RFoG Node FTTx Solution

RON1510D Series

- **1.2 GHz bandwidth**
- **RF ATT: 0 to 18, 1dB step**
- **RF EQ: 0 to 15, 1dB step**
- **Output level >108dBµV**
- **DFB Laser power: 2mW**
- **Display and set parameters with LED**
- **Excellent surge and ESD protection**

ACT 1.2 GHz RON1510D series RFoG (RF over Glass) ONU is a cost-effective and superior performance optical network unit, which is designed and optimized to work in a DOCSIS standards-compliant, OBI free RFoG Fiber-to-the-Home (FTTH) architecture.

RON1510D provides excellent forward and reverse path performance combined with high reliability and a user-friendly layout. It is designed with 1550 nm forward-path RF signals, and 16 return-path upstream signals at 1450, 1470, 1590, 1610nm region. Each unit can be adjusted with 4 output optical wavelengths (0.5nm stepping) at these four regions electronically.

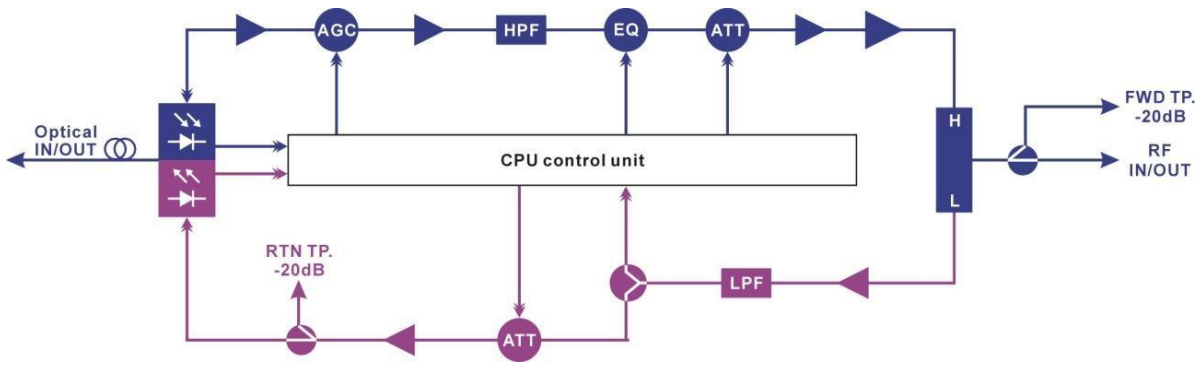
The RON1510D optical node is part of ACT overall FTTx solution suite. RON1510 features an optical AGC function in the forward path to ensure the same RF output level in every home. The return transmitter has burst mode (turns on the laser by return signal) to greatly reduce return fibers. It incorporates a low noise optical receiver and an isolated DFB optical laser to modulate the return-path signal from any set-top box (STB) or DOCSIS modem onto the fiber.

1.2 GHz RFoG Node FTTx Solution

Key Features

- 1.2 GHz bandwidth
- Optical AGC range adjustable -5/-6/-7/-8~0
- RF ATT: 0 to 18, 1dB step
- RF EQ: 0 to 15, 1dB step
- Output level >108dBμV
- DFB Laser power: 2mW
- Supporting burst and continuous mode
- Display and set parameters with LED
- Built-in WDM, 2 wavelengths in single fiber
- Excellent surge and ESD protection

Block Diagram

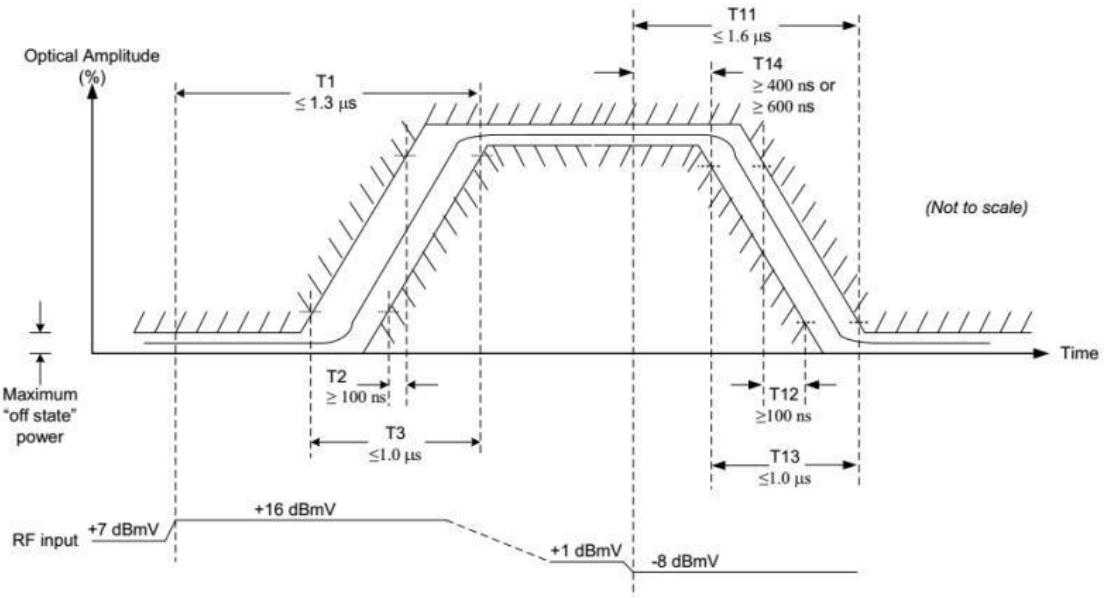


Specifications

Item		Unit	Parameter
Optical			
	Optical Return Loss	dB	>40
	Optical Connector		SC/APC
	WDM Wavelength	nm	Downstream：1550±10 Upstream: 1290, 1310, 1330, 1350, 1490, 1510, 1590, 1610±5
	WDM Insertion Loss	dB	Max: 0.7
Downstream			
	Receiving Wavelength	nm	1550±10
	PIN Tube Responsivity	mA/mW	>0.8
	Optical Receiving Power	dBm	-8 to 0
	AGC Range	dBm	-5/-6/-7/-8 to 0 adjustable
	Frequency Range	MHz	85/110/258 to 1003/1218

Item		Unit	Parameter	
	Flatness	dB	±1dB (85/110/258 to 862) ±1.5dB (862 to 1218)	
	Reflection	dB	>18dB@40MHz, -1.5dB/oct	
	ATT	dB	0 to 18, 1dB stepping	
	EQ	dB	0 to 15, 1dB stepping	
	Equivalent Noise Current		<6 pA/rt(Hz)	
	MAX Output Level	dBμV	≥ 108	AGC: -6 to 0dBm, OMI 3.5%
	C/N	dB	≥44	CENELEC 42 CH, output level: 108dBuV EQ: 6dB, AGC: -6 to 0dBm optical input power: -5dBm OMI 3.5%
	C/CTB	dB	≥60	
	C/CSO	dB	≥60	
	XMOD	dB	≥63	
	MER	dB	≥40	254 to 1218 MHz QAM256 ， output level: 102dBμV EQ: 8dB, AGC: -6 to 0dBm optical input power: -5dBm OMI 3.5%
	BER	—	-10^{-9}	
Upstream				
	Output Wavelength	nm	1290, 1310, 1330, 1350, 1490, 1510, 1590, 1610±5 optional	
	Laser Mode		DFB,burst/continuous	
	Optical Output Power	mW	2	
	Frequency Range	MHz	15 to 65/85/204	
	Flatness	dB	±0.75	
	Reflection	dB	>16dB	
	Adjustable Attenuation	dB	0 to 18, 1dB stepping	
	T1	us	≤1.3	SCTE_174_2010 7.1.3 below figure Note 1
	T2	ns	≥100	
	T3	us	≤1.0	
	T11	us	≤1.6	
	T12	ns	≥100	
	T13	us	≤1.0	
	T14	ns	≥100	
	Laser Turn-On Level	dBμV	68±1	
	Laser Turn-Off level	dBμV	58±1	
	NPR Dynamic Range	dB	≥16 dB @36 dB	
	OMI		15%@ input level 74dBμV	
Others				
	Supply Voltage	V	AC 90 to 265	
	Waterproof Level		IP50	
	F Connector		Female F connector	
	Test Port	dB	20±1.5	
	Surge		>4kV (EN61000-4-5, 1,2/50 μs pulse)	
	Operating Temperature	°C	-20 to 55	
	Storage Temperature	°C	-40 to 65	
	Humidity	%	Maximum 95% non-condensing	
	Power Consumption	W	<18	
	Weight	Kg	2	

Note:



Ordering Information

RON1500D 1.2GHz Series RFoG Node Ordering Information

RON15	XXD-	XX-	XX-	X-	XX-	XX-	X

	bandwidth
12D	1218MHz

	Return Transmitter*
61	RT 1610nm
59	RT 1590nm
47	RT 1470nm
45	RT 1450nm

	Band Split
065	65/85 MHz
085	85/110 MHz
204	204/258 MHz

	Power Supply
1	35 to 90 VAC
2	150 to 265 VAC

	Output Level
28	108dBuV

	Output Power
3	3dBm DFB

	Optical Connector
AS	SC/APC
US	SC/UPC

Note: *Each of these return transmitters can be set electronically with four sub-wavelengths(0.5nm stepping).

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