



FTF-C1XG-030M

10GBase-T RJ45 SFP+ module, 30 meters



Description

FTF-C1XG-030M SFP+ transceiver can be used to setup a reliable Gigabit Ethernet link over cat. 6a or 7 cable. Maximum transmission distance can reach up to 30 meters. Host device can access module internal EEPROM and PHY configuration registers via I²C interface (address A0h for EEPROM, ACh for PHY registers). Module is fully compatible with SFP+ MSA (SFF-8431 and SFF-8432).

Transceiver can be prepared as compatible with: Cisco, Netgear, Avaya, D-Link, Brocade, Extreme Networks, Huawei, Enterasys, 3Com, Alcatel-Lucent and other. To confirm compatibility please contact technical support before ordering.

Applications

- 10 Gigabit Ethernet (over Cat. 6a/7 cable)
- Switch/Router with 10GBase-T SFP+
- Switched backplane applications



Key features

- RJ45 connector
- Transmission distance up to 30m
- Throughput 10.3125Gb/s (Gigabit Ethernet)
- Fully compliant with SFF-8431 and SFF-8432
- Hot-Pluggable
- RoHS compliant
- Low power dissipation
- Metal case for low EMI
- Operating case temperature: 0~70°C

Specification

Supported transmission technology

10 Gigabit Ethernet

Speed supported for Ethernet technology

10.3125 Gbps

Speed supported for Fibre Channel technology

N/A

Transmission medium

UTP cable (Cat.6a or 7)

Transmission distance

up to 30m

Receptacle type

RJ45

Wavelength

N/A

Output power

N/A

Receiver sensitivity

N/A

Power supply voltage

3.3V

Total power consumption

< 1W

Operating environment – temperature*

0~70°C

Operating environment - humidity

5~95% non-condensing

Dimensions

56.5mm × 13.5mm × 8.9mm



Detailed technical specification

Pin Description

Pin	Name	Function/Description	Engagement order	Notes
1	VeeT	Transmitter Ground	1	-
2	TX Fault	Transmitter Fault Indication	3	
3	TX Disable	Transmitter Disable-Module disables on high or open	3	1
4	SDA	Module Definition 2-Two wire serial ID interface	3	2
5	SCL	Module Definition 1-Two wire serial ID interface	3	2
6	MOD-ABS	Module Definition 0-Grounded in module	3	2
7	RS0	Not Connected	3	-
8	LOS	Loss of Signal	3	3
9	RS1	Receiver Ground	1	-
10	VeeR	Receiver Ground	1	-
11	VeeR	Receiver Ground	1	-
12	RD-	Inverse Received Data out	3	4
13	RD+	Received Data out	3	4
14	VeeR	Receiver Ground	1	-
15	VccR	Receiver Power - +3.3V±5%	2	5
16	VccT	Transmitter Power - +3.3 V±5%	2	5
17	VeeT	Transmitter Ground	1	-
18	TD+	Transmitter Data In	3	6
19	TD-	Inverse Transmitter Data In	3	6
20	VeeT	Transmitter Ground	1	-

Notes:

- TX Disable input is used to shut down the PHY. It is pulled up within the module with a 4.7 – 10K resistor.
 Low (0 – 0.8V): PHY Enabled
 Between (0.8V and 2V): Undefined
 High (2.0 – VccT): PHY Disabled
 Open : PHY Disabled
- Mod-ABS, SDA, SCL. These are the module definition pins. They should be pulled up with a 4.7KΩ-10KΩ resistor on the host board to supply less than VccT+0.5V or VccR+0.5V.
 Mod-ABS is grounded by the module to indicate that the module is present.
 SDA is clock line of two wire serial interface for optional serial ID.
 SCL is data line of two wire serial interface for optional serial ID.
- LOS (Loss of Signal) is Grounded in the module
- RD-/+ : These are the differential receiver outputs. They are AC coupled 100Ω differential lines which should be terminated with 100Ω differential at the user SERDES. The AC coupling is done inside the module and thus not required on the host board.
- VccR and VccT are the receiver and transmitter power supplies. They are defined as 3.3V±5% at the SFP connector pin. The in-rush current will typically be no more than 30mA above steady state supply current after 500ns.
- TD-/+ : These are the differential transmitter inputs. They are AC coupled differential lines with 100Ω differential termination inside the module. The AC coupling is done inside the module and is thus not required on host board.



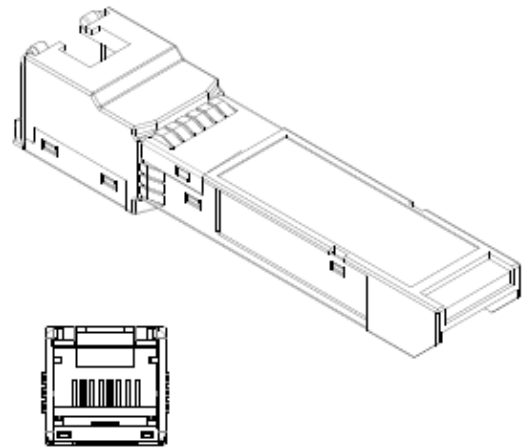
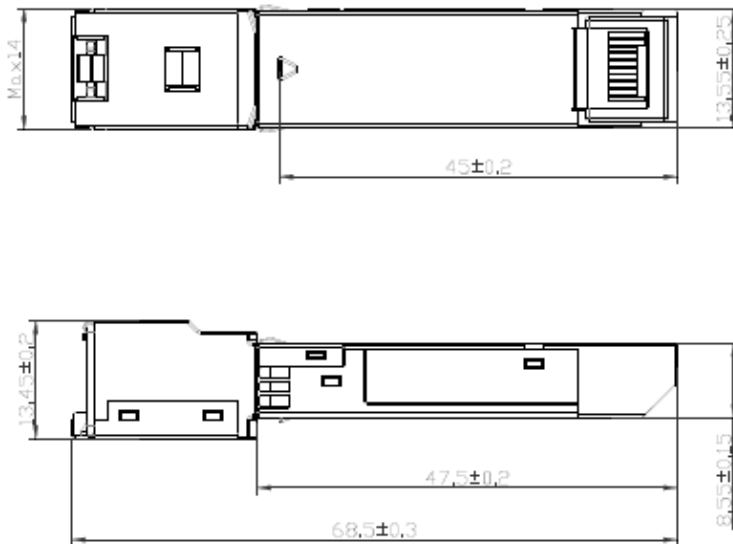
Electrical parameters

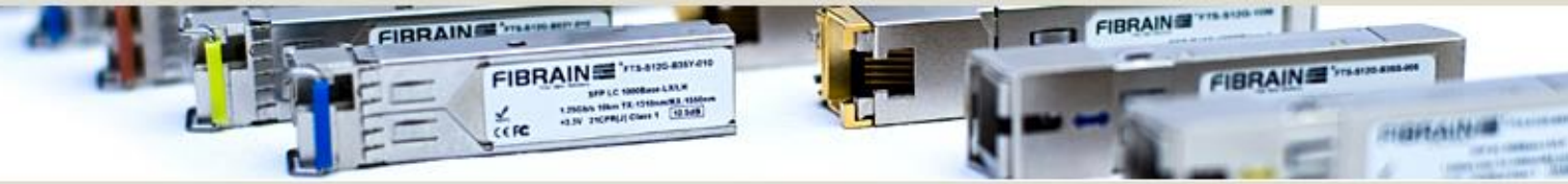
Parameter	Symbol	Minimal	Typical	Maximum	Unit	Notes
Module Supply Current	Icc	-	-	900	mA	-
Differential Input Swing	VIN	180	-	700	mV _{P-P}	1
Differential Output Swing	VO	300	-	850	mV _{P-P}	2
Differential Input Impedance	ZTX	80	100	120	Ω	
Total Power Consumption	PD	-	2.5	3.0	W	
Low speed input: Transmitter Disable (TX_DISABLE), SDA, SCL	VIH	2.0		V _{CC}	V	3
	VIL	0		0.8	V	-
Rise/Fall Time	tr,Rx/ tf,Rx	20			ps	-

Notes:

1. Internally AC coupled and terminated to 100Ω differential load.
2. Internally AC coupled, but requires a 100Ω differential termination or internal to Serializer/Deserializer.
3. SDA and SCL must be pulled up externally with a 4.7KΩ-10KΩ resistor on the host board to V_{CCT,R}.

Mechanical specification





Recommended environment conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature Range	T	0	25	70	°C
Supply Voltage	V _{CC}	3.135	3.3	3.465	V
Relative Humidity	RH	5	-	95	%

Ordering information

FTF-C1XG-030M – 10GBase-T RJ45 SFP+, 30m UTP, commercial temperature (0~70°C)

For further information regarding host device PCB layout recommendation, power supply requirements, EEPROM memory map, DDMI specification please check:

[SFF-8472 - Description of EEPROM and Digital Diagnostic Monitoring Interface](#) and [SFF-8431 - Technical specification for SFP+ transceiver](#)

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