ONU190

RF-Over-Glass (RFoG) Optical Network Unit

Flexible Installation

- Stand-alone or co-resident with Motorola PON ONT
- Operates on a single PON fiber architecture
- Powered via an independent 12VDC power source or COAX power feed
- Temperature hardened

Motorola's ONU190 adds return-path RF transport capability to a Passive Optical Network (PON), supporting the seamless delivery of existing voice, video, or broadband services – all on a common infrastructure.

PON access systems can deliver RF video downstream along with bi-directional IP-based services, but may lack the ability to support an RF return path, such as the upstream data or service request from an RF set-top box or cable modem. The Motorola ONU190 Optical Network Unit enables the return path function by injecting upstream data onto the passive optical network, serving as the optical transport layer for DOCSIS®, Aloha, and DAVIC technologies.

The ONU190 RF-Over-Glass (RFoG) Optical Network Unit operates with industry standard return receivers and Cable Modem Termination Systems (CMTS) and eliminates the need for costly network upgrades by maximizing reuse of existing access distribution networks and related operational and billing support systems.

Universal Compatibility and Improved Performance

- Passive Optical Network (PON) compatible
- Universal HFC set-top box and cable modem support
- Universal head-end support
- Transparent return path capability (protocol and modulation format agnostic)
- Transparent to incumbent PON systems
- Reduced ingress noise
- Automatic shut-off during power failure to preserve battery life

Data Sheet
ONU190
RF-Over-Glass (RFoG)
Optical Network Unit

Specifications

PHYSICAL

.85 in H x 4.9 in W x 3.7 in D
(2.2 cm H x 12.4 cm W x 9.4 cm D)

INDICATORS/EXTERNAL ALARMS

Green LED power indicator

OPTICAL INTERFACE

Two SC/APC female connectors

CUSTOMER INTERFACE

One 75 Ω coax F connector for customer drop
One 75 Ω coax F connector for RF Input from ONT

FORWARD PATH CHARACTERISTICS (PASS THROUGH ONLY)

Frequency response	
ONU190K	54MHz to 1.1GHz
ONU190A	88MHz to 1.1GHz
Flatness	±1dB
RF loss from input from ONU to output to customer drop	1.5dB max.

RETURN PATH OPTICAL CHARACTERISTICS

Wavelength	1610 nm
Output power	+2dBm to +4dBm
Input dynamic range	+15dBmV to +40dBmV
Frequency response	
ONU190K	5MHz to 42MHz
ONU190A	5MHz to 65MHz

Compatible with DOCSIS, DSG, Aloha (SCTE-55-1), and DAVIC (SCTE-55-2)

POWER AND ENVIRONMENTAL

Operating temperature range	–40 °C to +65 °C
Humidity	5% to 95% non-condensing
Power input	10 to 18 VDC (+12 VDC nominal)
Power consumption	3.0 W

STANDARDS AND CERTIFICATIONS

TUV listed, CE mark certified
Meets or exceeds FCC part 15b
IEC 60825-1:1993+A1:1997+A2:2001
RoHS compliant

Ordering Information

Model Name	Description
ONU190K	Optical Network Unit, RFoG, 54MHz–1.1 GHz FWD Pass-thru, 5–42MHz RTN, 1610nm RTN TX
ONU190A	Optical Network Unit, RFoG, 88MHz–1.1GHz FWD Pass-thru, 5–65MHz RTN, 1610nm RTN TX
Related Products	
ONU100K	Optical Network Unit, RFoG, 50MHz–1.1GHz FWD, 5–42MHz RTN, 1310nm RTN TX
ONU100A	Optical Network Unit, RFoG, 88MHz–1.1GHz FWD, 5–65MHz RTN, 1310nm RTN TX
ONU120K	Optical Network Unit, RFoG, 50MHz–1.1GHz FWD, 5–42MHz RTN, 1610nm RTN TX
ONU120A	Optical Network Unit, RFoG, 88MHz–1.1GHz FWD, 5–65MHz RTN, 1610nm RTN TX
ONU150K	Optical Network Unit, RFoG, 50MHz–1.1GHz FWD, 5–42MHz RTN, 1610nm RTN TX, PON Expansion Port
ONU150A	Optical Network Unit, RFoG, 88MHz–1.1GHz FWD, 5-65MHz RTN, 1610nm RTN TX, PON Expansion Port
WT-12V-110-NEMA1-F	ONU Wall Transformer, 12VDC Output, COAX feed, 110VAC Input, NEMA 1–U.S. Style plug
WT-12V-220-EU-B	ONU Wall Transformer, 12VDC Output, Bayonet style connector, 220VAC Input, European Style wall plug
UPS-12V-NB	UPS for ONU, 12VDC, 24W, with charger (battery not included)
UPS-12V-NB-H	UPS for ONU, 12VDC, 24W, with charger (battery not included), Hardened
ONU-CBL-COAX-UPS	UPS to Coax adapter cable, 8" long
ONU-CBL-BAYONET-UPS	UPS to Bayonet adapter cable, 8" long
ONU-OSPE301	ONU Standard outside enclosure
R1U-RX100BX4	Quad Return-path receiver, 5–100MHz, 1200–1620nm, rear output
AM-OCM-II-WDM-1310/1550-M-SCA	Optical Mux/Demux, 1310nm & 1550nm, monitoring port, SC/APC
AM-OCM-II-WDM-1310/1490/1550-M-SCA	Optical Mux/Demux, 1310nm, 1490nm, & 1550nm, monitoring port, SC/APC
AM-OCM-II-WDM-1310/1490/1550/1610-M-SCA	Optical Mux/Demux, 1310nm, 1490nm, 1550nm, & 1610nm, monitoring port, SC/APC

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