

F-TONE GROUP 集团旗下

Tel:+86-28-85255257-812 Fax:+86-28-85977702 Add:No.3,Run Xin Incubation Park,High-tech

F-TONE GROUP 集团旗下



F-TONE GROUP 集团旗下

Optical characteristics

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

	Unit	Values	
Operating Reach	m	20K	
Transmit			
Center wavelength (range)	nm	1260 -1355	
Side Mode Suppression Ratio (min)	dB	30	
Launched power			
– maximum	dBm	+1	
– minimum	dBm	-5 Notes1	
- OMA	dBm	-5.2	
- OMA-TDP (min)	dBm	-6.2	
Transmitter and dispersion penalty	dB	0 Notes4	
Average launch power of OFF transmitter (max)	dBm	-30	
Extinction ratio (min)	dB	3.5 Notes2	
RIN12 OMA (max)	dB/Hz	-128	
Optical Return Loss Tolerance (min)	dB	12	
Receiver			
Center wavelength (range)	nm	1260-1355	
Receive overload (max) in average power ¹	dBm	0.5	
Receive sensitivity (min) in average power ¹	dBm	-14.4 Notes3	
Receiver sensitivity (max) in OMA (footnote 2)	dBm	-12.6 Notes3	
Receiver Reflectance (max)	dB	-12	
Stressed receiver sensitivity (max) in OMA ²	dBm	-10.3	
Vertical eye closure penalty (min) ³	dB	2.2	
Stressed eye jitter (min) ²	Ulp-p	0.7	
Receive electrical 3dB upper cutoff frequency (max)	GHz	12.3	
Receiver power (damage, Max)	dBm	1.5	

Notes:

- 1. The optical power is launched into SMF
- 2. Measured with a PRBS 2³¹-1 test pattern@10.3125Gbps
- 3. Measured with a PRBS 2³¹-1 test pattern@10.3125Gbps BER \leq 10⁻¹²
- 4. In G.652 and G.655(NDSF)

Electrical characteristics

The following electrical characteristics are defined over the Recommended Operating Environment

Tel:+86-28-85255257-812 Fax:+86-28-85977702 Add: No.3,Run Xin Incubation Park,High-tech District,Chengdu,Sichuan,China Web:http://www.f-tone.com Email:sales@f-tone.com



F-TONE GROUP 集团旗下

unless otherwise specified.

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Data Rate		-	10.3125	-	Gbps	
Power Consumption		-	1200	1500	mW	
Transmitter						
Single Ended Output Voltage Tolerance		-0.3	-	4.0	V	
C common mode voltage tolerance		15	-	-	mV	
Tx Input Diff Voltage	VI	400		1600	mV	
Tx Fault	VoL	-0.3		0.4	V	At 0.7mA
Data Dependent Input Jitter	DDJ			0.10	UI	
Data Input Total Jitter	TJ			0.28	UI	
Receiver						
Single Ended Output Voltage Tolerance		-0.3	-	4.0	V	
Rx Output Diff						

Tel:+86-28-85255257-812 Fax:+86-28-85977702 Add:No.3,Run Xin Incubation Park,High-tech District,Chengdu,Sichuan,China Web:http://www.f-tone.com Email:sales@f-tone.com V 3.03





F-TONE GROUP 集团旗下

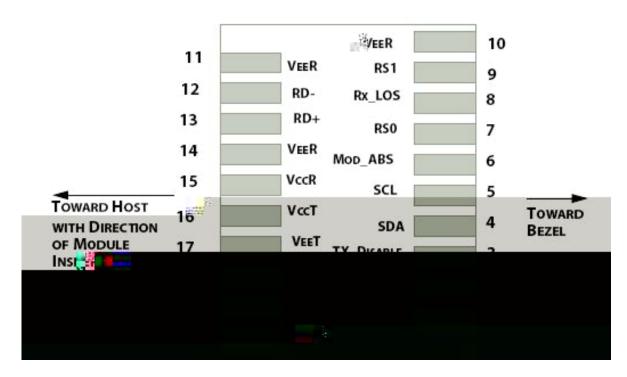


Figure 1: Interface to Host PCB

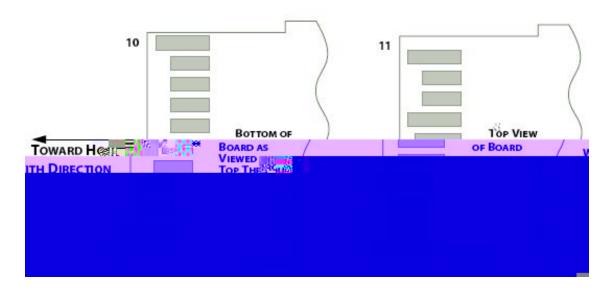


Figure 2: Module Contact Assignment

Pin definition

Tel:+86-28-85255257-812 Fax:+86-28-85977702 Add: No.3,Run Xin Incubation Park,High-tech District,Chengdu,Sichuan,China Web:http://www.f-tone.com Email:sales@f-tone.com



F-TONE GROUP 集团旗下

Pin	Symbol	Name/Description
1	VEET [1]	Transmitter Ground

Tel:+86-28-85255257-812 Fax:+86-28-85977702 Add:No.3,Run Xin Incubation Park,High-tech District,Chengdu,Sichuan,China Web:http://www.f-tone.com Email:sales@f-tone.com

F-TONE



F-TONE GROUP 集团旗下

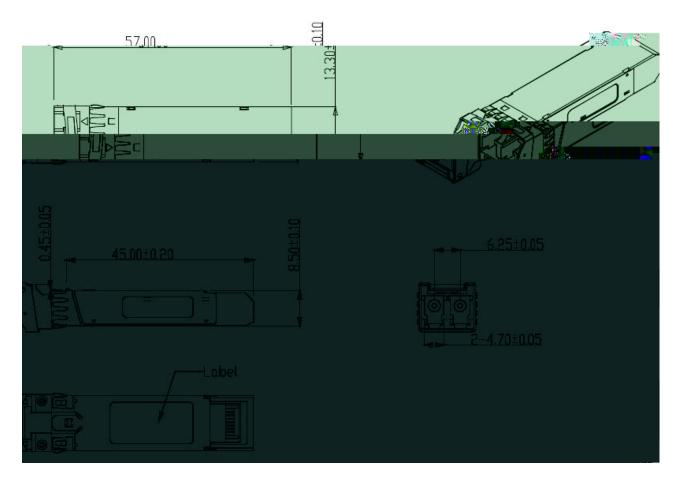


Figure 5. Mechanical Specifications

Regulatory ComplianceF-tone Networks SFP+ transceiver is designed to be Class I Laser safety compliant and is certified per the following standards:

Feature	Agency	Standard
Laser Safety	FDA	CDRH 21 CFR 1040 annd Laser Notice No. 50
Product Safety	UL	UL and CUL EN60950-2:2007
Environmental protection	SGS	RoHS Directive 2002/95/EC
EMC	WALTEK	EN 55022:2006+A1:2007 EN 55024:1998+A1+A2:2003

Tel:+86-28-85255257-812 Fax:+86-28-85977702

Add: No.3, Run Xin Incubation Park, High-tech District, Chengdu, Sichuan, China



F-TONE GROUP 集团旗下

Ordering information

Part Number	Product Description		
FTCS-131X-20D	1310nm, 10Gbps, SFP+ 20km, 0°C ~ +70°C		
FTCS-131X-20DI	1310nm, 10Gbps, SFP+ 20km, -40 to +85°C		

References

- "Specifications for Enhanced Small Form Factor Pluggable Module SFP+", SFF-8431, Rev 4.1, July 6, 2009.
- 2. "Improved Pluggable Formfactor", SFF-8432, Rev 4.2, Apr 18, 2007
- 3. IEEE802.3ae 2002
- 4. "Diagnostic Monitoring Interface for Optical Transceivers" SFF-8472, Rev 10.3, Dec 1,2007

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by F-tone Networks before they become applicable to any particular order or contract. In accordance with the F-tone Networks policy of continuous improvement specifications may change without notice.

The publication of information in this data sheet does not imply freedom from patent or other protective rights of F-tone Networks or others. Further details are available from any F-tone Networks sales representative.

Tel:+86-28-85255257-812 Fax:+86-28-85977702 Add: No.3, Run Xin Incubation Park, High-tech District, Chengdu, Sichuan, China Web: http://www.f-tone.com Email:sales@f-tone.com