



CL-SFP+_D80-T-XX
SFP+ DWDM Tunable 50GHz / 80km / 10G links
SFP Dual Fibre



Features

- SFP+ Multi-Source Agreement compatible, SFF-8431 revision 4.1 and SFP DWDM Tunable SFF-8690 compliant
- Hot pluggable SFP footprint
- Serial ID functionality supported according to [SFF-8472]
- Class 1 laser safety standard IEC 60825 compliant
- Dual LC connector
- C-band tunable wavelengths for 50GHz DWDM applications
- 80km, point-to-point transmission on single mode fiber pair
- Supported bitrates from 9.95 Gbps up to 11.3 Gbps
- Operating temperature range 0°C to 70°C
- Power dissipation (<2W)
- Digital Diagnostic Monitoring implemented
- RoHS 6/6 compliant
- Built in PHY SGMII interface
- Limiting SFI electrical output interface

Overview

CL-SFP+_D80-T-XX is a high performance transceiver module for 10 Gbps line rates from 9.95 Gbps up to 11.3 Gbps data link over a single mode fiber pair. The maximum reach is 80km for a 23dB end of life (EOL) power budget. The emitter is a C-band cooled tunable transmitter, the receiver is an APD photodiode.

This transceiver module is compliant with the Small Form-factor Pluggable (SFP+) Multisource Agreement (MSA) and hot pluggable. Always contact Carelink commercial agents for compatibility with different equipment platforms.

Application

- DWDM networks
- 10Gb Ethernet applications
- 10G Fiber channel application

Optical Interface

P/N	Wavelength [nm]	Output Optical Power ¹ [dBm]	Optical Receiver Sensitivity ² [dBm]	Power Budget ¹ [dB]	Trasmitter Dispersion Penalty[dB]
CL-SFP+_D80-T-XX	C-band tunable	-1 to -3	-24 to -7	23	2

1. EOL, over operating temperature range
2. Measured at 10 Gigabit Ethernet



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Technical parameters

5.1. Recommended Operating Conditions

Parameter	Min	Typ	Max	Units	Notes
Storage temperature	-40		85	°C	
Operating Case Temperature	0		70	°C	
Relative Humidity	5		95	%	Non condensing
Power Supply Voltage	3.1	3.3	3.5	V	
Power Supply Current				mA	

5.2. Transmitter Optical Specifications (0 to 70°C, 3.3V +/-5%)

Parameter	Min	Typ	Max	Units	Notes
Average Output Power	-1		3	dBm	3
Center Wavelength		50		nm	
Optical Extinction Ratio ER	9			dB	
Spectral Width			0.4	nm	At 20 dB

3. Output power coupled into a 9/125 μm single-mode fiber

5.3. Receiver Optical Specifications (0 to 70°C, 3.3V +/- 5%)

Parameter	Min	Typ	Max	Units	Notes
Sensitivity			-24	dBm	4,5
Receiver Overload	-7			dBm	

4. With BER better than or equal to 1×10^{-12} , measured in the center of the eye opening with 2⁻¹ PRBS

5. Low bitrates <4.25G datarate < High bitrates

Transceiver Electrical Pad Layout

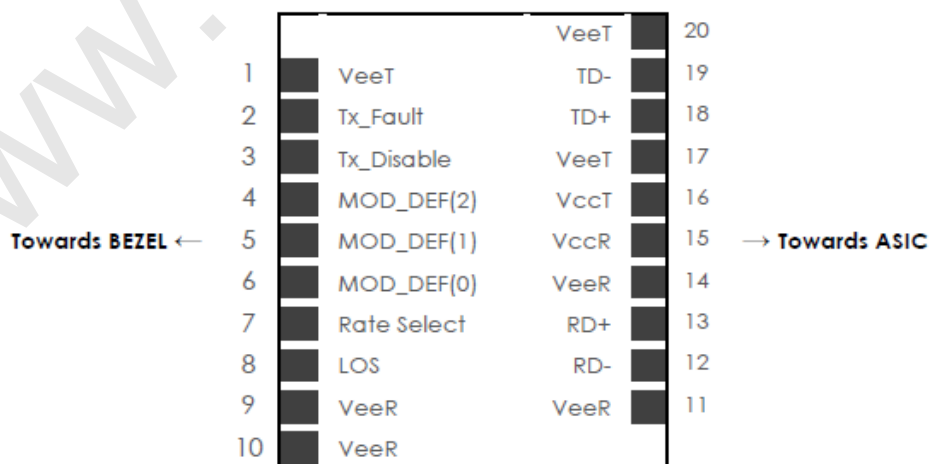


Figure 2. Transceiver Electrical Pad Layout



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Pin Functions Definitions

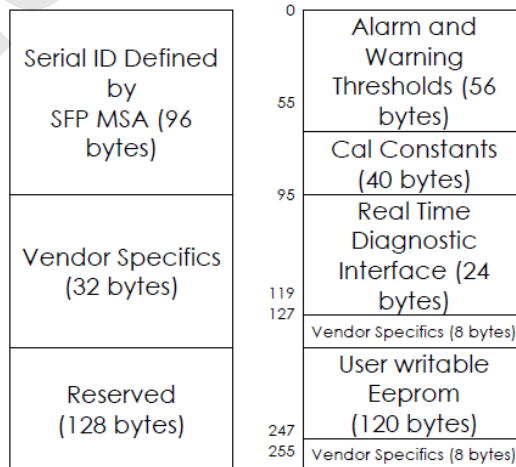
Pin Number	Name	Function
1	Vee	Transceiver Ground
2	TX_Fault	Transmitter Fault Indication
3	TX1_Disable	Transmitter Disable of Channel 1
4	MOD-DEF 2	2-Wire Serial Interface Data (SDA)
5	MOD-DEF 1	2-Wire Serial Interface Clock (SCL)
6	TD2-	Inverted transmit data input of Channel 2
7	TD2+	Transmit Data Input of Channel 2
8	LOS1	Loss of signal of Channel 1
9	RD2+	Received data output of Channel 2
10	RD2-	Inverted received data output of Channel 2
11	Vee	Transceiver Ground
12	RD1-	Inverted received data output of Channel 1
13	RD1+	Received data output of Channel 1
14	LOS2	Loss of signal of Channel 2
15	VccR	Receiver Power
16	VccT	Transmitter Power
17	TX2_Disable	Transmitter disable of Channel 2
18	TD1+	Transmit data input of Channel 1
19	TD1-	Inverted transmit data input of Channel 1
20	Vee	Transceiver Ground

EEPROM

MSA compliant [SFF-8472]

2 wire address 1010000x

2 wire address 1010001x



A0h

A2h

Figure 3. EEPROM of a SFP +



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Ordering information

Part Number	Description
CL-SFP+_D80-T-XX	SFP+ DWDM dual fiber, Tx C-band Tunable 1528nm (DWDM cooled tunable transmitter), Rx (APD), maximum distance 80km, power budget 23db, 9.95 Gbps up 11.3 Gbps, LC connector, 2W, limiting, 0°C to 70°C, DDM