RON1512
RFoG Node

RON1500 Series

- **Supports 1.2GHz RF pass band**
- **Single fiber WDM for forward and return path**
- **1550nm forward, 1610nm return**
- **AGC optical input range of -8dBm to 0dBm**
- **32dBmV RF output level**
- **RF test points for forward and reverse path**
- **Easy installation**
- **LED indicators**
- **Low power consumption**

Ascent RON1512 is a compact, high-performance 1.2 GHz two-way optical node designed for DOCSIS FTTH architectures. Engineered for superior forward and return path performance, it combines high reliability, simplified installation, and a user-friendly layout. The integrated optical AGC automatically maintains a consistent RF output level in every home, while the burst-mode return transmitter activates the laser only when a return signal is detected.

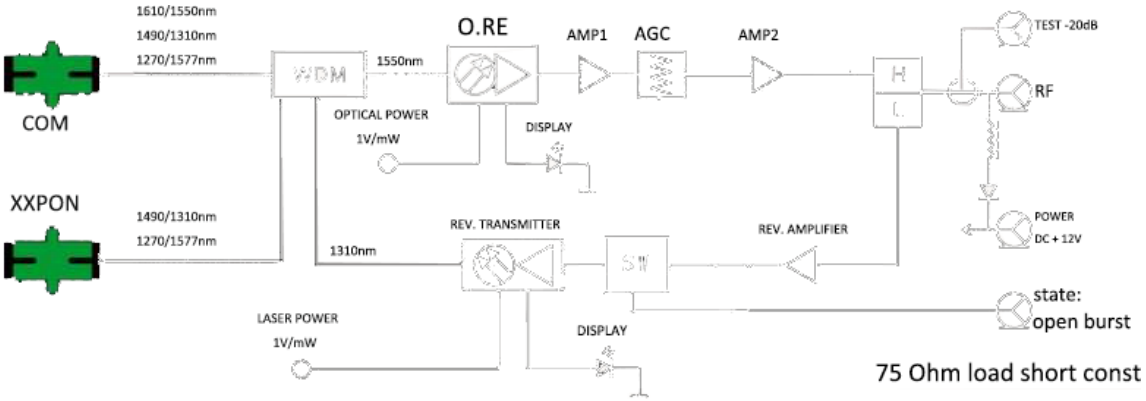
As part of ACT's FTTx solution suite, the RON1512 supports 1550 nm forward-path RF transmission and 1610 nm return-path upstream signals. It integrates a low-noise optical receiver and an isolated DFB laser to modulate return-path signals from set-top boxes (STBs) or DOCSIS modems onto the fiber.

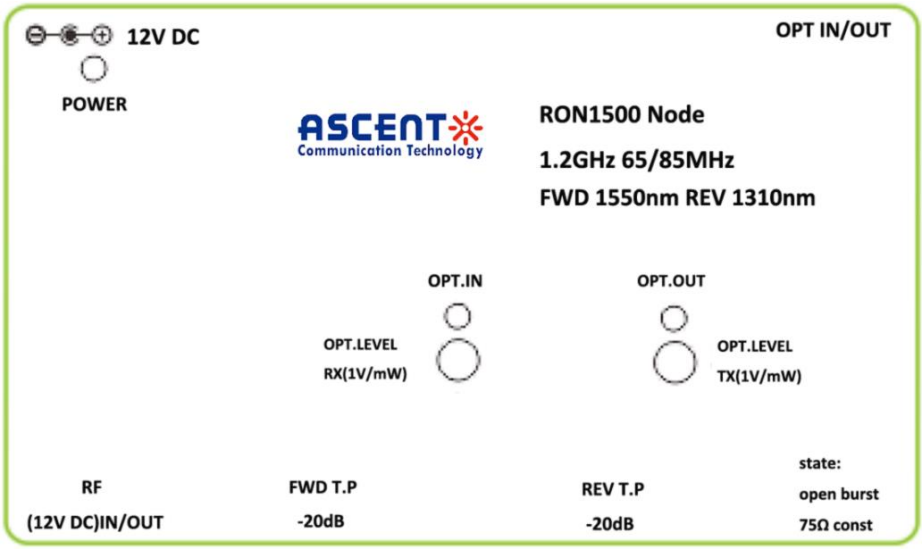
Utilizing single-fiber WDM transmission, the RON1512 supports both data and analog signal transport, ensuring seamless operation within existing HFC network infrastructures. Its simplified network structure reduces active components, enhances overall reliability, and lowers operational costs. Fully compliant with the SCTE 174 2010 standard, the RON1512 delivers a cost-effective, standards-based solution for next-generation RFoG and FTTH deployments.

Key Features

- Supports 1.2GHz RF pass band
- Single fiber WDM for forward and return path
- 1550nm forward, 1610nm return
- AGC optical input range of -8dBm to 0dBm
- 32dBmV RF output level
- RF test points for forward and reverse path
- Easy installation
- LED indicators for optical input, output and power
- Compact form factor
- Low power consumption

Block Diagram





Note: 12V DC can be powered through coaxial cable and inserted with a power plug.

Specifications

Downlink Characteristics

Parameter	Technical Parameters	Condition
Wavelength	1550nm to 1560nm	
Responsivity	0.8A/W	VR=5V, λ=1550nm
Optical Received	-8dBm to +2dBm	
RF Output Power @ 550 MHz	90dBmV to 92dBmV	-8 to 0 dBm opticalInput, (AGC) OMI 3.5%
Optical AGC Time Constant	1sec	
RF Response Tilt (54 to 1002MHz)	3.0dB to 4.0 dB(Typical 3.5dB)	54 to 1002
RF Flatness(Fit to Linear slope)	-1.0dB to +1.0dB	54 to 1002
RF Return Loss, 75 ohm	15dB(Typical 16dB)	
CNR @ -6 dBm	48dB	Note 1
CSO @ 0 dBm	-60dBc	
CTB @ 0 dBm	-60dBc	

Uplink Characteristics

Parameter	Technical Parameters	Condition
Wavelength (1610nm Option)	1610nm	CW, Tc=0 to +20
RF Operating Frequency	5MHz to 42MHz	42/54Mhz; 65/85MHz(Optional)
RF Flatness	-1dB to +1dB	
RF Return Loss, 75ohm	15dB(Typical 16dB)	
Input Dynamic Range	15dBmV to 40dBmV	
Power at Which Optical Turn On / Off		Double threshold, accord with the latest SCTE 174 2010 standard.
NPR Dynamic Range	20	
Tx Optical Power, High	0dBm(Typical 1dBm)	RF input power>RF Threshold power
Tx Optical Power, Off	-20dBm	RF input power<RF Threshold power
Turn-on Time	<700ns	
Turn-off Time	<700ns	

General Characteristics

Parameter	Technical Parameters	Condition
Optical Connector	SC/APC, FC/APC, SC/UPC	
Operating Temperature	-20°C to 55°C	
Storage Temperature	-40°C to 85°C	
Power Supply	100VAC to 240VAC	
Operating Relative Humidity	5% to 95%	
Power Consumption	7W	
Dimensions (W × D × H)	210mm x 156mm x 50mm	
Weight	0.93kg	

Note1: 1.79PAL-D/K (-6dB)channel loading up to 1 GHz, 20 Km fiber + passive loss; tested within the full temperature range and specified received optical power range.

Ordering Information

RON1500 Series RFoG ONU Ordering Information

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

	RF Bandwidth
10	1GHz
12	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
82	82dBuV
92	92dBuV

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

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

References Part Numbers*

**Contact your local sales representatives for more configuration*

RON1512-82-C-65-AS-03-0 RON1500 RFoG ONU 1.2GHz, 82dBuV, WDM, 3dBm DFB 1310nm RTX, 65MHz Rtn, SC/APC, +12V Power Adaptor with Continental EU Plug, No PON Port Upgrade

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Specifications and product availability are subject to change without notice.

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