WTXGSPON-OLT-N1-20 XGS PON OLT N1 SFP+ 20KM

10G XGS-PON SFP+ Optical Transceiver



Data Rate
Tx:9.95328G
Rx:9.95328/
2.48832G

1. Product Overview

Features

- Support ITU-T G.9807.1 XGS-PON OLT N1 Application
- Single fiber bi-directional data links with 9.953Gbps
- downstream and 9.953Gbps/2.488Gbps (compatible) upstream
- 1577nm continuous-mode transmitter with EML laser
- 1270nm burst-mode receiver with APD-TIA
- 2-wire interface for integrated digital diagnostic Monitoring
- SFP+ package with SC/UPC receptacle optical interface
- +3.3V power supplies
- RoHS With Exemptions
- 20Km Reach
- Operating case temperature:
- Industry temp: -40~+85°C

Applications

2. Ordering Information

Part No.	Application	Data Rate	Laser Source	Fiber
WTXGSPON-OLT-N1-20C	XGS-PON N1 Class 0~70 ºC 20KM	Tx:9.95328G Rx:9.95328/ 2.48832G	1577nm EML	SMF
WTXGSPON-OLT-N1-20I	XGS-PON N1 Class -40~85 ºC 20KM	Tx:9.95328G Rx:9.95328/ 2.48832G	1577nm EML	SMF

3. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Storage Ambient Temperature	TS	-40	-	+85	°C	
Operating Case Temperature	Tc	0		70	°C	C-Temp
Operating Case Temperature	Tc	-40		85	°C	I-Temp

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Supply Voltage	VCC3	0	-	3.6	V	
Operating Relative Humidity	RH	5	-	+85	%	

4. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Operating Case Temperature	Tc	0		70	°C	C-Temp
Operating Case Temperature	Tc	-40		85	°C	I-Temp
Power Supply Voltage	VCC3	3.13	3.3	3.47	V	
Supply current	Icc			796	mA	1
Power Consumption				2.5	W	
Transmission Distance				20	km	
Rx Optical Isolation (From external below 1260nm)	ISO	-32			dB	
Rx Optical Isolation (From external above 1280nm)	ISO	-32			dB	

5. Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter (9.953G)	Transmitter (9.953G)	Transmitter (9.953G)	Transmitter (9.953G)	Transmitter (9.953G)	Transmitter (9.953G)	Transmitter (9.953G)
Data Input Differential Swing	VIN	200	-	850	mVp-p	
Input Differential Impedance	ZIN		100		Q	
Tx_Disable Voltage	VIL	0	-	0.8	V	
Tx_Disable Voltage	VIH	2.4		3.3	V	
Receiver (9.953G)	Receiver (9.953G)	Receiver (9.953G)	Receiver (9.953G)	Receiver (9.953G)	Receiver (9.953G)	Receiver (9.953G)
Data Output Differential Swing	VOUT	300		800	mVP-P	
Signal Detected Voltage_low	VSD, L	0		0.8	V	
Signal Detected Voltage_high	VSD, H	2		VCC3	V	
Signal Detected Assert Time	TSDA			100	ns	
Signal Detected Deassert Time	TSDD			50	ns	
Data Recovery Time	Trec			200	ns	
Receiver (2.488G)	Receiver (2.488G)	Receiver (2.488G)	Receiver (2.488G)	Receiver (2.488G)	Receiver (2.488G)	Receiver (2.488G)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Data Output Differential Swing	VOUT	300		800	mVP-P	
Signal Detected Voltage_low	VSD, L	0		0.8	V	
Signal Detected Voltage_high	VSD, H	2		VCC3	V	
Signal Detected Assert Time	TSDA			100	ns	
Signal Detected Deassert Time	TSDD			50	ns	
Data Recovery Time	Trec			200	ns	

6. Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Transmitter (9.953G)	Transmitter (9.953G)	Transmitter (9.953G)	Transmitter (9.953G)	Transmitter (9.953G)	Transmitter (9.953G)	Transmitter (9.953G)
Centre Wavelength	λC	1575	1577	1580	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Average Launch Power	POUT	2		5	dBm	1
Average Launch Power-OFF	POFF			-39	dBm	
Optical Path Penalty				1	dB	2
Extinction Ratio	EX	8.2			dB	
transmitter eye diagram		Comply with ITU-T G.9807.1	Comply with ITU-T G.9807.1	Comply with ITU-T G.9807.1		
Receiver (9.953G)	Receiver (9.953G)	Receiver (9.953G)	Receiver (9.953G)	Receiver (9.953G)	Receiver (9.953G)	Receiver (9.953G)
Operating Wavelength	λC	1260	1270	1280	nm	
Sensitivity	PSEN			-26	dBm	3
Saturation	PSAT	-5			dBm	3
Signal Detected De-assert Level	Psdd	-42			dBm	
Signal Detected Assert Level	Psda			-28	dBm	
Receiver (2.488G)	Receiver (2.488G)	Receiver (2.488G)	Receiver (2.488G)	Receiver (2.488G)	Receiver (2.488G)	Receiver (2.488G)
Operating Wavelength	λC	1260	1270	1280	nm	
Sensitivity	PSEN			-27.5	dBm	4
Saturation	PSAT	-7			dBm	4
Signal Detected De-assert Level	Psdd	-42			dBm	
Signal Detected Assert Level	Psda			-28	dBm	

7. Digital Diagnostics

Address	Parameter	Range	Accuracy	Unit	Notes	Calibration
96	Temperature	0 to 70	±3	ºC	LSB equal to 1/256c	Internal
96	Temperature	-40 to 85	±3	ºC	LSB equal to 1/256c	Internal
98	Voltage	3.15 to 3.45	±3%	V	LSB equal to 100uV	Internal
100	Bias Current	0 to 130	±10%	mA	LSB equal to 4uA	Internal
102	Tx Power	2 to 5	±2dB	dBm	LSB equal to 0.2uW	Internal
104	Rx Power	-27.5 to -7	±2dB	dBm	LSB equal to 0.1uW	Internal

8. Digital Diagnostics

Pin	Logic	Name	Description	Notes
1	LVTTL	Rate_Sel	2.5G = Low, 10G = High	
2	LVTTL-O	TX_Fault	High voltage: TX Laser fault or safety, low voltage: Normal operation	
3	LVTTL-I	Tx_Disable	Active high to disable laser	
4		SDA	2-Wire serial interface SDA	
5		SCL	2-Wire serial interface SCL	
6		MOB_ABS	Module Ground	
7		RESET	Reset for TIA/LIA, Active High	
8	LVTTL	Rx_SD	Receiver signal detect, logic 1 indicates normal operation	
9	LVTTL	RSSI_Trigger	RSSI trigger input, active high	
10		GND	Module Ground	
11		GND	Module Ground	
12	CML	RD-	2.5/10G CML output with DC coupling	
13	CML	RD+	2.5/10G CML output with DC coupling	
14		GND	Module Ground	
15		VCC	+3.3V Power supply	
16		VCC	+3.3V Power supply	
17		GND	Module Ground	
18	CML	TD+	10G CML input with AC coupling	
19	CML	TD-	10G CML input with AC coupling	
20		GND	Module Ground	

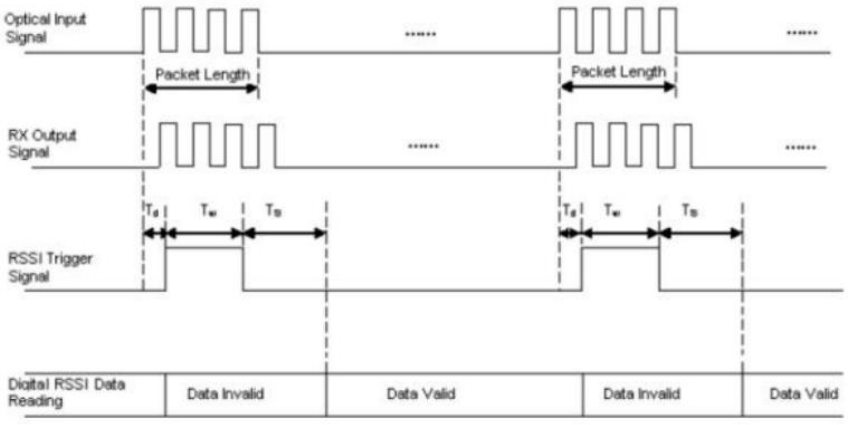
9. Additional Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Packet Length		575			ns	
RSSI Trigger Delay	Td	25			ns	
RSSI Trigger Width	Tw	500			ns	
RSSI Sampling Time	TSAMPLE	500			ns	
Delay before Read	Ts	500			us	

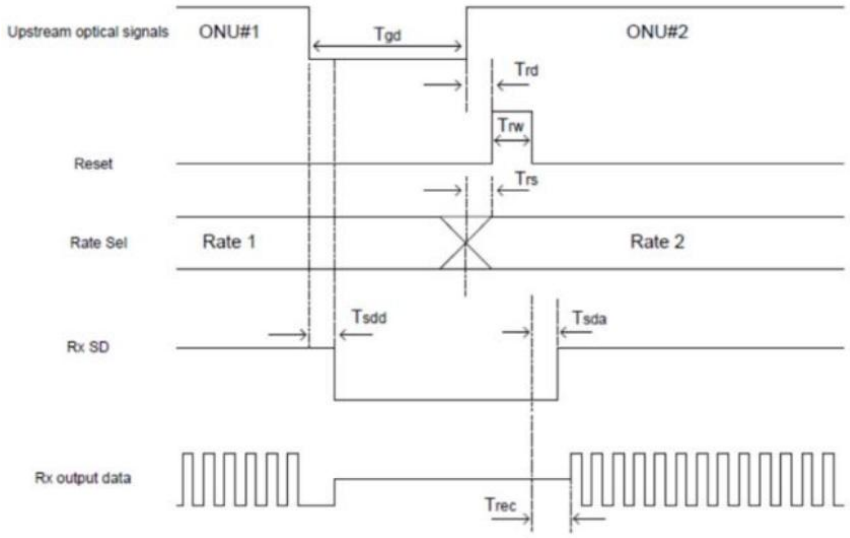
10. Additional Specifications

Parameters	Symbol	Min	Typ	Max	Units	Notes
Guard Time	Tgd	51.2	-	-	ns	
Reset Delay	Trd	0	-	-	ns	1
Reset Width	Trw	25.6	-	-	ns	
RateSel Setup Time	Trs	5	-	-	ns	2
SD Assert Time	Tsda	0	-	51.2	ns	
SD De-assert Time	Tsdd	-	100	-	ns	3
Data Recovery Time	Trec	0	51.2	100	ns	

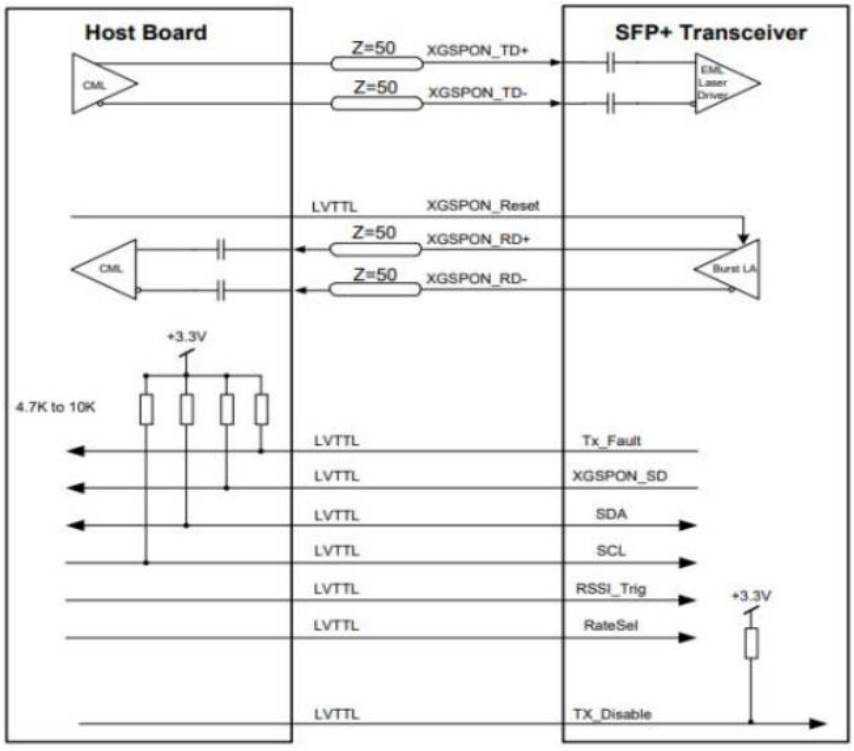
11. RSSI Timing



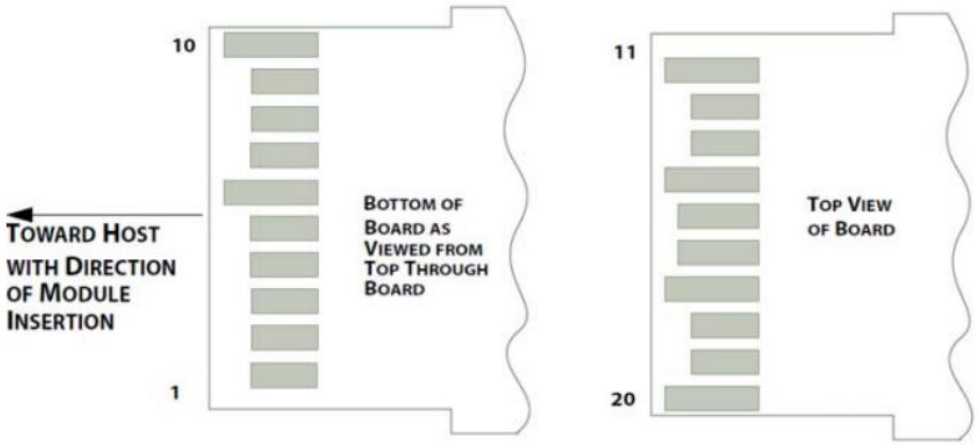
12. Burst-Mode Receiver Timing



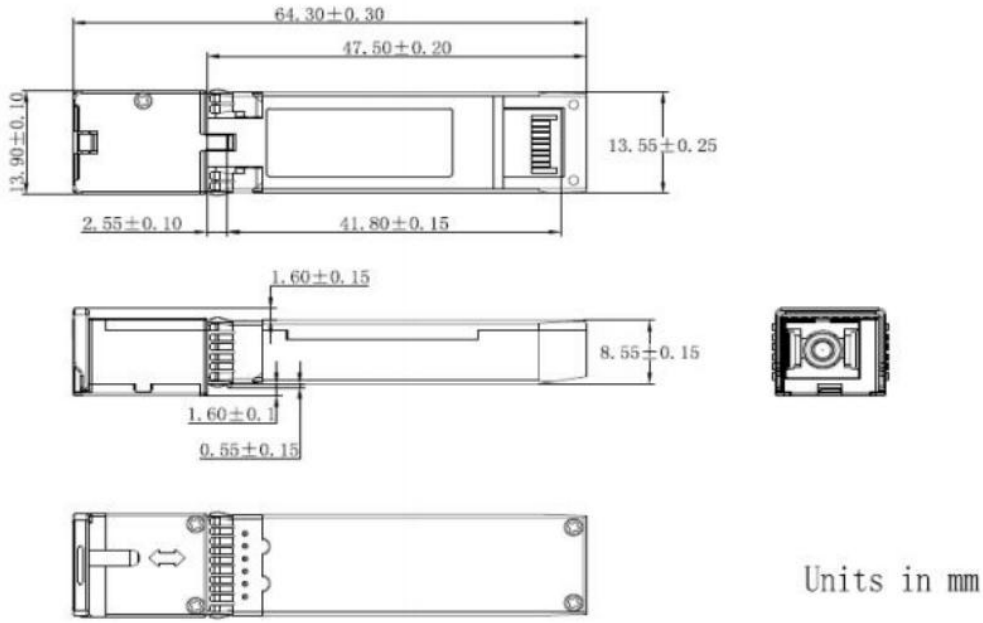
13. Electrical Interface



14. Pin Assignment



15. Mechanical Specifications



16. Revision History

Version	Date	Description	Prepared by
V6	2025	Unified WincoTek datasheet format	WincoTek
V6.1	2026-10-23	Engineering and format review	WincoTek