- Optical interface compliant to IEEE 802.3ae 10GBASE-LR
- Electrical interface compliant to SFF-8431
- Hot Pluggable
- Supports rate up to 10.3 Gb/s bit rates
- 1G/2G/4G/ 8G/10G Fiber Channel applications.
- 1310nm FP transmitter, PIN photo-detector
- Low power consumption
- Applicable for 2km SMF connection
- All-metal housing for superior EMI performance
- Advanced firmware allow customer system encryption information to be stored in transceiver
- Cost effective SFP+ solution, enables higher port densities and greater bandwidth
- For the OBSAI application, the rates are 6.144Gb/s, 3.072 Gb/s, 1.536 Gb/s and 0.768 Gb/s.
- For the CPRI application, the rates are 6.144Gb/s, 3.072 Gb/s, 2.4576 Gb/s, 1.2288 Gb/s, 0.6144 Gb/s.
- RoHS6 compliant (lead free)
- Operating case temperature:

  Standard : 0 to +70°C

  Industrial : -40 to +85°C

- 10GBASE-LR at 10.3125Gbps
- Other optical links

The module provides differential termination and reduce differential to common mode conversion for quality signal termination and low EMI. SFI typically operates over 200 mm of improved FR4 material or up to about 150mmof standard FR4 with one connector.

These values represent the damage threshold of the module. Stress in excess of any of the individual Absolute Maximum Ratings can cause immediate catastrophic damage to the module even if all other parameters are within Recommended Operating Conditions.

Power Supply Voltage	V_{CC}	0	+3.6	V
Storage Temperature	Tc	-40	+85	°C
Operating Case Temperature	Tc	0	+70	°C
Relative Humidity	RH	5	95	%
RX Input Average Power	Pmax	-	0	dBm

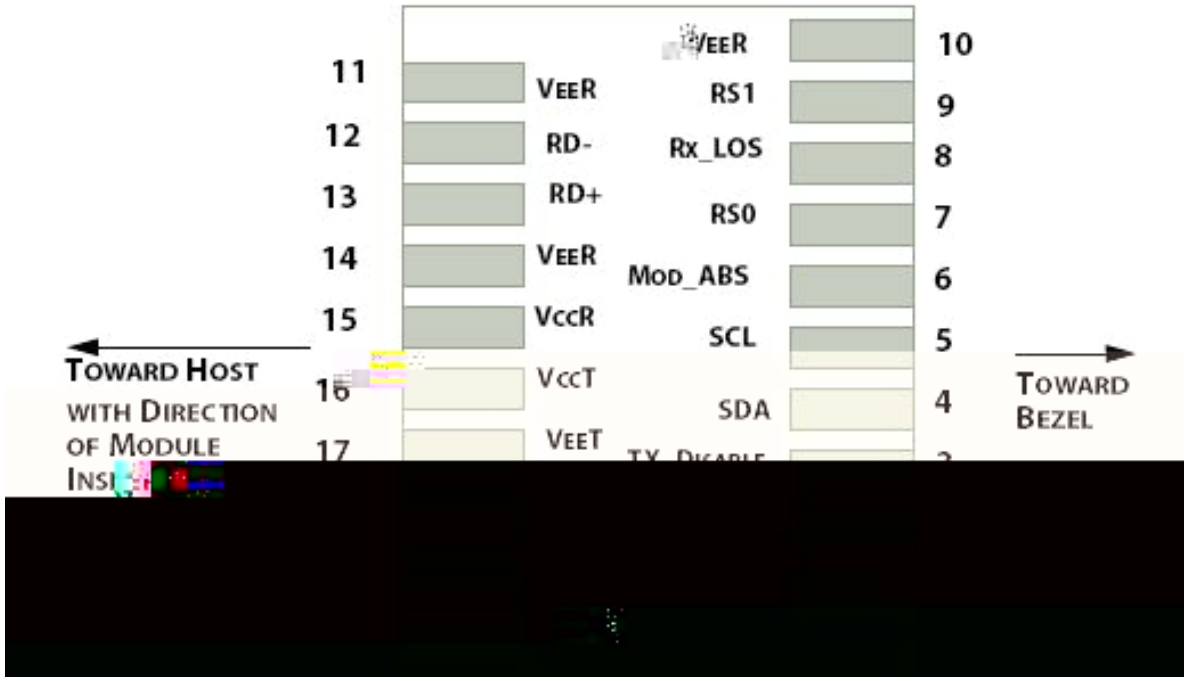
Recommended Operating Environment specifies parameters for which the electrical and optical characteristics hold unless otherwise noted.

Power Supply Voltage	V_{CC}	3.135	3.300	3.465	V
Operating Case Temperature	T_C	0	25	70	°C

Power Consumption				1	W
TX_Fault,RX_LOS	VOL	0		0.4	V
	VOH	Host_Vcc-0.5		Host_Vcc+0.3	V
TX_DIS	VIL	-0.3		0.8	V
	VIH	2.0		VCCT+0.3	V
RS0,RS1	VIL	-0.3		0.8	V
	VIH	2.0		VCCT+0.3	V

unless otherwise specified.

Data Rate		-	10.3125	-	Gbps	
Power Consumption		-	1200	1500	mW	
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	
Single Ended Output Voltage Tolerance		-0.3	-	4.0	V	
Rx Output Diff Voltage	Vo	300		850	mV	
Rx Output Rise and Fall Time	Tr/Tf	30			ps	20% to 80%
Total Jitter	TJ			0.70	UI	
Deterministic Jitter	DJ			0.42	UI	


11
VEER
12
RD-
13
RD+
14
VEER
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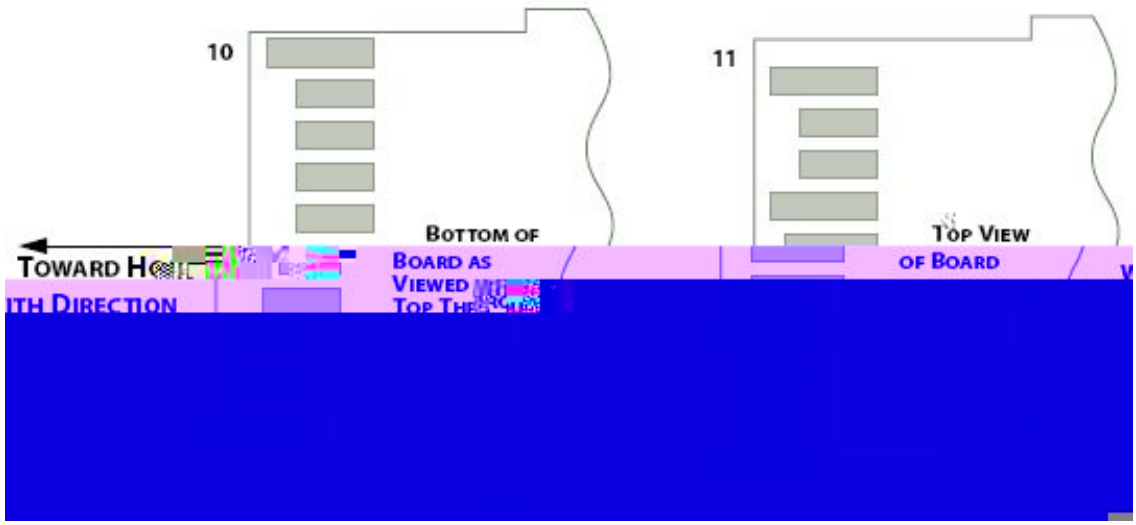
VCCR
16
VCCT
17
VEET
VEER
10
RS1
9
RX_LOS
8
RS0
7
MOD_ABS
6
SCL
5
SDA
4
TOWARD HOST
WITH DIRECTION
OF MODULE
TOWARD
BEZEL


10
11
BOTTOM OF
BOARD AS
VIEWED
TOP VIEW
OF BOARD

北亿纤通科技有限公司

FTCS-131X-02D	1310nm, 10Gbps, 2km, 0ºC ~ +70ºC
FTCS-131X-02DI	1310nm, 10Gbps, 2km, -40 to +85°C

1. “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