RON1512B 1.2GHz RFoG Optical Node

ASCENT Communication Technology

RFoG Optical Node FTTx Solution

RON1500B Series

- 1.2GHz Mini Node
- Output 92dBuV
- 1310/CWDM Return
- SCTE 174 2010 Standard Compliant
- Burst Mode Upstream
- Optical AGC
- Optional PON Upgrade Port
- Low Power Consumption
- LED Status Indicators

The ACT RON1500B Series is a cost-effective, high-performance RFoG optical network unit (ONU) designed and optimized for standards-compliant RFoG Fiber-to-the-Home (FTTH) networks. It enables cable operators to maximize their existing HFC infrastructure investment while continuing to deliver DOCSIS-based Internet, telephony, and Video-on-Demand services over fiber.

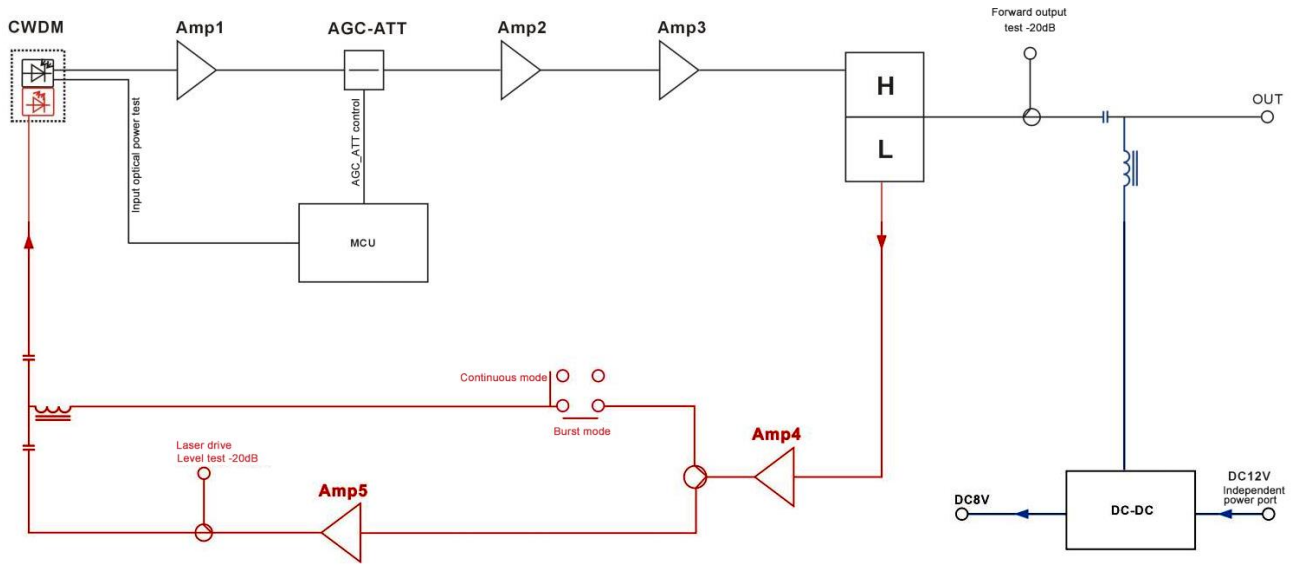
As part of ACT's comprehensive FTTx solution suite, the RON1512 optical node supports 1550 nm forward-path RF transmission and return-path upstream signals at multiple CWDM wavelengths in a 1×32 split FTTH topology. The unit features a low-noise optical receiver and an isolated DFB laser transmitter for stable upstream modulation from set-top boxes (STBs) or DOCSIS modems.

An optional PON upgrade port allows seamless convergence with next generation PON systems, providing multiple-system operators (MSOs) with a flexible migration path toward next-generation PON-based FTTH deployments. Designed for bidirectional HFC applications, the RON1500B integrates optical transmit and receive paths over a single fiber, effectively minimizing return-path noise and ensuring high-reliability signal transmission for modern CATV broadband networks.

Key Features

- Excellent AGC characteristic, when the AGC range is -8 to 0dBm, the output level remain unchanged, CTB and CSO basically unchanged.
- Optimizing circuit design, SMT production process, optimizing the whole signal path, makes the photoelectronic signal transmission more stable, RF linear indicators higher.
- Professional RF attenuator circuit, with good attenuation linear and high precision.
- GaAs amplifier device, with good index, low distortion and high reliability.
- The shell adopts aluminum die casting, cooling effect is good and the appearance is exquisite.
- The turning on mode of reverse laser can be set to continuous mode or burst mode.

Block Diagram



Specifications

Item		Unit	Technical Parameters
Forward Optical Receiver			
Optical Parameters	AGC Range	dBm	-8 to 0
	Optical Return Loss	dB	> 45
	Optical Receiving Wavelength	nm	1550+/-10
	Optical Connector Type		SC/APC
	Optical Fiber Type		Single mode
Link Performance	C/N	dB	≥ 51 (Pin= -1dBm)
	C/CTB	dB	≥ 62 @Pin=-8dBm, 42ch, OMI 3.5%
	C/CSO	dB	≥ 64
RF Parameters	Frequency Range	MHz	54 to 1218
	Flatness in Band	dB	±0.75 @-3dBm
	Rated Output Level	dBμV	≥ 92
	Max Output Level	dBμV	≥ 92
	Output Return Loss	dB	≥16
	Output Impedance	Ω	75
Reverse Optical Transmiter			
Optical Parameters	Laser ON/OFF	sec	<1.3
	Optical Transmit Wavelength	nm	1310 or other standard CWDM wavelengths
	Laser Type	-	DFB laser
	Optical Output Power	dBm	0.1 to 0.4
	Optical Connector Type	-	SC/APC
	Laser Mode	-	Continuous mode or burst mode
	Optical Power (Laser Turns Off)	dBm	-24 to -26
RF Parameters	Level (Laser Turns Off)	dBuV	OFF: 58±1.5
	Level (Laser Turns On)	dBuV	ON: 68±1.5
	Frequency Range	MHz	5 to 42
	Flatness in Band	dB	±0.75
	Input Return Loss	dB	≥ 16
	Output Impedance	Ω	75
	NPR Dynamic Range	dB	>35 dB (Input range >15dB)
General Performance	Power Voltage	V	DC12V
	ESD	KV	2 (RF port)
	Operating Temperature	°C	-20 to +55

Item		Unit	Technical Parameters
	Storage Temperature	℃	-30 to +70
	Relative Humidity	%	Max 95% no condensation
	Consumption	W	≤6.5
	Dimension	mm	154(L) x 116(W) x 26(H)

Ordering Information

RON1500B Series RFoG ONU Ordering Information

RON15	XXB-	XX	X-	XXX-	XX-	XX-	X

	RF Bandwidth
10B	1GHz
12B	1.2GHz

	Return Transmitter
0	No Rtn
A	1310 FP Rtn 0dBm
B	1310 FP Rtn 3dBm
C	1310 DFB Rtn 3dBm
D	1611 DFB Rtn 3dBm

	Optical Connector
AS	SC/APC
AF	FC/APC

	PON Upgrade Port
0	No Upgrade Port
P	PON Upgrade Port

	Output Level
92	92dBuV

	Band Split
42	42/54 MHz
65	65/85 MHz
204	204/258MHz

	Power Adaptor
00	None (RF Powering)
01	Australia
02	China
03	Continental Europe
04	North America

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Specifications and product availability are subject to change without notice.

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