High Output RFoG Optical Node FTTx Solution

RON1500 Series

- 1 GHz RFoG ONU
- High output 95 dBµV
- CWDM return
- SCTE 174 2010 standard compliant
- Burst mode upstream
- Optical AGC
- Optional PON upgrade port
- Low power consumption
- LED status indicators

ACT 1GHz RON1500 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 standards-compliant RFoG Fiber-to-the-Home (FTTH) architecture network.

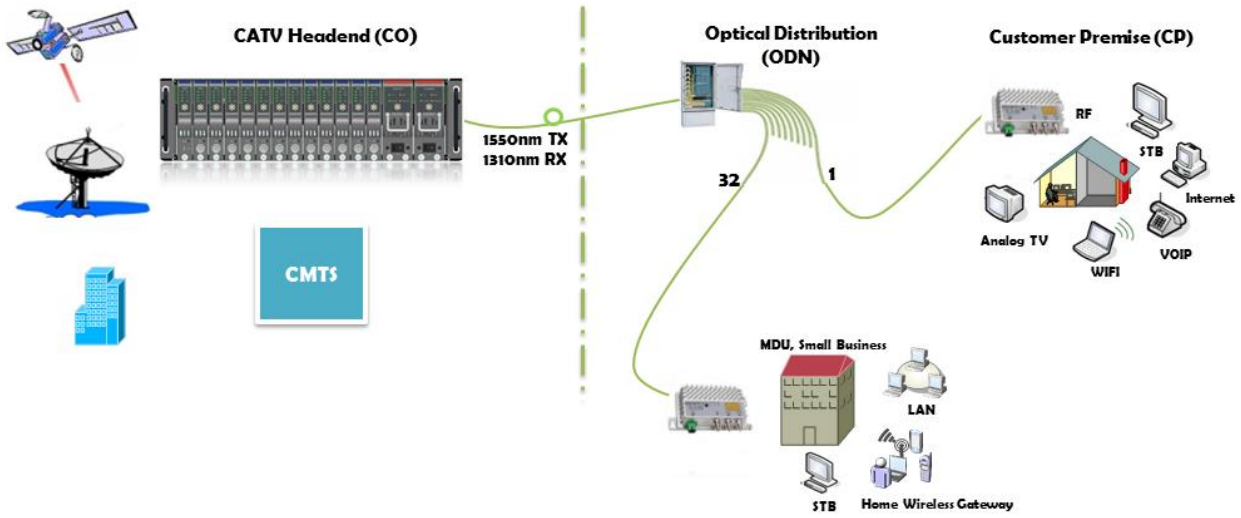
Rolling out RFoG ONU makes it possible for cable operators to protect their existing network investment and continue the deployment of DOCSIS-compliant cable modems for Internet and Telephony delivery, together with Video on Demand systems.

The RON1500 optical node is part of ACT's overall FTTx solution suite. It is designed with 1550 nm forward-path RF signals, and return-path upstream signal at various CWDM wavelength in a 1 x 32 split FTTH network topology. 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. An optional PON upgrade port combines these upstream and downstream signals across a 1310/1490 nm EPON/GPON network, providing MSO a transitional platform to migrate from existing HFC system to PON FTTH network.

Key Features

- 1 GHz RF Spectrum
- Small form factor and low power consumption
- SCTE 174 2010 standards compliant
- High performance and Cost Effective RFoG ONU solution for FTTX Network
- Optical automatic gain control (AGC)
- Active Carrier Suppression (ACS) to allow up to 32 units to function within a PON HFC network compatible with DOCSIS 1, 2 or 3 standards, and with SCTE-standards for RFoG
- In-built return path transmitter suits set-top box systems where pay-per-view and other various return path information sent via RF
- Powered directly using the power adaptor or via the F-type connectors
- The compact and sturdy enclosure fits easily in wiring closets or network termination boxes

Application Diagram



Specifications

RON1500 RFoG Optical Network Unit

Downstream Specifications (Receiver)	
Wavelength	1500 nm to 1600 nm, 1550 nm center
Optical Input Power	-8 dBm to +2 dBm
Optical AGC Range	-6 dBm to +2 dBm
Optical AGC Accuracy	0.7 dB typ., 1.5 dB max.
RF Bandwidth	54 MHz to 1003 MHz
Reference Output Level	77 dBµV or 95 dBµV ± 3 dBµV measured at 855.25 MHz in 1 GHz PAL-D system
RF Flatness	±1 dB @ 54 MHz to 1003 MHz
RF Return Loss	16 dB typ., 14 min.
RF Input Impedance	75 Ω
RF Test Point	-20 dB
Link Performance	
CNR	50 dB (59 ch PAL loading, -1 dBm W receive)
CTB	-65dBc
CSO	-60dBc
SBS	
Upstream Specifications (Transmitter)	
Optical Wavelength	CWDM wavelength
RF Bandwidth	5 to 42 MHz, 5 to 65 MHz
Output Power	3dBm (RF input > threshold)
Optical Power On/Off	10/8dBmV
Time On (90 %) / Off (10 %)	1.3/1.6us
RF Input Level Threshold	10 dBmV to 40 dBmV (25 dBmV typical)
RF Flatness	0.75 dB
RF Return Loss	16 dB typ., 14 min.
Optical Return Loss	45 min.
General Specifications	
Optical Connector	SC/APC, FC/APC
Operating Temperature	-20 °C to +55 °C
Storage Temperature	-40 °C to +85 °C
Power Supply	RF Power (F-Female) or 90 V_{AC} to 265 V_{AC}
Operating Relative Humidity	5 % to 95 %
Power Consumption	4.9 W
Dimensions (W×D×H)	128 mm × 84 mm × 40 mm (5.0 in × 3.3 in × 1.6 in)
Weight	0.6 kg
Ship Weight	5.5 kg (Packed in carton boxes of ten units)

Ordering Information

RON1500 Series RFoG ONU Ordering Information

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

	RF Bandwidth
10	1GHz

	Return Transmitter
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
77	77dBuV
95	95dBuV

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

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

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