



## **NU60RM FTTH / GPON ONT**

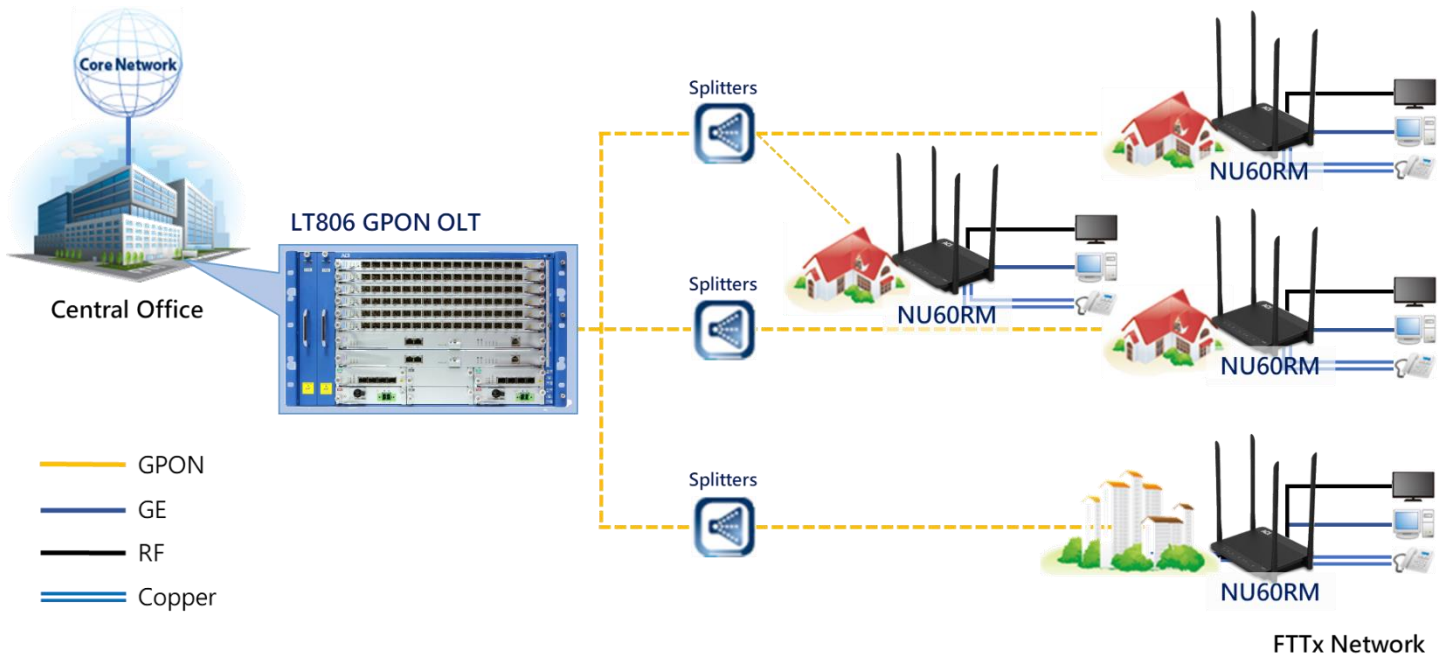
### **FTTH/GPON ONT**

The NU60RM optical network terminal is targeted for subscribers requiring multiple POTS, RF interface, and high-speed data interfaces in a cost-effective indoor housing. Fully compliant with ITU-T G.984 standards, the NU60RM supports data rates of 1.25Gbps upstream and 2.5Gbps downstream. With ACI's leading-edge GPON technology, users can enjoy bandwidth-intensive multimedia services such as real-time audio, video and gaming much easier and faster than ever before.

The NU60RM provides one GPON uplink port, four Gigabit Ethernet (10/100/1000Base-T) ports, Wireless LAN interface, one RF out interface and two FXS voice ports that enhance the ability to deliver demanding data/Wi-Fi/video/VoIP services. The NU60RM uses Session Initiation Protocol (SIP) to terminate VoIP calls so that in-home wiring does not change, and standard telephone sets may be used. The NU60RM supports the full triple play of services including voice, video and high-speed Internet access services.

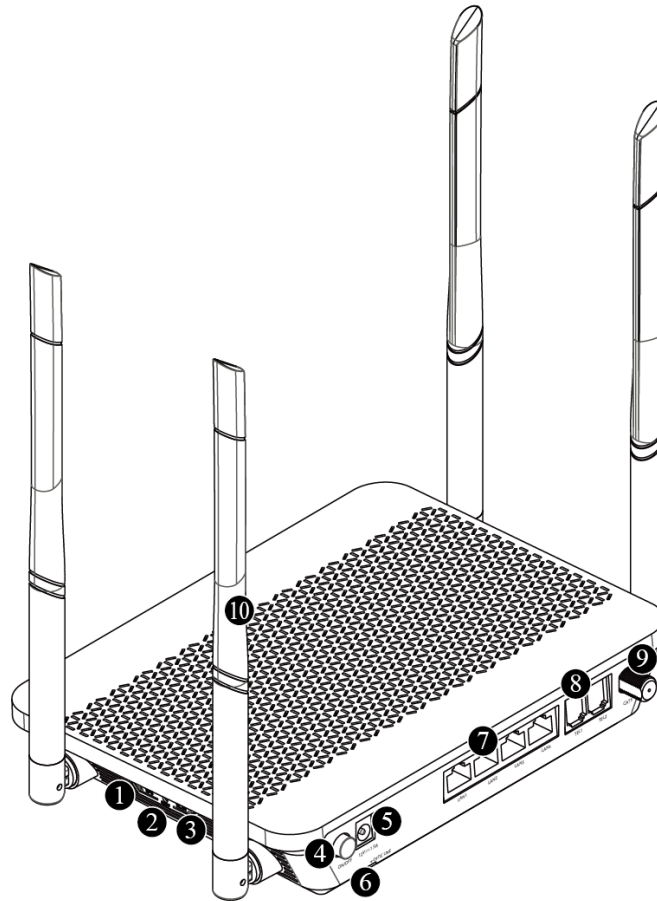
The NU60RM contains both built-in wire-speed L2 switch and L3 routing gateway with port forwarding, NAT and NAT address translation, PPPoE client support for high speed Internet service.

# FTTx Network Diagram



A PON consists of an Optical Line Termination (OLT) located at the HUB or Central Office and a set of Multi Dwelling Units (MDUs) or Optical Network Terminals (ONTs) located at the customer's premises. Between them is the optical distribution network (ODN) comprised of fibers and passive optical splitters or couplers. A splitter is a device that divides an optical signal into two or more signals. The OLT connects the PON to the IP network that controls and manages the PON clients. An MDU (ONT) connects the user-specific network to the PON. The ONT can be utilized by a single subscriber or used as a multi-dwelling gateway for a local network.

## Interface Layout



Interface Name	Description	Connector Type
① WLAN	Enable Wi-Fi function	-
② WPS	Enable WPS process	-
③ RESET button	Reboot the unit	-
④ ON/OFF button	Turn on/off the unit	-
⑤ Power port	Connect an external power supply	-
⑥ OPTIC LINE	Connect to OLT via a passive optical splitter 1 GPON uplink interface	SC/APC
⑦ LAN 1-4	Connect to PC or LAN 4 10/100/1000Base-T interfaces for data communication	RJ45
⑧ TEL 1-2	Connect to VoIP phone 2 FXS interfaces for phone service	RJ11
⑨ CATV	Connect to TV	F-connector
⑩ Antenna	Transmit and receive Wi-Fi packets	-

## Operating Status LEDs

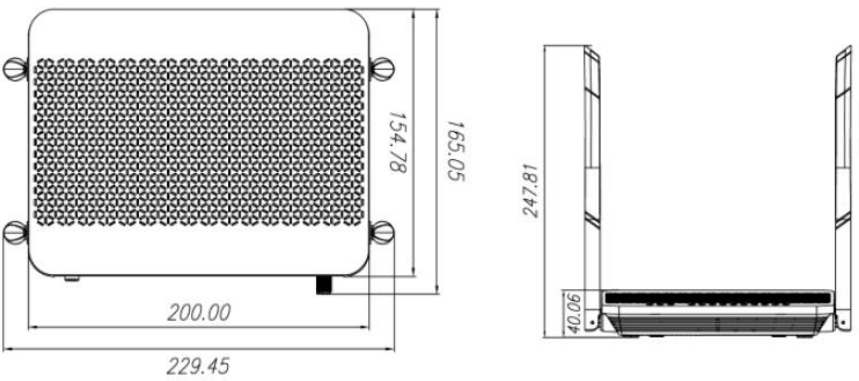
The status of the ONT is indicated by the LEDs located on the front of unit. LED indicators illuminate to show normal ONT operation and will blink and/or turn off to indicate the current status or errors. Refer to the following table for details of each LED state.



Label	Color	Status	Description
PWR	Green	On	The system is turned on.
	Red	On	The power to the device is too low.
		Off	The system is turned off.
PON	Red	On	No optic signal. And the unit has not been registered.
	Green	On	Optic signal normal. Normally registered. OMCI success.
		Blinking	Firmware being downloaded.
ALM	Red	On	No optic signal, firmware update failure or other faults.
		Off	Received optical power is normal.
Internet	Green	On	In service.
		Off	Not in service.
TEL 1-2	Green	On	Hook off
		Off	Hook on
2.4/5G	Green	On	The 2.4G Wi-Fi function enabled.
	Blue	On	The 5G Wi-Fi function enabled.
		Blinking	The 2.4G/5G Wi-Fi function enabled.
		Off	Wi-Fi function disabled.
WPS	Green	On	WPS connection successfully established (for 5 seconds).
		Blinking	WPS in progress
		Off	Disabled or process finished successfully.
LAN 1-4	Green	On	The link is up.
		Blinking	Port is sending or receiving data.
		Off	The link is down.
CATV	Green	On	The CATV is functioning properly. (Power in -8 to 2 dBm)
		Off	The CATV is not ready or malfunctioned.

NU60RM ONT Product Specifications	
Capabilities	Specifications
System	128 MB Flash Memory
	128 MB SDRAM
	GPON Interface Capacity: Up 1.25 Gbps / 2.5 Gbps
GPON ONT	ITU-T G.984.x Compliant
	Forward Error Correction (FEC)
	Multiple T-CONTs / GEM ports per device
	Flexible mapping between GEM port and T-CONT
	Priority queues and scheduling on Upstream
	Activation with automatic discovered Serial Number and password
	Dying Gasp
L2 / L3 / L4 Switch	IEEE 802.1D and IEEE802.1Q
	Address learning with auto aging
	VLAN Filter
	L2 / L3 Filter
	BPDU Filter
	Static Routing
	DHCP Server / Client
	DNS Proxy: Auto / Manual
	NAT / NAT / Port Forwarding (Fowarding engine up to 16K)
	MCL, DDNS, UPnP Port Mapping, ALG
	NTP
	PPPoE Client: Automatically Initating the session Automatically Keep Alive
	Multicast
IGMP Proxy	
Quality of Service (QoS)	HW-based internal IEEE 802.1p (CoS)
	Strict Priority (SP)
	802.1Q (VLAN tag) QoS Mapping, ToS / CoS
	8 Queues per Port
Management	ITU-T 984.4 Compliant OMCI Interface
	IEEE 802.3x Flow Control
	LED Indications for Maintenance
	Web-based Management
	ONT Service Provisioning (on the OLT-side)
VLAN	VLAN Port Filtering
	Destination Address Port Filtering

Wireless LAN	IEEE 802.11 b/g/n/ac Compliant
	Multiple SSIDs
	Up to 32 Devices can Accessed Simultaneously
	64 / 128 bit Wireless Encryption Protocol (WEP)
	Bandwidth: 2.4 GHz, 5 GHz
	Two Transmit and Two Receive (2T2R)
	2x2 MIMO
	Max Data Rate: 300 Mbps in 802.11n 867 Mbps in 802.11ac
	Supports 20 MHz, 40MHz, 80 MHz (11ac) Channels
	Security: WEP, WPA-PSK (TKIP), & WPA2-PSK (AES)
	Wi-Fi Protected Setup (WPS)
VoIP Features	SIP (RFC3261/3262/3264)
	5-REN per POTS
	RTP, RTCP (RFC 3550/3551)
	Multiple Codecs: G.711, G.723, G.729
	T.38 FAX Mode
	Echo Cancellation
Video (RF) Receiver Feature	Standard F-Type Connector
	RF Frequency Range 47 ~ 1,000 MHz
	Analog RF Video Over Dedicated 1550 nm Wavelength
	RF Output Level AGC Adjustment
Residential Gateway Unit Features (L3 Routing Mode)	PPPoE Client: Multiple Clients per RF ONT, Automatically keep alive
	DHCP Server / Client
	DNS Relay Server (DNS Relay, DNS Transparent)
	NAT and NATP
	Port Forwarding
	Integrated Stateful Packet Inspection Firewall with ACL

Physical Specifications	Specifications
Mechanics	<p style="text-align: center;">Dimensions</p> 
Environmental Conditions	<p style="text-align: center;">Operating Temperature: 23 to 122°F (-5 to 50°C)</p> <p style="text-align: center;">Storage Temperature: -22 to 140°F (-30 to 60°C)</p> <p style="text-align: center;">Operating Humidity: 20 to 90% (non-condensing)</p>
Power Voltage (AC/DC) Adaptor	<p style="text-align: center;">Input: 100-240 VAC, 50/60 Hz</p> <p style="text-align: center;">Output 12 VDC / 2A</p>
Interface Parameter	<p style="text-align: center;">GPON i/f: 1 GPON Port (SC/APC type)</p> <p style="text-align: center;">Gigabit Ethernet i/f: 4 x 10/100/1000Base-T Ports (RJ45)</p> <p style="text-align: center;">FXS i/f: 2 FXS Ports (RJ11)</p> <p style="text-align: center;">Wireless LAN: IEEE 802.11 b/g/n/ac Compliant, 4 Antennas</p> <p style="text-align: center;">Video i/f: 1 RF Video Port (F-Connector, Coax)</p>
Operating Indicators (LED)	<p style="text-align: center;">PWR: ON / OFF, Power Status</p> <p style="text-align: center;">PON: ON / Blinking, ONT Registration Status</p> <p style="text-align: center;">ALM: ON / OFF: Optical Signal Status</p> <p style="text-align: center;">Internet ON / OFF, Configuration Status</p> <p style="text-align: center;">TEL 1~2: ON / OFF, Off/On-Hook Status</p> <p style="text-align: center;">2.4 / 5G: ON / OFF, Wireless Function Status</p> <p style="text-align: center;">WPS ON / Blinking / OFF, WPS Connection Status</p> <p style="text-align: center;">LAN 1~4: ON / Blinking / OFF, LAN Port Link Activity Status</p> <p style="text-align: center;">CATV ON / OFF: RF Power Status</p>

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