

CWDM-SFP-2.5G-xxxx-10KM

2.5GBase CWDM SFP Transceiver

Hot Pluggable, +3.3V, Duplex LC, 1271~1611nm, CWDM DFB, SMF, 10km,
Commercial Temperature

FEATURES

- Up to 2.5Gbps data links
- Power Budget 19dB on SMF
- DFB laser for 18 CWDM waves
- Duplex LC Connector
- Hot-pluggable SFP footprint
- Single 3.3V power supply
- Digital Diagnostic Monitor (DDM)
- Commercial operating temperature range: 0 to 70°C
- RoHS compliant, Lead free

APPLICATIONS

- SDH STM 16
- SONET OC-48

DESCRIPTION

ATGBICS CWDM-SFP-2.5G-xxxx-10KM is a small form factor pluggable (SFP) transceiver compatible with multi-sourcing agreement (MSA). It is suitable for single-mode fiber (SMF) communications in SDH STM 16 and SONET OC-48.

Wavelength (xxxx)	Clasp Color	Wavelength (xxxx)	Clasp Color
1271nm	Light Purple	1291nm	Sky Blue
1311nm	Yellow Green	1331nm	Yellow Ocher
1351nm	Pink	1371nm	Beige
1391nm	White	1411nm	Silver
1431nm	Black	1451nm	Yellow Orange
1471nm	Gray	1491nm	Purple
1511nm	Blue	1531nm	Green
1551nm	Yellow	1571nm	Orange
1591nm	Red	1611nm	Brown

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Typical	Max.	Units
Case Operating Temperature	Tc	0		70	°C
Storage Temperature	Ts	-40		+85	°C
Supply Voltage	Vcc	-0.5		3.6	V

RECOMMENDED OPERATING ENVIRONMENTS

Parameter	Symbol	Min.	Typical	Max.	Units
Operating Case Temperature	Tc	0		70	°C
Power Supply Voltage	Vcc	3.15	3.3	3.45	V
Power Supply Current	Icc			300	mA
Data Rate			2.5		GBps
Power Budget	Pb			19	dB

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min	Typical	Max	Unit	Note
TRANSMITTER						
Input Differential Impedance	Zin	90	100	110	Ω	
Data Input Swing Differential	Vin	500		2400	mV	
Tx-Dis Disable	Vd	2.0		Vcc	V	
Tx-Dis Enable	Ven	0		0.8	V	
TX-Fault (Fault)		2.0		Vcc+0.3	V	
TX-Fault (Normal)		0		0.8	V	
RECEIVER						
Data Output Swing Differential	Vout	370		2000	mV	
Rx-Los Fault	Vlf	2.0		Vcc+0.3	V	
Rx-Los Normal	Vln	0		0+0.8	V	

OPTICAL PARAMETERS

Parameter	Symbol	Min	Typical	Max	Unit	Note
TRANSMITTER						
Centre Wavelength	λ_c		xxxx		nm	
Spectral Width (-20dB)	σ			1	nm	
Average Output Power	Pout	-2		5	dBm	
Extinction Ratio	EX	9			dB	
Optical Rise/Fall Time	tr/tf			2	ns	
RECEIVER						
Centre Wavelength	λ_c		xxxx		nm	
Receiver Sensitivity	PIN			-27	dBm	
Receiver Overload	PMAX	3			dBm	
LOS De-Assert	LOSD			-32	dBm	
LOS Assert	LOSA	-34			dBm	
LOS Hysteresis		0.5		4.5	dB	

PIN ASSIGNMENT

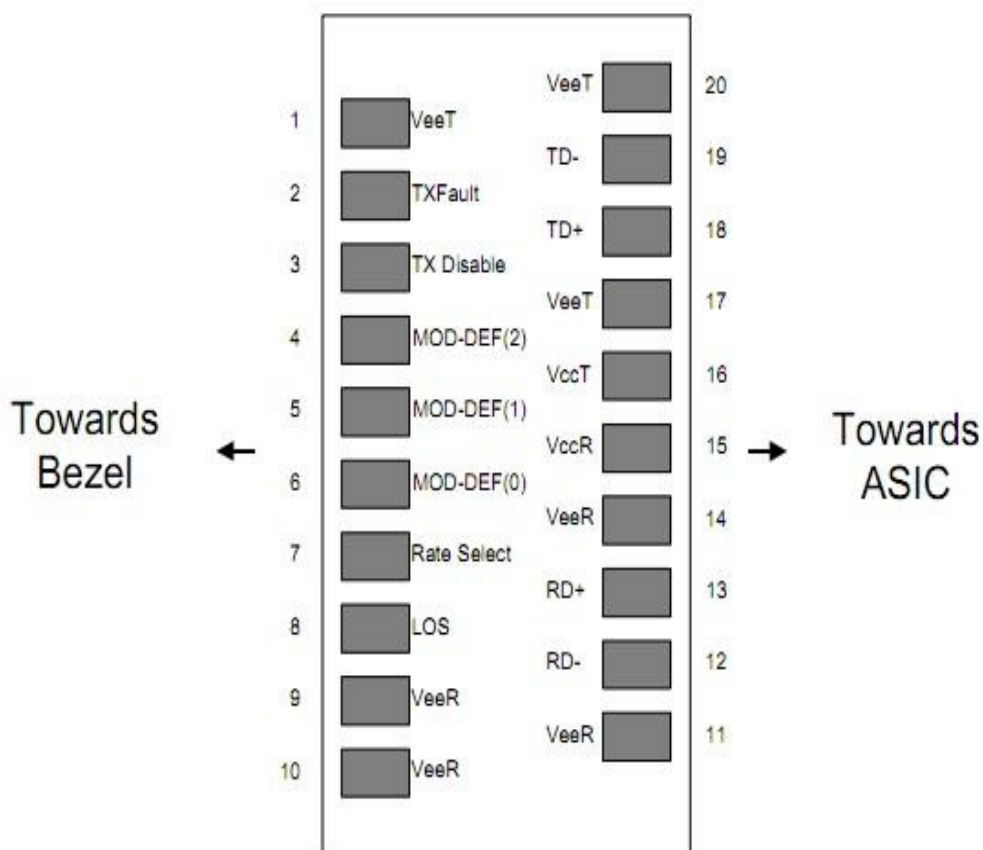


Diagram of Host Board Connector Block Pin Numbers and Names

PIN FUNCTION DEFINITIONS

Pin	Symbol	Description	Note
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	TFAULT	Transmitter Fault.	
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	3
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	4
9	VEER	Receiver Ground (Common with Transmitter Ground)	1
10	VEER	Receiver Ground (Common with Transmitter Ground)	1
11	VEER	Receiver Ground (Common with Transmitter Ground)	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)	1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	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)	1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.
3. Should be pulled up with 4.7k - 10kOhms on host board to a voltage between 2.0V and 3.6V. MOD_DEF(0) pulls line low to indicate module is plugged in.
4. LOS is open collector output. Should be pulled up with 4.7k -10kOhms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

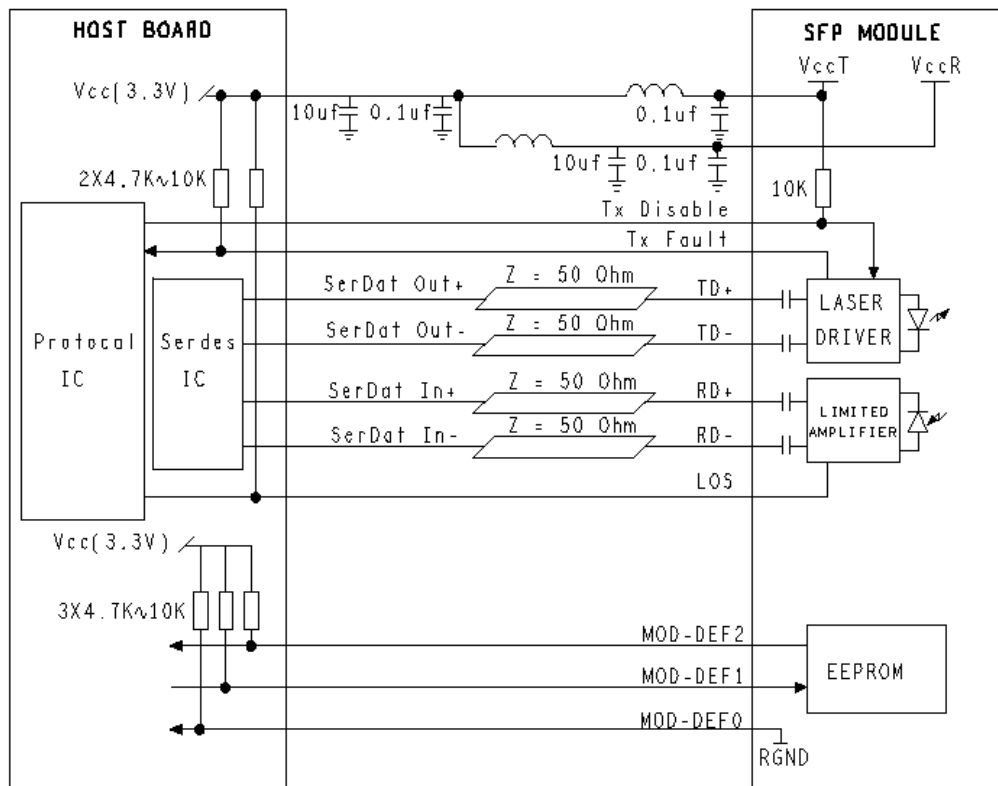
DDM THRESHOLD

Parameter	Low Alarm	Low Warn	High Warn	High Alarm	Unit
Temperature	-5	0	70	75	°C
Voltage	3	3.1	3.6	3.7	V
Tx Bias	3	3	70	75	mA
Tx Power	-2	-1	6	7	dBm
Rx Power	-30	-29	1	2	dBm

REGULATORY COMPLIANCE

ATGBICS transceivers are Class 1 Laser Products comply with FDA regulations. They meet Class 1 eye safety requirements of EN 60825 and the electrical safety requirements of EN 60950.

RECOMMENDED CIRCUIT



MECHANICAL DIMENSIONS (UNIT: mm)

