Transceivers, Transponders, and Active Optical Cables

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

**DATA**

- Applications using Fast Ethernet, Gigabit Ethernet, 1x/2x/4x Fibre Channel

**TELE**


**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

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**QSFP+/QSFP28** (optical; longwave and shortwave)

**DATA**

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

**TELE**

- 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

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**SFP+/SFP28** (optical; longwave, shortwave, DWDM and tunable)

**DATA**

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

**TELE**

- 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 80 km (Tunable)
- Wide operating temperature range
- Digital diagnostics
- Wireless CPRI compliant (LW and SW)
- Bi-directional SFP+ transceiver available

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**CXP** (optical; shortwave)

**DATA**

- Applications using 100G Ethernet and chassis interconnections

**Features**

- Twelve-channel full-duplex transceiver module
- Hot Pluggable CXP form factor
- Maximum link length of 300m on OM3 MMF and 400m on OM4 MMF
- Multirate capability: supports 1.06 Gb/s to 12.5 Gb/s per channel

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**Active Optical Cables**

**SFPwire**

- SFP+ Active Optical Cable for 10G and 25G Ethernet. Also available with Connectivity Diagnostics®

**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. Also available with Connectivity Diagnostics®

**Cwir**

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

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### 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

![Optical Engines](image)

### 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

![X2](image)

### Coherent (optical; longwave)

**TELECOM** 100Gb/s and 200Gb/s applications

**Features**
- Pluggable CFP2-ACO analog coherent optics module
- Highest density coherent interface
- Enables "pay-as-you-grow" deployment of coherent optics
- Analog interface is compatible with any external DSP
- Modulation format independent, supports data rates > 200Gb/s

![Coherent](image)

### 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/16x Fibre Channel
- Board-mounted for an edge optical interface or internal mounting
- Designed for rugged applications

![Endurance](image)

### 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

![XFP](image)

### 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

![SFF](image)

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### Finisar’s Digital Diagnostics

Finisar’s transceivers feature a microprocessor and diagnostics interface that provide 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 patented digital diagnostic functions provide network managers with a highly accurate, cost-effective tool for implementing reliable performance monitoring.

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### Finisar’s Connectivity Diagnostics

Several of Finisar’s products feature the Connectivity Diagnostics* suite of tools, which helps data center technicians quickly and intuitively find specific modules in a sea of sockets using a visual indicator. LynkFind™ allows an operator to light up the pull-tab of the module at the far-end of a link by pressing the pull-tab of the near-end module. LynkGuardian™ lights up a module experiencing a fault and sends alarms and warnings. LynkCommander™ allows a network operations center to light up a module for easy identification on the data center floor. Together, these patented tools bring the intelligence normally available through data center monitoring software to a simple and intuitive visual indicator. The benefits to the data center operator enable faster installation and maintenance, easier troubleshooting, and simplified operations.

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*Finisar’s Connectivity Diagnostics is a proprietary technology.
<table>
<thead>
<tr>
<th>Model</th>
<th>Type</th>
<th>Bandwidth (Gb/s)</th>
<th>Operating Distance (m)</th>
<th>Operating Temperature (°C)</th>
<th>LC Pluggable Digital</th>
<th>SONET/SONET+</th>
<th>MPO(MTP)24</th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
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<td>0 to 70</td>
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Notes:
- "LC Pluggable Digital" indicates if the connector is LC-pluggable.
- "SONET/SONET+" indicates if the module is SONET/SONET+ compatible.
- "MPO(MTP)24" indicates if the module is MPO(MTP)24 compatible.
- "Beginner" indicates the skill level required to use the module.
- "Intermediate" indicates the skill level required to use the module.
- "Advanced" indicates the skill level required to use the module.

Acknowledgments:
- "†" indicates additional information or notes.
- "‡" indicates a restriction or limitation.
- "§" indicates a special feature or attribute.

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