WTXGSP01

SFP+ OLT Transceiver XGS-PON/GPON Combo OLT Quadplexer Data Sheet / Product Description 3



1. Product Overview

The WTXGSP01 is a combination of XGS-PON OLT and GPON OLT optical transceiver in an SFP+ housing. It is designed to support both the XGS-PON OLT and the GPON OLT specifications over a single fiber via coarse wave division multiplexing. The XGS-PON bidirectional link is configured with 1270nm/1577nm optics and the GPON link is configured with 1310nm/1490nm optics. The 1270nm and 1310nm optical burst mode receivers incorporate APD/TIA optics for maximum sensitivity. The 10G transmitter incorporates a 1577nm EML laser assembly and the 2.5G transmitter incorporates a 1490nm DFB laser assembly. The transmitters can be controlled by the LVTTL Tx_DISABLE function and the receivers incorporates the LVTTL Rx_SD output.

The WTXGSP01 is designed to support up to 32/64 subscribers over distances of up to 20km. It meets the EEC Directive 2015/863/EU for RoHS compliance.

Features

- SFP+ Package
- 3.3V DC power supply
- 4 Lambda
- SC receptacle optical connector
- Hot pluggable
- 2x10 SFP+ Electrical Interface
- ITU-T G.9807.1 Class N1/N2 compli- ant
- ITU-T G.987.2 Class N1/N2a compli- ant
- ITU-T G.984.2 Class B+/C+ compliant
- Refer to YD-T 1688.8
- Optical Transmitter
- 1577nm CW Mode EML

Applications

- 10 Gigabits Access networks
- FTTH
- FTTB
- FTTC

2. Ordering Information

Part Number and	ODN Class	Latch Type	Latch Type	Temperature Range	Temperature Range	RoHS Compliance	RoHS Compliance
WTXGSP01-BC+	N1- B+	B	SC	C	0ºC to 70ºC	+	RoHS Compliance
WTXGSP01-BH+	N1- B+	B	SC	H	-40ºC to 85ºC	+	RoHS Compliance
WTXGSP01-BCA+	N2-C+	B	SC	C	0ºC to 70ºC	+	RoHS Compliance
WTXGSP01-BHA+	N2-C+	B	SC	H	-40ºC to 85ºC	+	RoHS Compliance

3. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units	Ref
Storage Ambient Temperature	Tstg	-40	+85	ºC	
Relative Humidity - Storage	RHS	5	90	%	
Relative Humidity - Operating	RHO	5	85	%	
Module Supply Voltage	VCC3	0	3.6	V	

4. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units	Notes
Tx_DISABLE	Tx_Dis	0	VCC3+0.5	V	LVTTL
Burst Mode SIGNAL Detect	Rx_SD	0	VCC3+0.5	V	LVTTL
Rx_Reset	Rx_Reset	0	Vcc3+0.5	V	Signal Ended LVTTL input
Digital Rx_RSSI_Trigger Input	TRI	0	VCC3+0.5	V	Single Ended LVTTL Input
I2C Serial Data	SDA	0	VCC3+0.5	V	Single Ended LVTTL I/O
I2C Serial Clock	SCL	0	VCC3+0.5	V	Single Ended LVTTL Input

5. Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Units	Notes
Case Operating Temperature	TCASE	0	-	+70	ºC	Temperature Range = C
Case Operating Temperature	TCASE	-40	-	85	ºC	Temperature Range = H
Module Supply Voltage	Vcc3	3.135	3.3	3.465	V	
Module Supply Current	Icc3	-	750	-	mA	
Power Consumption	P	-	-	3.5	W	

6. Recommended Operating Conditions

Address	Bit	Name	Description
96	ALL	Temperature MSB	Internally measured module temperature. (-40~+95℃)
97	ALL	Temperature LSB	
98	ALL	Vcc MSB	Internally measured supply voltage in transceiver. (3.0~3.6V)

Address	Bit	Name	Description
99	ALL	Vcc LSB	
100	ALL	TX Bias MSB	Internally measured TX Bias Current, the bias current measured as 4uA, which reflect to 16 bits integer range: 0~262mA.
101	ALL	TX Bias LSB	
102	ALL	TX Power MSB	Measured TX output power. Range: -34~+11.2dBm.
103	ALL	TX Power LSB	
104	ALL	RX Power MSB	Measured RX input power. Range: -37~+8.2dBm.
105	ALL	RX Power LSB	

7. Recommended Operating Conditions

Address	Bit	Name	Description
96	ALL	Temperature MSB	Internally measured module temperature. (-40~+95℃)
97	ALL	Temperature LSB	
98	ALL	Vcc MSB	Internally measured supply voltage in transceiver. (3.0~3.6V)
99	ALL	Vcc LSB	
100	ALL	TX Bias MSB	Internally measured TX Bias Current, the bias current measured as 4uA, which reflect to 16 bits integer range: 0~262mA.
101	ALL	TX Bias LSB	
102	ALL	TX Power MSB	Measured TX output power. Range: -34~+11.2dBm.
103	ALL	TX Power LSB	
104	ALL	RX Power MSB	Measured RX input power. Range: -37~+8.2dBm.
105	ALL	RX Power LSB	
106	ALL	Reserved MSB	Reserved for 1st future definition of digitized analog input.
107	ALL	Reserved LSB	Reserved for 1st future definition of digitized analog input.
108	ALL	Reserved MSB	Reserved for 2nd future definition of digitized analog input.
109	ALL	Reserved LSB	Reserved for 2nd future definition of digitized analog input.
Converted analog values. Calibrated 16-bit data.	Converted analog values. Calibrated 16-bit data.	Converted analog values. Calibrated 16-bit data.	Converted analog values. Calibrated 16-bit data.

8. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Conditions / Notes
Tx Differential Input Impendence	ZIN	90	100	110	Ω	
10Gb/s Tx Differential Input Amplitude	VIN10	120	-	800	mV	
2.5Gb/s Tx Differential Input Amplitude	VIN1	300	-	1800	mV	
Tx_Dis = HIGH (Transmitter OFF / DISABLED)	VTDH	0.7*VCC3	-	VCC3	V	LVTTL (Control INPUT)
Tx_Dis = LOW (Transmitter ON / ENABLED)	VTDL	0	-	0.8	V	LVTTL (Control INPUT)

9. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Conditions / Notes
Rx Differential Output Impendence	ZOUT	90	100	110	Ω	
10Gb/s Rx_Data Differential Output Voltage Amplitude	VOUT10	300	-	850	mV	LVCML
10Gb/s Output HIGH Voltage	VOH10	Vcc3-20	Vcc3-5	Vcc3	mV	LVCML
10Gb/s Output LOW Voltage	VOL10	Vcc3-400	Vcc3-350	Vcc3-300	mV	LVCML
1.25Gb/s Rx_Data Differential Output Voltage Amplitude	VOUT1	600	-	1600	mV	LVPECL
1.25Gb/s Output HIGH Voltage	VOH1	Vcc3-1085	Vcc3-955	Vcc3-880	mV	LVPECL
1.25Gb/s Output LOW Voltage	VOL1	Vcc3-1850	Vcc3-1705	Vcc3-1555	mV	LVPECL
Rx_SD = HIGH (Receiver ON)	VOH	2.0	-	VCC3	V	LVTTL (Monitor OUTPUT)
Rx_SD = LOW (Receiver OFF)	VOL	0	-	0.8	V	LVTTL (Monitor OUTPUT)
Ratesel/Reset=HIGH	VIH	1.9	-	VCC3	V	Tri-level (Control INPUT)
Ratesel/Reset=Middle	VIM	1.2	-	1.6	V	Tri-level (Control INPUT)
Ratesel/Reset=LOW	VIL	0	-	0.9	V	Tri-level (Control INPUT)
TRI=HIGH	VIH	0.7*VCC3	-	VCC3	V	LVTTL (Control INPUT)
TRI=LOW	VIL	0	-	0.8	V	LVTTL (Control INPUT)

10. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Notes
Laser Type		1577nm CW EML	1577nm CW EML	1577nm CW EML		
Downstream Signal Rate		9.95328	9.95328	9.95328	Gb/s	
Average Launch Power	POUT10	2	-	5	dBm	WTXGSP01- BC+ WTXGSP01- BH+
Average Launch Power	POUT10	4	-	7	dBm	WTXGSP01- BCA+ WTXGSP01- BHA+
Optical Center Wavelength	λ10	1575	-	1580	nm	
Spectral Width	Δλ10	-	-	1.0	nm	
Side Mode Suppression Ratio	SMSR10	30	-	-	dB	

11. Electrical Characteristics

Extinction Ratio	ER10	8.2		-	dB	
Output Eye Diagram	Compliant with ITU-T G.987.2 &ITU-T G.9807.1	Compliant with ITU-T G.987.2 &ITU-T G.9807.1	Compliant with ITU-T G.987.2 &ITU-T G.9807.1	Compliant with ITU-T G.987.2 &ITU-T G.9807.1	Compliant with ITU-T G.987.2 &ITU-T G.9807.1	

12. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Notes
Laser Type		1490nm CW DFB Laser	1490nm CW DFB Laser	1490nm CW DFB Laser		
Downstream Signal Rate		2.48832	2.48832	2.48832	Gb/s	
Average Launch Power	POUT2	1.5	2.5	5	dBm	WTXGSP01- BC+ WTXGSP01- BH+
Average Launch Power	POUT2	3	-	7	dBm	WTXGSP01- BCA+ WTXGSP01- BHA+
Optical Rise and Fall Time	Tr / Tf	-	-	200	ps	20% to 80%
Optical Center Wavelength	λ1	1480	1490	1500	nm	
Spectral Width	Δλ1	-	-	1.0	nm	
Side Mode Suppression Ratio	SMSR1	30	-	-	dB	
Extinction Ratio	ER1	8.2	-	-	dB	
Output Eye Diagram	Compliant with ITU-T G.984.2	Compliant with ITU-T G.984.2	Compliant with ITU-T G.984.2	Compliant with ITU-T G.984.2	Compliant with ITU-T G.984.2	

13. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Notes
Receiver Type		1270nm APD/TIA Receiver	1270nm APD/TIA Receiver	1270nm APD/TIA Receiver		

Parameter	Symbol	Min	Typ	Max	Units	Notes
Upstream Signal Rate		9.95328/2.48832	9.95328/2.48832	9.95328/2.48832	Gb/s	
Optical Center Wavelength	λ	1260	1270	1280	nm	
XGS-PON Receiver Sensitivity1	PIN	-	-	-26	dBm	WTXGSP01- BC+ WTXGSP01- BH+
XGS-PON Receiver Sensitivity1	PIN	-	-	-28	dBm	WTXGSP01- BCA+ WTXGSP01- BHA+
		-	-	-27.5	dBm	WTXGSP01-

14. Electrical Characteristics

XG-PON Receiver Sensitivity2	PIN					BC+ WTXGSP01- BH+
XG-PON Receiver Sensitivity2	PIN	-	-	-29.5	dBm	WTXGSP01- BCA+ WTXGSP01- BHA+
XGS-PON Receiver Optical Overload*	PIN(SAT)	-5	-	-	dBm	WTXGSP01- BC+ WTXGSP01- BH+
XGS-PON Receiver Optical Overload*	PIN(SAT)	-7	-	-	dBm	WTXGSP01- BCA+ WTXGSP01- BHA+
XG-PON Receiver Optical Overload*	PIN(SAT)	-7	-	-	dBm	WTXGSP01- BC+ WTXGSP01- BH+
XG-PON Receiver Optical Overload*	PIN(SAT)	-9	-	-	dBm	WTXGSP01- BCA+ WTXGSP01- BHA+
Damaged Input Optical Power	Pd	-	-	-5	dBm	
Rx_SD Assert	PA	-45	-	-29.5	dBm	
Rx_SD De Assert	PD	-45	-	-29.5	dBm	
Rx_SD Hysteresis	PHy	0	-	7	dB	
Note: 1: BER@10-3 *; Test Condition: PRBS: 231-1, ER=6 dB 2: BER@10-4 *: Test Condition: PRBS: 223-1, ER=6 dB	Note: 1: BER@10-3 *; Test Condition: PRBS: 231-1, ER=6 dB 2: BER@10-4 *: Test Condition: PRBS: 223-1, ER=6 dB	Note: 1: BER@10-3 *; Test Condition: PRBS: 231-1, ER=6 dB 2: BER@10-4 *: Test Condition: PRBS: 223-1, ER=6 dB	Note: 1: BER@10-3 *; Test Condition: PRBS: 231-1, ER=6 dB 2: BER@10-4 *: Test Condition: PRBS: 223-1, ER=6 dB	Note: 1: BER@10-3 *; Test Condition: PRBS: 231-1, ER=6 dB 2: BER@10-4 *: Test Condition: PRBS: 223-1, ER=6 dB	Note: 1: BER@10-3 *; Test Condition: PRBS: 231-1, ER=6 dB 2: BER@10-4 *: Test Condition: PRBS: 223-1, ER=6 dB	Note: 1: BER@10-3 *; Test Condition: PRBS: 231-1, ER=6 dB 2: BER@10-4 *: Test Condition: PRBS: 223-1, ER=6 dB

15. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Notes
Receiver Type		1310nm Burst APD/TIA Receiver	1310nm Burst APD/TIA Receiver	1310nm Burst APD/TIA Receiver		
Upstream Signal Rate		1.24416	1.24416	1.24416	Gb/s	
Optical Center Wavelength	λ	1290	1310	1330	nm	
Receiver Sensitivity1		-	-	-28	dBm	WTXGSP01- BC+ WTXGSP01-

16. Electrical Characteristics

	PIN					BH+
	PIN	-	-	-30	dBm	WTXGSP01- BCA+ WTXGSP01- BHA+
Receiver Sensitivity2	PIN	-	-	-30	dBm	WTXGSP01- BC+ WTXGSP01- BH+
Receiver Sensitivity2	PIN	-	-	-32	dBm	WTXGSP01- BCA+ WTXGSP01- BHA+
Receiver Optical Overload	PIN(SAT)	-7	-	-	dBm	
Damaged Input Optical Power	Pd	-	-	-5	dBm	
Rx_SD Assert	PA	-45	-	-30	dBm	WTXGSP01- BC+ WTXGSP01- BH+
Rx_SD De Assert	PD	-45	-	-30	dBm	WTXGSP01- BC+ WTXGSP01- BH+
Rx_SD Assert	PA	-45	-	-32	dBm	WTXGSP01- BCA+ WTXGSP01- BHA+
Rx_SD De Assert	PD	-45	-	-32	dBm	WTXGSP01- BCA+ WTXGSP01- BHA+
Rx_SD Hysteresis	PHy	0	-	7	dB	
Note: 1: Test Condition: BER@10^{-10}, PRBS 223-1, ER=9dB 2: Test Condition: BER@10^{-4}, PRBS 223-1, ER=9dB	Note: 1: Test Condition: BER@10^{-10}, PRBS 223-1, ER=9dB 2: Test Condition: BER@10^{-4}, PRBS 223-1, ER=9dB	Note: 1: Test Condition: BER@10^{-10}, PRBS 223-1, ER=9dB 2: Test Condition: BER@10^{-4}, PRBS 223-1, ER=9dB	Note: 1: Test Condition: BER@10^{-10}, PRBS 223-1, ER=9dB 2: Test Condition: BER@10^{-4}, PRBS 223-1, ER=9dB	Note: 1: Test Condition: BER@10^{-10}, PRBS 223-1, ER=9dB 2: Test Condition: BER@10^{-4}, PRBS 223-1, ER=9dB	Note: 1: Test Condition: BER@10^{-10}, PRBS 223-1, ER=9dB 2: Test Condition: BER@10^{-4}, PRBS 223-1, ER=9dB	Note: 1: Test Condition: BER@10^{-10}, PRBS 223-1, ER=9dB 2: Test Condition: BER@10^{-4}, PRBS 223-1, ER=9dB

17. Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Units	Notes
Guard Time (GPON)	Tg	25.6	-	-	ns	
Guard Time (XGS-PON)	Tg	51.2	-	-	ns	
Reset Pulse Width (GPON)	Tw	12.8	-	-	ns	Note 1
Reset Pulse Width (XGS-PON)	Tw	25.6	-	-	ns	Note 1
Reset time overlapping preamble	t_overlap	0	-	-	ns	
Setup time of rate level for following burst	t_setup	5	-	-	ns	
Burst Signal Detect Assert (GPON)	T_SDA	-	-	25.6	ns	
Burst Signal Detect Assert (XGS-PON)	T_SDA	-	25	100	ns	
Burst Signal Detect De-assert (GPON)	T_SDD	-	-	100	ns	Note 2
Burst Signal Detect De-assert (XGS-PON)	T_SDD	-	-	100	ns	Note 2

18. Electrical Characteristics

Burst Mode Receiver Setting Time (GPON)	Tsettle	-	-	19.2	ns	
Burst Mode Receiver Setting Time (XGS- PON)	Tsettle	-	100	-	ns	
Note 1: Reset pulse is required to be partially inside preamble. Note 2: Auto reset function is applied. Signal detect de-assert time is about 100ns forced by auto reset, and will short to about 20ns with external Reset pulse.	Note 1: Reset pulse is required to be partially inside preamble. Note 2: Auto reset function is applied. Signal detect de-assert time is about 100ns forced by auto reset, and will short to about 20ns with external Reset pulse.	Note 1: Reset pulse is required to be partially inside preamble. Note 2: Auto reset function is applied. Signal detect de-assert time is about 100ns forced by auto reset, and will short to about 20ns with external Reset pulse.	Note 1: Reset pulse is required to be partially inside preamble. Note 2: Auto reset function is applied. Signal detect de-assert time is about 100ns forced by auto reset, and will short to about 20ns with external Reset pulse.	Note 1: Reset pulse is required to be partially inside preamble. Note 2: Auto reset function is applied. Signal detect de-assert time is about 100ns forced by auto reset, and will short to about 20ns with external Reset pulse.	Note 1: Reset pulse is required to be partially inside preamble. Note 2: Auto reset function is applied. Signal detect de-assert time is about 100ns forced by auto reset, and will short to about 20ns with external Reset pulse.	Note 1: Reset pulse is required to be partially inside preamble. Note 2: Auto reset function is applied. Signal detect de-assert time is about 100ns forced by auto reset, and will short to about 20ns with external Reset pulse.

19. Additional Specifications

Parameter	Symbol	Min	Typ	Max	Units	Notes
Optical Input Signal Width	Tont	525	-	-	ns	
RSSI Trigger Delay	Ttri (TRI Delay)	25	-	3000	ns	
RSSI Trigger Width	TI2C (TRI Width)	500	-	Tont – Ttri	ns	
I2C Protect Time	Tp	500	-	-	μs	
RSSI Monitor Range	Pmon	-6	-	-30	dBm	XGS-PON
RSSI Monitor Range	Pmon	-6	-	-30	dBm	XGPON
RSSI Monitor Range	Pmon	-8	-	-30	dBm	GPON
RSSI Precision	Prssi	-3	+/-1	3	dB	
Ttri+Ti2c<Tont	Ttri+Ti2c<Tont	Ttri+Ti2c<Tont	Ttri+Ti2c<Tont	Ttri+Ti2c<Tont	Ttri+Ti2c<Tont	Ttri+Ti2c<Tont

20. Additional Specifications

Address	Bytes	Name	Description	Hex Value
0	1	Identifier	SFP Plus	03
1	1	Ext. Identifier	Serial ID module	04
2	1	Connector	SC connector	01
3-10	8	Transceiver	Combo OLT	00 00 00 00 00 00 00 00
11	1	Encoding	NRZ	03
12	1	BR Nomina	9.953 Gbps	64
13	1	Rate Identifier	Reserved	00
14	1	Length (SMF, km)	20km	14

Address	Bytes	Name	Description	Hex Value
15	1	Length (SMF)	20km	C8
16	1	Length (50um)	Not support	00
17	1	Length (62.5um)	Not support	00
18	1	Length (Copper)	Not support	00
19	1	Length (OM3)	Not support	00
20-35	16	Vendor Name	57 69 6E 63 6F 54 65 6B 20 20 20 20 20 20 20 20	WincoTek (ASCII)
36	1	Transceiver	Unallocated	00
37-39	3	Vendor OUI	SFP vendor IEEE company ID	00 00 00 (placeholder; assign authorized OUI at programming)
40-55	16	Vendor PN	16-byte ASCII, per ordered WT model	WTXGSP01-BC+/WTXGSP01-BH+ /WTXGSP01-BCA+/WTXGSP01-BHA+
56-59	4	Vendor Rev	Revision level for part number	Customized
60-61	2	Wavelength	1577nm	06 29
62	1	Unallocated		00
63	1	CC_BASE	Check code (0 to 62)	
64-65	2	Options	Coold LD, power level 3, limiting receiver output	24
64-65	2	Options	TxDisable, TxFault, SD implemented	1C
66	1	BR, max	Upper bit rate margin, unit of %	00
67	1	BR, min	Lower bit rate margin, unit of %	00
68-83	16	Vendor SN	Serial number provided by vendor	

21. Additional Specifications

84-91	8	Date Code	Vendor’s manufacturing date code	
92	1	Diagnostic Monitoring Type	Internal cal, Average power	68
93	1	Enhanced Options	Optional alarm/warning implemented. Soft TX_DIS, TX_FAULT implemented	E0
94	1	SFF Compliance		08
95	1	CC_EXT	Check code (64 to 94)	
96-127	32	Vendor Specific	Vendor Specific EEPROM	
128-255	128	Reserved		

22. Additional Specifications

0	1	Identifier	SFP Plus	03
1	1	Ext.Identifier	Serial ID module	04
2	1	Connector	SC Connector	01
3-10	8	Transceiver	Combo OLT	00 00 00 00 00 00 00 00
11	1	Encoding	NRZ	03
12	1	BR, Nomina	2.5Gbps	19
13	1	Rate Identifier	Reserved	00
14	1	Length (SMF, km)	20km	14
15	1	Length (SMF)	20km	C8
16	1	Length (50um)	Not support	00
17	1	Length (62.5um)	Not support	00
18	1	Length (Copper)	Not support	00
19	1	Length (OM3)	Not support	00
20-35	16	Vendor name	57 69 6E 63 6F 54 65 6B 20 20 20 20 20 20 20 20	WincoTek (ASCII)
36	1	Transceiver	Unallocated	00
37-39	3	Vendor OUI	SFP vendor IEEE company ID	00 00 00 (placeholder; assign authorized OUI at programming)
40-55	16	Vendor PN	16-byte ASCII, per ordered WT model	WTXGSP01-BC+/WTXGSP01-BH+ /WTXGSP01-BCA+/WTXGSP01-BHA+
56-59	4	Vendor Rev	Revision level for part number	Customized

23. Additional Specifications

60-61	2	Wavelength	1490nm	05 D2
62	1	Unallocated		00
63	1	CC_BASE	Check code (0 to 62)	
64-65	2	Options	Uncoold LD, Power Level 2, Limiting Re- ceiver Output	20
64-65	2	Options	TxDisable, TxFault, SD implemented	1C
66	1	BR, max	Upper bit rate margin, units of %	00
67	1	BR, min	Lower bit rate margin, units of %	00
68-83	16	Vendor SN	Serial number provided by vendor	
84-91	8	Date Code	Vendor’s manufacturing date code	
92	1	Diagnostic Monitoring Type	Internal Cal, Average Power	68

60-61	2	Wavelength	1490nm	05 D2
93	1	Enhanced Options	Optional Alarm/warning implemented. Soft TX_DIS, TX_FAULT implemented.	E0
94	1	SFF Compliance		08
95	1	CC_EXT	Check code (64 to 94)	
96-127	32	Vendor Specific	Vendor Specific EEPROM	
128-255	128	Reserved		

24. Additional Specifications

106	ALL	Reserved MSB	Reserved for 1st future definition of digitized analog input.
107	ALL	Reserved LSB	Reserved for 1st future definition of digitized analog input.
108	ALL	Reserved MSB	Reserved for 2nd future definition of digitized analog input.
109	ALL	Reserved LSB	Reserved for 2nd future definition of digitized analog input.
Converted analog values. Calibrated 16-bit data.	Converted analog values. Calibrated 16-bit data.	Converted analog values. Calibrated 16-bit data.	Converted analog values. Calibrated 16-bit data.

25. Additional Specifications

Address	Hex Value	Name	Description
0	55	Temperature High Alarm Threshold	85.00℃
1	00	Temperature High Alarm Threshold	85.00℃
2	DC	Temperature Low Alarm Threshold	-35.00℃
3	00	Temperature Low Alarm Threshold	-35.00℃
4	50	Temperature High Warning Threshold	80.00℃
5	00	Temperature High Warning Threshold	80.00℃
6	E1	Temperature Low Warning Threshold	-30.00℃
7	00	Temperature Low Warning Threshold	-30.00℃
8	8C	Voltage High Alarm Threshold	3.60V
9	A0	Voltage High Alarm Threshold	3.60V
10	75	Voltage Low Alarm Threshold	3.00V
11	30	Voltage Low Alarm Threshold	3.00V
12	87	Voltage High Warning Threshold	3.465V
13	5A	Voltage High Warning Threshold	3.465V
14	7A	Voltage Low Warning Threshold	3.135V
15	76	Voltage Low Warning Threshold	3.135V

Address	Hex Value	Name	Description
16	EA	Bias High Alarm Threshold	120.00mA
17	60	Bias High Alarm Threshold	120.00mA
18	27	Bias Low Alarm Threshold	20.00mA
19	10	Bias Low Alarm Threshold	20.00mA
20	D6	Bias High Warning Threshold	110.00mA
21	D8	Bias High Warning Threshold	110.00mA
22	30	Bias Low Warning Threshold	25.00mA
23	D4	Bias Low Warning Threshold	25.00mA
24	FF	TX Power High Alarm Threshold	7dBm（WTXGSP01-BC+/BH+） 9dBm（WTXGSP01-BCA+/BHA+）
25	FF	TX Power High Alarm Threshold	7dBm（WTXGSP01-BC+/BH+） 9dBm（WTXGSP01-BCA+/BHA+）
26	31	TX Power Low Alarm Threshold	0dBm （WTXGSP01-BC+/BH+） 2dBm（WTXGSP01-BCA+/BHA+）
27	2D	TX Power Low Alarm Threshold	0dBm （WTXGSP01-BC+/BH+） 2dBm（WTXGSP01-BCA+/BHA+）
28	F6	TX Power High Warning Threshold	6dbm（WTXGSP01-BC+/BH+） 8dBm（WTXGSP01-BCA+/BHA+）
29	78	TX Power High Warning Threshold	6dbm（WTXGSP01-BC+/BH+） 8dBm（WTXGSP01-BCA+/BHA+）
30	3D	TX Power Low Warning Threshold	1dBm （WTXGSP01-BC+/BH+） 3dBm （WTXGSP01-BCA+/BHA+）
31	E9	TX Power Low Warning Threshold	1dBm （WTXGSP01-BC+/BH+） 3dBm （WTXGSP01-BCA+/BHA+）
32	09	RX Power High Alarm Threshold	-6.00dBm
33	D0	RX Power High Alarm Threshold	-6.00dBm
34	00	RX Power Low Alarm Threshold	-34.00dBm
35	04	RX Power Low Alarm Threshold	-34.00dBm
36	06		

26. Additional Specifications

37	31	RX Power High Warning Threshold	-8.00dBm
38	00	TX Power Low Warning Threshold	-32.00dBm

27. Additional Specifications

Address	Hex Value	Name	Description
40	3A	Reserved for TOSA Temp High Alarm, not sup- ported.	58.00℃
41	00	Reserved for TOSA Temp High Alarm, not sup- ported.	58.00℃
42	1E	Reserved for TOSA Temp Low Alarm, not support- ed.	30.00℃
43	00	Reserved for TOSA Temp Low Alarm, not support- ed.	30.00℃
44	38	Reserved for TOSA Temp High Warning, not sup- ported.	56.00℃
45	00	Reserved for TOSA Temp High Warning, not sup- ported.	56.00℃
46	20	Reserved for TOSA Temp Low Warning, not sup- ported.	32.00℃

28. Additional Specifications

Address	Hex Value	Name	Description
16	C3	Bias High Alarm Threshold	100.00mA
17	50		
18	03	Bias Low Alarm Threshold	2.00mA
19	E8		
20	AF	Bias High Warning Threshold	90mA
21	C8		
22	05	Bias Low Warning Threshold	3.00mA
23	DC		
24	F6	TX Power High Alarm Threshold	7dBm（WTXGSP01-BC+/BH+） 9dBm（WTXGSP01-BCA+/BHA+）

29. Additional Specifications

25	78		
26	3D	TX Power Low Alarm Threshold	0dBm（WTXGSP01-BC+/BH+） 1dBm（WTXGSP01-BCA+/BHA+）
27	E9		
28	C3	TX Power High Warning Threshold	6dBm（WTXGSP01-BC+/BH+） 8dBm（WTXGSP01-BCA+/BHA+）
29	C7		
30	4D	TX Power Low Warning Threshold	0.5dBm（WTXGSP01-BC+/BH+） 2dBm（WTXGSP01-BCA+/BHA+）

25	78		
31	F1		
32	09	RX Power High Alarm Threshold	-6.00dBm
33	D0		
34	00	RX Power Low Alarm Threshold	-33.00dBm
35	05		
36	06	RX Power High Warning Threshold	-8.00dBm
37	31		
38	00	RX Power Low Warning Threshold	-31.00dBm
39	08		

30. Additional Specifications

Address	Bit	Name	Description
118	7	RSSI Select	Writing “0” for XGS-PON/XGPON RSSI Monitor; Writing “1” for GPON RSSI Monitor. Default power up value is “0”.
118	6	RSSI/TX_disable Select	When set “0”, PIN9 input as TX_Disable input; When set “1”, PIN9 as RSSI input. Default power up value is “0”.

31. Additional Specifications

Register 118	Bit6	Bit7	Register 118 is used to control Hardware TX-Dis and RSSI switch
TX-Disable Mode	0	X	GPON and XGSPON Hardware TX-Dis state is control by PIN9 input signal. When PIN9 is High level GPON and XGSPON Hardware TX-Dis state is disable, When PIN9 is LOW level GPON and XGSPON Hardware TX-Dis state is enable,
RSSI Mode	1	1	GPON RSSI is triggered by PIN9 . GPON and XGSPON Hardware TX-Dis state is always enable
RSSI Mode	1	0	XGSPON RSSI is triggered by PIN9. GPON and XGSPON Hardware TX-Dis state is always enable

32. Additional Specifications

Hardware TX-Dis state	A2h Register 110 Bit 6（Soft TX-Disable control）
Enable	Read /Write Bit to control software disable laser. Write “0” enable XGSPON La- ser, write “1” disable XGSPON Laser
Disable	The XGSPON laser is always off

33. Additional Specifications

Hardware TX-Dis state	B2h Register 110 Bit 6（Soft TX-Disable control）
Enable	Read /Write Bit to control software disable laser. Write “0” enable GPON Laser， write“1” disable GPON Laser
Disable	The GPON laser is always off

34. Additional Specifications

Pin	Name	Description	Notes
1	GPON_TD+	Transmit non-inverted 2.48832Gb/s Data Input; AC coupled inside the module.	
2	GPON_TD-	Transmit Inverted 2.48832Gb/s Data Input; AC coupled inside the module.	
3	GND	Module Ground.	
4	SDA	2-Wire Serial Interface Data Line, with the pull-up resistance: 4.7kΩ～10kΩ.	
5	SCL	2-Wire Serial Interface Clock, with the pull-up resistance: 4.7kΩ～10kΩ.	
6	GPON_RD-	Receive Burst Mode Inverted 1.24416Gb/s Data Output; DC coupled inside the module.	1
7	Ratesel/Reset	Three-level input combining “Rate Select” and “Reset” information. Set high level to reset TIA/LA. Middle level indicates 2.5G data rate. Low level indicates 10G data rate.	
8	XGS-PON_SD	Receiver Signal Detect Indicator for XGS-PON/XGPON Receiver, when Low, indicates insufficient optical input power to the module; when High, means in normal.	
9	Trig/Txdis	Two signals multiplex, which selected by the register. Receiver signal strength indication trigger for Digital RSSI. As TXdisable, when Low level, the transceiver port work in normal; when High level, both 10Gb/s and 2.5Gb/s are disabled.	
10	GPON_RD+	Receive Burst Mode Non-Inverted 1.24416Gb/s Data Output; DC coupled inside the module.	1
11	GND	Module Ground.	
12	XGS-PON_RD-	Receive Burst Mode Inverted 9.953 or 2.48832Gb/s Data Output. DC coupled inside the module.	
13	XGS-PON_RD+	Receive Burst Mode Non-Inverted 9.953 or 2.48832Gb/s Data Output. DC coupled inside the module.	

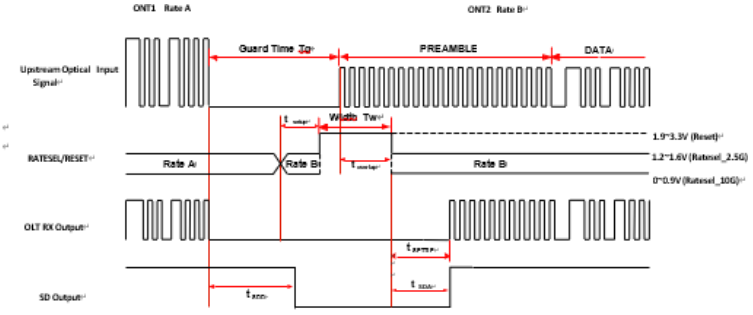
Pin	Name	Description	Notes
14	GPON_SD	Receiver Signal Detect Indicator for G-PON Receiver. When Low, indicates insufficient optical input power to the module. When High, means in normal.	
15	VCC3_RX	+3.3V power supply for RX. Tolerance: 3.3V±5%.	
16	VCC3_TX	+3.3V power supply for TX. Tolerance: 3.3V±5%.	

35. Additional Specifications

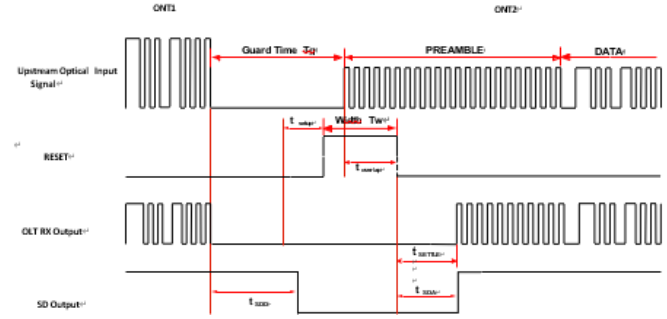
17	GPON_Reset	**Burst Mode Receiver Reset for GPON Receiver. When HIGH, indicates the receiver is OFF/being reset.**	
18	XGS-PON_TD+	Transmit non-inverted 9.95328Gb/s Data Input; AC coupled inside the module.	
19	XGS-PON/_TD-	Transmit Inverted 9.95328Gb/s Data Input; AC coupled inside the module.	
20	GND	Module Ground.	

36. Technical Figure 1

LTF5308B Time Diagram(XGS)



LTF5308B Time Diagram(G)



37. Revision History

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