

PRELIMINARY Product Specification

10G Serial Laserwire™ Jack

FCBJ110LE1

PRODUCT FEATURES

- Small footprint 10G serial port
- RJ-45 width
- Enables high-density
- Copper contacts



APPLICATIONS

- Host-board connector for Laserwire™ cables
- High-density switches
- NIC applications
- LAN On Motherboard

Finisar's FCBJ110LE1 Laserwire™ Jack is the host-board connector for Laserwire™ active cables (P/N FCBP110LD1Lxx). The Laserwire™ Jack provides the smallest connector host-board footprint compared to alternative 10G serial solutions. An evaluation board (P/N FDB-1032) is also available.

PRODUCT SELECTION

FCBJ110LE1

I. Pin Descriptions

Pin	Symbol	Name/Description	Note
1	V _{EE}	Ground	1
2	TX-	Transmitter Inverted DATA in	
3	TX+	Transmitter Non-Inverted DATA in	
4	V _{EE}	Ground	1
5	V _{CC}	Power Supply (+3.3V ± 5%)	
6	F	Fault signal	2
7	CAB-ABS	Cable absent, connected to Vee within cable plug	3
8	NC	NC	4
9	V _{EE}	Ground	1
10	RX+	Receiver Non-inverted DATA out	
11	RX-	Receiver Inverted DATA out	
12	V _{EE}	Ground	1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Open collector output. Should be pulled up with 4.7kΩ - 10kΩ on host board to a voltage between 2.0V and 3.6V. High indicates a fault condition.
3. Should be pulled up with 4.7kΩ - 10kΩ on host board to a voltage between 2.0V and 3.6V. High indicates no cable present
4. Reserved for future applications. No Connect in Host.

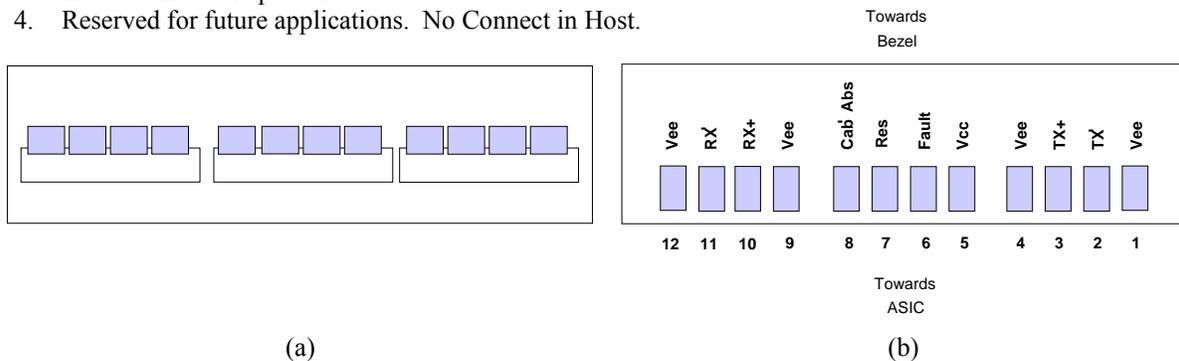


Figure 1. Pinout : (a) Cable plug end view, (b) host board decal top view.

II. Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Note
Maximum Supply Voltage	V _{cc}	-0.5		4.0	V	
Storage Temperature	T _S	-40		100	°C	
Case Operating Temperature	T _{OP}	TBD		TBD	°C	
Relative Humidity	RH	0		85	%	1

Notes:

1. Non-condensing.

III. Electrical Characteristics ($T_{OP} = 0$ to $60^{\circ}C$, $V_{CC} = 3.3 \pm 5\%$ Volts)

Parameter	Symbol	Min	Typ	Max	Unit	Note
Supply Voltage	Vcc	3.135		3.465	V	
Supply Current	Icc		150	200	mA	
Transmitter						
Differential data input swing	Vin,pp	180		800	mVpp	1
Receiver						
Differential data output swing	Vout,pp	450	700	850	mVpp	2
Power Supply Ripple Tolerance	PSR	100			mVpp	3

Notes:

- DC coupled internally. See Figure 2 of Laserwire (P/N FCBP110LD1Lxx) datasheet for input eye mask requirements. Self biasing 100 Ohm differential input. **Must be AC coupled on HOST**
- DC Coupled with 100Ω differential output impedance. **Must be AC coupled on HOST.** See Figure 3 of Laserwire (P/N FCBP110LD1Lxx) datasheet for output eye mask.
- All transceiver specifications are guaranteed with the given power supply sinusoidal modulation up to specified amplitude over a range of 20 Hz to 1.5 MHz applied through the power supply filtering network shown in Figure 12. See SFF-8431 Rev 2.0¹ (SFP+) specification section D.16.3 Power Supply Tolerance Testing for the test methodology but with the module replaced by a 15Ω load for amplitude calibration.

IV. Application Note of Recommended Host-Board Connections

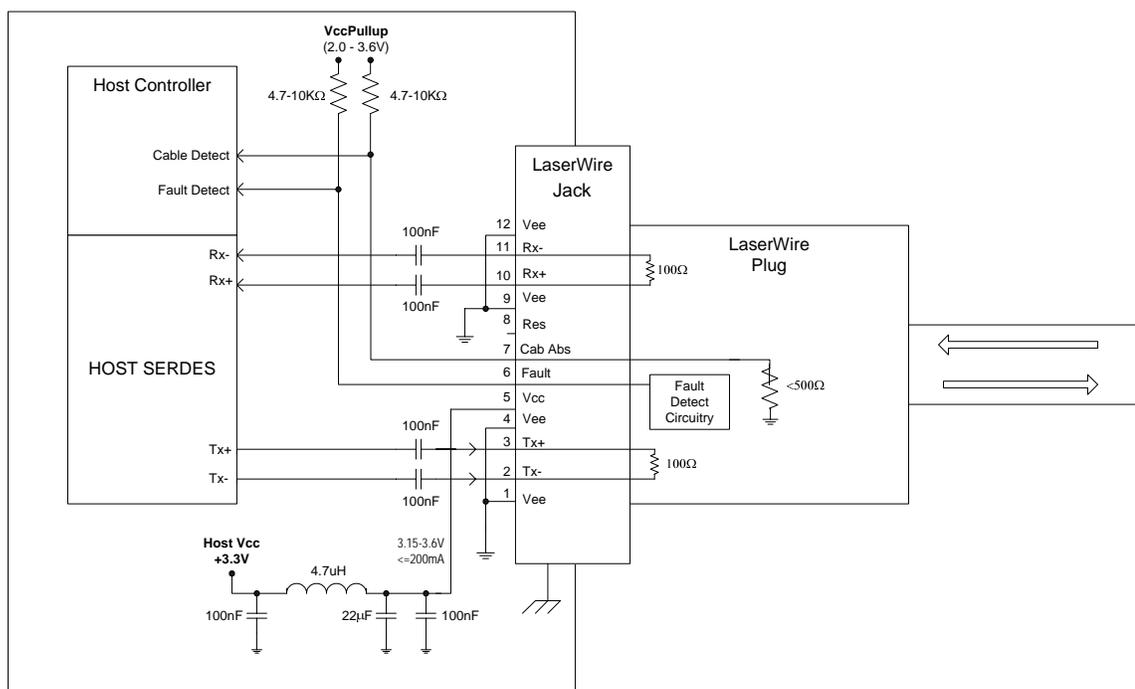


Figure 2. Recommended host board configuration showing power supply filtering, AC coupling caps, and status pull-up resistors.

V. Materials

Housing	Cast zinc, nickel plated
EMI Shields	Stainless steel
Mounting Posts	Stainless steel, nickel plated
Contacts	Copper alloy, gold plated
Insulators	Liquid crystal polymer, glass filled, 94V-0 flammability rating

VI. Regulatory Compliance

Finisar Laserwire™ Jack is RoHS Compliant. Copies of certificates are available at Finisar Corporation upon request.

VII. Mechanical Specifications

The PCB attachment process requires manual insertion. The mounting posts are thru-hole soldered and the contacts are surface mount reflow soldered.

PCB should be compatible with 10G RF design and lead free soldering

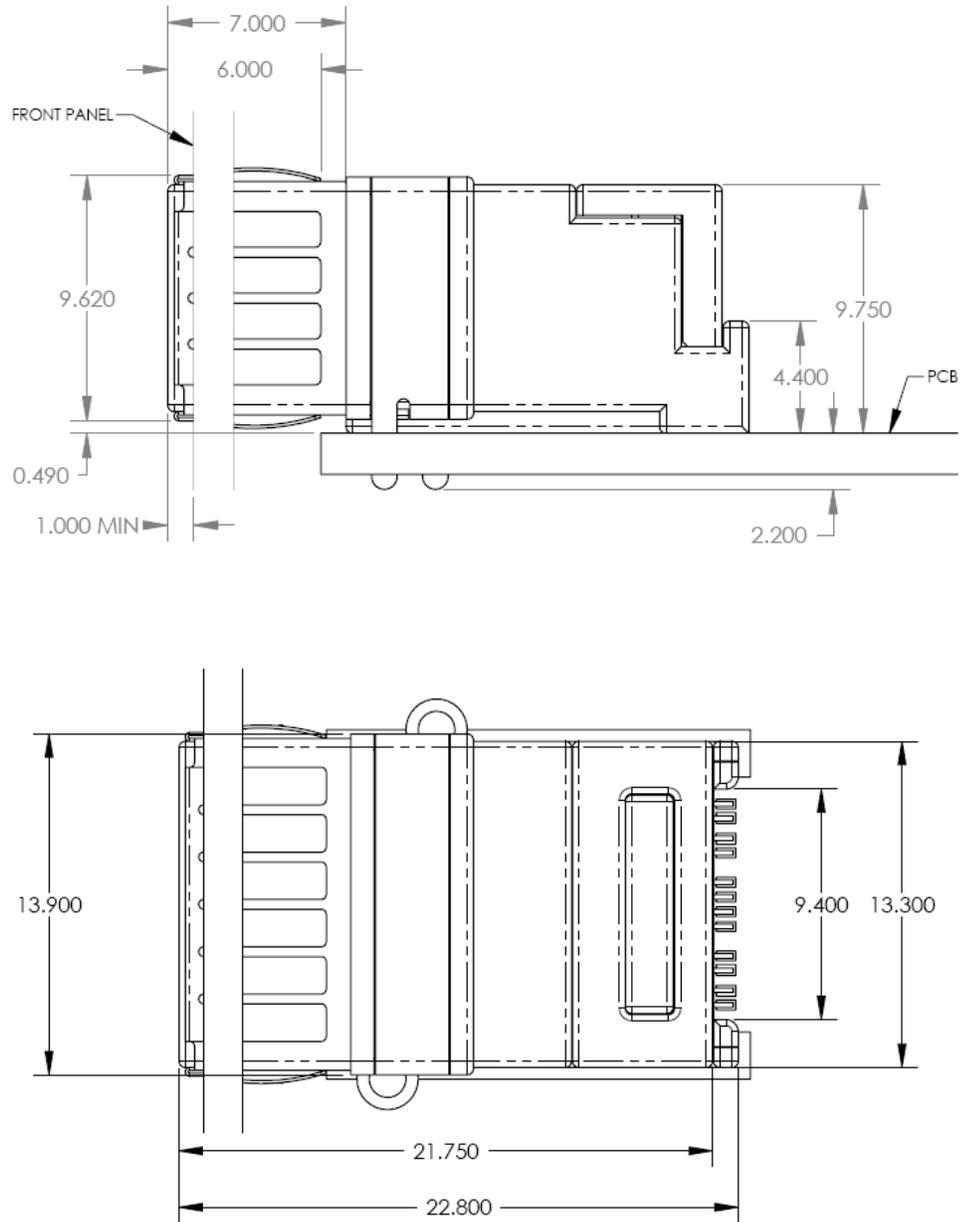


Figure 3. Side view and top view (with sample bezel shown).

VIII. PCB Layout and Bezel Recommendations

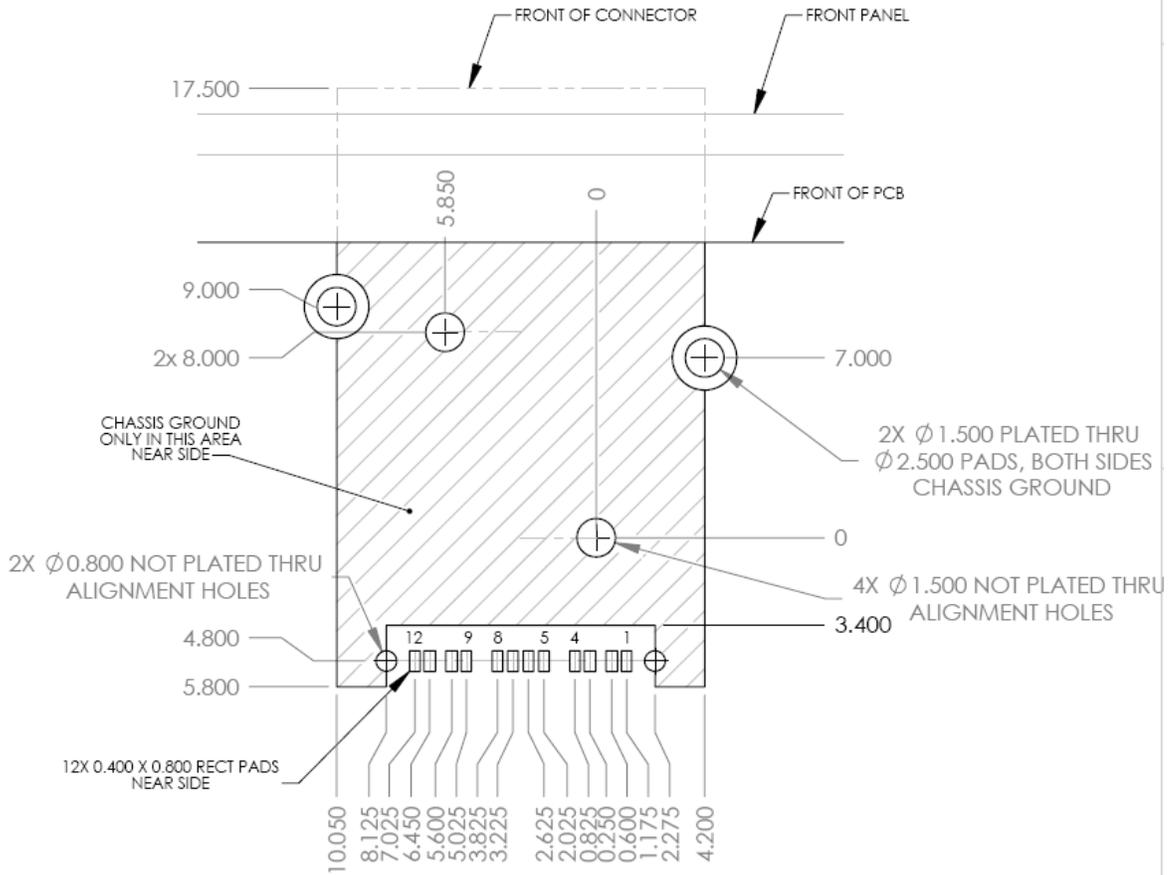
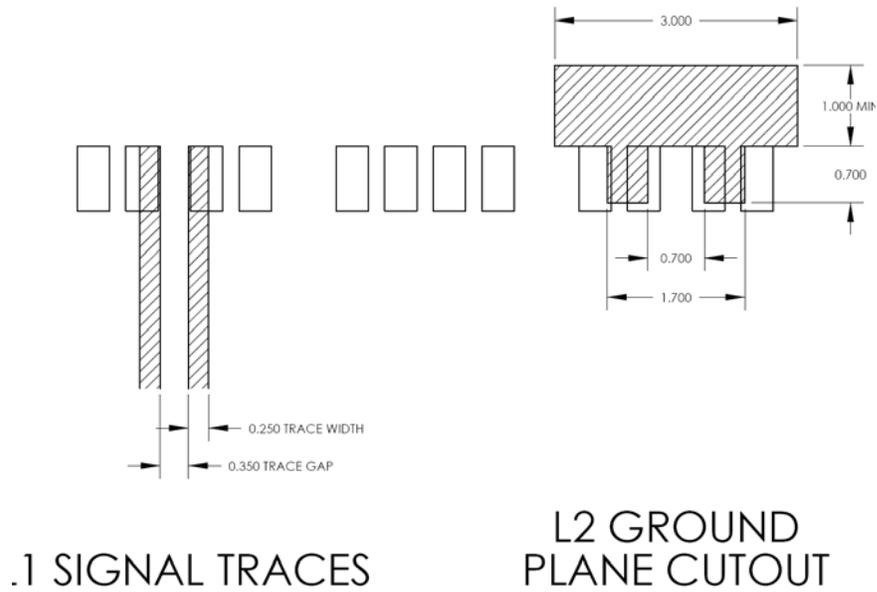


Figure 4. Host PCB layout (component side).



**Figure 5. Layout rules for a 0.15mm L1-L2 stackup (top view).
Adjustment of these dimensions is required if a different stackup is utilized.**

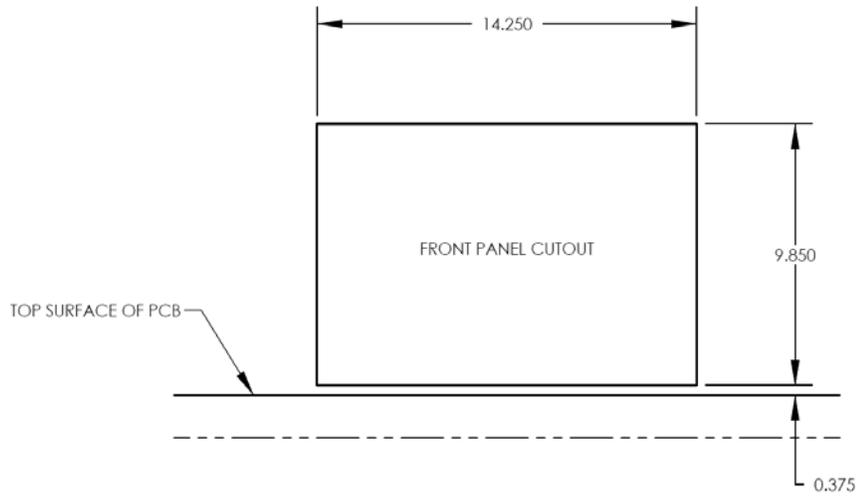


Figure 6. Bezel position dimensions

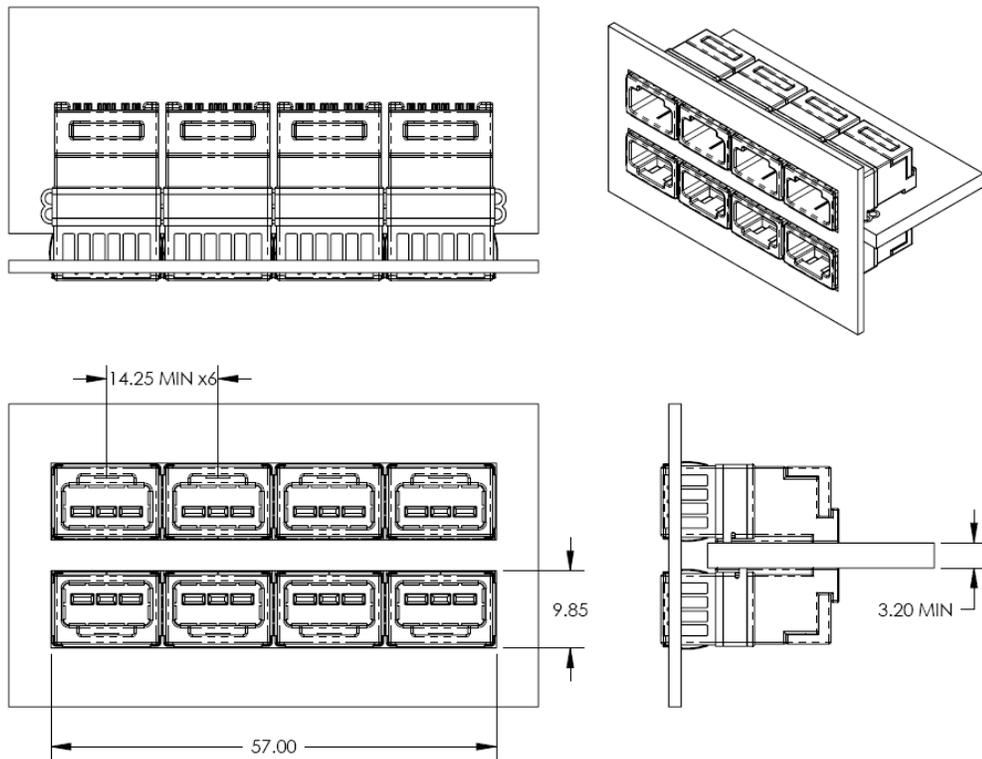


Figure 7. High-density 14.25mm x 4 x 2 sided (belly-to-belly) configuration

IX. References

1. SFF-8431 – SFP+ Specifications, SFF Committee.

X. For More Information

Finisar Corporation
1389 Moffett Park Drive
Sunnyvale, CA 94089-1133
Tel. 1-408-548-1000
Fax 1-408-541-6138
sales@finisar.com
www.finisar.com