

Product Overview

ONU3.1 is a DOCSIS 3.1 compliant high output two way indoor optical fiber node for CATV, SMATV, FTTx, MDU or private business applications.

ONU3.1 has a wide optical input range from 1200 to 1600nm, making it ideal for either 1310nm and 1550nm systems.

Downstream section has a microprocessor controlled AGC feature which enables tracking input optical level to maintain constant RF output level.

High RF output level (35/48 dBmV with 13dB tilt) over -8 to +4 dBm input level eliminates the need for a separate RF amplifier

The nodes are powered by a plug-in wall type 24VDC power transformer via F-connector.



Key Features

- Supports 1220 MHz downstream for DOCSIS 3.1 migration,
- High RF output level (35/48 dBmV) through GaAs-FET Push Pull technology,
- Future proof with field replaceable diplex filters (42/54 MHz and 85/102 MHz),
- Extended optical input level range (-8dBm to 4dBm) for maximum flexibility,
- Optical automatic gain control (AGC) via built-in microprocessor maintains constant RF output levels over a wide range of optical inputs,
- Internal digital optical TX/RX level display enables level monitoring without instrumentation,
- JXP style pad and equalizer control,
- 1310 nm, 1550 nm and CWDM DFB laser options for return transmitter,
- Superior return transmitter (TX) NPR performance,
- Separate -20dB RF test ports for forward and reverse directions,
- Powered by a plug-in wall type 24VDC power transformer via F-connector,
- Surge protection (6kV) at RF output,
- SCTE compliant F type connectors,
- Diecast aluminum housing for excellent heat dissipation and RFI shielding.

Specifications

Forward (Down-Stream)

Optical Features (RX)

Optical Input Wavelength	1200...1600 nm
Optical AGC Input Range	-8...+4 dBm (with AGC)
Optical Input Level Test Point	-8...+4 dBm (shown on digital display)
Optical Input Level Indicator	Green LED (> -8 dBm)

RF Features

Forward Bandwidth Options	54 - 1220 MHz / 102-1220 MHz (field replaceable plug-in duplex filters)
Gain Tilt	0 dB
Slope Control (input)	0...20 dB (with plug-in JXP controllers)
Stability	+/- 1.5 dB
Return Loss	Typ. -16 dB (Max. -14 dB)
Test Point	-20 dB
Link Performance (-1 dBm optical input power, NTSC77 channel, OMI=%3,5)	
Output Level	35/48 dBuV (tilted)
AGC Setting	A8
CNR	-51 dBc
CTB	-64 dBc
CSO	-64 dBc

Return (Up-Stream)

Optical Features (TX)

Transmitted Wavelength (TX Laser)	1310 nm, 1550 nm DFB, ITU CWDM (1270 nm...1610 nm)
Optical Output Power	2 mW (3 dBm)
Test Point	-8...+4 dBm (by digital display)
Optical Output Level Indicator	-0,25 mW (shown on digital display)

RF Features

Reverse Bandwidth Options	5 - 42 MHz/ 5-85 MHz (field replaceable)
Flatness	+/- 1.5
Input Level Control	0...20 dB dB (with plug-in JXP controllers)
Test Point	-20 dB
Return Loss	-16 dB

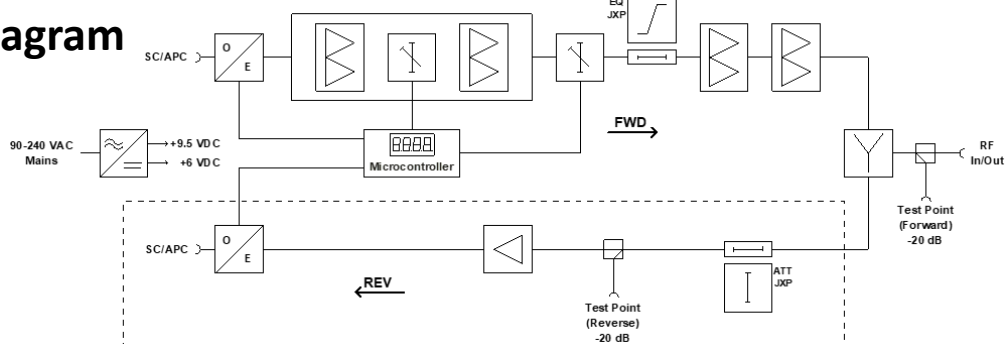
Link Performance (6dB link loss, 10 km fiber + optical attenuator)

Optimum Total Input Level	16 dBmV
NPR Peak / Input Level	58 / 22 dB/dBmV tot
TX Input Level (@ NPR=-41dB)	5-27 dBmV tot
TX Input Level (@ NPR=-38dB)	3-27 dBmV tot

General Features

Connectors	1 F type RF In/Out and 1 F Type Test Reverse
Surge Protection (in/Out)	IEEE62.41 Cat.A3 (6kV,200A)
Powering	11-36 VDC with wall type external power supply
Power Consumption	8 Watt
Impedance	75 ohm
Operating Environment Temperature	-30...+55 C°
Housing	IP54 class protection, diecast housing
Weight	1,7 / 3.7 (kg / lb)
Dimension	19,5 x 13,6 x 7,5 / 7-5/8 x 5-3/8 x 3 (cm / inch)

Block Diagram



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