



# ONU120

## RF-Over-Glass (RFoG) Optical Network Unit

### Flexible Installation

- Operates on a single PON fiber architecture
- Powered via an independent 12VDC power source
- Supports power over COAX
- Temperature hardened

Motorola's ONU120 Optical Network Unit for PON, RFoG, and Hybrid PON networks transparently and delivers bi-directional interactive RF services over a reliable passive fiber optical distribution network.

The Motorola ONU120 is designed to operate in parallel to industry standard Passive Optical Network (PON) solutions supporting the seamless delivery of existing voice, video and broadband services – all on a common infrastructure. Motorola's ONU120 serves as the optical transport layer for RF video, Aloha, DAVIC, and DOCSIS® technologies, providing bi-directional services over extended RF frequencies up to 1.1 GHz. The ONU120 is transparent to headend and customer premises equipment while remaining compatible with today's operational support and billing systems.

By extending the optical network directly to a home or business, the Motorola ONU120 eliminates the need for HFC nodes and RF amplifiers along with the long-term operating expenses associated with an active access network architecture. Motorola's flexible Optical Network Unit offers cable operators the ability to meet today's broadband demands while evolving their networks in support of new business and residential services.

### Features and Benefits

- GPON, GEAPON, and BPON compatible
- Extended RF spectrum
- Universal HFC set-top box and head-end support
- Transparent return path capability (protocol and modulation format agnostic)
- Optical AGC with positive RF up-tilt
- Supports most in-home applications without amplifiers
- Multiple set-top box support
- In-home power over 75Ω coax cabling

**Data Sheet**  
 ONU120  
 RF-Over-Glass (RFoG)  
 Optical Network Unit

## Specifications

### PHYSICAL

1.2 in H x 3.5 in W x 5 in D (30 mm H x 89 mm W x 127 mm D)

### INDICATORS/EXTERNAL ALARMS

Green LED power indicator  
 Red LED loss of signal indicator

### OPTICAL INTERFACE

One recessed SC/APC female connector

### CUSTOMER INTERFACE

75  $\Omega$  coax F connector

### FORWARD PATH CHARACTERISTICS

Input wavelengths 1545 – 1560 nm  
 Input power range 0 to –6 dBm  
 RF Output @ 550MHz +18dBmV/ch  $\pm$ 2dBmV  
 Frequency response  
     ONU120K 50MHz to 1.1GHz  
     ONU120A 88MHz to 1.1GHz  
 Up-tilt 50MHz – 1.1GHz: 3dB  
 CNR @ –6dBm input power: 48  
 CSO @ 0dBm input power: 60  
 CTB @ 0dBm input power: 65

### RETURN PATH CHARACTERISTICS

Wavelength 1610 nm  
 Output power +2dBm to +4dBm  
 Input dynamic range +15dBmV to +40dBmV  
 Frequency response  
     ONU120K 5MHz to 42MHz  
     ONU120A 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
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
<b>Related Products</b>	
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
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
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
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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