

Cisco Network Convergence System 5700 Series: Modular Port Adapters

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Product overview

The Cisco® Network Convergence System 5700 Series is designed to efficiently scale between data centers and large enterprises, web, and service provider WAN and aggregation networks. Equipping the chassis and the line cards with a variety of interfaces is crucial to cater to a plethora of use cases and services. The Modular Port Adapters provide the much-needed flexibility and capability to the chassis and the line cards. They provide ports with bandwidth up to 400GE and pluggable form factors like SFP-56, QSFP-DD and CFP2 DCO including 400G ZR/ZRP compatible optics.

NC57-MPA-2D4H-FC

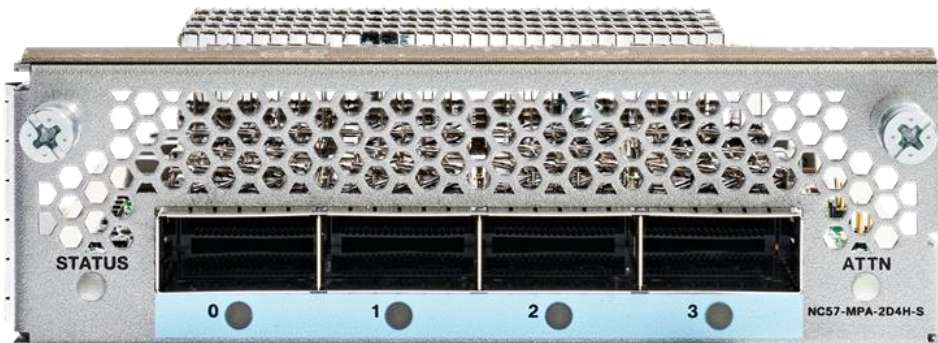


Figure 1.
The NC57-MPA-2D4H-FC Modular Port Adapter

NC57-MPA-12L-S-FC



Figure 2.
The NC57-MPA-12L-S-FC Modular Port Adapter

NC57-MPA-1FH1D-FC

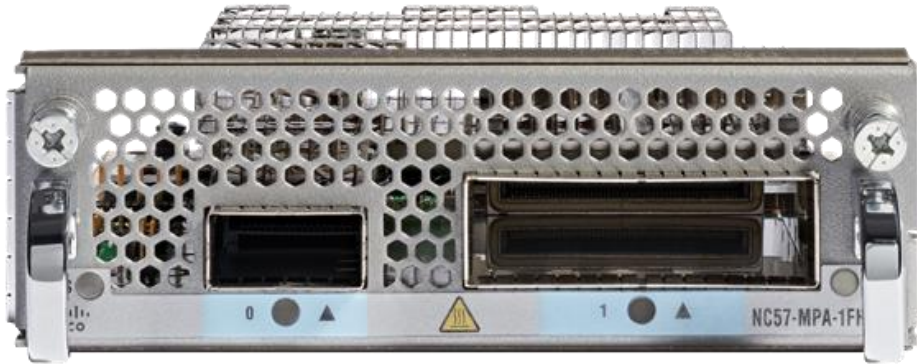


Figure 3.
The NC57-MPA-1FH1D-FC Modular Port Adapter

Compatibility

The following table lists HW compatibility of the NCS-5700 series of MPAs and the required minimum IOS XR SW release.

Table 1. HW compatibility matrix

Host Platform	NC57-MPA-2D4H-FC	NC57-MPA-12L-S-FC	NC57-MPA-1FH1D-FC
NCS-57C3-MOD versions	7.4.1	7.6.1	7.8.1 (Slot 2 & 3)
NC57-MOD-S	7.6.1	7.6.1	7.8.1
NCS-55A2-MOD versions	7.5.1	7.6.1	Not yet supported
NC55-MOD versions	Not yet supported	7.6.1	Not yet supported

Specifications

Tables 2 through 8 list key specifications for the NCS 5700 Series of MPAs.

Table 2. Features and specifications of NC57-MPA-2D4H-FC MPA (Cisco IOS XR Software Release 7.4.1 and later)

Feature	Specification
Interface	4 ports of QSFP-DD
Operable modes	<ul style="list-style-type: none"> • 2 x 400G QSFP-DD (Ports 0 and 2) • 4 x (2 x 100G) QSFP-DD • 1 x 400G QSFP-DD + 2 x 100G QSFP28 • 4 x 100G QSFP28 (400G MPA compatible) • 1 x (4x100G) QSFP-DD (400G MPA compatible - Port 0) • Breakout support: 4 x 100G / 4 x 25G / 4 x 10G

Feature	Specification
Product IDs	Flexible Consumption Model (FCM): NC57-MPA-2D4H-FC Perpetual (BAU): NC57-MPA-2D4H-S
MACsec encryption	IEEE 802.1AE standards-based Layer 2 hop-by-hop encryption that provides data confidentiality and integrity for media access independent protocols
Timing	Class C capable
Power consumption (with optics)	Typical (27° C): 83W Maximum (40° C): 89W
Power consumption (without optics)	Typical (27° C): 35W Maximum (40° C): 36W
Physical specifications	Width - 110.69 mm Height - 34.36 mm Depth - 174.32 mm Weight - 1.2 lbs (0.56 kg)

Table 3. Features and specifications of NC57-MPA-12L-S-FC MPA (Cisco IOS XR Software Release 7.6.1 and later)

Feature	Specification
Interface	12 ports of SFP56
Operable modes	Supports 10GE, 25GE and 50GE modules
Product IDs	Flexible Consumption Model (FCM): NC57-MPA-12L-S-FC Perpetual (BAU): NC57-MPA-12L-S
MACsec encryption	IEEE 802.1AE standards-based Layer 2 hop-by-hop encryption that provides data confidentiality and integrity for media access independent protocols
Timing	Class C capable
Power consumption (without optics)	Typical (25° C): 35W Maximum (40° C): 45W
Physical specifications	Width - 110.69 mm Height - 34.36 mm Depth - 174.32 mm Weight - 1.1 lbs (0.51 kg)

Table 4. Features and specifications of NC57-MPA-1FH1D-FC MPA (Cisco IOS XR Software Release 7.8.1 and later)

Feature	Specification
Interface	1 port of 400G CFP2 DCO and 1 port of 400G QSFP-DD
Operable modes	CFP2 DCO port: 400G and nx100G modes QSFP-DD port: 400G and 4x100G grey optics
Product IDs	Flexible Consumption Model (FCM): NC57-MPA-1FH1D-FC Perpetual (BAU): NC57-MPA-1FH1D-S
Timing	Class C capable
Power consumption (without optics)	Typical (25°C): 32W Maximum (40°C): 38W
Physical specifications	Width - 110.69 mm Height - 34.36 mm Depth - 174.32 mm Weight - 1.2 lbs (0.56 kg)

Supported transceivers modules

Check the Cisco NCS 5500 Series supported transceivers module matrix: <https://tmgmatrix.cisco.com>

Environment

Table 5. Environmental properties for NC57-MPA-2D4H-FC MPA

Property	Specifications	
Normal operating temperature (at 1800 m)	NCS-57C3-MOD variants	0-45°C
	NCS-55A2-MOD variants	0-45°C
	NC57-MOD-S	0-40°C
	Please also see host platform documentation for more details on extended temperature range	

Property	Specifications
Non-operating (storage) temperature	-40 to 158° F (-40 to 70° C)
Operating humidity	Normal: 5% RH to 85% RH Short term: 5% to 95% RH Should not exceed 0.026 kg water/kg of dry air
Storage (relative) humidity	5% to 95% at 40° C per NEBS GR-63-Core
Altitude	0 to 9842 ft (0 to 3000 m)
Air flow	Front to back

Table 6. Environmental properties for NC57-MPA-12L-S-FC MPA

Property	Specifications
Normal operating temperature	0 to 40° C Please also see host platform documentation for more details on extended temperature range
Non-operating (storage) temperature	-40 to 158° F (-40 to 70° C)
Operating humidity	Normal: 5% RH to 85% RH Short term: 5% to 95% RH Should not exceed 0.026 kg water/kg of dry air
Storage (relative) humidity	5% to 95% at 40° C per NEBS GR-63-Core
Altitude	0 to 9842 ft (0 to 3000 m)
Air flow	Front to back

Table 7. Environmental properties for NC57-MPA-1FH1D-FC MPA

Property	Specifications	
Normal operating temperature	NCS-57C3-MOD variants	0 - 45° C
	NC57-MOD-S	0 - 40° C
	Please also see host platform documentation for more details on extended temperature range	
Non-operating (storage) temperature	-40 to 158° F (-40 to 70° C)	
Operating humidity	Normal: 5% RH to 85% RH Short term: 5% to 95% RH Should not exceed 0.026 kg water/kg of dry air	
Storage (relative) humidity	5% to 95% at 40° C per NEBS GR-63-Core	

Property	Specifications
Altitude	0 to 9842 ft (0 to 3000 m)
Air flow	Front to back

Regulatory standards compliance

Table 8. Regulatory standards compliance: Safety and EMC for NC57-MPA-2D4H-FC, NC57-MPA-12L-S-FC MPA and NC57-MPA-1FH1D-FC

Specification	Description
Regulatory compliance	Products should comply with CE Markings according to directives 2014/30/EU and 2014/35/EU.
Network Equipment Building Standards (NEBS)	Designed to meet: <ul style="list-style-type: none"> • GR-63-CORE • GR-1089-CORE
Safety	UL 62368-1 Third Edition CAN/CSA-C22.2 No. 62368-1, Third Edition EN 60950-1 Second Edition IEC 60950-1 Second Edition IEC 62368-1: 2018, Third Edition EN 62368-1: 2020, Third Edition AS/NZS 62368.1
EMC standards	FCC 47CFR15 AS/NZS CISPR 32 EN55032/EN55022 CISPR 32/CISPR 22 ICES-003 VCCI KN32 CNS-13438 EN61000-3-2 Power Line Harmonics EN61000-3-3 Voltage Changes, Fluctuations, and Flicker
EMC immunity	IEC/EN61000-4-2 IEC/EN61000-4-3 IEC/EN61000-4-4 IEC/EN61000-4-5 IEC/EN61000-4-6 IEC/EN61000-4-8 IEC/EN61000-4-11 EN 300 386 (C-4) EN55022 EN55024/CISPR 24 I EN55035/CISPR 35 EN61000-6-1 KN35

Specification	Description
Restriction of Hazardous Substances (RoHS)	The product is RoHS-6 compliant with exceptions for leaded-ball grid-array (BGA) balls and lead press-fit connectors

Additional information related to NC57-MPA-2D4H-FC, NC57-MPA-12L-S-FC and NC57-MPA-1FH1D-FC [regulatory compliance and safety standards](#).

Ordering information

Table 9. Ordering information - Flexible Consumption Model Hardware

Part number	Description
NC57-MPA-2D4H-FC	NCS 5700 QSFP-DD MPA
NC57-MPA-2D4H-FC=	NCS 5700 QSFP-DD MPA spare
NC57-MPA-12L-S-FC	NCS 5700 - 12x10/25/50G MPA
NC57-MPA-12L-S-FC=	NCS 5700 - 12x10/25/50G MPA spare
NC57-MPA-1FH1D-FC	NCS 5700 400G CFP2 DCO & 400G QSFP-DD MPA
NC57-MPA-1FH1D-FC=	NCS 5700 400G CFP2 DCO & 400G QSFP-DD MPA spare

Table 10. Ordering information - Perpetual Hardware

Part number	Description
NC57-MPA-2D4H-S	NCS 5700 QSFP-DD MPA
NC57-MPA-2D4H-S=	NCS 5700 QSFP-DD MPA spare
NC57-MPA-12L-S	NCS 5700 - 12x10/25/50G MPA
NC57-MPA-12L-S=	NCS 5700 - 12x10/25/50G MPA spare
NC57-MPA-1FH1D-S	NCS 5700 400G CFP2 DCO & 400G QSFP-DD MPA
NC57-MPA-1FH1D-S=	NCS 5700 400G CFP2 DCO & 400G QSFP-DD MPA spare

Product sustainability

Table 11. Ordering information – Perpetual Hardware

Sustainability topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries, and packaging	WEEE Compliance
	Information on product takeback and reuse program	Cisco Takeback and Reuse Program
	Sustainability inquiries	Contact: csr_inquiries@cisco.com
	Countries and regions supported	Table 8: Regulatory Compliance
	Predicted MTBF	NC57-MPA-2D4H-FC: 1,377,430 hours NC57-MPA-12L-FC-S: 1,289,250 hours NC57-MPA-1FH1D-FC: 1,758,010 hours
Power	Power consumption	See Table 2, 3 and 4 of this datasheet
Material	Product packaging weight and materials	Contact: environment@cisco.com
	Weight	See Table 2, 3 and 4 of this datasheet

Warranty

The Cisco NCS 5500 Series has a one-year limited hardware warranty. The warranty includes hardware replacement with a 10-day turnaround from receipt of a Return Materials Authorization (RMA).

Service and support

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing the Cisco NCS 5500 Series. These innovative Cisco Services offerings are delivered through a unique combination of people, processes, tools, and partners, and they are focused on helping you increase operating efficiency and improve your data center network. Cisco Advanced Services uses an architecture-led approach to help you align your data center infrastructure with your business goals and achieve long-term value. Cisco SMARTnet™ Service helps you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources. With this service, you can take advantage of the Cisco Smart Call Home service, which offers proactive diagnostics and real-time alerts on your Cisco NCS 5500 Series. Spanning the entire network lifecycle, Cisco Services offerings help increase investment protection, optimize network operations, support migration operations, and strengthen your IT expertise.

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For more information

[Learn more](#) about the NCS 5700 Series.

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Our experts recommend

[Cisco NCS 5500 Fixed Platform Architecture White Paper](#)

Document history

Table 12. Document history

New or Revised Topic	Described In	Date
Updated Photo	Figure 2	June 21, 2022
Added NC57-MPA-1FH1D	Figure 3, Table 4, 7, 9, 10 and 11	January 20, 2023
Updated NC57-MPA-2D4H, NC57-MPA-12L	Table 2, 5, 11	January 20, 2023
Updated Photo	Figure 1	January 20, 2023

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