

Applications

GPON ONU Side

Voice / Data / Video FTTx

Standards

ITU-T G.984.2 Class B+

ITU-T G.984.5

SFF-8472 Rev 9.5

RoHS 6

Descriptions

RTXM170-601-C45 GPON ONU Triplexer Transceiver is designed for Gigabit-capable Passive Optical Network (GPON). The Triplexer comprise of a Burst Mode optical transmitter, a Continuous Mode optical receiver and an Analog CATV receiver.

The Digital transmitter uses a 1310nm DFB laser diode and an integrated Burst Mode laser driver which designed to perform very small burst enable/disable delay time. The transmitter also incorporates an Automatic Power Control(APC) circuit and an Automatic Temperature Control(ATC) circuit to keep the launch optical power and extinction ratio over an operating case temperature of 0~+85℃.

The Digital receiver uses an integrated 1490nm APD photodiode and preamplifier mounted together. It has the function that indicates receiver signal-detected status (active high).

The Analog CATV receiver uses a 1555nm PIN photodiode and a high performance RF amplifier. It contains an Automatic Gain Control(AGC) circuit to keep the output effective voltage level over an input optical power range of -8dBm~+2dBm and contains a Spectrum Balance Network(SBN) circuit to keep the output tilt over a wideband of 45MHz~1002Hz.

The Triplexer features a digital diagnostic and control function through a digital serial I2C interface.

Block diagram

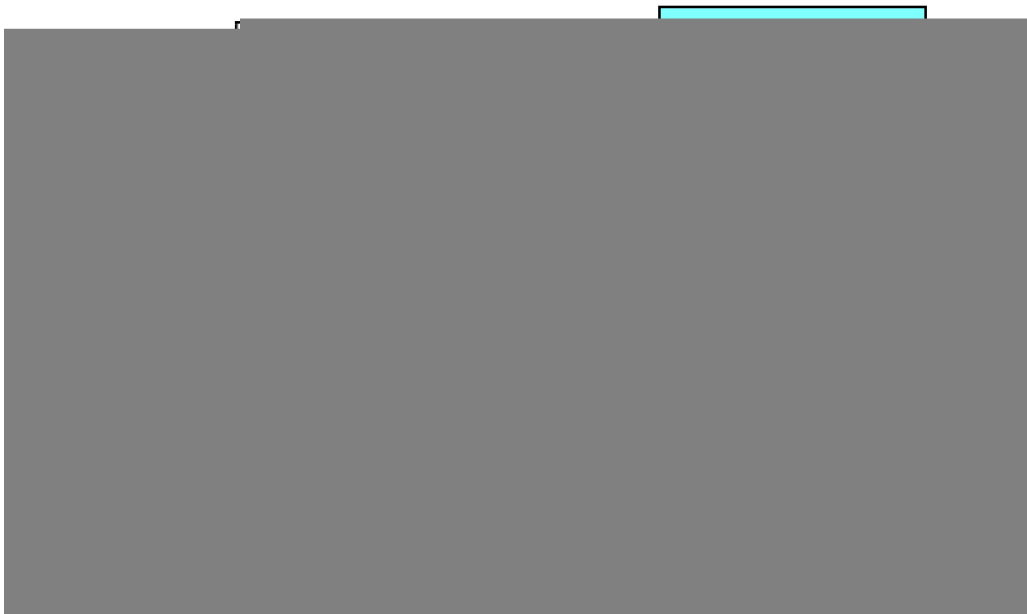


Figure 1 Transceiver Functional Diagram

Optical and Electrical Characteristics ($T_o = 0\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$)

Parameter	Symbol	Unit	Min	Typ	Max	Note
Digital Transmitter						
Supply Voltage	V_{CC_T}	V	3.13	3.3	3.47	-
Supply Current	I_{CC_T}	mA	-	-	200	-
Bit Rate	-	Gbps	-	1.25	-	-
Operation Wavelength	λ_P	nm	1290	1310	1330	
Spectral Width (@ -20dB)	$\Delta\lambda$	nm	-	-	1	-
SMSR	-	dB	30	-	-	-
Launch Optical Power	P_O	dBm	0.5	-	5	1
Off Level Light	P_{OFF}	dBm	-	-	-45	-
Extinction ratio	ER	dB	10	-	-	2
Burst turn on Time			-	-	12.8	3
Burst turn off Time	T_{OFF}	ns	-	-	12.8	

Output

Regulatory Compliance

Feature	Test Method	Performance
Electrostatic Discharge (ESD) Immunity	IEC61000-4-2	LV4(Air discharge 15kV,Contact discharge 8kV) Performance criterion B
Electromagnetic Interference (EMI)	CISPR22 ITE Class B EN55022 Class B FCC Part15 Class B	Compliant with standards
Immunity	IEC61000-4-3 Class 2 EN55024	Typically show no measurable effect from a 3V/m field swept from 80 to 1000MHz applied to the transceiver without a chassis enclosure.
Laser Eye Safety	FDA 21 CFR 1040.10 And 1040.11 EN60950 TUV EN60825-1,2	Compliant with Class 1 laser product
RoHS	2002/95/EC 4.1&4.2	Compliant with standards

Ordering Information

Part No.	Specifications												Application
	Package	Data rate Bandwidth	Laser	Optical Power	Detector	Sensitivity	Video Detector	AGC Range	RFcon	Top	Reach	Other	
RTXM170-601	1×20	TX:1.25Gb/s	1310nm	+0.5~	1490nm	< -28dBm	1550nm	-8~		0~			GPON ONU
-C45	SFF	RX1:2.5 Gb/s	DFB	+5dBm	APD-TIA		PIN	+2dBm	3 PIN	85 °C	20Km	DDM	Triplexer
		RX2:45~1002MHz											

Note1 : The length of pigtail is normal 610mm ±40mm, but can be customer for specific requirement.

Note2 : Min is ambient temperature; max is the module case temperature.

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