The Fivertroniks Products **10312-FK** direct attach copper cables are based on the 40G Ethernet IEEE 802.3ae standard and are programmed to be fully compatible and functional with all intended Extreme switching devices. The passive design has no signal amplification. The passive QSFP+ cable is a low cost alternative for short reach application.

Features

- Up to 40 GBd bi-directional data links
- Hot-pluggable QSFP+ footprint
- 4 independent duplex 10Gbs channels
- AC coupled inputs and outputs
- 100 Ohm differential impedance
- Metal housing for superior EMI performance
- Single power supply 3.3V
- Operating temperature range: 0℃ to 70℃

Compliance

- QSFP+ MSA
- IEEE802.3ba
- Infiniband QDR
- RoHS Compliant

Applications

- 40GBASE Ethernet
- Serial Data Transmission

Warranty:

Fibertroniks Branded Cables- Lifetime Warranty

Part Numbers

Part Number	*AWG*	*Description*
10311-GT	30	40GB QSFP+ Passive Copper Cable Extreme Compatible- 0.5M
10312-GT	30	40GB QSFP+ Passive Copper Cable Extreme Compatible- 1M
10312-150C-GT	30	40GB QSFP+ Passive Copper Cable Extreme Compatible- 150CM
10312-2M-GT	30	40GB QSFP+ Passive Copper Cable Extreme Compatible- 2M
10312-250C-GT	30	40GB QSFP+ Passive Copper Cable Extreme Compatible- 250CM
10313-GT	30	40GB QSFP+ Passive Copper Cable Extreme Compatible- 3M
10313-4M-GT	28	40GB QSFP+ Passive Copper Cable Extreme Compatible- 4M
10323-GT	28	40GB QSFP+ Passive Copper Cable Extreme Compatible- 5M
10311-GT	28	40GB QSFP+ Passive Copper Cable Extreme Compatible- 7M

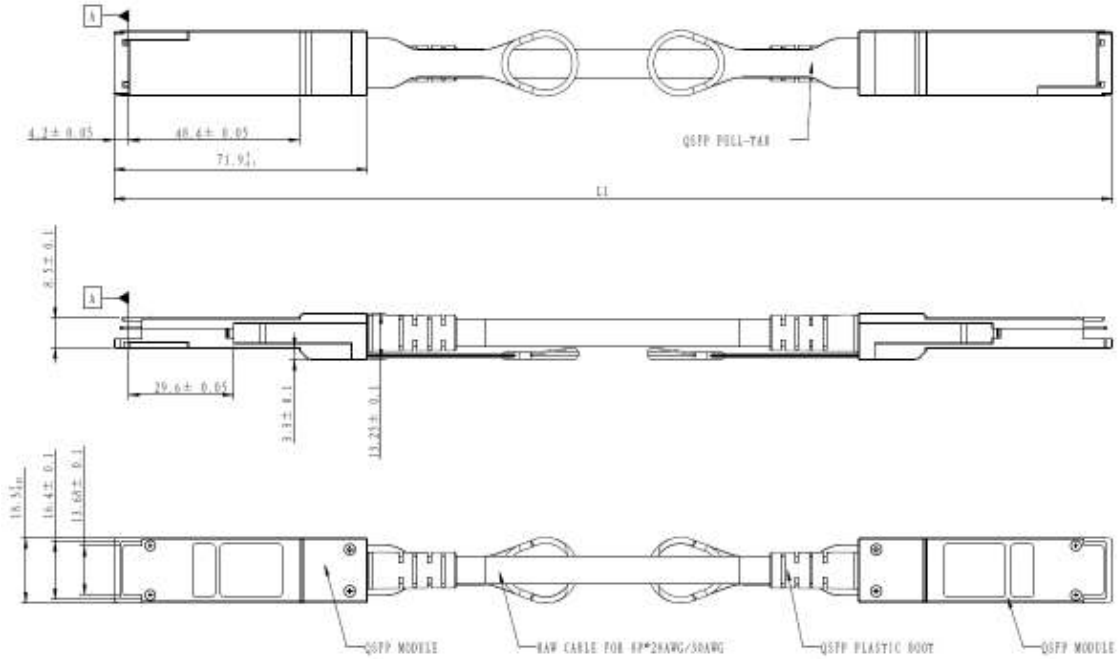
General Specifications

Parameter	*Symbol*	*Min*	*Typ*	*Max*	*Unit*	*Remarks*
Data Rate	*DR*		40		GBd	IEEE 802.3ba
Bit Error Rate	*BER*			10^{-12}		
Input Voltage	V_{CC3}	3	3.3	3.6	V	
Maximum Voltage	V_{MAX}	-0.5		4	V	Electric Power Interface
Operating Temperature	T_{OP}	0		70	℃	Case Temperature
Storage Temperature	T_{STO}	-40		85	℃	Ambient Temperature

Cable Mechanical Specifications

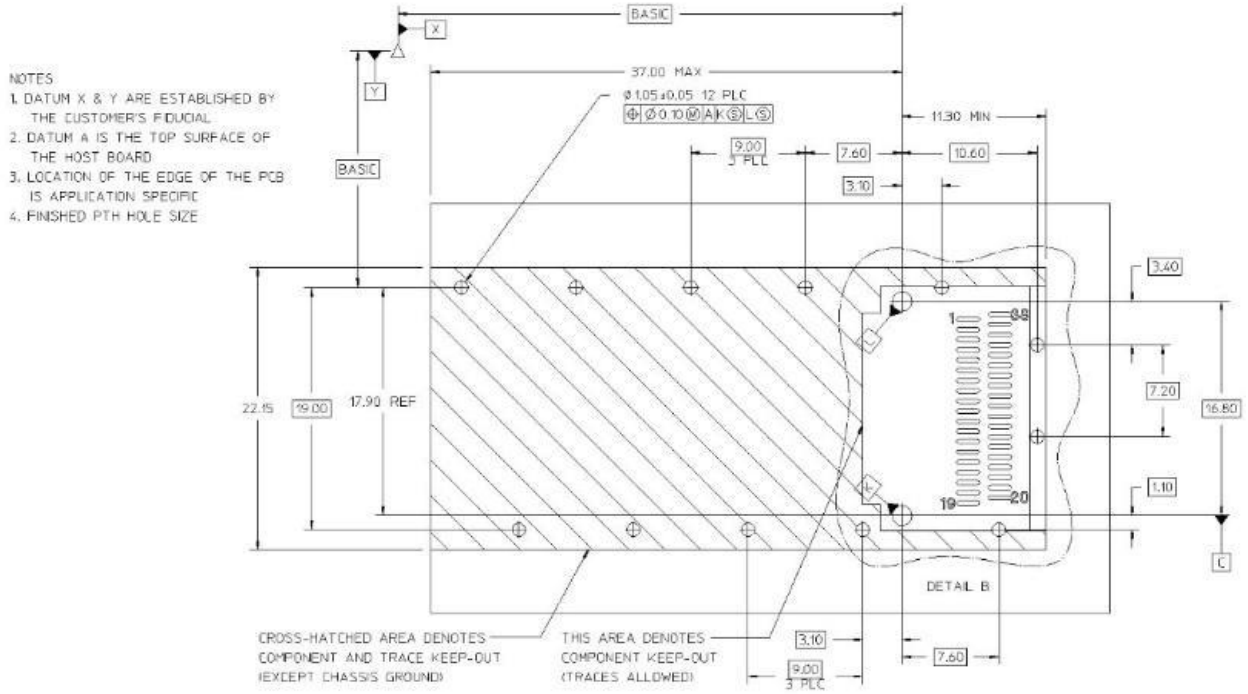
Parameter	*Symbol*	*Min*	*Typ*	*Max*	*Unit*	*Remarks*
Wire Gauge		24		30	AWG	
Cable Impedance	*Z*	95	100	105	Ohm	

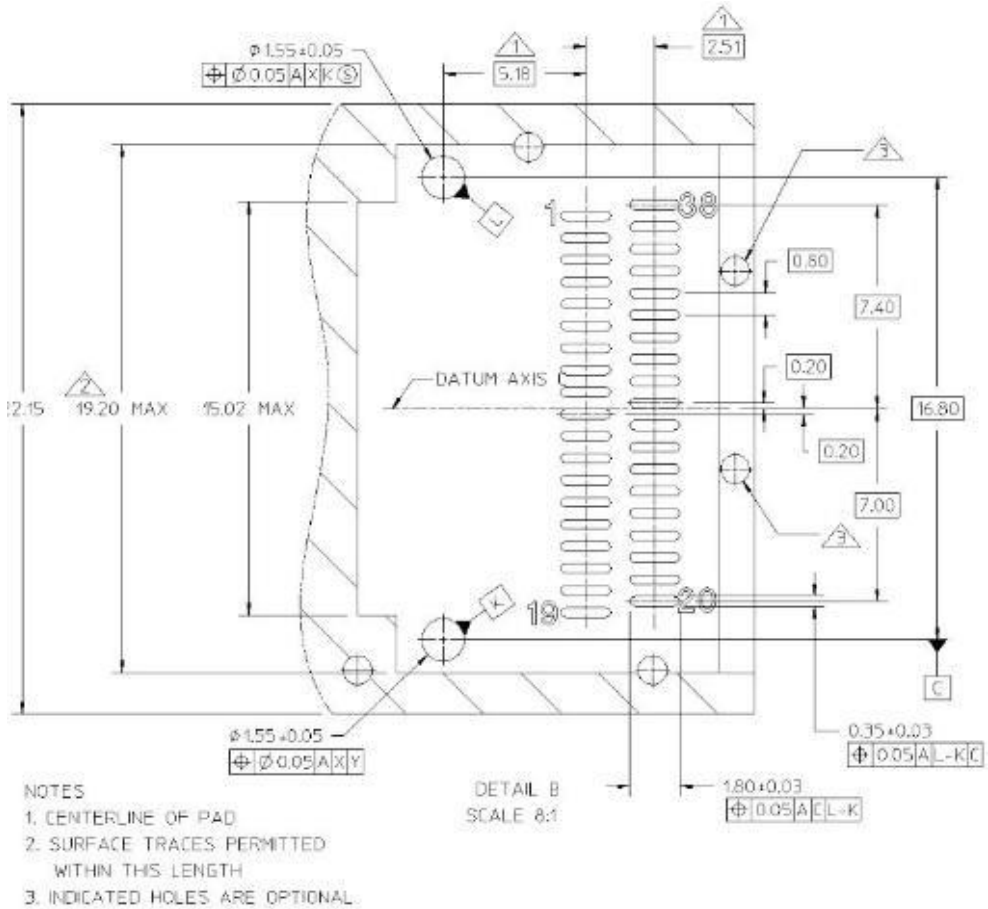
Dimensions



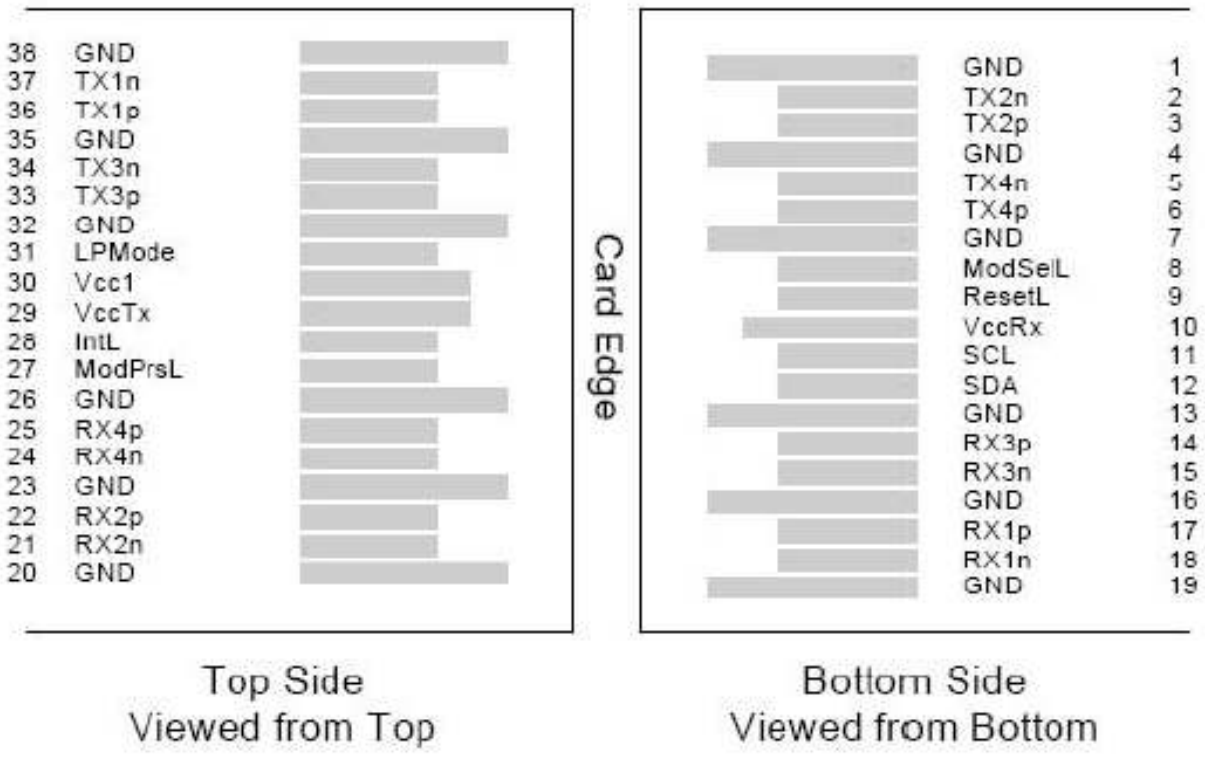
ALL DIMENSIONS ARE ±0.2mm UNLESS OTHERWISE SPECIFIED UNIT: mm

PCB Layout Recommendation





Electrical Pad Layout



Pin Assignment

PIN #	*Symbol*	*Description*
1	GND	Ground
2	Tx2n	Transmitter Inverted Data Input
3	Tx2p	Transmitter Non-Inverted Data Input
4	GND	Ground
5	Tx4n	Transmitter Inverted Data Input
6	Tx4p	Transmitter Non-Inverted Data Input
7	GND	Ground
8	ModSelL	Module Select
9	ResetL	Module Reset
10	VccRX	+3.3V Power Supply Receiver
11	SCL	2-Wire Serial Interface Clock
12	SDA	2-Wire Serial InterfaceData
13	GND	Ground
14	Rx3p	Receiver Non-Inverted Data Input
15	Rx3n	Receiver Inverted Data Input
16	GND	Ground
17	Rx1p	Receiver Non-Inverted Data Input
18	Rx1n	Receiver Inverted Data Input
19	GND	Ground
20	GND	Ground
21	Rx2n	Receiver Inverted Data Input
22	Rx2p	Receiver Non-Inverted Data Input
23	GND	Ground
24	Rx4n	Receiver Inverted Data Input
25	Rx4p	Receiver Non-Inverted Data Input
26	GND	Ground
27	ModPrsL	Module Present
28	IntL	Interrupt
29	VccTX	+3.3V Power Supply Transmitter
30	Vcc1	+3.3V Power Supply
31	LPMode	Low Power Mode
32	GND	Ground
33	Tx3p	Transmitter Non-Inverted Data Input
34	Tx3n	Transmitter Inverted Data Input
35	GND	Ground
36	Tx1p	Transmitter Non-Inverted Data Input
37	Tx1n	Transmitter Inverted Data Input
38	GND	Ground

References

1. IEEE standard 802.3ba. IEEE Standard Department, 2005.
2. QSFP+ 10Gbs 4X Pluggable Transceiver- SFF8436