP2-E
Dimensions (H x W x D)	37.2 mm x 178.7 mm x 193.3 mm (1.46 in. x 7.04 in. x 7.61 in.)
Weight	0.9 kg (1.98 lb)
Typical power consumption	85.8 W
Typical heat dissipation	278.4 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Connector type	CFP2
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Table 14. 2-Port 100GBase-QSFP28 Flexible Card E(P480-E) Specifications

Item	Specification
Order Name	CR5DoE2NFE70
Silkscreen	P480-2x100GBase-QSFP28-E
Dimensions (H x W x D)	37.2 mm x 178.7 mm x 193.3 mm (1.46 in. x 7.04 in. x 7.61 in.)
Weight	1.2 kg (2.65 lb)
Typical power consumption	73.0 W
Typical heat dissipation	236.8 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Connector type	QSFP28/QSFP+
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Table 15. 20-Port 10GBase LAN/WAN-SFP+ Flexible Card E(P480-E) Specifications

Item	Specification
Order Name	CR5DoLEXFE70
Silkscreen	P480-20x10G LAN/WAN-SFP+ -E
Dimensions (H x W x D)	37.2 mm x 178.7 mm x 193.3 mm (1.46 in. x 7.04 in. x 7.61 in.)
Weight	0.9 kg (1.98 lb)
Typical power consumption	93.4 W
Typical heat dissipation	303.0 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Connector type	SFP+
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Product Performance

Table 16. Performance of the LPUF-480/LPUF-480-B

Feature	Specification
FIB	IPv4: up to 4,096,000 routes IPv6: up to 2,048,000 routes Mixed: up to 2,048,000 IPv4 routes and 1,024,000 IPv6 routes
Multicast	IPv4: up to 64,000 routes IPv6: up to 8,000 routes
QoS	Up to 384,000 queues in the upstream Up to 512,000/slot queues in the downstream Up to 5 levels of hierarchy Up to 100ms packet buffer time
Access Control List (ACL) rules	ACLv4: up to 256 * 1,024/slot(Only unidirectional transmission is supported.) ACLv6: up to 32 * 1,024/slot

For More Information

For more information about the Huawei NE40E 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

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