



Multicom's RFoG ONU

Description

The Multicom Forward and Return Path RFoG ONU delivers advanced bi-directional, interactive RF services over a passive fiber optic distribution network. The RFoG ONU serves as the transport layer for RF video, voice, and DOCSIS technologies in deep fiber and FTTH access networks. This not only eliminates the costs of the annual testing and maintenance required to operate the HFC nodes, but also reduces the ongoing power requirements of nodes and RF amplifiers.

The RFOG ONU provides services over extended RF frequencies (up to 1.1Ghz), while compatible with both headend and customer premises equipment (CPE), and preserving today's operating processes.

General Features

- Complies with SCTE standards and all RFoG network topologies
- High quality, High performance, Cost effective
- Available in 1550nm downstream, either 1310nm or 1610nm upstream
- Small form factor with all electrical and optical connections on side panel
- 12V positive voltage can be applied to either DC jack or F connector
- Wide input voltage range from 12V to 18V, with surge protection
- LEDs indicate power, burst mode and alarm
- Optimal design for single-family dwellings and MDU applications



Receiver Features

- Standard OMI setting at 3.5%
- 79 NTSC and digital 64/256 QAM channels available for analog TV, digital HDTV, and cable-modem services
- High sensitivity receiver capable as low as -6dBm with 48dB CNR
- Optical AGC control lockable down to -8dBm
- Low receiver input LED alarm (Red) at -13dBm

Burst Mode Features

- Optimized Burst Mode Turn ON-OFF time in the range of 0.5 μ s to 1.5 μ s
- ON-OFF time independent of RF signal power, providing stable return path laser signal
- Premium Quiet/OFF mode for optical ON/OFF power ratio at -50dBm; minimizes system return noises against adjacent nodes

MUL-RFOGONU-1310
MUL-RFOGONU-1610

www.multicominc.com

Ph: 800-423-2594



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Product Specifications

Down-Stream Specifications		Values	Notes
Optical	Operating Wavelength (nm)	1550 - 1560	
	Optical Input (dBm)	-6 - +1	
	Loss of Optical Power (dBm)	-13	
	AGC Time Constant (ms)	20	
	Responsivity (A/W)	0.85	$\lambda_{\text{down}} = 1550\text{nm}$
	Connector Type	SC/APC	
RF	Max. Operating Bandwidth (MHz)	52 - 1002	
	Output Level at 550 MHz (dBmV)	16 - 20	-6~ + 1 dBm optical
	RF Response Tilt (dB)	3 - 5	54 to 1002 MHz
	RF Flatness - Fit to Linear Slope (dB)	-1 - +1	54 to 1002 MHz
	RF Return Loss, 75 ohm (dB)	16 - 18	
	RF Connector	F-Female	
Link	CNR at -6 dBm (dB)	48	RIN < RIN < -156dB/Hz 3.5% OMI/ch Note 1
	CSO at 0 dBm (dB)	-60	
	CTB at 0 dBm (dB)	-60	
General	Power Supply (DCV)	+12 - 16	Note 4
	Power Consumption (W)	3.2 - 6.4	
	Operating/Storage Temperature (°C)	-40 - 65	
	Relative Humidity (%)	5 - 95	
	Size excluding adapters (WxDxH in mm)	98 x 68 x 27	3.85" x 2.68" x 1.06"
Up-Stream Specifications		Values	Notes
Optical	Reverse Transmission Operating Wavelength (nm) $T_c = -40 \sim +60 \text{ }^\circ\text{C}$	1260-1360	1310nm Return
		1595-1630	1610nm Return
	1310nm TX Optical Power, high (dBm)	2 - 4	RF input power < RF _{th}
	1610nm TX Optical Power, high (dBm)	4 - 6	RF input power < RF _{th}
	TX Optical Power, off (dBm)	-48	RF input power < RF _{th}
	Turn-ON Time (μs)	0.5 - 1.5	
	Turn-OFF Time (μs)	0.5 - 1.5	
	Connector Type	SC/APC	
RF	Operating Bandwidth (MHz)	5 - 42	
	Flatness (dB)	-1 - +1	5~42_MHz
	RF Return Loss, 75 ohm (dB)	16 - 18	
	RF Input Range (dBmV)	20 - 45	
	RF Threshold Power (dBmV)	5 - 15	
	NRR Dynamic Range (dB)	~10	Notes 2,3

1. 79 NTSC, 20 km fiber + passive loss. 2. NPR threshold of 30dB, tested with 35MHz noise loading after 20 km fiber + passive loss with received optical power ranging from -16dBm to -24dBm. The receiver sensitivity is 2pA/√Hz. Specification is for DFB laser diode, FP laser may suffer 1.5dB dynamic range degradation. Dynamic range for 1610 Band at 4dBm output power may suffer 1dB loss. 3. Please contact sales if optional TX output power higher than 4dBm is needed. 4. Power through DC jack or F connector. Note when powering through DC jack, DC voltage can pass through the F connector. A DC block in series with the F connector is recommended for safety. 12V positive voltage should be applied to the center PIN of the connector, either via DC jack or F connector.

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Multicom, Inc.
Ph: 800-423-2594
Fax: 407-339-0204
Email: multicom@multicominc.com