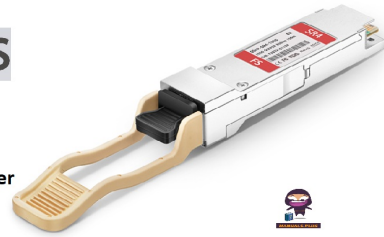




QSFP28
and
SFP-DD
Transceiver
Module



FS 100G QSFP28 and SFP-DD Transceiver Module Installation Guide

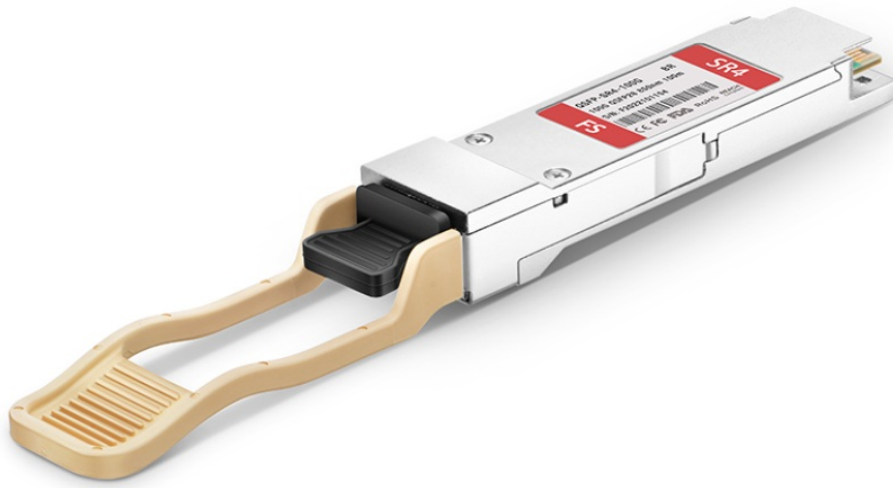
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FS 100G QSFP28 and SFP-DD Transceiver Module



Audience:

This installation note provides instructions for installing FS Quad Small Form-factor Pluggable 28 (QSFP28) and Small Form-factor Pluggable Double Density (SFP-DD) transceiver modules. These modules are hotswappable input/output (I/O) devices that plug into 100GBASE ports, connecting the module to a fiber-optic or copper network.

Preface

The table below lists the optical module part number for QSFP28 and SFP-DD packages:

Part Number	QSFP-SR4-100G	QSFP-LR4-100G	QSFP-CWDM4-100G
	QSFP-BIDI-100G	QSFP-ER4L-100G	QSFP-DR-100G
	Q28-40/100G-SM4	QSFP-LR-100G	QSFP-PSM4-100G
	QSFP-ELR4-100GM	QSFP-PLR4L-100G	QSFP-ZR4-100G
	QSFP-LR4-100GM	QSFP-FR-100G	QSFP-ESR4-100G
	QSFP-ER4-100GM	QSFP-4W10-100G	QSFP-ER4L-100GM
	QSFP-PLR4-100G	QSFP-ERL-100G	QSFP-SR1.2-100G
	Q28-100G-BX40	Q28-100G-BX10	QSFP-100G-BX20
	QSFP-eER4-100G	QSFP-SR4-100GM	QSFP-LX4-100G
	QSFP-ER-100G	Q28-100G-BX30	QSFP-LR4-100G-I
	QSFP-SL4-100G	QSFP-SR4-100G-I	QSFP-CWDM4-100G-I
	QSFP-ZR4-100G-I	QSFP-4W40-100G-E	QSFP-FR-100G-29
	QSFP-LR-100G-29	QSFP-FR-100G-33	QSFP-FR-100G-27
	QSFP-LR-100G-33	QSFP-4W20-100G-I	QSFP-LR-100G-27
	QSFP-4W40-100G-I	QSFP-EZR4-100G	QSFP-ZR-100G-S
	QSFP-ZR-100G	DWDM2-Q28100G-80	SFPDD-DR-100G
	SFPDD-FR-100G	SFPDD-LR-100G	

Overview

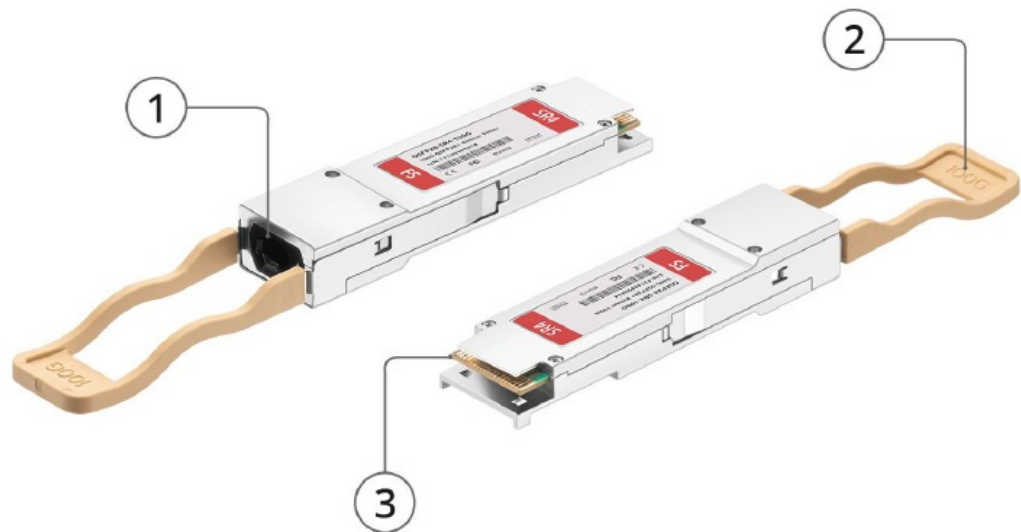
Module Purpose and Instructions for Use

- QSFP28 and SFP-DD transceiver modules are hot-swappable I/O devices that can be plugged into module slots. These transceivers connect the module's circuitry to the fiber-optic network.
- You can use any combination of QSFP28 and SFP-DD transceiver modules supported by FS devices. The only restriction is that each port must match the wavelength specifications of the other end of the fiber or cable, and the cable must not exceed the specified length to ensure reliable communication.
- Use only FS QSFP28 transceiver modules with your FS devices. Each QSFP28 transceiver module supports the FS Quality Identification (ID) feature, allowing the FS switch or router to identify and verify whether the transceiver module has been certified and tested by FS.

Module Appearance Overview

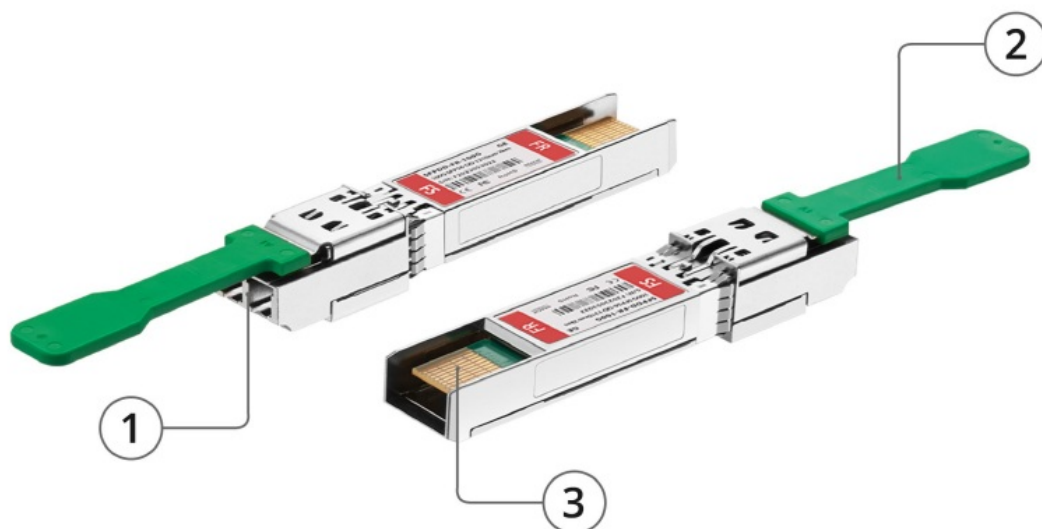
An optical QSFP28 transceiver module is shown in Figure 1.

Figure 1: QSFP28 Transceiver Module



An optical SFP-DD transceiver module is shown in Figure 2.

Figure 2: SFP-DD Transceiver Module



Number	Description	Number	Description
1	Optical Interface	3	Golden Fingers
2	Pull Tab		

Product Part Numbers and Descriptions

Table 1 Product Numbers and Descriptions

Part Number	Description
100G QSFP28 Transceiver	
QSFP-SR4-100G	100GBASE SR4 QSFP28 Transceiver, MTP/MPO, 100m over OM4 MM F
QSFP-LR4-100G	100GBASE LR4 QSFP28 Transceiver, Duplex LC, 10km over SMF
QSFP-CWDM4-100G	100GBASE IR4 QSFP28 Transceiver, Duplex LC, 2km over SMF
QSFP28-BIDI-100G	100G-SR SWDM4 BiDi QSFP28 Transceiver, Duplex LC, 100m OM4 M MF
QSFP-ER4L-100G	100GBASE ER4 QSFP28 Transceiver, Duplex LC, 40km over SMF
QSFP-DR-100G	100GBASE DR QSFP28 Transceiver, Duplex LC, 500m over SMF

Part Number	Description
Q28-40/100G-SM4	40/100GBASE QSFP28 Transceiver, Duplex LC, 100m over MMF
QSFP-LR-100G	100GBASE LR QSFP28 Transceiver, Duplex LC, 10km over SMF
QSFP-PSM4-100G	100GBASE PSM4 QSFP28 Transceiver, MTP/MPO, 500m over SMF
QSFP-ELR4-100GM	100GBASE LR4 and 112GBASE OTU4 QSFP28 Transceiver, Duplex LC, 20km over SMF
QSFP-PLR4L-100G	100GBASE PSM4 QSFP28 Transceiver, MTP/MPO, 2km over SMF
QSFP-ZR4-100G	100GBASE ZR4 QSFP28 Transceiver, Duplex LC, 80km over SMF
QSFP-LR4-100GM	100GBASE LR4 and 112GBASE OTU4 QSFP28 Transceiver, Duplex LC, 10km over SMF
QSFP-FR-100G	100GBASE FR QSFP28 Transceiver, Duplex LC, 2km over SMF
QSFP-ESR4-100G	100GBASE ESR4 QSFP28 Transceiver, MTP/MPO, 300m over MMF
QSFP-ER4-100GM	100GBASE ER4 and 112GBASE OTU4 QSFP28 Transceiver, Duplex LC, 40km over SMF
QSFP-4W10-100G	100GBASE 4WDM-10 QSFP28 Transceiver Duplex LC, 10km over SMF
QSFP-ER4L-100GM	4WDM40 and 112GBASE-OTU4 QSFP28 Transceiver, Duplex LC, 30km over SMF
QSFP-PLR4-100G	100GBASE PLR4 QSFP28 Transceiver, MTP/MPO, 10km over SMF
QSFP-ERL-100G	100GBASE ERL QSFP28 Transceiver, Duplex LC, 25km over SMF
QSFP-SR1.2-100G	100GBASE-SR1.2 QSFP28 Transceiver, Duplex LC, 100m over MMF
Q28-100G-BX40	100GBASE-BX40-D BiDi Transceiver, Simplex LC, 40km over SMF
Q28-100G-BX10	100G BX10 QSFP28 Transceiver, Simplex LC, 10km over SMF
QSFP-100G-BX20	100G BX20 QSFP28 Transceiver, Simplex LC, 20km over SMF
QSFP-eER4-100G	100GBASE ER4 QSFP28 Transceiver, Duplex LC, 60km over SMF

Part Number	Description
QSFP-SR4-100GM	100GBASE SR4 and 112GBASE OTU4 QSFP28 Transceiver, MPO-12, 100m over MMF
QSFP-LX4-100G	100GBASE LX4 QSFP28 Transceiver, Duplex LC, 2km over SMF and 100m over QSFP-LX4- 100G OM3 MMF

QSFP-ER-100G	100GBASE ER QSFP28 Transceiver, Duplex LC, 40km over SMF
Q28-100G-BX30	100G BX30 QSFP28 Transceiver, Simplex LC, 30km over SMF
QSFP-LR4-100G-I	100GBASE LR4 QSFP28 Transceiver, Duplex LC, 10km over SMF, I-Temp
QSFP-SL4-100G	100GBASE-SL4 QSFP28 Transceiver,MPO-12,20m over OM3/30m over OM4 MMF
QSFP-SR4-100G-I	100GBASE SR4 QSFP28 Transceiver, MTP/MPO, 100m over OM4 MMF, I-Temp
QSFP-CWDM4-100G-I	100GBASE IR4 QSFP28 Transceiver, Duplex LC, 2km over SMF, I-Temp
QSFP-ZR4-100G-I	100GBASE ZR4 QSFP28 Transceiver, Duplex LC, 80km over SMF, I-Temp
QSFP-4W40-100G-E	100GBASE ER4L Transceiver, 40km over SMF, duplex, Duplex LC, E-Temp
QSFP-FR-100G-29	100GBASE-FR Single Lambda 1290nm QSFP28 Transceiver, Duplex LC, 2km over SMF
QSFP-LR-100G-29	100GBASE-LR Single Lambda 1290nm QSFP28 Transceiver, Duplex LC, 10km over SMF
QSFP-FR-100G-33	100GBASE-FR Single Lambda 1330nm QSFP28 Transceiver, Duplex LC, 2km over SMF
QSFP-FR-100G-27	100GBASE-FR Single Lambda 1270nm QSFP28 Transceiver, Duplex LC, 2km over SMF
QSFP-LR-100G-33	100GBASE-LR Single Lambda 1330nm QSFP28 Transceiver, Duplex LC, 10km over SMF
QSFP-4W20-100G-I	100GBASE 4WDM QSFP28 Transceiver, Duplex LC, 20km over SMF, I-Temp
QSFP-LR-100G-27	100GBASE-LR Single Lambda 1270nm QSFP28 Transceiver, Duplex LC, 10km over SMF

QSFP-4W40-100G-I	100GBASE 4WDM QSFP28 Transceiver, Duplex LC, 40km over SMF, I-Temp
QSFP-EZR4-100G	100GBASE-ZR4 QSFP28 Transceiver,Duplex LC,100km over SMF

QSFP-ZR-100G-S	100GBASE ZR QSFP28 Transceiver, DCO, CMIS
QSFP-ZR-100G	100GBASE ZR QSFP28 Transceiver, DCO, SFF-8636
DWDM2-Q28100G-80	100GBASE DWDM QSFP28 Transceiver, CS, 80km over SMF
100G SFP-DD Transceiver	
SFPDD-DR-100G	100GBASE-DR SFPDD Transceiver, Duplex LC, 500m over SMF
SFPDD-FR-100G	100GBASE-FR SFPDD Transceiver, Duplex LC, 2km over SMF
SFPDD-LR-100G	100GBASE-LR SFPDD Transceiver, Duplex LC, 10km over SMF

Optical Transmit and Receive Specifications

Table 2 Optical Transmit and Receive Specifications

Part Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
100G QSFP28 Transceiver				
QSFP-SR4-100G	100GBASE-SR4,850nm MMF	-8.4~2.4	-10.3~2.4	840-860
QSFP-LR4-100G	100GBASE-LR4,1310nm SMF	-4.3~4.5	-10.6~4.5	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.09)
QSFP-CWDM4-100G	100GBASE-CWDM4,1310nm SMF	-6.5~2.5	-20.5~-3.5	L0 1271 (1264.5-1277.5) L1 1291 (1284.5-1297.5) L2 1311 (1304.5-1317.5) L3 1331 (1324.5-1337.5)
QSFP-BIDI-100G	100GBASE-SR BiDi,850nm MMF	-5.5~3	-9.5~3.4	850, 880, 910,940
QSFP-ER4L-100G	4WDM40,1310nm SMF	-2.5~6.5	-20.9~4.9	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.09)

Part Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
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QSFP-DR-100G	100GBASE-DR Single Lambda,1310nm SMF	-2.9~4	-5.9~4	1304.5-1317.5
Q28-40/100G-SM4	40/100GBASE-SM4 Dual Rate,850nm MMF	100G:-7.5~2 40G:- 7.5~3	100G: L0 -9.5Min L1 - 9.4Min L2 -9.4 Min L3 -9.4~3.4 40G L0 -12.9Min L1 -12.5Min L2 - 12.2Min L3 -11. 9~2.4	L0 844~858 L1 874~888 L2 9 04~918 L3 934~948
QSFP-LR-100G	100GBASE-LR Single Lambda,1310nm SMF	-1.4~4.5	-7.7~4.5	1304.5-1317.5
QSFP-PSM4-100G	100GBASE- PSM4 ,1310nm SMF	-9.4~2	-12.66~2	1295-1325
QSFP-ELR4-100GM	100GBASE-LR4 and 112GBASE-OTU4 Dual Rate,1310nm 20km SMF	100G -1.0~4.5 112G 0~4	100G-9.5~4.5 112G -9.0~4	L0 1295.56 (1294.53- 1296.59) L1 1300.05 (1299.02- 1301.09) L2 1304.58 (1303.54- 1305.63) L3 1309.14 (1308.09- 1310.09)
QSFP-PLR4L-100G	100GBASE- PLR4 L,1310nm SMF	-6~2	-12.66~2.5	1295-1325
QSFP-ZR4-100G	100GBASE-ZR4,1 310nm SMF	2~6.5	-28~2	L0 1294.53-1296.59 L1 1299.02-1301.09 L2 1303.54-1305.63 L3 1308.09-1310.19

QSFP-LR4-100GM	100GBASE-LR4 and 112GBASE-OTU4 Dual Rate,1310nm SMF	100G:-4.3~4.5 112G -0.6~4	100G: -8.6~4.5 112G: -8.4~4.5	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.09)
QSFP-FR-100G	100GBASE-FR Single Lambda,1310nm SMF	-2.4~4	-6.4~4.5	1304.5-1317.5
QSFP-ESR4-100G	100GBASE-ESR4, 850nm MMF	-4~4	-12~2.4	840-860

QSFP-4W10-100G	100GBASE-4W10, 1310nm SMF	-6.5~2.5	-13~2.5	L0 1271 (1264.5-1277.5) L1 1291 (1284.5-1297.5) L2 1311 (1304.5-1317.5) L3 1331 (1324.5-1337.5)
QSFP-ER4L-100GM	4WDM40 and 112 GBASE- OTU4 Dual Rate,1310nm SMF	100G -2.5~4.5 112G -1.5~4.5	100G -15~-4.9 112G -14.5~-4.9	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.09)
QSFP-PLR4-100G	100GBASE-PLR4, 1310nm SMF	-6~2	-12~2.5	1295-1325
QSFP-ERL-100G	100GBASE-ERL Single Lambda,1310nm SMF	0~5.6	-13.5~-2.6	1304.5-1317.5

Part Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
QSFP-SR1.2-100G	100GBASE-SR1.2, 850nm MMF	-6.2~4	-8.2~4	844~863 900~918
Q28-100G-BX40	100GBASE-BX40-D BiDi, 1309.14nm-TX/1304.58nm-RX SMF	1.7~7.1	-13.8~-3	1304.58+/- 1.0 1309.14+/- 1.0
Q28-100G-BX10	100GBASE-BX10-D BiDi, 1331nm-TX/1271nm- RX SMF	-1.9~4.8	-26~4.8	1264.5- 1277.5 1324.5- 1337.5
QSFP-100G-BX20	100GBASE-BX20-D BiDi, 1310nm-TX/1280nm- RX SMF	-4.3~4.5	-14.5~4.5	L0 1273.55 1272.55-1274.54 L1 1277.89 1276.89-1278.89 L2 1282.26 1281.25-1283.27 L3 1286.66 1285.65-1287.68 L0 1295.56 1294.53-1296.59 L1 1300.05 1299.02-1301.09 L2 1304.58 1303.54-1305.63 L3 1309.14 1308.09-1310.19
QSFP-eER4-100G	100GBASE-ER4, 1310nm SMF	1~6	-30~-7	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.09)
QSFP-SR4-100GM	100GBASE-SR4 and 112GBASE-OTU4 Dual Rate, 850nm MMF	-8.4~2.4	10.3 ~2.4	840-860
QSFP-LX4-100G	100GBASE-LX4, 1310nm SMF/MMF	-3~4.5	-7.3~4.5	1271, 1291, 1311, 1331

QSFP-ER-100G	100GBASE-ER Single Lambda,1310nm SMF	1.7~7.1	-16~-3.4	1308.09-1310.19
Q28-100G-BX30	100GBASE-BX30-D BiDi,1309.14nm-Tx/1304.58nm-Rx SMF	1.7~7.1	-16~-3.4	1303.54-1305.63 1260-1620
QSFP-LR4-100G-I	100GBASE-LR4,1310nm SMF	-4.3~4.5	-10.6~4.5	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.09)
QSFP-SL4-100G	100GBASE-SL4,850nm MMF	-8.4~2.4	-10.3~2.4	840-860
QSFP-SR4-100G-I	100GBASE-SR4,850nm MMF	-8.4~2.4	-10.3~2.4	840-860
QSFP-CWDM4-100G-I	100GBASE-CWDM4,1310nm SMF	-2.5~6.5	-11.5~3.5dBm	L0 1271 (1264.5-1277.5) L1 1291 (1284.5-1297.5) L2 1311 (1304.5-1317.5) L3 1331 (1324.5-1337.5)
QSFP-ZR4-100G-I	100GBASE-ZR4,1310nm SMF	2.0~6.5	-28.0~-5	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.09)

Part Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
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QSFP-4W40-100G-E	100GBASE-4W40,1310nm SMF	-2.5~6.5	-20.5~-3.5	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.09)
QSFP-FR-100G-29	100GBASE-FR Single Lambda,1290nm SMF	-3.1~4	-7.1 ~4	L0 1271 (1264.5-1277.5) L1 1291 (1284.5-1297.5) L2 1311 (1304.5-1317.5) L3 1331 (1324.5-1337.5)
QSFP-LR-100G-29	100GBASE-LR Single Lambda,1290nm SMF	-1.9 ~4.8	-8.2~4.8	L0 1271 (1264.5-1277.5) L1 1291 (1284.5-1297.5) L2 1311 (1304.5-1317.5) L3 1331 (1324.5-1337.5)
QSFP-FR-100G-33	100GBASE-FR Single Lambda,1330nm SMF	-3.1 ~4	-7.1 ~4	L0 1271 (1264.5-1277.5) L1 1291 (1284.5-1297.5) L2 1311 (1304.5-1317.5) L3 1331 (1324.5-1337.5)
QSFP-FR-100G-27	100GBASE-FR Single Lambda,1270nm SMF	-3.1 ~4	-7.1 ~4	L0 1271 (1264.5-1277.5) L1 1291 (1284.5-1297.5) L2 1311 (1304.5-1317.5) L3 1331 (1324.5-1337.5)
QSFP-LR-100G-33	100GBASE-LR Single Lambda,1330nm SMF	-1.9~4.8	-8.2~4.8	L0 1271 (1264.5-1277.5) L1 1291 (1284.5-1297.5) L2 1311 (1304.5-1317.5) L3 1331 (1324.5-1337.5)

QSFP-4W20-100G-I	100GBASE-4WDM - 20,1310nm SMF	-4.3~4.5	-14.5~4.5	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.19)
QSFP-LR-100G-27	100GBASE-LR Sin gle Lambda,1270nm S MF	-1.9~4.8	-8.2~4.8	L0 1271 (1264.5-1277.5) L1 1291 (1284.5-1297.5) L2 1311 (1304.5-1317.5) L3 1331 (1324.5-1337.5)
QSFP-4W40-100G-I	100GBASE-4WDM - 40,1310nm SMF	-2.5~6.5	-20.5~-3.5	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.19)
QSFP-EZR4-100G	100GBASE-ZR4,1 310nm SMF	2~6	-30~-7	L0 1295.56 (1294.53-1296.59) L1 1300.05 (1299.02-1301.09) L2 1304.58 (1303.54-1305.63) L3 1309.14 (1308.09-1310.09)
100G SFP-DD Transceiver				
SFPDD-DR-100G	100GBASE-DR Sin gle Lambda,1310nm S MF	-2.9~4	-5.9~4	1304.5-1317.5

Part Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
SFPDD-FR-100G	100GBASE-FR Single Lambda, 1310nm S MF	-3.1~4	-7.1~4	1304.5- 1317.5
SFPDD-LR-100G	100GBASE-LR Single Lambda, 1310nm S MF	-1.9~4.8	-8.2~4	1304.5- 1317.5

Safety



Required Tools

You will need the following tools to install the QSFP28 & SFP-DD transceiver modules:

- A wrist strap or other personal grounding device to prevent ESD occurrences.
- An antistatic mat or foam to place the transceiver on.
- Fiber-optic end-face cleaning tools and inspection equipment. For complete information on inspecting and

cleaning fiber-optic connections, see the white paper at this URL: [5.1 Optical Module Endface Testing](#).

Installing QSFP28 and SFP-DD Transceiver Modules

Caution: QSFP28 and SFP-DD transceiver modules are static-sensitive devices. Always use an ESD wrist strap or a similar grounding device when handling or coming into contact with these modules.

To install an QSFP28 / SFP-DD transceiver module, please follow these steps:

- **Step 1:** Attach an ESD-preventive wrist strap to your wrist and to the ESD ground connector or a bare metal surface on your chassis.
- **Step 2:** Remove the QSFP28 / SFP-DD transceiver module from its protective packaging.
- **Step 3:** Check the label on the QSFP28 / SFP-DD transceiver module body to verify that you have the correct model for your network.
- **Step 4:** For optical QSFP28 or SFP-DD transceivers, remove the dust cap from the optical port and set it aside.
- **Step 5:** Hold the transceiver with the identifier label facing up. Align the QSFP28 or SFP-DD transceiver in front of the module transceiver socket opening, then carefully slide the transceiver into the socket until the transceiver contacts the electrical connector of the socket. (As shown in Figures 3 and 4.)

Figure 3: Inserting an 100G QSFP28 Transceiver Module into a Module Socket



Figure 4: Inserting an 100G SFP-DD Transceiver Module into a Module Socket



Step 6 Firmly press the front end of the QSFP28 or SFP-DD transceiver with your thumb to fully secure the transceiver in the module's transceiver slot. (As shown in Figures 5 and 6.)

Figure 5: Latching the QSFP28



Figure 6: Latching the SFP-DD



Step 7: For optical QSFP28 or SFP-DD modules, reinsert the dust plug into the transceiver's optical port until you are ready to connect the network interface cable. Do not remove the dust plug until you are prepared to make the connection.

Connect Fiber Optic Network Cables

Before removing the dust plug and making any optical connections, please follow these guidelines:

- Keep the dust plug installed on the unconnected fiber cable connectors and transceiver optical ports until you are ready to make the connection.
- Inspect and clean the end faces of MPO / duplex LC connectors before making any connections. Refer to the tip after Step 2 in the next procedure for pointers to the fiber inspection and cleaning white paper.
- Insert or remove the fiber cable only by holding the MPO or duplex LC connector housing.

Caution: The MPO and duplex LC connectors on QSFP28 and SFP-DD transceivers support network interface cables with Physical Contact (PC) or Ultra Physical Contact (UPC) polished surface types. The MPO and duplex LC connectors on optical QSFP28 and SFP-DD transceivers do not support network interface cables with Angled Polished Contact (APC) surface types.

- **Step 1:** Remove the dust plug from the MPO connector of the fiber network interface cable. Please keep the dust plug in a safe place for future use.
- **Step 2:** Inspect and clean the fiber end face of the MPO or duplex LC connector. Refer to the tips below for a link to the fiber inspection and cleaning white paper.

Tips: For complete information on inspecting and cleaning fiber connections, please see this URL:

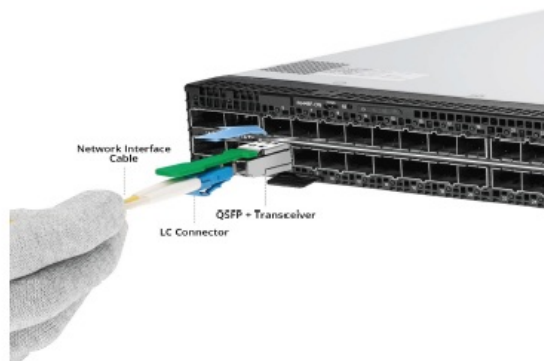
<https://resource.fs.com/mall/resource/800g400g-transceiver-acceptance-testing-guide.pdf>

- **Step 3:** Remove the dust plug from the optical port of the QSFP28 or SFP-DD transceiver module.
- **Step 4:** Immediately connect the network interface cable MPO connector to the QSFP28 transceiver module (Figure 7) or the duplex LC connector to the SFP-DD transceiver module (Figure 8).

Figure 7: 100G QSFP28 Transceiver Modules with MPO Connectors



Figure 8: 100G SFP-DD Transceiver Modules with Duplex LC Connectors



- **Step 5:** Gently pull on the MPO or duplex LC connector housing of the cable to check if the fiber network cable is fully seated. If the network cable is disconnected, reinstall it and ensure that the cable connector is fully seated and that the connector latch is engaged.

Removing QSFP28 and SFP-DD Transceiver Modules

Caution: QSFP28 and SFP-DD transceiver modules are electrostatic-sensitive devices. Always wear an ESD wrist strap or a similar personal grounding device when handling QSFP28 or SFP-DD transceiver modules or coming into contact with them.

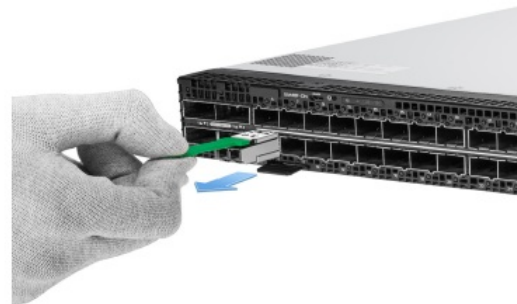
To remove the QSFP28 or SFP-DD transceiver, follow these steps:

- **Step 1:** For optical QSFP28 or SFP-DD transceivers, disconnect the network interface cable from the QSFP28 or SFP-DD transceiver connector.
- **Step 2:** For QSFP28 or SFP-DD transceivers equipped with a pull-tab latch (see Figures 9 and 10, bottom view):
 - Immediately install the dust plug into the transceiver's optical port.
 - Grasp the latch and gently pull to release the transceiver from the socket.
 - Slide the transceiver out of the socket.
- **Step 3:** Place the QSFP28 or SFP-DD transceiver in an antistatic bag.

Figure 9: Removing the 100G QSFP28 Transceiver Module



Figure 10: Removing the 100G SFP-DD Transceiver Module



FS has invested resources in product R&D, quality control, intelligent manufacturing, industry-leading experts, professional technical support, and networking solutions. All is to provide customers with higher-performance, lower-power consumption, and the most costeffective products, promoting clients' network upgrades.

For more information and technical support, welcome to contact us at www.fs.com/contact_us

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Documents / Resources

	FS 100G QSFP28 and SFP-DD Transceiver Module [pdf] Installation Guide QSFP-SR4-100G, QSFP-BIDI-100G, Q28-40-100G-SM4, QSFP-ELR4-100GM, QSFP-LR4-100 GM, QSFP-ER4-100GM, QSFP-PLR4-100G, Q28-100G-BX40, QSFP-eER4-100G, QSFP-ER-1 00G, QSFP-SL4-100G, QSFP-ZR4-100G-I, QSFP-LR-100G-29, QSFP-LR-100G-33, and more., 100G QSFP28 and SFP-DD Transceiver Module, 100G, QSFP28 and SFP-DD Transceiver Mod ule, SFP-DD Transceiver Module, Transceiver Module, Module
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References

-  [FS.com Australia - HPC, Data Centre, Enterprise, Telecom](#)
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