

MRV Pluggable Optics

Today's network engineer is faced with a myriad of technical options when upgrading the network. The need to accommodate what's left of yesterday's technology while implementing the network of the future is a challenge commonly faced. At the same time, the industry is buzzing with talk of speeds ten times faster than what's currently available. What decision will stand the challenge of new technology and protect today's investment against the ever increasing bandwidth explosion?

For optical network implementations, pluggable transceivers (SFP, SFP+, and XFP) provide a modular approach to future-safe network design. Pluggable technology replaces fixed ports or optics and increases the flexibility and longevity of network devices. Interchangeable transceivers allow a single device to operate with a wide selection of media, protocols and functions. The same host module may function as a simple optical device, a distance extension solution, a repeater or a WDM transponder. Upgrading a port takes only seconds - snap in a new pluggable option at both ends of the media and the upgrade is complete.

Standards-based with vertical integration

Standards-compliant network devices use pluggable transceivers interchangeably. MRV offers a full line of pluggable transceiver options fully integrated with its networking solutions. The MRV pluggable transceivers operate in MRV devices or most other devices that comply with the MSA standard. The only network manufacturer that offers this breadth of flexibility, MRV's pluggable transceiver line includes:

- SFP — with a wide range of protocols and rates (Fast and Gigabit Ethernet, Fibre Channel, SONET/SDH and many more), for dual and bidirectional fiber as well as copper media support, Digital Video, 3G SAS/SATA, Firewire
- SFP+ — 8 and 10Gbps for Fibre Channel and 10G Protocols (Ethernet, Fibre Channel, SONET/SDH)
- XFP — 10G Ethernet and Fibre Channel, OC192/STM 64, MM, SM, DWDM and Copper 10G

MRV's pluggable transceivers support Digital Diagnostics (SFF-8472) to monitor real-time statistics including input power, output power, temperature, and supply voltage.

Future-proof and economical network design

MRV's line of pluggable transceivers gives you the option to implement today's technology while offering the ability to protect your investment for what lies ahead. Support optical Gigabit Ethernet today, and upgrade to 10 Gigabit Ethernet tomorrow through a simple transceiver change-out. Unique pluggable transceivers allow off-the-shelf devices to operate like custom-built equipment at a fraction of the price. Pluggable transceiver technology is the answer to today's ever-changing network needs.



SFP - Small Form Pluggable

Single Fiber Bidirectional, Fast Ethernet/OC-3 STM-1

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-FD-BX35	1310	1550	-14	-8	-28	-8	4			14	0-28	-5-70	Yes
SFP-FD-BX53	1550	1310	-14	-8	-28	-8	4			14	0-28	-5-70	Yes
SFP-FD-BX35SC	1310	1550	-14	-8	-28	-8	4			14	0-28	-5-70	Yes
SFP-FD-BX53SC	1550	1310	-14	-8	-28	-8	4			14	0-28	-5-70	Yes
SFP-FD-BX35TH	1310	1550	-14	-8	-28	-8	4			14	0-28	-40-85	Yes
SFP-FD-BX53TH	1550	1310	-14	-8	-28	-8	4			14	0-28	-40-85	Yes
SFP-FD-BD35	1310	1550	-5	0	-28	-8	4			23	16-46	-5-70	Yes
SFP-FD-BD53	1550	1310	-5	0	-28	-8	4			23	16-46	-5-70	Yes
SFP-FD-BD35TH	1310	1550	-5	0	-28	-8	4			23	16-46	-40-85	Yes
SFP-FD-BD53TH	1550	1310	-5	0	-28	-8	4			23	16-46	-40-85	Yes
SFP-FD-BZ45	1490	1570	0	5	-28	-8	4			28	52-112	-5-70	Yes
SFP-FD-BZ54	1570	1490	0	5	-28	-8	4			28	52-112	-5-70	Yes

Single Fiber Bi, Dual Rate Fast Ethernet/OC-3 STM-1/OC-12 STM-4

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-DR-35IR1	1310	1550	-15	-8	-28	-8	4			12	0-24	-5-70	Yes
SFP-DR-53IR1	1550	1310	-15	-8	-28	-8	4			12	0-24	-5-70	Yes
SFP-DR-35IR2	1310	1550	-3	2	-28	-8	4			24	20-48	-5-70	Yes
SFP-DR-53IR2	1550	1310	-3	2	-28	-8	4			24	20-48	-5-70	Yes
SFP-DR-45LR2	1490	1570	-3	2	-28	-8	4			24	40-96	-5-70	Yes
SFP-DR-54LR2	1570	1490	-3	2	-28	-8	4			24	40-96	-5-70	Yes

Single Fiber Bidirectional, Gigabit Ethernet/ Fibre Channel

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-GD-BX34	1310	1490	-9	-3	-22	-3	0			13	0-26	-5-70	Yes
SFP-GD-BX43	1490	1310	-9	-3	-22	-3	0		800	13	0-26	-5-70	Yes
SFP-GD-BX34TH	1310	1490	-9	-3	-22	-3	0			13	0-26	-40-85	Yes
SFP-GD-BX43TH	1490	1310	-9	-3	-22	-3	0			13	0-26	-40-85	Yes
SFP-GD-BD35	1310	1550	-5	0	-24	-3	0			19	12 - 38	-5-70	Yes
SFP-GD-BD53	1550	1310	-5	0	-24	-3	0			19	12-38	-5-70	Yes
SFP-GD-BD35TH	1310	1550	-5	0	-24	-3	0			19	12-38	-40-85	Yes
SFP-GD-BD53TH	1550	1310	-5	0	-24	-3	0			19	12-38	-40-85	Yes
SFP-GD-BD34	1310	1550	-5	0	-24	-3	0			19	12-38	-5-70	Yes
SFP-GD-BD43	1490	1310	-5	0	-24	-3	0			19	12-38	-5-70	Yes
SFP-GD-BZ45	1490	1570	0	5	-24	-3	0			24	32-96	-5-70	Yes
SFP-GD-BZ54	1570	1490	0	5	-24	-3	0			24	32-96	-5-70	Yes
SFP-GD-EBZ45	1490	1570	-2	3	-33	-9	6			31	32-124	-5-70	Yes
SFP-GD-EBZ54	1570	1490	-2	3	-33	-9	6			31	32-124	-5-70	Yes

Single Fiber Bidirectional, Multirate 100-2700 Mbps.

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-MR-35IR1	1310	1550	-5	0	-18	-8	4			12	0-24	-5-70	Yes
SFP-MR-53IR1	1550	1310	-5	0	-18	-8	4			12	0-24	-5-70	Yes
SFP-MR-45IR2	1490	1570	-2	3	-18	-8	4			15	12-60	-5-70	Yes
SFP-MR-54IR2	1570	1490	-2	3	-18	-8	4			15	12-60	-5-70	Yes
SFP-MR-45LR2	1490	1570	-2	3	-28	-10	4			25	52-100	-5-70	Yes
SFP-MR-54LR2	1570	1490	-2	3	-28	-10	4			25	52-100	-5-70	Yes

Dual Fiber, Fast Ethernet/OC-3 STM-1

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-O3-M	1310		-20	-14	-29	-14				DL	0-2	0-70	No
SFP-O3D-M	1310		-20	-14	-30	-10				DL	0-2	0-70	Yes
SFP-O3D-MTH	1310		-20	-14	-30	-10				DL	0-2	-40-85	Yes
SFP-FDSGMII-M	1310		-20	-14	-31	-8				11	0-2	-5-70	No
SFP-FDSGMII-LR	1310		-15	-8	-31	-8				16	0-10	-5-70	No
SFP-O3-IR1	1310		-15	-8	-28	-8	0	1		12	0-24	0-70	No
SFP-O3-IR1TH	1310		-15	-8	-28	-8	0	1		12	0-24	-40-85	No
SFP-O3D-IR1	1310		-15	-8	-28	-8	0	1		12	0-24	0-70	Yes
SFP-O3D-IR1TH	1310		-15	-8	-28	-8	0	1		12	0-24	-40-85	Yes
SFP-O3-LR1	1310		-5	0	-34	-8	0	1		30	20-60	0-70	No
SFP-O3-LR1TH	1310		-5	0	-34	-8	0	1		30	16-60	-40-85	No
SFP-O3D-LR1	1310		-3	2	-34	-8	0	1		30	20-60	0-70	Yes
SFP-O3D-LR2	1550		-5	0	-34	-10	0	1		30	40-116	0-70	Yes
SFP-O3D-XLR	1550		1	5	-42	-10	4	2		41	60-164	-5-70	Yes

Dual Fiber, CWDM Fast Ethernet OC-3/STM-1

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-O3D-XLR-XX	1470-1610		1	5	-42	-10	4	2		41	60-164	-5-70	Yes

Dual Fiber, Multi-rate 100-200 Mbps

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-MR2-M	1310		-20	-14	-29	-14				DL	0-2	0-70	Yes

Dual Fiber, OC-12/STM-4

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-DRO12D-IR1	1310		-15	-8	-28	-8	0	1		12	0-30	0-70	Yes
SFP-O12D-LR1	1310		-3	2	-28	-8	0	1		24	20-48	0-70	Yes
SFP-O12D-LR1TH	1310		-3	2	-28	-8	0	1		24	20-48	-40-85	Yes
SFP-O12D-LR2	1550		-3	2	-28	-8	0	1		24	40-96	0-70	Yes

Dual Fiber, Gigabit Ethernet/Fibre Channel

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-GD-MX	1310		-9	-3	-17	-3	6			8	0-2	-5-70	Yes
SFP-G-MMX	1310		-9	-3	-22	-3	6			DL	0-2	0-70	No
SFP-G-MMX	1310		-10	-3	-20	-3	6			DL	0-2	0-70	No
SFP-GD-LX	1310		-10	-3	-20	-3	6			10	0-20	0-70	Yes
SFP-GD-ELX	1310		-7	0	-24	-3	6	2		15	6-30	0-70	Yes
SFP-GD-XD	1550		-5	0	-24	-3	6	2		17	12-70	0-70	Yes
SFP-GD-ZX	1550		0	5	-24	-3	6	2		22	35-88	0-70	Yes
SFP-GD-EZX	1550		0	5	-32	-6	6	2		30	44-120	0-70	Yes

Dual Fiber, CWDM Gigabit Ethernet/Fibre Channel

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-GDCWXD-XX	1310-1610		-5	0	-24	-3	6	1		18	10-70	0-70	Yes
SFP-GDCWZX-XX	1310-1610		0	5	-24	-3	6	1		23	30-90	0-70	Yes
SFP-GDCWEZX-XX	1310-1610		0	5	-32	-6	6	2		30	40-120	0-70	Yes

Dual Fiber, Fibre Channel Dual Rate (1 and 2Gbps)

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-DGD-SX	850		-10	-2	-18	0				DL	0-0.50	-20-85	Yes

SFP-DGD-LX	1310		-10	-3	-21	0				10	0-10	-40-85	Yes
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Dual Fiber, Fibre Channel Triple Rate (1, 2 and 4 Gbps)

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-TGD-SX	850		-10	-2	-15	0				DL	0-0.50	-20-85	Yes
SFP-TGD-SR4	1310		-10	-3	-18	0				8	0-4	-20-85	Yes
SFPFC401	1310		-8.4	-1	-18	0	4	1		8.6	0-17	-5-70	Yes
SFPFC404	1550		0	4	-18	-3	4	2		16	28-64	-5-70	Yes
SFPFC408	1550		0	4	-24	-6	4	3		21	40-84	-5-70	Yes

Dual Fiber, Fibre Channel Triple Rate (1, 2 and 4 Gbps) CWDM

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFPFC4CW04-XX	1270-1610		0	5	-17.5	0	4	2		15.5	0-40	-5-70	Yes
SFPFC4CW08-XX	1270-1610		0	5	-24	-6	4	3		21	30-84	-5-70	Yes

Dual Fiber, Fibre Channel Triple Rate (1, 2 and 4 Gbps) DWDM

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFPFC4DW04-XX	1528-1565		0	4	-24	-6	4	2	800	22	10-40	-5-70	Yes
SFPFC4DW08-XX	1528-1565		0	4	-24	-6	4	3	1600	21	40-80	-5-70	Yes

Dual Fiber, Multi-rate 100-2700 Mbps

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-MR27D-MMX	1310		-10	-3	-20	-3				DL	0-1	0-70	Yes
SFP-MR27D-SR1	1310		-10	-3	-20	-3	4			10	0-20	0-70	Yes
SFP-MR27D-SR1TH	1310		-10	-3	-20	-3	4			10	0-20	-40-85	Yes
SFP-MR27D-IR1	1310		-5	0	-20	0	5	1		14	0-28	0-70	Yes

SFP-MR27D-IR2	1550		-5	0	-20	0	5	1		14	0-56	0-70	Yes
SFP-MR27D-LR1	1310		-2	3	-27	-9	4	0		24	20-48	0-70	Yes
SFP-MR27D-LR2	1550		-2	3	-28	-9	4	2		24	40-96	0-70	Yes

Dual Fiber, Multi-rate 100-2700 Mbps CWDM

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP27DCWEIR-XX	1310-1610		0	5	-20	0	5	1		19	20-70	0-70	Yes
SFP-27DCWLR-XX	1310-1610		-2	3	-28	-6	4	2		24	40-96	0-70	Yes

Dual Fiber, Multi-rate 100-2700 Mbps 100GHz DWDM

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP27DWLR08-XX	1529-1563		0	4	-28	-6	4	2	1450	26	40-80	-5-70	Yes
SFP27DWLR12-XX	1529-1563		0	4	-28	-6	4	2	2200	26	40-120	-5-70	Yes
SFP27DWLR20-XX	1529-1563		0	4	-28	-6	4	2	4000	26	40-200	-5-70	Yes

SFP+ - Small Form Pluggable

Dual Fiber, 8Gbps

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-8GD-SX	850		-9	-2	-11.2	0		4.2		2.2	0-0.3	-5-70	Yes
SFP-8GD-LR	1310		-8.4	-0.5	-13.8	0		3.2		5.4	0-10	-5-85	Yes

Dual Fiber, 10Gbps

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFP-10GD-SX	850		-7	-1	-11	0.5		3.9		DL	0-0.3	0-70	Yes
SFP-10GD-LRM	1310		-5	2	-6	2	na	5		DL	0-0.220	-5-70	Yes
SFP-10GD-LR	1310		-5	0.5	-14	0.5	na	3.2		5.8	0-11.6	-5-70	Yes

XFP - Pluggable Module

Dual Fiber, 10Gbps XFPs - Requires protocol-specific ref clock

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
XFP-10GD-LR12P	1550		-2	2	-24	-7		2	2400	20	36-120	-5-70	Yes

Dual Fiber, 10Gbps XFPs - No protocol-specific ref clock require

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
XFP-10GED-SX	850		-7	-1	-11	-6	na	4		DL	0-0.3	-5-70	Yes
XFP-10GD-SX	850		-7	-1	-11	-1				DL	0-0.3	-5-70	Yes
XFP-10GD-MMX	1310		-6	-1	-13	0.5				DL	0-0.5	-5-70	Yes
XFP-10GD-LR	1310		-8	0	-14	0.5				7	0-14	-5-70	Yes
XFP-10GED-LR	1310		-8	0.5	-16	0.5		3.2		5	0-10	-5-70	Yes
XFP-10GED-LRTH	1310		-8	0.5	-16	0.5	na	3.2		5	0-10	-40-85	Yes
XFP-10GED-IR2	1550		-5	4	-16	-1		3		8	10-32	-5-70	Yes
XFP-10GD-IR2	1550		-1	2	-16	-1		2	800	13	12-52	-5-70	Yes
XFP-10GD-LR2	1550		0	4	-24	-7		3	1600	21	44-84	-5-70	Yes

Dual Fiber, 10Gbps XFPs DWDM, No protocol-specific ref clock req

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
XFP-DWIR204-xx	1529-1563		-1	2	-16	-1		2	800	13	10-50	-5-70	Yes
XFP-DWLR08-xx	1529-1563		-1	3	-24	-7		2.5	1450	20	40-80	-5-70	Yes

Tunable XFP - Pluggable Module

Dual Fiber, 10Gbps Tunable XFPs DWDM

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
XFP-DWLR08TC	1528-1563	1260-1600	-1	3	-24	-7	3	3	1600	20	80	-5-70	Yes

Pluggables

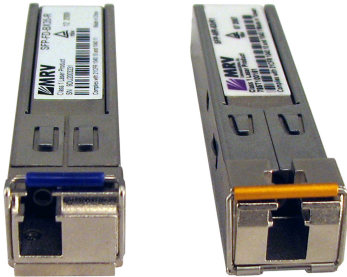
Dual Fiber, Fibre Channel Triple Rate (1, 2 and 4 Gbps) CWDM

Part Number	Wavelength Tx (nm)	Wavelength Rx (nm)	Output Power Min (dBm)	Output Power Max (dBm)	Rx Sensitivity (dBm)	Saturation Power (dBm)	Rx Damage Threshold (dBm)	Dispersion Penalty (dB)	Dispersion Tolerance (ps/nm/km)	Link Budget (dB)	Distance Range (km)	Operating Temp. (°C)	Diagnostics Support
SFPFC4CW01-XX	1270-1610		-5	0	-16	0	4	1		10	0-20	-5-70	Yes

Optical Transceivers

The optical port configurations of the pluggable transceivers listed in the preceding tables fall into three categories:

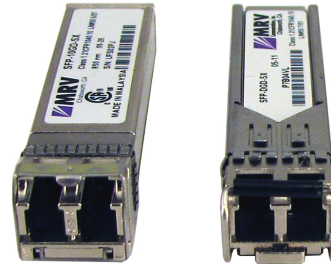
SFP Single-Fiber Bidirectional



Single-fiber bidirectional SFPs send and receive data over one fiber-optic cable strand. Each transceiver uses separate wavelengths to transmit and receive. A paired "SF Bidi" SFP must use the same wavelengths with Rx and Tx reversed to complete the link circuit.

With the label on top, the single Tx/Rx port is on the left or centered.

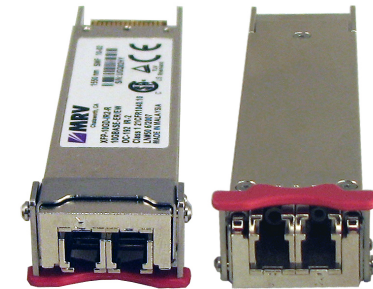
SFP or SFP+ Dual-Fiber



Dual-fiber SFPs send data in only one direction on an optical fiber strand. They use a separate optical fiber strand for data in each direction of a link circuit. Because the data in each direction is independent, the same wavelength may be used to transmit and receive in each SFP.

Data direction is indicated either with arrows or port labels for Tx and Rx.

XFP Dual-Fiber



Dual-fiber XFPs send data in only one direction on an optical fiber strand. They use a separate optical fiber strand for data in each direction of a link circuit. Because the data in each direction is independent, the same wavelength may be used to transmit and receive in each XFP.

Data direction is indicated either with arrows or port labels for Tx and Rx.

About MRV Communications

The Optical Communications Systems division of MRV Communications is a global provider of Carrier Ethernet, WDM transport and IT infrastructure management solutions since 1988. MRV products enable the delivery of next-generation optical transport and Carrier Ethernet services over any fiber infrastructure. MRV operates R&D centers in the North America, Europe and Asia, along with 50 support centers, and 21 sales offices around the world.

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