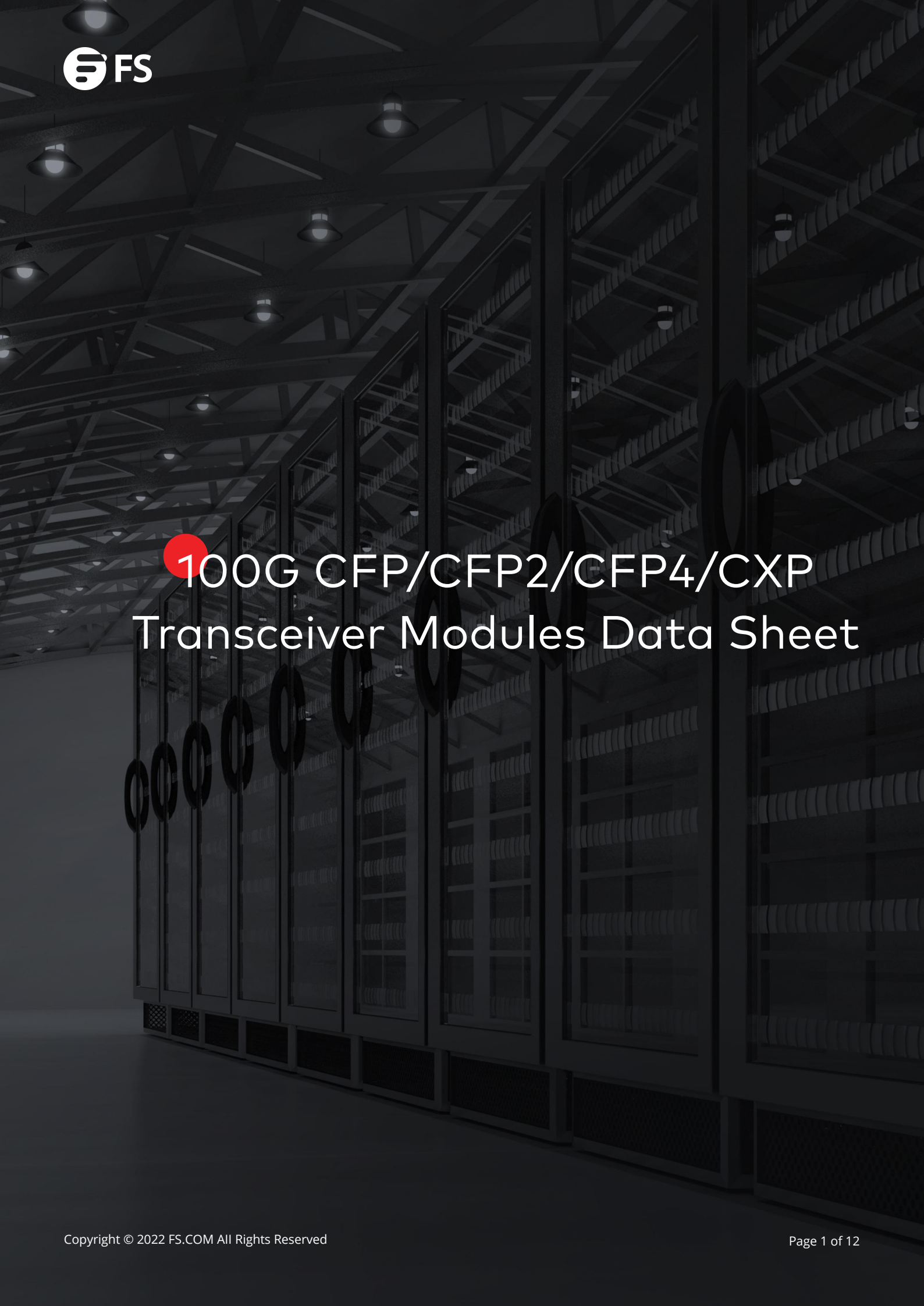


A dark, high-contrast photograph of a server room. Rows of server racks with glass doors are visible, filled with equipment. The ceiling has a complex grid of beams and several pendant lights are hanging, casting a soft glow. The overall atmosphere is industrial and technological.

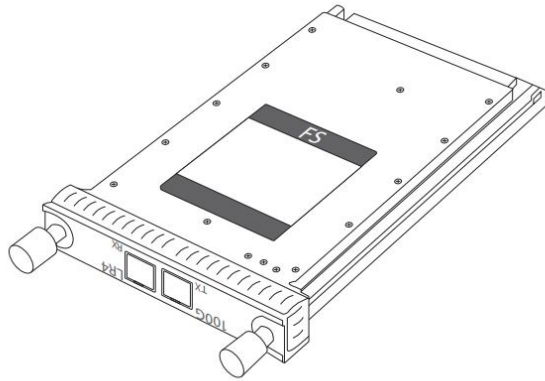
100G CFP/CFP2/CFP4/CXP Transceiver Modules Data Sheet

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Product overview

The FS® 100GBASE Quad Small Form-Factor Pluggable (CFP/CFP2/CFP4/CXP) portfolio offers customers a wide variety of high-density and low-power 100 Gigabit Ethernet connectivity options for data center, high-performance computing networks, enterprise core and distribution layers, and service provider applications. The CFP/CFP2/CFP4/CXP-100G modules are our latest generation of 100G transceiver modules solution based on a CFP/CFP2/CFP4/CXP form factor. (See Figure 1).



- CFP-LR4-100G
- CFP-ER4-100G
- CXP-SR10-100G
- CFP-SR10-100G

Figure 1.

CFP/CFP2/CFP4/CXP-100G Optical modules

Features and benefits

- Hot-swappable input/output device that plugs into a 100G Gigabit Ethernet CFP/CFP2/CFP4/CXP port
- Interoperable with other IEEE-compliant 100GBASE interfaces where applicable
- Certified and tested on Cisco, Arista, Juniper, Brocade CFP/CFP2/CFP4-100G ports for superior performance, quality, and reliability. For more details, refer to the [FS Assured Program for Transceivers](#)
- High-speed electrical interface compliant to IEEE 802.3bm

Table 1 describes the CFP/CFP2/CFP4/CXP-100G portfolio.

Table 1. CFP/CFP2/CFP4/CXP-100G portfolio

Product	Description	Connector type
CFP-SR10-100G	100GBASE SR10 CFP Transceiver, MTP/MPO, 150m over MMF	MTP/MPO
CFP4-LR4-100G	100GBASE LR4 CFP4 Transceiver, Duplex LC, 10km over SMF	Duplex LC
CFP-ER4-100G	100GBASE ER4 CFP4 Transceiver, Duplex LC, 40km over SMF	Duplex LC

Product	Description	Connector type
CFP2-LR4-100G	100GBASE LR4 CFP2 Transceiver, Duplex LC, 10km over SMF	Duplex LC
CFP-LR4-100G	100GBASE LR4 CFP Transceiver, Duplex LC, 10km over SMF	Duplex LC
CXP-SR10-100G	100GBASE SR10 CXP Transceiver, MTP/MPO, 150m over MMF	MTP/MPO

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CXP-SR10-100G

The CXP-SR10-100G Module supports link lengths of up to 150m over a Multimode Fiber (MMF) with MTP/MPO connectors. It is compliant with the 120Gbits Small Form factor Hot-Pluggable CXP-interface. The 100 Gigabit Ethernet signal is carried over four wavelengths.

CFP4-LR4-100G

The CFP4-LR4-100G Module supports link lengths of up to 10km over a standard pair of G.652 Single-Mode Fiber (SMF) with duplex LC connectors. The transceiver complies with CFP MSA CFP4 Hardware Specification, CFP MSA Management Interface Specification, and OIF CEI-28G-VSR standards.

CFP-ER4-100G

The CFP-ER4-100G Module supports link lengths of up to 40km over a standard pair of G.652 Single-Mode Fiber (SMF) with duplex LC connectors. The 100 Gigabit Ethernet signal is carried over a single wavelength using onboard PAM4 modulation and FEC.

CFP-SR10-100G

The CFP-SR10-100G Module supports link lengths of up to 150m over a Multimode Fiber (MMF) with MTP/MPO connectors. It complies with the IEEE 100GBASE-SR10 specification, which does not employ the use of FEC. CFP-SR10-100G supports 100GBase Ethernet rate.

CFP2-LR4-100G

The CFP2-LR4-100G industrial temperature Module supports link lengths of up to 10km over a standard pair of G.652 single-mode fiber(SMF) with duplex LC connectors. It complies with the IEEE 100GBASE-LR4 specification, which does not employ the use of FEC. CFP2-100G-LR4 supports 100GBase Ethernet rate within an industrial temperature range.

CFP-LR4-100G

The CFP-LR4-100G supports link lengths of up to 10km over a standard pair of G.652 single-mode fiber with duplex LC connectors. The transceiver's designs are optimized for high performance and cost efficiency to provide customers the best solutions for Datacom and Telecom applications.

Product Specifications

Table 2 shows the key electrical characteristics for the 100G CFP/CFP2/CFP4/CXP modules.

Table2. Electrical specifications

Product	Description	Nominal data rate (Gbs)	High-speed electrical	Link meter
CXP-SR10-100G	100GBASE SR10 CXP Transceiver, MTP/MPO, 150m over MMF	120 Gbps	100G CAUI	150m
CFP4-LR4-100G	100GBASE LR4 CFP4 Transceiver, Duplex LC, 10km over SMF	112Gbps	100G CAUI	10km
CFP-ER4-100G	100GBASE ER4 CFP4 Transceiver, Duplex LC, 40km over SMF	112Gbps	100G CAUI	40km
CFP-SR10-100G	100GBASE SR10 CFP Transceiver, MTP/MPO, 150m over MMF	103.1 Gbps	100G CAUI	150m
CFP2-LR4-100G	100GBASE LR4 CFP2 Transceiver, Duplex LC, 10km over SMF	112Gbps	100G CAUI	10km
CFP-LR4-100G	100GBASE LR4 CFP Transceiver, Duplex LC, 10km over SMF	103.1 Gbp	100G CAUI	10km

Table 3 shows the key optical characteristics for the 100G CFP/CFP2/CFP4/CXP modules.

Table 3. Optical specifications

Product	Description	Transmit Power (dBm) per lane		Receive Power (dBm) per lane		Transmit and Receive Wavelength (nm)
		Minimum	Maximum	Minimum	Maximum	
CXP-SR10-100G	100GBASE SR10 CXP Transceiver, MTP/MPO, 150m over MMF	-7.6	2.4	9.5	2.4	850nm
CFP4-LR4-100G	100GBASE LR4 CFP4 Transceiver, Duplex LC, 10km over SMF	-4.3	4.5	-10.6	4.5	1310nm
CFP-ER4-100G	100GBASE ER4 CFP4 Transceiver, Duplex LC, 40km over SMF	-2.9	2.9	-20.9	4.5	1310nm
CFP-SR10-100G	100GBASE SR10 CFP Transceiver, MTP/MPO, 150m over MMF	-8	1	-	-	850nm
CFP2-LR4-100G	100GBASE LR4 CFP2 Transceiver, Duplex LC, 10km over SMF	-4.3	4.5	-10.6	4.5	1310nm
CFP-LR4-100G	100GBASE LR4 CFP Transceiver, Duplex LC, 10km over SMF	-4.3	4.5	-10.6	4.5	1310nm

Table 4 shows the mechanical characteristics for the 100G CFP/CFP2/CFP4/CXP modules.

Table 4. Mechanical specifications

Parameter	Product	Weight
Module dimension with pull tab	(H x W x D) 8.5 x 18.35 x 123.41 mm	
Module weight (Max)	Optical modules	
	CXP-SR10-100G	400g
	CFP4-LR4-100G	320g
	CFP-ER4-100G	400g
	CFP-SR10-100G	400g
	CFP2-LR4-100G	320g
	CFP-LR4-100G	200g

Parameter	Product	Weight
CFP/CFP2/CFP4/CXP-100G module operation temperature	0 to 70° C	
Storage temperature	-20 to 85° C	

Warranty

- Standard warranty: 5 years
- For more information for FS Returns & Refunds policy, visit <https://www.fs.com/policies/warranty.html> or https://www.fs.com/policies/day_return_policy.html

Ordering information

Table 5 provides the ordering information for CFP/CFP2/CFP4/CXP 100G modules and related cables.

Table 5. Ordering information

Part number	Description
CFP/CFP2/CFP4/CXP optics modules	
CXP-SR10-100G	100GBASE SR10 CXP Transceiver, MTP/MPO, 150m over MMF
CFP4-LR4-100G	100GBASE LR4 CFP4 Transceiver, Duplex LC, 10km over SMF
CFP-ER4-100G	100GBASE ER4 CFP4 Transceiver, Duplex LC, 40km over SMF
CFP-SR10-100G	100GBASE SR10 CFP Transceiver, MTP/MPO, 150m over MMF
CFP2-LR4-100G	100GBASE LR4 CFP2 Transceiver, Duplex LC, 10km over SMF
CFP-LR4-100G	100GBASE LR4 CFP Transceiver, Duplex LC, 10km over SMF

I Regulatory and standards compliance

Standards

- SFF-8665: CFP/CFP2/CFP4/CXP+ 28 Gb/s 4X Pluggable Transceiver Solution (CFP/CFP2/CFP4/CXP)
- SFF-8636: Common Management Interface
- 802.3™-2012 IEEE Standard for Ethernet
- IEEE 802.3ba Amendment of IEEE Std 802.3
- IEEE 802.3bm Amendment of IEEE Std 802.3
- GR-20-CORE: Generic Requirements for Optical Fiber and Optical Fiber Cable
- GR-326-CORE: Generic Requirements for Single-Mode Optical Connectors and Jumper Assemblies
- GR-468-CORE: Generic Requirements for Optoelectronic Devices Used in Telecommunications Equipment
- GR-1435-CORE: Generic Requirements for Multifiber Optical Connectors
- RoHS 6

Safety

- Modules are compliant with Laser Class 1 as defined in IEC 60825-1, IEC 60825-2 and Comply with 21 CFR 1040.10 and 1040.11

Table 6. Laser class for the CFP/CFP2/CFP4/CXP-100G optical modules

Product	Laser class
CXP-SR10-100G	1
CFP4-LR4-100G	1
CFP-ER4-100G	1
CFP-SR10-100G	1
CFP2-LR4-100G	1
CFP-LR4-100G	1

I Additional information

For more information about 100GBASE CFP/CFP2/CFP4 optics and copper modules, contact your account manager or visit <https://www.fs.com/c/fiber-optic-transceivers-9>

I Document history

New or revised topic	Described in	Date
100GBASE CFP/CFP2/CFP4/CXP-100G Modules Data Sheet	Updated all	10/14/2022



Shenzhen (China)

Address: 24F, Yingfeng Center, Haitian 2nd Rd,
Nanshan District, Shenzhen
Tel: +86 (755) 8357 1351
Email: sales@feisu.com

Delaware (United States)

Address: 380 Centerpoint Blvd, New Castle,
DE 19720, United States
Tel: +1 (888) 468 7419
Email: us@fs.com

Munich (Germany)

Address: NOVA Gewerbepark Building 7, Am
Gfild 7,85375 Neufahrn bei Munich, Germany
Tel: +49 (0) 8165 4099 260
Email: de@fs.com

Singapore

Address: 30A Kallang Pl, #11-10/11/12 Singapore
339213
Tel: +65 6443 7951
Email: sg@fs.com

Wuhan (China)

Address: 9-14F, Optical Valley Software Park
A7, Guanshan Ave, Wuhan
Tel: +86 (027) 8808 9195
Email: sales@feisu.com

Birmingham (United Kingdom)

Address: Regus Edmund House, 12-22 Newhall
Street, Birmingham, B3 3AS
Tel: +49 (0) 8165 4099 260
Email: uk@fs.com

Melbourne (Australia)

Address: 57-59 Edison Rd, Dandenong South,
VIC 3175, Australia
Tel: +61 3 9693 3488
Email: au@fs.com

Tokyo (Japan)

Address: JS Progress Building, 4-1-23 Heiwajima,
Ota-ku, Tokyo 〒143-0006
Tel: 03-5826-8305
Email: jp@fs.com



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