

Product Guide

Transceivers, Transponders,
and Active Optical Cables

FINISAR®



Transceivers, Transponders, and Active Optical Cables

SFP (copper and optical; longwave, shortwave and WDM)

DATACOM applications using Fast Ethernet, Gigabit Ethernet, 1x/2x/4x Fibre Channel

TELECOM applications using OC-3/STM-1, OC-12/STM-4, OC-48/STM-16, EPON/GPON and Wireless/CPRI across all reaches

Features

- 3.3 V operating voltage
- Distances from very short links up to 100+ km
- Wide operating temperature range
- Metal enclosure for lower EMI
- Digital diagnostics
- Wireless CPRI compliant



SFP

SFP+/SFP28

(optical; longwave, shortwave, DWDM and tunable)

DATACOM applications using 10G and 25G Ethernet and 2x/4x/8x/16x/32x Fibre Channel (LW and SW)

TELECOM applications using either OC-192/STM-64, 10G Ethernet, or Wireless/CPRI

Features

- 3.3 V operating voltage
- Supports bit rates up to 28.05 Gb/s (LW, SW, and DWDM) and 11.3 Gb/s (Tunable)
- Distances from short links up to 80 km metro (LW, SW, and DWDM) and 80km (Tunable)
- Wide operating temperature range
- Digital diagnostics
- Wireless CPRI compliant (LW and SW)
- Bi-directional SFP+ transceiver available



SFP+/SFP28

CFP/CFP2/CFP4 (optical; longwave and shortwave)

DATACOM applications using 40G and 100G Ethernet

TELECOM applications using OTU3 and OTU4

Features

- Hot-pluggable, MSA-compliant CFP, CFP2 and CFP4 form factors
- Supports 39.8 Gb/s to 112 Gb/s aggregate bit rates
- Maximum link length of 100m on OM3 MMF, 150m on OM4 MMF, 10km on SMF, and 500km in Amplified DWDM Applications
- 3.3 V operating voltage



CFP/CFP2/CFP4

QSFP+/QSFP28 (optical; longwave and shortwave)

DATACOM applications using 40G and 100G Ethernet, 128G Fibre Channel and high-density 10G and 25G Ethernet

TELECOM applications using OTU3 and OTU4

Features

- Four-channel full-duplex transceiver module
- Hot-pluggable, MSA-compliant QSFP+ and QSFP28 form factors
- Maximum link length of 300m on OM3 MMF, 400m on OM4 MMF, and 40 km on SMF
- 3.3 V operating voltage



QSFP+/QSFP28

CXP (optical; shortwave)

DATACOM applications using 100G Ethernet and chassis interconnections

Features

- Twelve-channel full-duplex transceiver module
- Hot Pluggable CXP form factor
- Maximum link length of 100m on OM3 MMF and 150m on OM4 MMF
- Multirate capability: supports 1.06 Gb/s to 12.5 Gb/s per channel



CXP

Active Optical Cables

SFP^{wire}

10 Gb/s SFP+ Active Optical Cable for 10G Ethernet

quadwire

40 Gb/s to 100 Gb/s Parallel Active Optical Cable for 40GbE and 100GbE, InfiniBand 4xQDR, InfiniBand 4xFDR, InfiniBand 4xEDR and Intel® Omni-Path Architecture

C.wire

150 Gb/s Parallel Active Optical Cable for 100GbE and InfiniBand 12xQDR



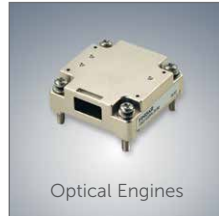
Active Optical Cables

Optical Engines (optical; shortwave)

DATACOM applications for inter-chassis connections

Features

- Twelve-channel full-duplex transceiver modules
- Maximum link length of 100m at 10 Gb/s on OM3 MMF or 70m at 25 Gb/s on OM4 MMF
- Multirate capability: supports 1 Gb/s up to 28.05 Gb/s per channel



X2 (optical; longwave and shortwave)

DATACOM applications using 10G Ethernet

Features

- Supports bit rates up to 10.5 Gb/s
- Distances up to 10 km
- Digital diagnostics



Coherent (optical; longwave)

TELECOM 100Gb/s and 200Gb/s applications

Features

- Pluggable CFP2-ACO with analog interface
 - Analog host interface is compatible with any external DSP
 - Modulation format independent
- 5"x7" module supporting multiple modulation formats with internal DSP
 - Platform supports DP-BPSK, DP-QPSK, or DP-16QAM at up to 32Gbaud
 - Best in class OSNR performance



Endurance Compact Transceivers (optical; longwave and shortwave)

Features

- Compact form-factor for high-density solutions
- Data rate flexibility including 1G and 10G Ethernet, Fast Ethernet, and 1x/2x/4x/8x Fibre Channel
- Board-mounted for an edge optical interface or internal mounting
- Designed for rugged applications



XFP (optical; longwave, shortwave, DWDM, and tunable)

DATACOM applications using 10G Ethernet and 10x Fibre Channel

TELECOM applications using OC-192/STM-64

Features

- Supports bit rates up to 11.3 Gb/s
- Distances up to 200 km (LW, SW, and DWDM) and 80 km (Tunable)
- Digital diagnostics
- Wide operating temperature range versions available



SFF (optical; longwave and shortwave)

DATACOM applications using Gigabit Ethernet, 1x/2x/4x Fibre Channel

TELECOM applications using OC-3/STM-1, OC-12/STM-4 and OC-48/STM-16 across all reaches

Features

- Distances from very short links up to 80 km
- Wide operating temperature range
- Available in 2x5, 2x7 or 2x10. 2x7 and 2x10 incorporate digital diagnostics



Finisar's Patented Digital Diagnostics

Finisar's transceivers feature a microprocessor and diagnostics interface that provides performance information on the data link. Users can remotely monitor—in real-time—received optical power, transmitted optical power, laser bias current, transceiver input voltage and transceiver temperature of any transceiver in the network. These digital diagnostic functions provide network managers with a highly accurate, cost-effective tool for implementing reliable performance monitoring.

Technology Innovator.
Broad Product Portfolio.
Trusted Partner.

FINISAR[®]

1389 Moffett Park Drive
Sunnyvale, CA 94089-1133
Telephone: +1 408-548-1000
Sales: +1 408-541-5690

Email: sales@finisar.com
Blog: www.finisar.com/blogs/lightspeed
www.finisar.com



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SFP



SFP+/SFP28



CFP/CFP2/CFP4



QSFP+/QSFP28



CXP



Active Optical Cables



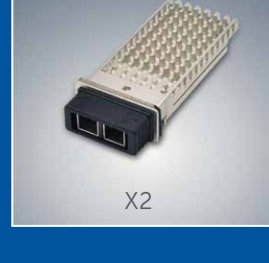
Optical Engines



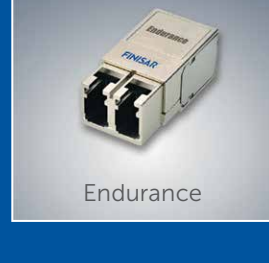
Coherent



XFP



X2



Endurance



SFF



Part Number	Data Rate	Media Type	Wavelength(nm)	Transmitter	Receiver	Data Rate (Gb/s)	Voltage (Vpp)	Optical Data Rate	1000 Gbps/100G Ethernet	25 Gbps/10G Ethernet	10 Gbps/40 Gbps Ethernet	40 Gbps Ethernet	80 Gbps Ethernet	160 Gbps Ethernet	320 Gbps Ethernet	640 Gbps Ethernet	800 Gbps Ethernet	1000 Gbps Ethernet	3D Vision	Coherent	Module Type	Dimensions	Reach	
FTL852zP2BTL		Copper	N/A	N/A	N/A	1.25 Gb/s	3.3														RJ-45	Pluggable	N/A	100 m
FTL8519P3xNL		Multimode	850nm Band	VCSEL	PIN	2.125 Gb/s	3.3														LC	Pluggable	Digital	550 m
FTL8519P3xTL		Multimode	850nm Band	VCSEL	PIN	2.125 Gb/s	3.3														LC	Pluggable	Digital	550 m
FTL8519P2xTL		Multimode	1310nm Band	LED	PIN	200 Mb/s	3.3														LC	Pluggable	Digital	2 km
FTL8518P2xTL		Single Mode	1310nm Band	Fabry-Perot Laser	PIN	1.25 Gb/s	3.3														LC	Pluggable	N/A	10 km
FTL8518P3xTL		Single Mode	1310nm Band	Fabry-Perot Laser	PIN	1.25 Gb/s	3.3														LC	Pluggable	Digital	10 km
FTL8518P1xCL		Single Mode	1310nm Band	DFB Laser	PIN	2.125 Gb/s	3.3														LC	Pluggable	Digital	55 km
FTL8518P1xTL		Single Mode	1550nm	DFB Laser	PIN	2.125 Gb/s	3.3														LC	Pluggable	Digital	90 km
FTL8519P1xCL		Single Mode	1550nm	DFB Laser	PIN	2.125 Gb/s	3.3														LC	Pluggable	Digital	90 km
FTL8519P1xTL		Single Mode	1550nm	DFB Laser	APD	2.125 Gb/s	3.3														LC	Pluggable	Digital	115 km
FTL8523P1xTR		Single Mode	1310nm Band	Fabry-Perot Laser	PIN	155 Mb/s	3.3														LC	Pluggable	Digital	15 km
FTL8523P1xTL		Single Mode	1310nm Band	Fabry-Perot Laser	PIN	155 Mb/s	3.3														LC	Pluggable	Digital	40 km
FTL8523P1xTL		Single Mode	1550nm	DFB Laser	PIN	155 Mb/s	3.3														LC	Pluggable	Digital	80 km
FTL8522P1xTR		Single Mode	1310nm Band	Fabry-Perot Laser	PIN	622 Mb/s	3.3														LC	Pluggable	Digital	15 km
FTL8522P1xTL		Single Mode	1310nm Band	Fabry-Perot Laser	PIN	622 Mb/s	3.3														LC	Pluggable	Digital	40 km
FTL8522P1xTL		Single Mode	1550nm	DFB Laser	PIN	622 Mb/s	3.3														LC	Pluggable	Digital	80 km
FTL8521P1xTL		Single Mode	1310nm Band	Fabry-Perot Laser	PIN	2.67 Gb/s	3.3														LC	Pluggable	Digital	2 km
FTL8521P1xCL		Single Mode	1310nm Band	DFB Laser	PIN	2.67 Gb/s	3.3														LC	Pluggable	Digital	15 km
FTL8521P1xTL		Single Mode	1310nm Band	DFB Laser	PIN	2.67 Gb/s	3.3														LC	Pluggable	Digital	15 km
FTL8521P1xTL		Single Mode	1550nm	DFB Laser	PIN	2.67 Gb/s	3.3														LC	Pluggable	Digital	15 km
FTL8521P1xTL		Single Mode	1310nm Band	DFB Laser	APD	2.67 Gb/s	3.3														LC	Pluggable	Digital	40 km
FTL8521P1xTL		Single Mode	1550nm	DFB Laser	APD	2.67 Gb/s	3.3														LC	Pluggable	Digital	80 km
FWL8523P1C51 (OSC)		Single Mode	1511nm	DFB Laser	PIN	155 Mb/s	3.3														LC	Pluggable	Digital	80 km
FWL8523P1C51 (OSC)		Single Mode	1511nm	DFB Laser	PIN	155 Mb/s	3.3														LC	Pluggable	Digital	80 km
FWL85197Dxx**		Single Mode	1550nm CWDM	CWDM DFB Laser	PIN	1.25 Gb/s	3.3														LC	Pluggable	Digital	80 km
FWL85197Dxx**		Single Mode	1550nm CWDM	CWDM DFB Laser	APD	1.25 Gb/s	3.3														LC	Pluggable	Digital	100 km
FWL85217Dxx**		Single Mode	1550nm CWDM	CWDM DFB Laser	PIN	2.67 Gb/s	3.3														LC	Pluggable	Digital	50 km
FWL85217Dxx**		Single Mode	1550nm CWDM	CWDM DFB Laser	APD	2.67 Gb/s	3.3														LC	Pluggable	Digital	80 km
FWL8524P2xx		Single Mode	1550nm CWDM	CWDM DFB Laser	APD	2.67 Gb/s	3.3														LC	Pluggable	Digital	80 km
FWL8524P2xx		Single Mode	1550nm CWDM	CWDM DFB Laser	PIN	4.25 Gb/s	3.3														LC	Pluggable	Digital	40 km
FWL8524P2xx		Single Mode	1550nm CWDM	CWDM DFB Laser	APD	4.25 Gb/s	3.3														LC	Pluggable	Digital	80 km
FWL8524P2xx		Single Mode	C-Band DWDM Fixed	DWDM DFB Laser	APD	2.67 Gb/s	3.3														LC	Pluggable	Digital	120 km
FWL8524P2xx		Single Mode	C-Band DWDM Fixed	DWDM DFB Laser	PIN	2.67 Gb/s	3.3														LC	Pluggable	Digital	160 km
FWL8524P2xx		Single Mode	C-Band DWDM Fixed	DWDM DFB Laser	APD	4.25 Gb/s	3.3														LC	Pluggable	Digital	80 km
FTEN2x15P1xUN (EPON SFP-ONU)		Single Mode	BIDI 1310nm/1490nm	Fabry-Perot Laser	PIN	1.25 Gb/s	3.3														SC	Pluggable	Digital	10 km
FTEN2x15P1xUN-BC (EPON SFP-ONU)		Single Mode	BIDI 1310nm/1490nm	Fabry-Perot Laser	PIN	1.25 Gb/s	3.3														SC	Pluggable	Digital	10 km
FTEN2x17P1xUN (EPON SFP-ONU)		Single Mode	BIDI 1310nm/1490nm	DFB Laser	PIN	1.25 Gb/s	3.3														SC	Pluggable	Digital	20 km+
FTEN2x17P1xUN-BC (EPON SFP-ONU)		Single Mode	BIDI 1310nm/1490nm	DFB Laser	PIN	1.25 Gb/s	3.3														SC	Pluggable	Digital	20 km+
FTGN2171P2CxN (GPON SFP-ONU)		Single Mode	BIDI 1310nm/1490nm	DFB Laser	APD	2.5 Gb/s	3.3														SC	Pluggable	Digital	20 km+
FTGN2171P2CxN (GPON SFP-ONU)		Single Mode	BIDI 1310nm/1490nm	DFB Laser	APD	2.5 Gb/s	3.3														SC	Pluggable	Digital	20 km+
FTL8524P3xNL		Multimode	850nm Band	VCSEL	PIN	3.7 Gb/s	3.3														LC	Pluggable	Digital	300 m
FTL8524P3xTL		Single Mode	1310nm Band	Fabry-Perot Laser	PIN	4.25 Gb/s	3.3														LC	Pluggable	Digital	4 km
FTL8524P3xTL		Single Mode	1310nm Band	Fabry-Perot Laser	PIN	4.25 Gb/s	3.3														LC	Pluggable	Digital	4 km
FTL8528P3BVC		Multi-mode	850nm Band	VCSEL	PIN	8.5 Gb/s	3.3														LC	Pluggable	Digital	150 m (*)
FTL8528P3BVC		Multi-mode	850nm Band	VCSEL	PIN	8.5 Gb/s	3.3														LC	Pluggable	Digital	150 m (*)
FTL8528P3BVC		Multi-mode	850nm Band	VCSEL	PIN	8.5 Gb/s	3.3														LC	Pluggable	Digital	150 m (*)
FTL8528P3BVC		Multi-mode	850nm Band	VCSEL	PIN	14.025 Gb/s	3.3														LC	Pluggable	Digital	100 m
FTL8528P3BVC		Multi-mode	850nm Band	VCSEL	PIN	14.025 Gb/s	3.3														LC	Pluggable	Digital	100 m
FTL8529P4BVC		Single Mode	1310nm Band	DFB Laser	PIN	14.025 Gb/s	3.3														LC	Pluggable	Digital	100 m
FTL8529P4BVC		Single Mode	1310nm Band	DFB Laser	PIN	14.025 Gb/s	3.3														LC	Pluggable	Digital	25 km
FTL8529P4BVC		Single Mode	850nm Band	VCSEL	PIN	28.05 Gb/s	3.3														LC	Pluggable	Digital	100 m
FTL8529P4BVC		Single Mode	850nm Band	VCSEL	PIN	28.05 Gb/s	3.3														LC	Pluggable	Digital	100 m
FTL8529P4BVC		Single Mode	1310nm Band	DFB Laser	PIN	28.05 Gb/s	3.3														LC	Pluggable	Digital	100 m
FTL8529P4BVC		Single Mode	1310nm Band	DFB Laser	PIN	28.05 Gb/s	3.3														LC	Pluggable	Digital	100 m
FTL8529P4BVC		Single Mode	850nm Band	VCSEL	PIN	25.78 Gb/s	3.3														LC	Pluggable	Digital	100 m
FTL8529P4BVC		Single Mode	850nm Band	VCSEL	PIN	25.78 Gb/s	3.3														LC	Pluggable	Digital	100 m
FTL8529P4BVC		Single Mode	1310nm Band	DFB Laser	PIN	28.05 Gb/s	3.3														LC	Pluggable	Digital	10 km
FTL8529P4BVC		Single Mode	1310nm Band	DFB Laser	PIN	25.78 Gb/s	3.3														LC	Pluggable	Digital	100 m
FTL8529P4BVC		Multi-mode	850nm Band	VCSEL	PIN	10.5 Gb/s	3.3														LC	Pluggable	Digital	300 m (*)
FTL8529P4BVC		Multi-mode	850nm Band	VCSEL	PIN	10.5 Gb/s	3.3					</												