



Optical

2 Gb/s SFP Transceiver Modules

Double Gigabit-rate Small Form Factor Pluggable

2.125 Gbit/sec Fibre Channel

Dual-rate 1.06/2.125 Gbit/sec Fibre Channel

- Up to 2.125 Gbit/sec bi-directional data links
- Interoperates with 2 Gbit/sec and 1 Gbit/sec data links
- Pluggable RJ-45 footprint
- Duplex LC or MT-RJ connector
- Built-in Serial ID
- Very low jitter
- Metal enclosure for lower EMI
- Single 3.3 V power supply
- Low power dissipation
- Extended operating temperature range

Finisar's new FTRJ-8519-3-2.5 and FTRJ-1319-3-2.5 family of Small Form Factor Pluggable (SFP) transceiver modules are state-of-the-art components designed expressly for high-speed bi-directional communication applications that require rates of up to 2.125 Gbit/sec. These transceiver modules will interoperate with 1x and 2x Fibre Channel links, with no Rate Select input required. They are fully compliant with all published portions of the SFP Multisource Agreement.

The SFP modules are a cost-effective solution that allows double port densities by fitting twice the number of modules in the same board space.

The modules are supplied with an LC connector.

Each optical transceiver provides built-in Serial ID capabilities, which allow the user to obtain information on its supported link length, standard interfaces, part numbers, manufacturer and other parameters, through a 2-wire serial interface.

Finisar transceivers feature a very low jitter contribution, which results in extremely clean, high-quality eye patterns.

Short- and long-wavelength versions are available. Both operate at extended voltage (3.15 to 3.6 V) and temperature (-10 to 85°C) ranges, and dissipate less than 750 mW.

The modules' metal enclosure not only makes them sturdier, but also improves their FCC test margins. This emission and ESD control is particularly important in applications with sensitive multiport hubs and switches.

Finisar's high-speed transceiver modules are well known throughout the industry for their superior quality, reliability, and affordability. An evaluation board is available for test and demonstration purposes.



FTRJ-8519-3-2.5 & 1319-3-2.5 Optical 2 Gb/s SFP Transceiver Modules

Specifications

Transmitter type:

- FTRJ-8519: Shortwave laser, 850 nm multi-mode
- FTRJ-1319: Longwave laser, 1310 nm single-mode

Data rate (nominal range):

1062.5 to 2125 Mbaud

Average launch power:

- FTRJ-8519: -9 dBm min, -4 dBm max
- FTRJ-1319 (9/125 SMF): -9.5 dBm min, -3 dBm max

Optical modulation amplitude:

196 mW min

Data format: 8B/10B

Average receive power:

- FTRJ-8519: -18 dBm min, -22 dBm typical, 0 dBm max
- FTRJ-1319: -20 dBm min, -25.5 dBm typical, -3 dBm max

RX LOS level: -30 dBm min

Jitter: Peak-to-peak contribution

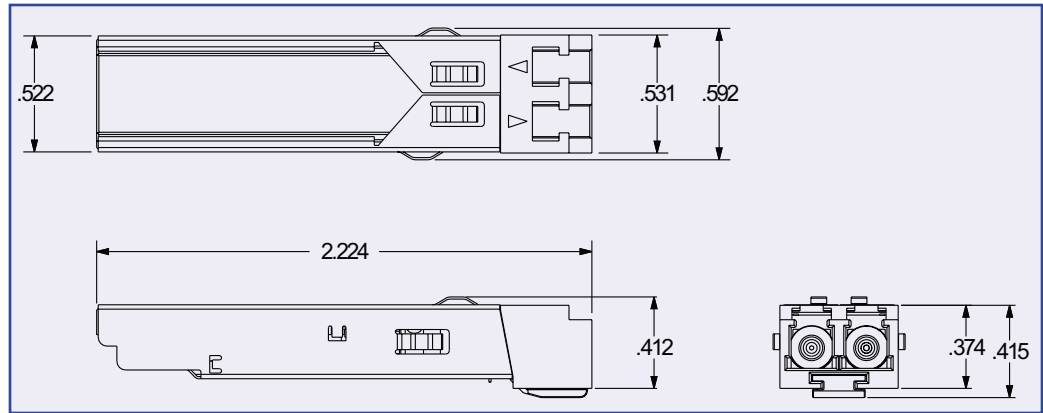
- Tx: < 40 psec typical
- Rx: < 55 psec typical

Connector: Duplex LC

Fiber lengths:

- FTRJ-8519 (50 μ m MMF): 300 m (2x)
- FTRJ-1319 (9 μ m SMF): 10 km (2x)

For single-rate products (1.25 Gbit/sec), please see our FTRJ-8519-3/4 and FTRJ-1319-3 data sheet.



Power supply: 3.15 to 3.60 Vdc

- FTRJ-8519: 240 mA max
- FTRJ-1319: 240 mA max

Operating Temperature:

-10 to 85°C

Regulatory: Class 1 devices per FDA/CDRH and IEC-825-1 laser safety regulations

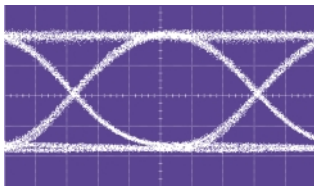
Specifications, configurations, and availability subject to change without notice.

Pin Descriptions

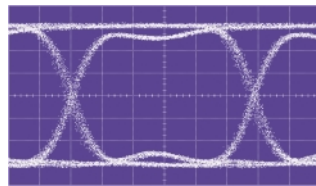
Pin	Symbol	Name/Description
1	VEET	Transmitter Ground (Common with Receiver Ground)
2	T_FAULT	Transmitter Fault.
3	T_DIS	Transmitter Disable. Laser output disables on high or open.
4	MOD_DEF(2)	Module Definition 2
5	MOD_DEF(1)	Module Definition 1
6	MOD_DEF(0)	Module Definition 0. Grounded.
7	Rate Select	No connection required.
8	LOS	LOS Detect. Logic 0 indicates normal operation.
9	VEER	Receiver Ground (Common with Transmitter Ground)
10	VEER	Receiver Ground (Common with Transmitter Ground)
11	VEER	Receiver Ground (Common with Transmitter Ground)
12	RD-	Receiver Inverted DATA out. AC Coupled
13	RD+	Receiver Non-inverted DATA out. AC Coupled
14	VEER	Receiver Ground (Common with Transmitter Ground)
15	VCCR	Receiver Power Supply
16	VGCT	Transmitter Power Supply
17	VEET	Transmitter Ground (Common with Receiver Ground)
18	TD+	Transmitter Non-Inverted DATA in. 100 ohm termination between TD+ and TD-, AC Coupled thereafter.
19	TD-	Transmitter Inverted DATA in. See TD+.
20	VEET	Transmitter Ground (Common with Receiver Ground)

Waveforms

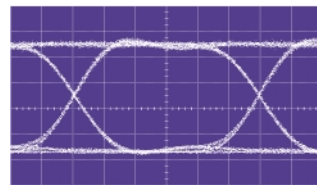
Eye patterns are from a typical SFP link transmitting a 2⁷ pseudorandom bit sequence.



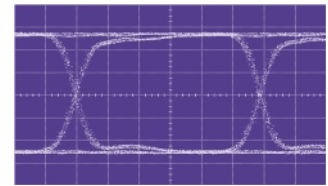
Transmitter @ 2.125 Gbit/sec



Receiver @ 2.125 Gbit/sec



Transmitter @ 1.062 Gbit/sec



Receiver @ 1.062 Gbit/sec

Ordering Information

Part Number	Description
FTRJ-8519-3-2.5	Short Wavelength Double-rate Multi-mode SFP Transceiver, LC connector
FTRJ-1319-3-2.5	Long Wavelength Double-rate Single-mode SFP Transceiver, LC connector
FDB-1018	SFP Evaluation Board

Contact factory for custom requirements.