GENATA

ITOONER
Idea Transmission Navigator

SFP Module

GNT-SF10G12

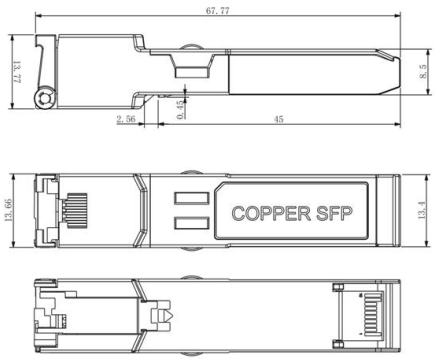
- Hot-pluggable SFP footprint
- Fully metallic enclosure for low EMI
- Compact RJ-45 connector assembly
- Up to 1.25Gb/s bi-directional data links
- Low power dissipation (1.05 W typical)

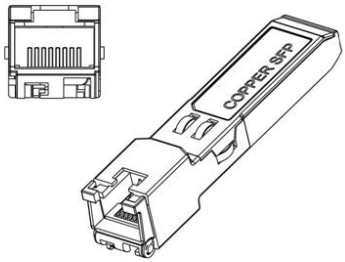
Product Features

- TX Disable and RX Los/without Los function
- Access to physical layer IC via 2-wire serial bus
- 1000 BASE-T operation in host systems with SERDES interface
- Operating case temperature range of
  0°C to +70°C (Commercial) / -20°C to +85°C (Extend)

Ports Description

Dimension (mm)





Pin Definitions

20	VeeT	1	VeeT
19	TD -	2	Tx Fauit
18	TD +	3	Tx Disable
17	VeeT	4	MOD-DEF(2)
16	VccT	5	MOD-DEF(1)
15	VccR	6	MOD-DEF(0)
14	VeeR	7	Rate Select
13	RD +	8	LOS
12	RD -	9	VeeR
11	VeeR	10	VeeR

Top of Board

Bottom of Board (as viewed thru top of board)

Pin Descriptions

PIN	NAME	FUNCTION	SEQ.	NOTES
1	VeeT	Transmitter Groun	1	VeeT and VeeR
2	TX_FAULT	Transmitter Fault Indica	3	Not Implemented. Tied to VeeT in SFP
3	TX_DISABLE	Transmitter Disabl	3	See TX Disab
4	MOD DEF (2)	Module Definition (2)	3	Data Line for Serial ID and Bidirectional DataTransfer bus
5	MOD DEF (1)	Module Definition 1	3	Clock Line for Serial ID and Bidirectional DataTransfer bus.

※Specifications subject to change without notice.

PIN	NAME	FUNCTION	SEQ.	NOTES
6	MOD DEF (0)	Module Definition 0	3	Tied to Vee in SFP
7	RATE SELECT	Not Implemented	3	Not implemented. 33K pulldown to Vee in SFP.
8	LOS	Loss of Signal	3	See LOS option.
9	VeeR	Receiver Ground	1	VeeT and VeeR are connected in SFP.
10	VeeR	Receiver Ground	1	VeeT and VeeR are connected in SFP.
11	VeeR	Receiver Ground	1	VeeT and VeeR are connected in SFP.
12	RD-	Inverted Received Data out	3	AC coupled 100 ohm differential high speed data lines.
13	RD+	Non-Inverted Received Data out	3	AC coupled 100 ohm differential high speed data lines.
14	VeeR	Receiver Ground	1	VeeT and VeeR are connected in SFP.
15	VccR	Receiver Power	2	VccR and VccT are connected in SFP.
16	VccT	Transmitter Power	2	VccR and VccT are connected in SFP.
17	VeeT	Transmitter Ground	1	VeeT and VeeR are connected in SFP.
18	TD+	Non-inverted Data In	3	AC coupled 100 ohm differential high speed data lines.
19	TD-	Inverted Data In	3	AC coupled 100 ohm differential high speed data lines.
20	VeeT	Transmitter Ground	1	VeeT and VeeR are connected in SFP.

Notes:

Plug Seq.: Pin engagement sequence during hot plugging.
1) TX Fault is not supported and is always connected to ground.
2) TX disable, an input used to reset the transceiver module, This pin is pulled up within the module with a 4.7 KΩ resistor. Low (0 – 0.8 V): Transceiver on Between (0.8 V and 2.0 V): Undefined High (2.0 – 3.465 V): Transceiver in reset state Open: Transceiver in reset state
3) Mod-Def 0, 1,2. These are the module definition pins. They should be pulled up with a 4.7K~10K resistor on the host board. The pull-up voltage shall be VccT or VccRMod-Def 0 is grounded by the module to indicate that the module is present Mod-Def 1 is the clock line of two wire serial interface for serial IDMod-Def 2 is the data line of two wire serial interface for serial ID
4) RX_LOS (Loss of Signal): LVTTL compatible with a maximum voltage of Host_Vcc. RX_LOS can enabled or disabled (Refer to Ordering information),RX_LOS is not used and is always tied to ground via 100-ohm resistor.
5) RD-/+: These are the differential receiver outputs. They are AC coupled 100 differential lines which should be terminated with 100 (differential) at the user SERDES.
6) TD-/+: These are the differential transmitter inputs. They are AC-coupled, differential lines with 100 differential termination inside the module.

+3.3V Volt Electrical Power Interface

Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Supply Current	Is		320	375	mA	1.2W max power over full range of voltage and temperature. See caution note below
Input Voltage	Vcc	3.13	3.3	3.47	V	V Referenced to GND
Maximum Voltage	Vmax			4	V	Maximum

Low-speed signals, electronic characteristics

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 LOW	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

High-speed electrical interface, transmission line-SFP

Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Line Frequency	fL		125		MHz	5-level encoding, per IEEE 802.3
Tx Output 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

High-speed electrical interface, host-SFP

Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Single ended data input swing	Vinswing	250		1200	mV	Single ended
Single ended data output swing	Voutswing	350		800	mV	Single ended
Rise/Fall Time	Tr,Tf		175		psec	20%-80%
Tx Input Impedance	Zin		50		Ohm	Single ended
Rx Output Impedance	Zou		50		Ohm	Single ended

General Specification

Parameter		Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Commercial	Tc	0		70	°C
	Extend		-20		85	°C
Storage Temperature			-40		85	°C