XPON ONU STICK (MAC Inside)

l Applications 3

Part Number WTXPON-ONU-STICK



1. Product Overview

Features

- XPON ONU stick with MAC inside.
- GPON and EPON operation according to the selected configuration.
- 1310 nm transmitter and 1490 nm receiver.
- Up to 20 km over single-mode fiber; SC/PC connector.
- GPON Tx/Rx: 1.244/2.488 Gb/s; EPON: 1.25/1.25 Gb/s.
- Commercial 0 to 70 °C and industrial -40 to 85 °C options.
- 3.3 V nominal supply; maximum power dissipation 2.5 W.

Applications

2. Ordering Information

D	FP	-	34	X	-	2	C	C	2
WincoTek	SFP		TX:1310 RX:1490	G: GPON		20KM	I	-40~+85 °C	2： SC/PC
				E: EPON			C	0~70°C	
				X: Compatible with GPON and EPON					

3. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max	Unit	Notes
Storage Ambient Temperature	TSTG	-40	85	°C	
Operating Case Temperature	Tc	0	70	°C	
	Tc	-40	85	°C	
Operating Humidity	OH	5	95	%	
Power Supply Voltage	VCC	-0.5	3.6	V	

4. Absolute Maximum Ratings

Parameter	Symbol	Min. Typ.	Max. Unit	Max. Unit	Notes
Power Supply Voltage	VCC	3.13 3.3	3.47 V	3.47 V	3.47 V
Power Dissipation	PD	- 2.10	2.5 W	2.5 W	Max value under High temp environment
Operating Case Temperature	Tc	0	+70 °C	+70 °C	+70 °C
	Tc	-40	+85 °C	+85 °C	+85 °C
Operating Humidity Range	OH	5	95 %	95 %	95 %
Data Rate		TX:1.244 / RX:2.488		Gbit/s	GPON MODE EPON MODE
TX:1.25 / RX:1.25	TX:1.25 / RX:1.25	TX:1.25 / RX:1.25	TX:1.25 / RX:1.25	Gbit/s	GPON MODE EPON MODE
Data Rate Drift		-100	+100 PPM	+100 PPM	+100 PPM

5. Absolute Maximum Ratings

Parameter	Symbol	Min. Typ. Max.	Unit	Note
Optical Center Wavelength	λC	1290 1310 1330	nm	
Spectral Width (-20dB)	Δλ	1	nm	
Side Mode Suppression Ratio	SMSR	30	dB	
Average Launch Optical Power	AOP	0.5 4	dBm	Launched into SMF Fiber
Burst off Average Output Power		-45	dBm	
Extinction Ratio	ER	10	dB	
Rise/Fall Time (20%-80%)	TR/TF	0.26 ns	0.26 ns	Unfiltered PRBS 223 - 1@1244.16 Mbps
RIN15OMA		-115	dB/Hz	
Optical Return Loss Tolerance		-15	dB	
Transmitter Reflectance		-10	dB	
Transmitter and Dispersion Penalty	TDP	1	dB	Transmit on 20km SMF.
Optical Waveform Diagram		Compliant With ITU-T G984.2	Compliant With ITU-T G984.2	PRBS 223 –1 @1244.16Mbps

6. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Input Differential Swing		300		1800	mV	CML input, AC coupled
Input Differential Impedance		90	100	110	Ω	

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter TxDisable Control Voltage -		0		0.8	V	
Transmitter TxDisable Voltage - High		2.0		VCC	V	
Transmitter Fault Alarm Voltage - Low		0		0.4	V	
Transmitter Fault Alarm Voltage – High		2.4		Vcc	V	

7. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Operating Wavelength	λc	1480	1490	1500	nm	
Sensitivity	SEN			-28	dBm	PRBS 223 - 1 @1G~2.5Gbps
Saturation Optical Power	SAT	-8			dBm	
Loss of Signal De-Assert	LOSD			-29	dBm	
Loss of Signal Assert	LOSA	-40			dBm	
Signal-Detected Hysteresis		0.5		6	dB	
Receiver Reflectance				-12	dB	λ=1490nm
WDM Filter Isolation		38			dB	λ=1550nm
WDM Filter Isolation		35			dB	λ=1650nm

8. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Output Differential Swing		300		1200	mV	CML output, AC coupled
Loss of Signal - Low		0		0.4	V	
Loss of Signal - High		2.4		VCC	V	

9. Electrical Characteristics

PIN	Name	Description	Notes
1	VeeT	Transmitter Ground	Note 5
2	TX Fault	Transmitter Fault Indication	Note 1
3	TX Disable	NC	
4	MOD-DEF2	Module Definition 2	Note 3,2 wire serial ID Interface

PIN	Name	Description	Notes
5	MOD-DEF1	Module Definition 1	Note 3,2 wire serial ID Interface
6	MOD-DEF0	Module Definition 0	Note 3 Grounded in Module
7	Rate	NC	-
8	LOS	Loss of Signal	Note 4
9	VeeR	Receiver Ground	Note 5
10	VeeR	Receiver Ground	Note 5
11	VeeR	Receiver Ground	Note 5
12	RD-	Inv. Received DataOut	Note 6
13	RD+	Received Data Out	Note 6
14	VeeR	Receiver Ground	Note 5
15	VccR	Receiver Power	3.3 ±5%, Note 7
16	VccT	Transmitter Power	3.3 ±5%, Note 7
17	VeeT	Transmitter Ground	Note 5
18	TD+	Transmit Data In	Note 8
19	TD-	Inv.Transmit Data In	Note 8
20	VeeT	Transmitter Ground	Note 5

10. Additional Specifications

Data Addr	Field Size (Byte)	Name Of filed	Hex	Coded value
0(00)	1	Identifier	03	SFP
1(01)	1	Ext .Identifier	04	GBIC/SFP function is defined by serial ID only
2(02)	1	Connector	01	SC
3(03)			00	
4(04)			00	
5(05)			00	
6(06)		Transceiver	02	
	8			
7(0X07)		(Note 3)	00	
8(0X08)			00	
9(0X09)			00	
10(0X0A)			00	
11(0X0B)	1	Encoding	03	NRZ
12(0C)	1	BR, Nominal	0C	1.244 Gb/s
13(0D)	1	Reserved	00	

11. Additional Specifications

14(0E) 1 Length (9m) 14 20(km)
15(0F) 1 Length (9m) C8 200(100m)
16(10) 1 Length (50um) 00
17(11) 1 Length (62.5um) 00
18(12) 1 Length (Copper) 00
19(13) 1 Reserved 00
20-35 | Vendor Name (16 bytes) | 57 69 6E 63 6F 54 65 6B 20 20 20 20 20 20 20 20 | WincoTek (ASCII)
36(24) 1 Reserved 00
37(25) 00 38(26) 3 Vendor OUI 00 39(27) 00
40-55 | Vendor PN (16 bytes) | 57 54 58 50 4F 4E 2D 4F 4E 55 2D 53 54 49 43 4B | WTXPON-ONU-STICK (ASCII)

12. Additional Specifications

52(34)			--	X
53(35)			--	<space>
54(36)			--	<space>
55(37)			--	<space>
56(38)			31	1
57(39) 58(3A)	4	Vendor rev (Note3)	30 20	0 <space>
59(3B)			20	<space>
60(3C)	2	Wavelength	05	1310nm
61(3D)			1E	
62(3E)	1	Reserved	00	
63(3F)	1	CC_BASE	00	Note1
64(40)	2	Options	00	TX_FAULT, LOS
65(41)			0A	
66(42)	1	BR, max	00	
67(43)	1	BR, min	00	
68(44)			FF	
69(45)			FF	
70(46)			FF	
71(47)			FF	
72(48)			FF	
73(49)			FF	
74(4A)			FF	
75(4B)		Vendor SN	FF	
	16			

52(34)			--	X
76(4C)		(Note3)	FF	
77(4D)			FF	
78(4E)			FF	
79(4F)			FF	
80(50)			FF	
81(51)			FF	
82(52)			FF	
83(53)			FF	
84(54)	8	Date code	xx	Year
85(55)		(Note3)	xx	Year
86(56)			xx	Month
87(57)			xx	Month
88(58)			xx	Day
89(59)			xx	Day

13. Additional Specifications

90(5A)			20	<Space>
91(5B)			20	<Space>
92(5C)	1	Diagnostic Monitoring Type	68	DD Implemented; Internally Calibrated; Average Power
93(5D)	1	Enhanced Options	B0	Optional Alarm/warning Flags Implemented;TX_FAULT;RX_LOS;
94(5E)	1	SFF-8472 Compliance	02	Rev 9.4of SFF-8472.
95(5F)	1	CC_EXT	FF	Note 2

14. Additional Specifications

	TX_DISABLE_STATE	TX_DISABLE_STATE		-
	SOFT_TX_DISABLE	Enables direct control of the transmitter via I2C		Disable
	ROGUE_ONU	Set this bit to"1" on the occurrence of a rogue ONU condition. Set to "0" to reset.		-
	N/A			-
110(6E)	ROGUE_TXP_LO_FL AG	Set to 1 when TXP_LO_FLAG has been set in Rogue_TXP_LO_EN bit enable.	XX	-
	TX_FAULT_STATE	TX_FAULT_STATE		-
	RX_LOS_STATE	RX_LOS_STATE		-

	TX_DISABLE_STATE	TX_DISABLE_STATE		-
	DATA_READY_BAR_ STATE	Indicates LDD has achieved power and data is ready. Bit stays high until data is ready at which time the LDD sets this bit low		-
111(6F)	N/A		40	-
		Default "0" means on de-assert of TX_SLEEP,		Set to "1" enable the
	TX_FAST_SLEEP	Tx implements a reset start. Set to "1" enable the Tx to use the last known bias & mod		Tx to use the last known bias & mod
		values.		values.
	RX_SLEEP_ASSERT	Set to 1 enable RX_SLEEP mode		disable
	RX_SLEEP_STATE	RX_SLEEP_STATE		-
	TX_SLEEP_STATE	TX_SLEEP_STATE		-

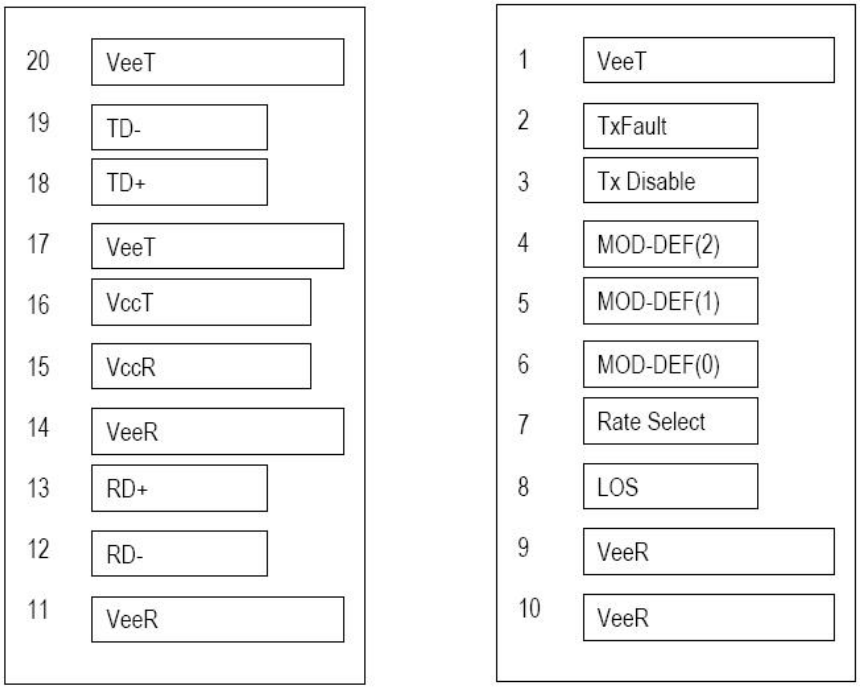
15. Additional Specifications

	POW_LEV		Sets the GPON power leveling control		00=0dB
112(70)	Alarm_flags1		alarm & warning flags	00	00
113(71)	Alarm_flags2		alarm & warning flags	00	00
114(72)	Rogue ONU Setup Reserved	Timer	Sets the interval time for counters located at 78h and 79h.4 vaules are avialable.80h=40ms,40h=80ms,20h=160ms,10h=320ms.	80	set as 80h=40ms
115(73)	Reserved			FF	
116(74)	Warning_flag1		alarm & warning flags	xx	xx
117(75)	Warning_flag2		alarm & warning flags	xx	xx
118(76)	Reserved			FF	
119(77)	unallocated			FF	
120-255	Reserved		Reserved for debug information		

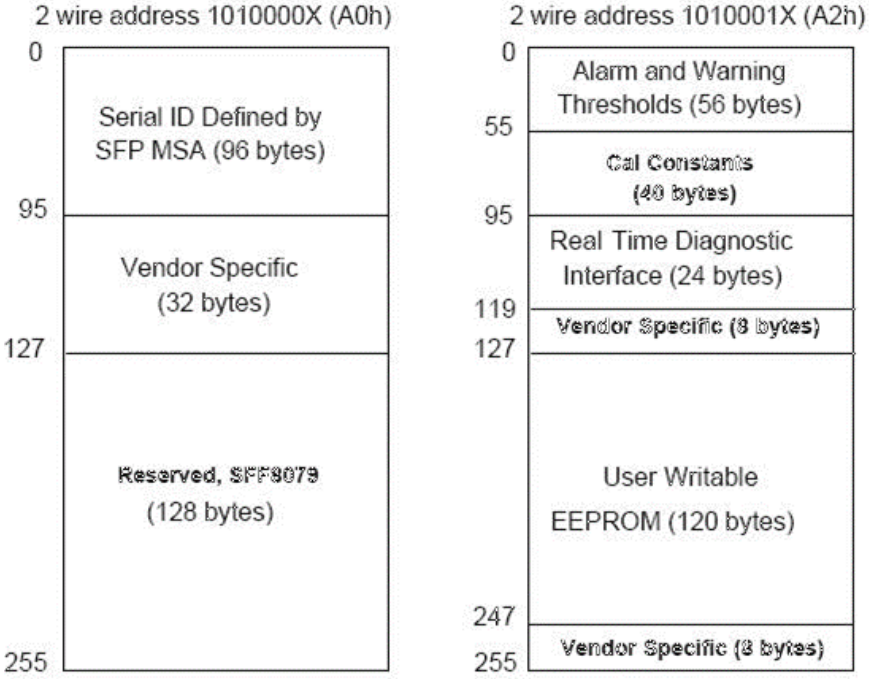
16. Additional Specifications

Parameter	Range	Accuracy	Calibration
Temperature	-40 to 85°C (I Temp)	±3°C	Internal
	0 to 70°C （ C Temp）	±3°C	Internal
Voltage	0 to 3.7V	±3%	Internal
Bias Current	0 to 130mA	±10%	Internal
TX Power	-10 to 8 dBm	±2dB	Internal
RX Power monitor	-30 to -8 dBm	±2dB	Internal

17. Technical Figure 1



18. Technical Figure 2



19. Revision History

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