

NE40E Series 240G Flexible Card Line Processing Units Data Sheet



Product Overview

Huawei® NE40E Series Universal Service Routers support 240 Gbps flexible card line processing units (LPUF-240 Series). The LPUF-240 Series line processing units handle all the network data-plane traffic-processing tasks of Huawei NE40E series universal service routers.

Figure 1. 240G Flexible Card Line Processing Units



24-Port 100/1000Base-X-SFP Flexible Card A (P101-A)



2-Port 50GBase/1-Port 100GBase-QSFP28 FlexE Flexible Card (P120)



1-Port 100GBase-CFP Flexible Card A (P240-A)



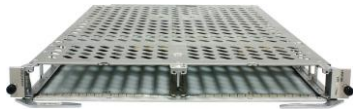
1-Port 100GBase-CFP2 Flexible Card A (P240-A)



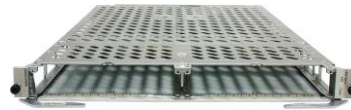
12-Port 10GBase LAN/WAN-SFP+ Flexible Card A (P240-A)



1-Port 100GBase-QSFP28 Flexible Card A (P240-A)



Flexible Card Line Processing Unit(LPUF-240)



Flexible Card Line Processing Unit(LPUF-240-B)



Flexible Card Line Processing Unit(LPUF-240-E)

10-Port 10GBase LAN/WAN-SFP+ Flexible Card
E(P240-E)

3-Port 40GBase-QSFP+ Flexible Card(P240-A)



24-Port 1000Base-X-SFP Flexible Card E(P52-E)

Product Features

The LPUF-240 Series supports the following flexible cards:

- 1-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.
- 3-port 40GE flexible cards: can be used to process traffic at the aggregation and core layers can resolve this problem by simplifying networks and reducing OPEX. It can be used at the data center egress routers or data center core/aggregation layer devices.
- The 12-port/10-port 10GE flexible cards: boast industry-leading high interface density and support large-scale aggregation for scalable Ethernet and IP/Multi-protocol Label Switching (IP/MPLS) networks.

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-240 uses Huawei-developed Solar chips and provides powerful service capability. The LPUF-240 supports the combination of IP, MPLS, Ethernet, L2VPN, and L3VPN services. In addition, the LPUF-240 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-240 supports IPv6, which helps implement smooth IPv4-to-IPv6 transition. The LPUF-240 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-240 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-240 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-240 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.

NOTE

Differences between the LPUF-240, LPUF-240-B, and LPUF-240-E:

- The LPUF-240 supports L3VPN by default, and does not support BRAS functions, such as Enhanced Dynamic Service Gateway (EDSG), by default. After being loaded with specific license, it supports BRAS functions.
- The LPUF-240-B does not support L3VPN by default. After being loaded with specific license, it supports L3VPN. LPUF-240-B does not support BRAS functions.
- The LPUF-240-E supports L3VPN and BRAS functions, by default.

Differences between P240-A flexible card and P240-E flexible card:

- The P240-A supports 1588v2.
- The P240-E does not support 1588v2 in V600R008 version (P240-E supports 1588v2 in V800R008 version).

Product Compatibility

Table 1. 240G Flexible Card Line Processing Units Compatible Chassis ("•" indicates supported items, "-" indicates unsupported items).

BOM	Order Name	Description	X3	X8	X16	X3A	X8A	X16A
03030PMN	CR5D0EFGFA71	24-Port 100/1000Base-X-SFP Flexible Card A(P101-A)	•	•	•	•	•	•
03032MVX	CR5DE2VE1N70	2-Port 50GBase/1-Port 100GBase-QSFP28 FlexE Flexible Card (P120)	•	•	•	•	•	•
03030QDF	CR5D00E1NC74	1-Port 100GBase-CFP Flexible Card A(P240-A)	-	•	•	•	•	•
03032GLA	CR5D00E1NC7A	1-Port 100GBase-CFP2 Flexible Card A(P240-A)	-	•	•	•	•	•
03030QDD	CR5D00LBXF71	12-Port 10GBase LAN/WAN-SFP+ Flexible Card A(P240-A)	-	•	•	•	•	•
03032HGG	CR5D00E1ND73	1-Port 100GBase-QSFP28 Flexible Card A(P240-A)	-	•	•	•	•	•

BOM	Order Name	Description	X3	X8	X16	X3A	X8A	X16A
03054690	CR5DLPUFFo70	Flexible Card Line Processing Unit(LPUF-240)	-	●	●	-	●	●
03054698	CR5DLPUFFo7B	Flexible Card Line Processing Unit(LPUF-240-B)	-	●	●	-	●	●
03055720	CR5DLPUFFo7E	Flexible Card Line Processing Unit(LPUF-240-E)	-	●	●	-	●	●
03030TUQ	CR5DoLAXFE70	10-Port 10GBase LAN/WAN-SFP+ Flexible Card E(P240-E)	-	●	●	-	●	●
03030WGT	CR5DoE3MFA70	3-Port 40GBase-QSFP+ Flexible Card(P240-A)	-	●	●	-	●	●
03031XQJ	CR5DoEFGFE71	24-Port 1000Base-X-SFP Flexible Card E(P52-E)	-	●	●	●	●	●

Table 2. 240G Flexible Card Line Processing Units Compatible Optical/Electrical Modules

BOM	Order Name	Board Name	Optical type supported
03030QDD	CR5DooLBXF71	12-Port 10GBase LAN/WAN-SFP+ Flexible Card A(P240-A)	1Gbps electrical module 1.25Gbps eSFP optical module 1.25Gbps eSFP CWDM optical module 1.25Gbps eSFP BIDI optical module 125M~2.67Gbps eSFP DWDM optical module 10Gbps SFP+ optical module 10Gbps SFP+ CWDM optical module 10Gbps SFP+ BIDI optical module 10Gbps SFP+ DWDM optical module 1.25/9.953/10.3125Gbps SFP+ optical module
03030WGT	CR5DoE3MFA70	3-Port 40GBase-QSFP+ Flexible Card(P240-A)	40Gbps QSFP+optical module NOTE Modules with the BOM number 02311NUA are not supported. When optical modules with the BOM number 02310WUU are used, 4x10G breakout optical fibers are not supported.

BOM	Order Name	Board Name	Optical type supported
03030PMN	CR5DoEFGF A71	24-Port 100/1000Base-X-SFP Flexible Card A(P101-A)	155Mbps eSFP optical module 155Mbps eSFP BIDI optical module 1Gbps electrical module 1.25Gbps eSFP optical module 1.25Gbps eSFP CWDM optical module 1.25Gbps eSFP BIDI optical module 125M~2.67Gbps eSFP DWDM optical module
03030TUQ	CR5DoLAXF E70	10-Port 10GBase LAN/WAN-SFP+ Flexible Card E(P240-E)	10Gbps SFP+ optical module 10Gbps SFP+ CWDM optical module 10Gbps SFP+ BIDI optical module 10Gbps SFP+ DWDM optical module
03031XQJ	CR5DoEFGF E71	24-Port 1000Base-X-SFP Flexible Card E(P52-E)	1Gbps electrical module 1.25Gbps eSFP optical module 1.25Gbps eSFP CWDM optical module 1.25Gbps eSFP BIDI optical module 125M~2.67Gbps eSFP DWDM optical module
03030QDF	CR5DooE1N C74	1-Port 100GBase-CFP Flexible Card A(P240-A)	100Gbps CFP optical module
03032GLA	CR5DooE1N C7A	1-Port 100GBase-CFP2 Flexible Card A(P240-A)	100Gbps CFP2 optical module NOTE When optical modules with the BOM number 02311LYG are used, 2x40G and 10x10G breakout optical fibers are not supported.
03032MVX	CR5DE2VE1 N70	2-Port 50GBase/1-Port 100GBase-QSFP28 FlexE Flexible Card (P120)	50Gbps QSFP28 optical module 100Gbps QSFP28 optical module NOTE When using 100Gbps QSFP28 optical module, the board only supports 100Gbps QSFP28 optical module which transmission distance is 10km.
03032HGG	CR5DooE1N D73	1-Port 100GBase-QSFP28 Flexible Card A(P240-A)	100Gbps QSFP28 optical module 40Gbps QSFP+ optical module

Product Specifications

错误!未找到引用源。 to 14 list the specifications of the LPUF-240 Series line processing unites and flexible cards.

Table 3. Flexible Card Line Processing Unit(LPUF-240) Specifications

Item	Specification
Order Name	CR5DLPUFF070
Silkscreen	LPUF-240
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	8.5 kg (18.74 lb)
Typical power consumption	244.0 W
Typical heat dissipation	791.7 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-240-B) Specifications

Item	Specification
Order Name	CR5DLPUFF07B
Silkscreen	LPUF-240-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	8.5 kg (18.74 lb)
Typical power consumption	244.0 W
Typical heat dissipation	791.7 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(LPUF-240-E) Specifications

Item	Specification
Order Name	CR5DLPUFF07E

Item	Specification
Silkscreen	LPUF-240-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	8.5 kg (18.74 lb)
Typical power consumption	244.0 W
Typical heat dissipation	791.7 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 6. 1-Port 100GBase-CFP Flexible Card A(P240-A) Specifications

Item	Specification
Order Name	CR5D00E1NC74
Silkscreen	P240-1x100GBase LAN-CFP-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	1.3 kg (2.87 lb)
Typical power consumption	51.0 W
Typical heat dissipation	165.5 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	CFP
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Table 7. 1-Port 100GBase-CFP2 Flexible Card A(P240-A) Specifications

Item	Specification
Order Name	CR5D00E1NC7A
Silkscreen	P240-1x100GBase-CFP2-A

Item	Specification
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	0.8 kg (1.76 lb)
Typical power consumption	40.0 W
Typical heat dissipation	129.7 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 8. 1-Port 100GBase-QSFP28 Flexible Card A(P240-A) Specifications

Item	Specification
Order Name	CR5DooE1ND73
Silkscreen	P240-1x100Gbase-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	0.8 kg (1.65 lb)
Typical power consumption	34.0 W
Typical heat dissipation	110.3 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)
Connector type	QSFP28/QSFP+
Working mode	Full-duplex
Frame format	Ethernet_II,Ethernet_SAP,Ethernet_SNAP
Reliability and availability	Hot swappable.

Table 9. 12-Port 10GBase LAN/WAN-SFP+ Flexible Card A(P240-A) Specifications

Item	Specification
Order Name	CR5DooLBXF71

Item	Specification
Silkscreen	P240-12x10GBase LAN/WAN-SFP+-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	0.8 kg (1.65 lb)
Typical power consumption	52.0 W
Typical heat dissipation	168.7 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/SFP+
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Table 10. 10-Port 10GBase LAN/WAN-SFP+ Flexible Card E(P240-E) Specifications

Item	Specification
Order Name	CR5DoLAXFE70
Silkscreen	P240-10x10GBase 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	1 kg (2.2 lb)
Typical power consumption	72.0 W
Typical heat dissipation	233.6 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 11. 3-Port 40GBase-QSFP+ Flexible Card(P240-A) Specifications

Item	Specification
Order Name	CR5DoE3MFA70
Silkscreen	P240-3x40GBase-QSFP+ -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	0.8 kg (1.87 lb)
Typical power consumption	50.0 W
Typical heat dissipation	162.2 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	QSFP+
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Table 12. 24-Port 100/1000Base-X-SFP Flexible Card A(P101-A) Specifications

Item	Specification
Order Name	CR5DoEFGFA71
Silkscreen	P101-24xFE/GE-SFP-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 kg (2.2 lb)
Typical power consumption	37.0 W
Typical heat dissipation	120.0 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

Table 13. 24-Port 1000Base-X-SFP Flexible Card E(P52-E) Specifications

Item	Specification
Order Name	CR5D0EFGFE71
Silkscreen	P52-24xGE-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	1.2 kg (2.65 lb)
Typical power consumption	77.1 W
Typical heat dissipation	250.2 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 14. 2-Port 50GBase/1-Port 100GBase-QSFP28 FlexE Flexible Card (P120) Specifications

Item	Specification
Order Name	CR5DE2VE1N70
Silkscreen	P120-2x50GBase-QSFP28
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	0.8 kg (1.76 lb)
Typical power consumption	69.0 W
Typical heat dissipation	223.9 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)
Connector type	QSFP28
Working mode	Full-duplex
Frame format	Ethernet_II, Ethernet_SAP and Ethernet_SNAP
Reliability and availability	Hot swappable.

Product Performance

Table 15. Performance of the LPUF-240/LPUF-240-B/LPUF-240-E

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 512,000 queues 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
IPoE/PPPoE subscribers	Up to 64,000 subscribers/card Up to 128,000 subscribers/slot
L2TP sessions	64,000/slot
L2TP tunnels	16,000/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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HUAWEI TECHNOLOGIES CO., LTD.

Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129, P.R. China
Tel: +86-755-28780808

www.huawei.com