

Finisar[®]

Product Guide

Transceivers, Transponders, and Active Cables for
Datacom and Telecom Applications



CFP



QSFP



SFP+



XFP



300 PIN



Active Cable

Finisar's broad product selection and innovative technology have made us the optical module manufacturer of choice for all major networking equipment vendors worldwide. We have taken a leading role in transforming the datacommunications and telecommunications equipment market from utilizing discrete optical components to leveraging the design and pay-as-you-grow flexibility offered by pluggable modules. Our products are fully compliant with Ethernet, Fibre Channel, SONET/SDH/OTN and PON standards and operate at data rates up to 100 Gb/s. They are capable of distances ranging from very short reach within a datacenter to campus, access, metro, and long-haul reaches. They feature outstanding performance over extended voltage and temperature ranges, while minimizing jitter, electromagnetic interference (EMI) and power dissipation.

FINISAR MODULES ARE AVAILABLE IN A WIDE VARIETY OF FORM FACTORS:

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 and OC-48/STM-16 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/OBSAI compliant



SFP

SFP+ (optical; longwave and shortwave)

- **DATACOM** applications using 10 Gigabit Ethernet and 2x/4x/8x/16x Fibre Channel

Features

- 3.3 V operating voltage
- Supports bit rates up to 14.025 Gb/s
- Distances from short links up to 80 km metro links
- Wide operating temperature range
- Digital diagnostics
- Wireless CPRI/OBSAI compliant



SFP+

CFP (optical; longwave and shortwave)

- **DATACOM** applications using 40G and 100G Ethernet
- **TELECOM** applications using OTU3 across all reaches

Features

- Hot-pluggable CFP form factor
- Supports 39.8 Gb/s to 103.1 Gb/s aggregate bit rates
- CFP MSA-compliant form factor
- Single 3.3 V power supply



CFP

QSFP (optical; longwave and shortwave)

- **DATACOM** applications using 40G Ethernet
- **TELECOM** applications using OTU3

Features

- Four-channel full-duplex transceiver module
- Hot Pluggable, MSA-compliant QSFP+ form factor
- Maximum link length of 100 m on OM3 MMF, 150 m on OM4 MMF, and 10 km on SMF
- Multirate capability; supports 1.06 Gb/s to 11.3 Gb/s per channel



QSFP

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



- 10 Gb/s Serial Active Optical Cable for 1/10GbE and 1/2/4/8x Fibre Channel
- 40 Gb/s to 56 Gb/s Parallel Active Optical Cable for 40GbE, InfiniBand 4xQDR, and Infiniband 4xFDR
- 150 Gb/s Parallel Active Optical Cable for 100GbE and InfiniBand 12xQDR



Active Optical Cables

SNAP12 (optical; shortwave)

- **DATACOM** applications for inter-chassis connections

Features

- Twelve-channel transmitter and receiver modules
- Pluggable MegArray connector and unretimed electrical interface
- Maximum link length of 600m at 2.5Gb/s on OM3 MMF Fiber
- Multirate capability: 1 Gb/s to 2.7 Gb/s per channel

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

- **DATACOM** applications using 10 Gigabit 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 80 km
- Digital diagnostics

X2/XENPAK (optical; longwave and shortwave)

- **DATACOM** applications using 10 Gigabit Ethernet and 10x Fibre Channel

Features

- 1.2 V, 3.3 V and 5 V operating voltage
- Supports bit rates up to 10.5 Gb/s
- Distances up to 10 km
- Digital diagnostics

300 PIN (optical; longwave)

- **TELECOM** 10 Gb/s and 40 Gb/s applications

Features

- Supports bit rates up to 44.6 Gb/s
- Available in RZ-OOK (10G), NRZ-OOK (10G/40G), and NRZ-DPSK (40G) formats
- Compliant to industry standards (ITU-T; SFI-4/5; 300 PIN MSA)
- DWDM broadly 50GHz spaced tunability across C or L bands

SFF (optical 2x5, 2x7 and 2x10; 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

- 3.3 V operating voltage
- Distances from very short links up to 80 km
- Wide operating temperature range
- Metal enclosure for lower EMI
- 2x7 and 2x10 incorporate digital diagnostics

PON (optical; longwave)

- **TELECOM** access applications for GPON and EPON

Features

- 3.3 V operating voltage
- EPON stick incorporates full EPON ONU functionality
- Distances up to 20 km, Class B+, PX-20+
- Digital diagnostics

FINISAR'S PATENTED DIGITAL DIAGNOSTICS

Finisar's XFP, XPAK, X2, XENPAK, 300 PIN, SFP, SFP+, and 2x7 and 2x10 SFF 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.



SNAP12



XFP



X2



XENPAK



300 PIN



SFF



PON

World's Largest Supplier of Optical Communication Components and Subsystems

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SFP



SFP+



SFF



PON



XFP



X2



XENPAK



300 PIN



CFP



SNAP12



AOC/QSFP/CXP

Part Number	Wavelength (nm)	Transmitter	Receiver	Data Rate (Gbit/s)	Wavelength (nm)	Optical Input/Output	1x Fiber Channel	2x Fiber Channel	4x Fiber Channel	8x Fiber Channel	16x Fiber Channel	32x Fiber Channel	64x Fiber Channel	128x Fiber Channel	256x Fiber Channel	512x Fiber Channel	1024x Fiber Channel	2048x Fiber Channel	4096x Fiber Channel	8192x Fiber Channel	16384x Fiber Channel	32768x Fiber Channel	65536x Fiber Channel	131072x Fiber Channel	262144x Fiber Channel	524288x Fiber Channel	1048576x Fiber Channel	2097152x Fiber Channel	4194304x Fiber Channel	8388608x Fiber Channel	16777216x Fiber Channel	33554432x Fiber Channel	67108864x Fiber Channel	134217728x Fiber Channel	268435456x Fiber Channel	536870912x Fiber Channel	1073741824x Fiber Channel	2147483648x Fiber Channel	4294967296x Fiber Channel	8589934592x Fiber Channel	17179869184x Fiber Channel	34359738368x Fiber Channel	68719476736x Fiber Channel	137438953472x Fiber Channel	274877906944x Fiber Channel	549755813888x Fiber Channel	1099511627776x Fiber Channel	2199023255552x Fiber Channel	4398046511104x Fiber Channel	8796093022208x Fiber Channel	17592186044416x Fiber Channel	35184372088832x Fiber Channel	70368744177664x Fiber Channel	140737488355328x Fiber Channel	281474976710656x Fiber Channel	562949953421312x Fiber Channel	1125899906842624x Fiber Channel	2251799813685248x Fiber Channel	4503599627370496x Fiber Channel	9007199254740992x Fiber Channel	18014398509481984x Fiber Channel	36028797018963968x Fiber Channel	72057594037927936x Fiber Channel	144115188075855872x Fiber Channel	288230376151711744x Fiber Channel	576460752303423488x Fiber Channel	1152921504606846976x Fiber Channel	2305843009213693952x Fiber Channel	4611686018427387904x Fiber Channel	9223372036854775808x Fiber Channel	18446744073709551616x Fiber Channel	36893488147419103232x Fiber Channel	73786976294838206464x Fiber Channel	147573952589676412928x Fiber Channel	295147905179352825856x Fiber Channel	590295810358705651712x Fiber Channel	1180591620717411303424x Fiber Channel	2361183241434822606848x Fiber Channel	4722366482869645213696x Fiber Channel	9444732965739290427392x Fiber Channel	18889465931478580854784x Fiber Channel	37778931862957161709568x Fiber Channel	75557863725914323419136x Fiber Channel	151115727451828646838272x Fiber Channel	302231454903657293676544x Fiber Channel	604462909807314587353088x Fiber Channel	1208925819614629174706176x Fiber Channel	2417851639229258349412352x Fiber Channel	4835703278458516698824704x Fiber Channel	9671406556917033397649408x Fiber Channel	19342813113834066795298816x Fiber Channel	38685626227668133590597632x Fiber Channel	77371252455336267181195264x Fiber Channel	154742504910672534362390528x Fiber Channel	309485009821345068724781056x Fiber Channel	618970019642690137449562112x Fiber Channel	1237940039285380274899124224x Fiber Channel	2475880078570760549798248448x Fiber Channel	4951760157141521099596496896x Fiber Channel	9903520314283042199192993792x Fiber Channel	19807040628566084398385987584x Fiber Channel	39614081257132168796771975168x Fiber Channel	79228162514264337593543950336x Fiber Channel	158456325028528675187087900672x Fiber Channel	316912650057057350374175801344x Fiber Channel	633825300114114700748351602688x Fiber Channel	1267650600228229401496703205376x Fiber Channel	2535301200456458802993406410752x Fiber Channel	5070602400912917605986812821504x Fiber Channel	10141204801825835211973625643008x Fiber Channel	20282409603651670423947251286016x Fiber Channel	40564819207303340847894502572032x Fiber Channel	81129638414606681695789005144064x Fiber Channel	162259276829213363391578010288128x Fiber Channel	324518553658426726783156020576256x Fiber Channel	649037107316853453566312041152512x Fiber Channel	1298074214633706907132624082305024x Fiber Channel	2596148429267413814265248164610048x Fiber Channel	5192296858534827628530496329220096x Fiber Channel	10384593717069655257060992658440192x Fiber Channel	20769187434139310514121985316880384x 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