100Mbps / 1.25Gbps /2.5Gbps/ 5Gbps Copper SFP Transceiver

SFP-T-PLU*

Features

- 100Mbps / 1.25Gbps /2.5Gbps/ 5Gbps bi-directional data links
- RJ45 Max link distance 50 meters
- Fully metallic enclosure for low EMI
- Compact RJ-45 Connector assembly
- Hot-pluggable SFP footprint
- Low power dissipation
- Extended case temperature: 0ºC to 70ºC
- RoHS compliant and Lead Free

Applications

- OC3/ OC48 SONET
- 1000BASE Ethernet

*This spec sheet is also for other vendor compatible units with the last 3 digits of the part number varying based on vendor code. Please see the last page of this specification sheet for a list of vendor codes

Product Description

The SFP-T-PLU is Copper Small Form pluggable (SFP) transceiver, which is based on SFP multi-sourcing agreement (MSA). It is compatible with the OC3/ OC48 SONET and 1000BASE Ethernet standards as specified in IEEE Std 802.3.The physical layer IC(PHY) can be accessed via I2C,allowing access to LIMITED PHY settings and features.

+3.3V Volt Electrical Power Interface

The CLSFP5GTX1 has an input voltage range of 3.3V +/-5%,The 4 V maximun voltage is not allowed for continuous operation.

Parameter	Symbol	Min.	Typ	Max	Units	Notes/Conditions
Supply Current	I_s			800	mA	2.7W max power over full range of voltage and temperature.see caution note below
Power Supply Voltage	V_{cc}	3.13	3.3	3.47	v	Referebced to GND
Maximum Voltage	V_{max}			4	v	
Surge Current	I_{surge}			550	mA	Hot plug above steady state current, See caution note below

Caution:Power consumption and surge current are higher than the specified values in the SFP MSA

Table 1.+3.3 Volt electrical power interface

Low-Speed Signals

Parameter	Symbol	Min.	Max	Units	Notes/Conditions
SFP Output LOW	VOL	0	0.5	V	4.7k to 10k pull-up to host Vcc,measured at host side of connector
SFP Output HIGH	VOH	Host Vcc -0.5	Host Vcc+0.3	V	4.7k to 10k pull-up to host Vcc,measured at host side of connector
SFP Input LO W	VIL	0	0.8	V	4.7k to 10k pull-up to Vcc,measured at SFP side of connector
SFP Input HIGH	VIH	2	Vcc+0.3	V	4.7k to 10k pull-up to Vcc,measured at SFP side of connector

Table 2. Low -speed signals, electronic characteristics

High-Speed Electrical Interface

ALL high-speed signals are AC-coupled internally

(1)High-speed Electrical Interface Transmission Line-SFP

Parameter	Symbol	Min.	Typ	Max	Units	Notes/Conditions
Line Frequency	fL	10	125	1000	MHZ	5-level encoding,per IEEE 802.3
Tx Out put Impedance	Zout,TX		100		Ohm	Differential,for all frequencies between 1MHz and 125MHz
Rx Input Impedance	Zin,RX		100		Ohm	Differential,for all frequencies between 1MHz and 125MHz

Table 3. High-speed electrical interface,transmission line-SFP

(2)High -speed Electrical Interface,Host-SFP

Parameter	Symbol	Min.	Typ	Max	Units	Notes/Conditions
Single ended data input swing	Vinsing	180		700	mV	Single ended
Single ended data output swing	Voutsing	350		850	mV	Single ended
Rise/Fall Time	Tr,Tf		175		psec	20%-80%
Tx Input Impedance	Zin		50		Ohm	Single ended
Rx Output Impedance	Zout		50		Ohm	Single ended

Table 4. High -speed electrical interface,host-SFP

General Specifications

Parameter	Symbol	Min.	Typ	Max	Units	Notes/Conditions
Data Rate	BR	10		10000	Mb/sec	IE EE 802.3 compatible.See Notes 2 through 4 below
Tx Output Impedance	L			100	m	Category 5 UTP.BER< 10^{-12}

Table 5. General specifications

Note:

1. Clock tolerance is +/- 50 ppm.
2. By default,the SFP-T-PLU is a full duplex device in preferred master mode.
3. Automatic crossover detection is enabled. External crossover cable is not required.
4. Multi- BASE-T operation requires the host system to have an SGMII interface with no clocks, and the module PHY to be configured per Applications Note AN-2036.With a SERDES that does not support SGMII, the module will operate at single rate only.

Environmental Specifications

The SFP-T-PLU has an extended range from 0ºC to +70ºC case temperature as specified in Table.

Parameter	Symbol	Min.	Typ	Max	Units	Notes/Conditions
Operating Temperature	Top	0		70		Case temperature
Storage Temperature	Tsto	0		70		Ambient temperature

Table 6. Environmental specifications

Pin Descriptions

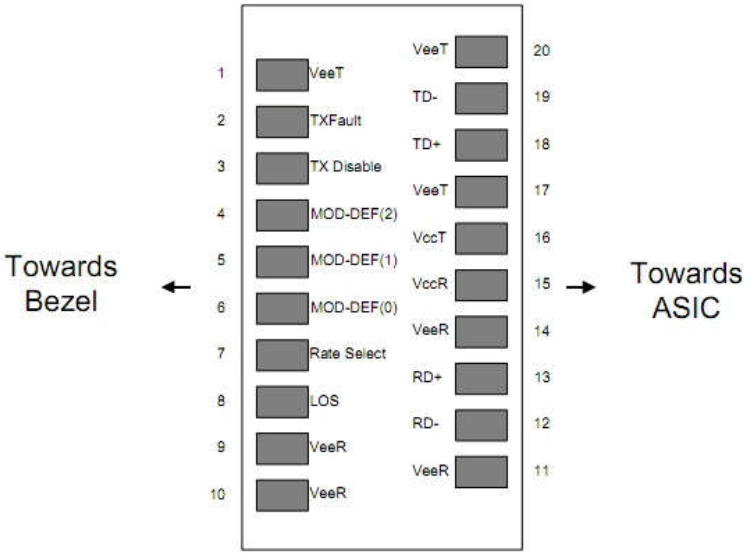
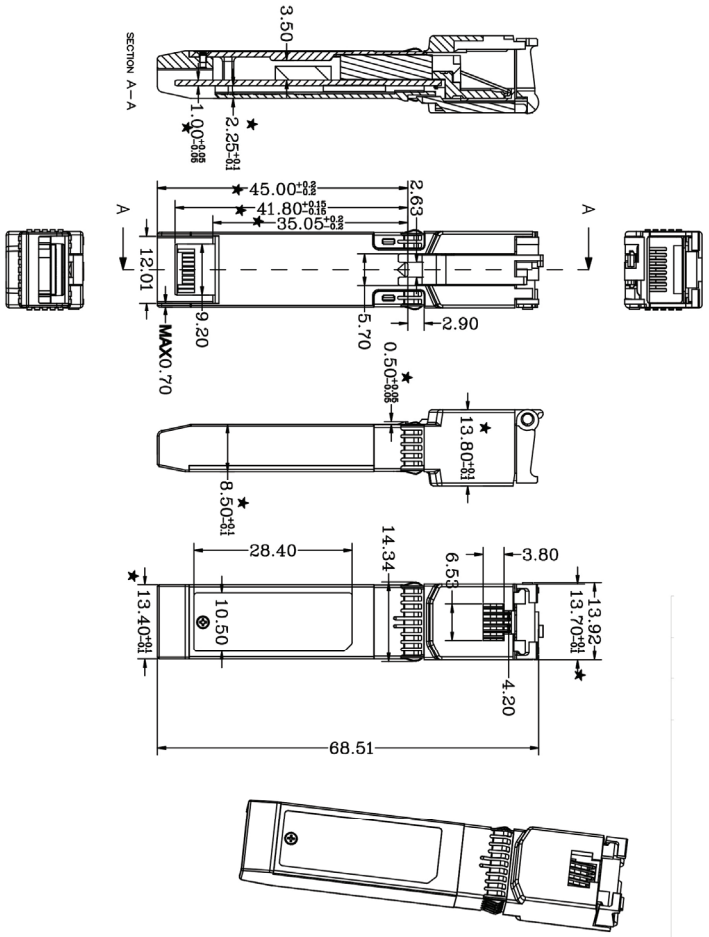


Diagram of Host Board Connector Block Pin Numbers and Names

Pin	Symbol	Description	Ref.
1	VEET	Transmitter Ground (Common with Receiver Ground)	8.1
2	TFAULT	Transmitter Fault. Not supported.	
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	8.2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	8.3
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	8.3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	8.3
7	Rate Select	No connection required	
8	LOS	Grounded	8.4
9	VEER	Receiver Ground (Common with Transmitter Ground)	8.1
10	VEER	Receiver Ground (Common with Transmitter Ground)	8.1
11	VEER	Receiver Ground (Common with Transmitter Ground)	8.1
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)	8.1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	8.1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD -	Transmitter Inverted DATA in. AC Coupled.	
20	VEET	Transmitter Ground (Common with Receiver Ground)	8.1

Table 7. SFP to host connector pin assignments and descriptions

Mechanical Specifications



Serial Communication Protocol

SFP-T-PLU supports the 2-wire serial communication protocol outlined in the SFP MSA. The physical layer IC can also be accessed via the 2-wire serial bus at address Ach. For details interfacing with the PHY IC, please contact support man or sales of 4Cabling.

Serial Bus Timing Requirements

Parameter	Symbol	Min.	Typ e	Max	Units	Notes/Conditions
IC Clock Rate		0		100000	Hz	

Ordering information

When ordering, to choose the vendor you require such as Cisco, HP, Juniper etc you need to replace the 'XXX' at the end of each SKU with the relevant 3 digit vendor code, for instance if you wanted a Cisco Multimode 1.25Gb SFP then the SKU would read SFP-T-PLU.

VENDOR	CODE	VENDOR	CODE	VENDOR	CODE	VENDOR	CODE
3com	3CO	Cyan	CYN	Huawei	HUA	PlusOptic	PLU
Adtran	ADT	Compaq	COM	IBM	IBM	Q-logic	QLO
Alcatel-Lucent	ALC	Dell	DEL	Intel	INT	QNA	QNA
Allied Telesis	ATE	Delta	DTA	JDS Uniphase	JDS	RAD	RAD
Allnet	ALL	D-LINK	DLI	Juniper	JUN	Redback	RED
Arista Networks	ARI	EMC	EMC	LNV	LNV	Riverstone	RIV
Aruba Networks	ARU	EMU	EMU	Linksys	LIN	Silicom	SIL
Asante	ASA	Enterasys	ENT	Marconi	MAR	Smartoptic	SMO
Avago	AVA	Extreme	EXT	McAfee	McA	SMC	SMC
Avaya	AVY	F5 Networks	F5	Meraki	MER	Solarflare	SLF
Black Box	BLK	Finisar	FIN	Milan Techn	MIL	Sun	SUN
Blade	BLA	Fluke	FLU	Moxa	MOX	SuperMicro	SUP
Bluecoat	BLU	Force 10	F10	NetAPP	NAP	Telco	TEL
Broadcom	BRD	Fortinet	FOR	Netgear	NET	TP-Link	TPL
Brocade	BRO	Foundry	FOU	Nortel	NOR	Transition	TRA
Calix	CAL	Fujitsu	FUJ	Packeteer	PKT	Trendnet	TRE
Ceragon Networks	CRN	Gigamon	GIG	PacketLight	PKL	Voltaire	VOL
Check Point	CHE	H3C	H3C	Palo Alto	PAL	WGD	WGD
CHL	CHL	HIR	HIR	Penguin	PEN	WES	WES
Ciena	CIE	HP	HP	Perle	PER	ZTE	ZTE
Cisco	CIS	HP ProCurve	HPP	PicoLight	PIC	ZYXEL	ZYX
Citrix	CIX	Huawei	HUA	Planet	PLA		