

Cisco Compatible CWDM-SFP10G-XXXX-40 Quick Spec:

Part Number:	10GBase-CWDM-SW-40-SFPP
Form Factor:	SFP+
TX Wavelength:	1270-1330nm
Reach:	40km
Cable Type:	SMF
Rate Category:	10G
Interface Type:	CWDM
DDM:	Yes
Connector Type:	Dual-LC



Cisco Compatible CWDM-SFP10G-XXXX-40 Features

- Hot-Pluggable SFP+ footprint
- 4-Wavelengths CWDM EML transmitter from 1270 nm to 1330 nm, with step 20 nm
- With high sensitivity APD
- 14dB power budget
- Duplex LC connector
- Power dissipation < 1.2W
- Dispersion tolerance 800p s/nm
- Case operation temperature
 - Standard: 0°C to 70°C
- Compliant with SFF-8431 MSA
- Compliant with SFF-8432 MSA
- Compliant with SFF-8472 MSA

Cisco Compatible CWDM-SFP10G-XXXX-40 Applications

- 10GBASE-ER/EW 10G Ethernet
- 10GBASE-ER at 10.31Gbps
- 10GBASE-EW at 9.95Gbps
- Other optical links

Product Description

The Cisco Compatible CWDM-SFP10G-XXXX-40 series optical transceiver is designed for fiber communications application such as 10G Ethernet (10GBASE-LR), which fully compliant with the specification of SFP+ MSA SFF-8431. This module is designed for single mode fiber and operates at a nominal wavelength of CWDM wavelength. There are four center wavelengths available from 1270nm to 1330nm, with each step 20nm. A guaranteed minimum optical link budget of 14 dB is offered. The module is with the SFP+ connector to allow hot plug capability. Single 3.3V power supply is needed. The optical output can be disabled by LVTTTL logic high-level input of TX_DIS. Loss of signal (RX_LOS) output is provided to indicate the loss of an input optical signal of receiver. This module provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit
Maximum Supply Voltage 1	Vcc	-0.5	4.0	V
Storage Temperature	TS	-40	85	°C
Case Operating Temperature	TOP	0	70	°C

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Typ	Max	Unit
Case Operating Temperature	Tc	0		70	°C
Supply Voltage	Vcc	3.13	3.3	3.45	V
Supply Current	Icc			350	mA
Data Rate		9.95		10.7	Gbps

PERFORMANCE SPECIFICATIONS – ELECTRICAL TRANSMITTER

Parameter	Symbol	Min	Typ	Max	Unit	Notes
CML Inputs(Differential)	VIN	150		1200	mVpp	After internal AC coupling
Input Impedance (Differential)	ZIN	85	100	115	ohms	
Tx_DISABLE Input Voltage – High		2		Vcc+0.3	V	
Tx_DISABLE Input Voltage – Low		0		0.8	V	
Tx_FAULT Output Voltage – High		2		Vcc+0.3	V	
Tx_FAULT Output Voltage – Low		0		0.8	V	

PERFORMANCE SPECIFICATIONS – ELECTRICAL RECEIVER

Parameter	Symbol	Min	Typ	Max	Unit	Notes
CML Outputs (Differential)	Vout	350		700	mVpp	After internal AC coupling
Output Impedance (Differential)	Zout	85	100	115	ohm	
Rx_LOS Output Voltage – High		2		Vcc+0.3	V	
Rx_LOS Output Voltage – Low		0		0.8	V	
MOD_DEF (2:0)	VoH	2.5			V	Reference the SFF-8472 MSA
	VoL	0		0.5	V	

OPTICAL AND ELECTRICAL CHARACTERISTICS TRANSMITTER

Parameter	Symbol	Min	Typ	Max	Unit
Output Opt. Pwr: 9/125 SMF	<i>P_{out}</i>	-1		+4	dBm
Extinction Ratio, EOLP-1696-14XN	ER	3.5			dB
Optical Wavelength	λ	$\lambda_c - 5.5$	λ_c	$\lambda_c + 7.5$	nm
Side Mode Suppression Ratio	<i>SMSR</i>	30			dB
Average Launch Power of OFF Transmitter	<i>POFF</i>			-30	dBm
Transmitter Dispersion Penalty	<i>TDP</i>			2	dB

OPTICAL AND ELECTRICAL CHARACTERISTICS RECEIVER

Parameter	Symbol	Min	Typ	Max	Unit
Receiver Sensitivity	<i>P_{min}</i>			-15	dBm
Input Overload	<i>P_{max}</i>	+0.5			dBm
Optical Center Wavelength	λ	1260		1620	Nm
Receiver Reflectance	<i>R_{rf}</i>			-27	dB
LOS De-Assert	<i>LOSD</i>			-16	dBm
LOS Assert	<i>LOSA</i>	-28			dBm
LOS Hysteresis		1			dB

PIN FUNCTION DEFINITIONS

PIN	Signal Name	Description	PIN	Signal Name	Description
1	VEET	Transmitter Signal Ground	11	VEER	Receiver Signal Ground
2	TX_Fault	Transmitter Fault Indication. Logic "1" Output = Laser Fault. Logic "0" Output = Normal Operation	12	RD-	Inverse Receiver Data Out
3	TX_Disable	Logic "1" Input (or no connection) = Laser off, Logic "0" = Laser on.	13	RD+	Receiver Data Out
4	SDA	Modulation Definition 2 – Two wires serial ID Interface	14	VEER	Receiver Signal Ground
5	SDL	Modulation Definition 1 – Two wires serial ID Interface	15	VCCR	Receiver Power – 3.3V±5%
6	MOD-ABS	Modulation Definition 0 – Ground in Module	16	VCCT	Transmitter Power – 3.3V±5%
7	RS0	RX Rate Select (LVTTTL). This pin has an internal 30k pulldown to ground. A signal on this pin will not affect module performance.	17	VEET	Transmitter Signal Ground
8	RX_LOS	Loss of Signal Out (OC).	18	TD+	Transmitter Data In
9	RS1	TX Rate Select (LVTTTL). This pin has an internal 30k pulldown to ground. A signal on this pin will not affect module performance.	19	TD-	Inverse Transmitter Data In
10	VEER	Receiver Signal Ground	20	VEET	Transmitter Signal Ground