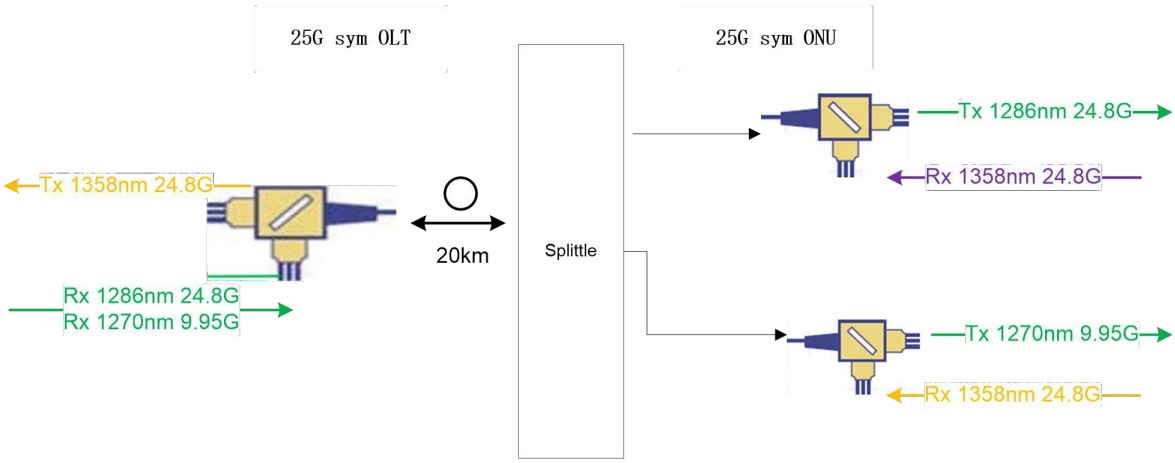
X5T-NSSx-20DC

25G PON OLT SFP28 Optical Module

Features

- Support ITU_T G.988.5 25 GPON OLT application
- Single fiber Bi-directional data links, and the 25G PON upstream signals are in Wavelength Division Multiplex mode
- 25G PON 1358nm 24.8832G continuous-mode transmitter with EML laser, 1286nm 24.8832G burst-mode receiver with APD_TIA (with reset)&1270nm9.95328G burst-mode receiver with APD_TIA (with reset)
- 2-wire interface for integrated digital diagnostic monitoring
- Digital receiving signal strength indication(RSSI)
- SFP28 MSA package with SC/UPC receptacle optical interface
- +3.3V power supply
- Operating case temperature: 0°C~70°C Commercial Temperature
- RoHS6 compliance

25G PON OLT



Operating Condition

Parameter	Unit	Min.	Typical	Max.
Storage Temperature	°C	-40		85
Operating Case Temp for C-temp	°C	0		70
Storage Humidity	%	5		90
Operating Relative Humidity	%	5		85
Power Supply Voltage(3.3V)	V	3.15	3.3	3.45
Total Power Consumption	W			2.0
Damage Threshold for Receiver	dBm	0		
Bit Rate for Tx 1358nm	Gbps	24.8332G		
Bit Rate for Rx1286nm	Gbps	24.8332G		
Bit Rate for Rx1270nm	Gbps	9.95328G		

Characteristics

All performance is specified at whole working temperature and conditions

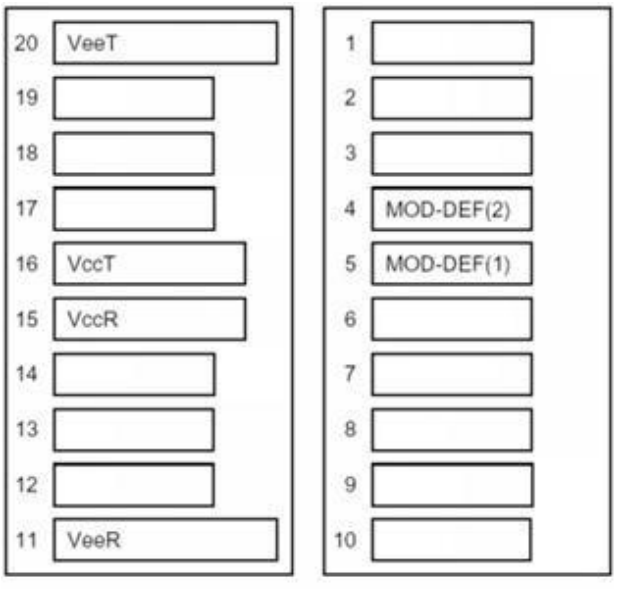
Parameter	Unit	Min.	Typical	Max.
Transmitter1358nm 24.8832G (Symmetric compatibility)				
TX Central Wavelength	nm	1356	1358	1360
Spectral Width (-20dB)	nm			1
SMSR	dB	30		
Mean Launched Power (N1 EOL)	dBm	4.1		7
Mean Launched Power (N2 EOL)	dBm	6.1		9
Mean Launched Power (TX Off)	dBm			-39
Extinction Ratio	dB	5		
Optical Return Loss Tolerance	dB	-15		
Transmitter Mask ($PRBS2^{31}$-1@24.8832G)	Compliant With ITU-T G.988.5			
Receiver 1286nm 24.8832G				
Receive Wavelength(N1/N2)	nm	1284	1286	1288
Sensitivity (N1 EOL) ($PRBS2^{31}$-1@24.8832G, BER<10^{-2}) ER=6.0,	dBm			-24.3
Sensitivity(N2 EOL) ($PRBS2^{31}$-1@24.8832G,ER=6.0, BER<10^{-2})	dBm			-26.3
Overload (N1) EOL)	dBm	-5		

Overload (N2) EOL)		dBm	-7		
Settling Time		ns		50	
SD Assert Level		dBm			-29.0
SD De-assert Level		dBm	-39		
SD Hysteresis		dB	0.5		6.0
Receiver 1270nm 9.95328G					
Receive Wavelength(N1/N2)		nm	1260	1270	1280
Sensitivity (N1 EOL)(PRBS2^{31}-1@9.95328G, BER<10^{-2})	ER=6.0,	dBm			-26
Sensitivity (N2 EOL) (PRBS2^{31}-1@9.95328G,ER=6.0, BER<10^{-2})		dBm			-28
Overload (N1 EOL)		dBm	-5		
Overload (N2 EOL)		dBm	-7		
Settling Time		ns		50	
SD Assert Level		dBm			-29.0
SD De-assert Level		dBm	-45		
SD Hysteresis		dB	0.5		6.0

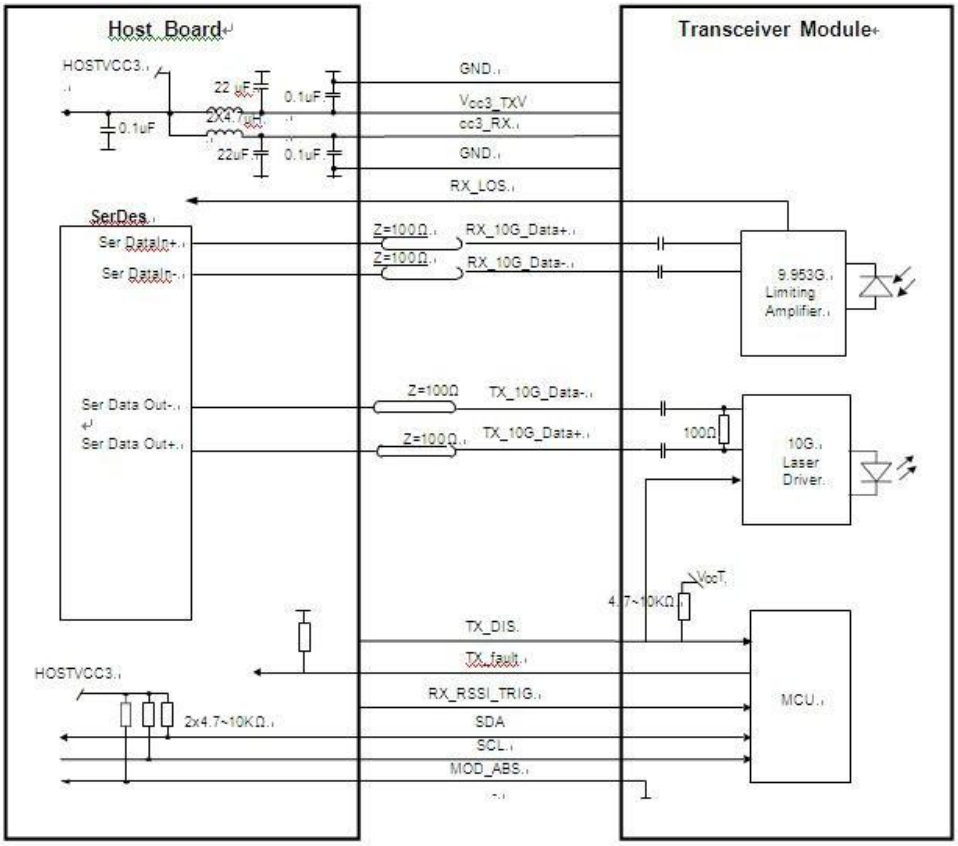
Parameter	Unit	Min.	Typical	Max.
Electrical Interface Characteristics				
Data Input Swing Differential/TX	mV	120		850
Data Output Swing Differential/RX	mV	340		850
Data Differential Impedance	Ω	90	100	110
LVTTL Output High	V	2.4		Vcc
LVTTL Output Low	V	0		0.4
LVTTL Input High	V	2.0		Vcc+0.3
LVTTL Input Low	V	0		0.8

PIN Definition

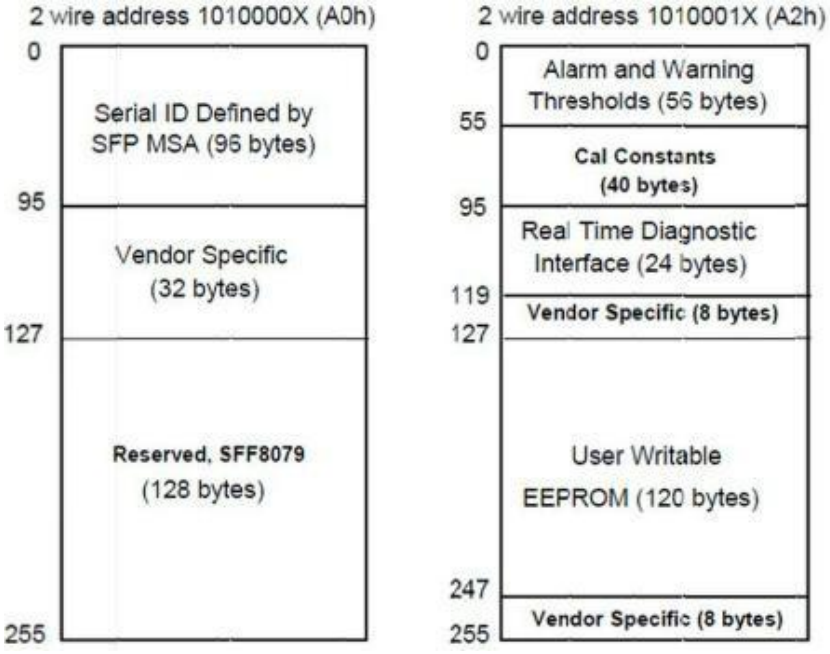
Pin No.	Symbol	Level / Logic	Description
1	GND		Module Ground
2	TX_FAULT_OUT		Transmitter Fault Indicator
3	TX_DIS		Active high to turn off transmitter laser output.
4	SDA	LVTTL-I/O	2-Wire Serial Interface Data Line
5	SCL	LVTTL-I	2-Wire Serial Interface Clock
6	MOD_NR		Indicates Module is not present. Grounded in the Module
7	RX_Reset		Receiver burst Reset
8	SD/LOS	LVTTL-O	Receiver Signal Detected Indicator
9	RX_TRIG	LVTTL-I	Active high to trigger the RSSI sampling.
10	GND		Module Ground
11	GND		Module Ground
12	RD-	CML-O	Receiver Inverted Data Output, 24.8G&12.4Gbps, DC-coupled
13	RD+	CML-O	Receiver Non-Inverted Data Output, 24.8G&12.4Gbps,DC-coupled
14	GND		Module Ground
15	VCCR		+3.3V Rx Power Supply
16	VCCT		+3.3V Tx Power Supply
17	GND		Module Ground
18	TD+	CML-I	Transmitter Non-Inverted Data Input,24.8Gbps, AC-coupled
19	TD-	CML-I	Transmitter Inverted Data Input, 24.8Gbps,AC-coupled
20	GND		Module Ground



Typical Interface Circuit

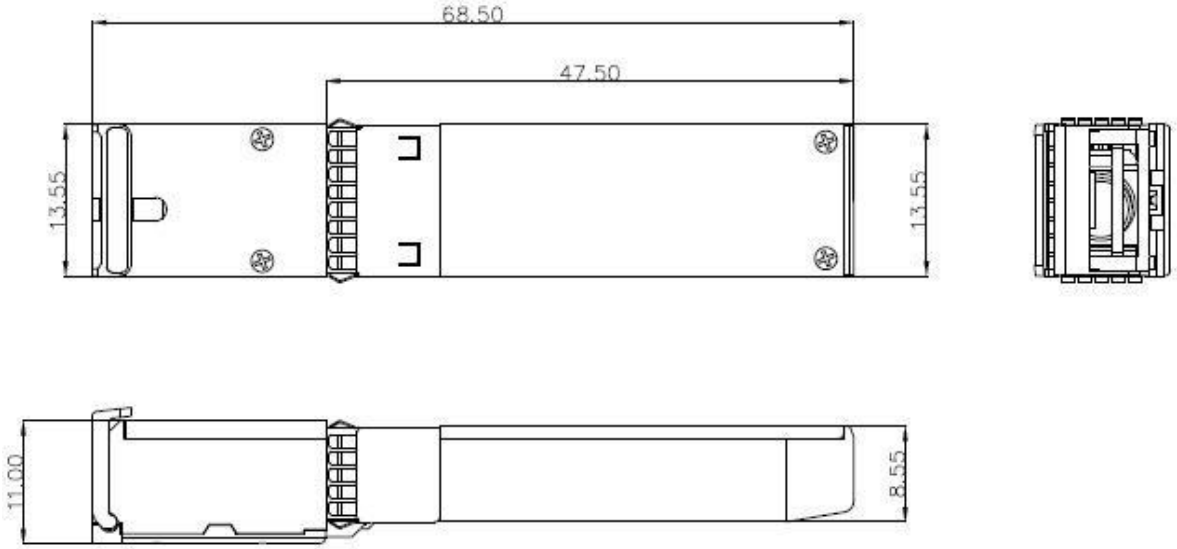


EEPROM Memory Map



Address	Parameter	Range	NOTES
96-97	Temperature	-40 to 125°C	1LSB=1/256°C
98-99	Vcc Voltage	0V to 6.55V	1LSB=0.1mV
100-101	24.8G TX Bias Current	0 to 262mA	1LSB=4uA
102-103	24.8G TX Power	-37 to 11.2 dBm	1LSB=0.2uW
104-105	24.8G&9.95G RX Power	-40 to 8.2 dBm	1LSB=0.1uW

Mechanical Diagram



Ordering information

Part Number	Product Description
T5T-NSS1-20DC	25GPON OLT, Symmetric compatible N1,1358nm/1286nm,24.8Gbps/24.8Gbps,SC/UPC, 20km, 0°C~+70°C
T5T-NSS2-20DC	25GPON OLT, Symmetric compatible N2,1358nm/1286nm,24.8Gbps/24.8Gbps,SC/UPC, 20km, 0°C~+70°C
A5T-NSS1-20DC	25GPON OLT, Asymmetric compatible N1, 1358nm/1270nm,24.8Gbps/9.95Gbps,SC/UPC, 20km, 0°C~+70°C
A5T-NSS2-20DC	25GPON OLT, Asymmetric compatible N2, 1358nm/1270nm,24.8Gbps/9.95Gbps,SC/UPC, 20km, 0°C~+70°C

For More Information

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