

RH802GW-AX3L

GPON ONT

Specification

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1. OVERVIEW

1.1 Product Introduction

RH802GW-AX3L is a slave GPON gateway for the needs of FTTR. The functions meet the ITU G.984 international standards, supports multi WAN connection of bridge or route, IPv4 and IPv6 protocol stack, multicast protocol, QoS and firewall function, easy Mesh function and TR069 management protocol. The slave gateway is distributed in the user's room, connected with the master gateway through fiber, and communicated with the master gateway through the PON interface. In the all-optical network, the slave gateway can auto mesh with the master gateway. It has good quality, high reliability, smart management, easy mesh and other advantages , It can effectively meet the user's high-speed access needs.

Uplink optical port is 2.488G/1.244G(asymmetric GPON interface), Downlink support 2*GE LAN, one of them can used for WAN port (optional) ; The device adopts the latest 802.11ax WiFi 6 technology standard and is also compatible with 802.11a/b/g/n/ac.



Figure1-1

1.2 Network Diagram

RH802GW-AX3L is an FTTR slave gateway device designed for indoor applications, refer to the below diagram.

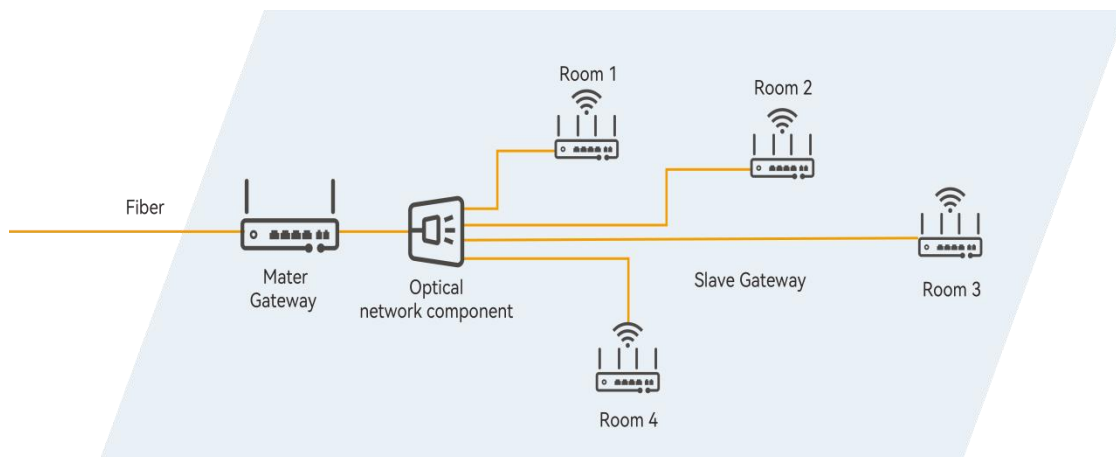


Figure1-2 Products network diagram

2. HARDWARE SPECIFICATIONS

2.1 Hardware Parameters

WiFi Base-band	MT7916AN
RAM	512MB DDR3
ROM	256MB Flash

Table 2-1 Device Hardware Parameters

2.2 Device Interface

Interface	Indicator	Description
DC port	DC 12V	DC adaptor interface: DC12V
Reset Key	RST	Press reset key and keep 5 seconds to make the device restart and recover from the factory default Settings.
WPS Key	WPS	Wi-Fi connection button , also used for mesh connect.
User Side Network	LAN1, LAN2	RJ-45 LAN port, LAN1~2(10/100/1000Mbps)

Ports		
GPON Port	PON	Supports SC/UPC or SC/APC connectors, 2.5G/1.25G Optical Interface, Uplink to FTTR Master Gateway, Plug and Play

Table 2-2 Device Interface

2.3 Indicators of device

Indicators	LED color	Status & Descriptions
Power	Green	ON: Power on Off: Power off
PON	Blue & Red	● Blue Off: ONU did not start the activation process ● Blue On: ONU link active ● Blue Flash: ONU linking ● Red Off: No optical signal ● Red Flash: Receiving power lower than optical receiver sensitivity ● Red On: No optical signal Remark: While the red LED is on or flash, the Blue LED is off.
WLAN	Blue & Green	● Blue Off: ONU is power off, or WLAN(2.4G & 5G) is disabled, or LED indicators are disabled. ● Blue On: WLAN(2.4G & 5G) is enabled, and is working ● Green On: WPS configuration successful or Mesh successful, turn on for 5 seconds and then turn off. ● Green Flash: ①ONU is pairing with other devices through WPS function ②Device's mesh network is creating ● Green Off: ①Blink and then turn off: WPS configuration is unsuccessful or Mesh network created is unsuccessful; ②green on and then turn off: WPS configuration is successful or Mesh network created is successful. Remark: while the green led is keep on or flashing, the blue led is off.

Table2-3 Indicators of device

3. SOFTWARE SPECIFICATIONS

3.1 Layer 3 Features

-  PPPoE/Static IP/DHCP
-  NAT/NAPT
-  Port forwarding
-  ALG,UPnP
-  DDNS/DNS server/DNS Client
-  IPv6/IPv4,DS-Lite
-  Static route / default route
-  A WAN carries multiple services

3.2 Layer 2 Features

-  VLAN Configuration
-  STP
-  MAC management
-  Port management

3.3 Multicast

-  IGMP v1/v2/v3 snooping
-  IGMP v2 proxy
-  IGMP v3 proxy
-  MLD v1/v2 snooping
-  Wi-Fi Carrying multicast services

3.4 QoS

-  Ethernet port speed limit
-  Supports priority marking of ports or custom flows, and provides the ability to mark 802.1p and DSCP priorities
-  SP/WRR/SP+WRR
-  Broadcast packets rate limit
-  Support advanced queue scheduling based on port or custom flow
-  The port / stream supports 4 priority queues and provides WRR, SP and FIFO queue scheduling algorithms
-  Support congestion avoidance mechanism

3.5 Security

- ✚ Anti DoS attack
- ✚ MAC/IP/URL filter

3.6 OAM

- ✚ OAM/OMCI/Web UI/TR069

4. TECHNICAL SPECIFICATIONS

4.1 Physical structure, Environment and Electrical Parameters

Parameter	Nominal Value
Dimension	155mm×86mm×35mm (L×W×H)
Net weight	~0.4kg
Typical power consumption	<18W
Noise	No Noise
Cooling style	Natural cooling
Power supply	12V DC (external AC/DC adapter)
Installation style	Support Desktop and Wall-mounted
Operating Temperature	0℃~45℃
Operating Humidity	10% RH~95% RH (non-condensing)
Atmospheric pressure	70~106Kpa
MTBF	30,000hours@25℃
MTTR	30minutes

Table4-1

4.2 Interface Parameters

4.2.1 GPON interface parameters

Parameters	Nominal Value
Fiber Connector	SC/UPC or SC/APC
PON Quantity	1
Fiber Mode	Single-mode Fiber
Wavelength	Tx: 1310±20nm

	Rx: 1490 ± 10nm
PON Interface Standard	ITU-T G.984.2/ITU-T G.984.3/ITU-TG.988
PON interface transmitting rate	2.488Gpbs
PON interface receiving rate	1.244Gpbs
Tx Optical Power	-4dBm~0dBm
Rx receiving sensitivity	Precede -27dBm

Table4-2-1 GPON Interface parameter

4.2.2 User Interface

Quantity	Type	Remark
2	RJ45 100/1000 Base-T Ethernet Self negotiation	IEEE802.3ab Standard, Support direct network cable connection and automatic verification of connection network cable

Table4-2-2 User Interface

4.2.3 Wi-Fi Specifications

Wireless Standards		IEEE 802.11 ax/ac/b/g/n
Parameters	Frequency	2.4~2.4835GHz 5GHz: Low frequency 5.15GHz~5.25GHz、 Middle frequency 5.25GHz~5.35GHz、 High frequency 5.725GHz~5.825GHz
	Transmission speed	11ax: MCS0~MCS11, Max 2402Mbps(5GHz 3T3R), 573.5Mbps(2.4GHz 2T2R) 11ac:MCS0~MCS9, max 866.7Mbps(5GHz 3T3R) 11n: MCS0~MCS15, max 300Mbps(2.4GHz 2T2R) 11g: 54/48/36/24/18/12/9/6M(Auto) 11b: 11/5.5/2/1M (Auto)
	Channel number	2.4GHz: 1,2,3,4,5,6,7,8,9,10,11 5GHz: 36,40,44,48, 52, 56, 60, 64, 149,153,157,161
	Data Modulation	DBPSK、DQPSK、CCK、 OFDM/OFDMA(BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM)
	Sensitivity @PER(Package error rate)	[2.4GHz] CCK:-100dBm@1M MCS0: -95 dBm or less (20MHz), -92 dBm or less (40MHz)

		@PER 10% MCS8: -71 dBm or less (20MHz), -70 dBm or less (40MHz) @PER 10% MCS11: -65 dBm or less (20MHz), -63 dBm or less (40MHz) @PER 10% [5GHz] OFDM:-95dBm@6M MCS0: -94 dBm or less (20MHz), -91 dBm or less (40MHz), -87 dBm or less (80MHz) @ PER 10% MCS8: -70 dBm or less (20MHz), -67 dBm or less (40MHz), -64 dBm or less (80MHz) @PER 10% MCS11: -64 dBm or less (20MHz), -61 dBm or less (40MHz), -59 dBm or less (80MHz) @PER 10%, -54 dBm or less (160MHz MCS11) @PER 10%
	Transmission distance	Outdoor: Maximum >100 meters(depends on the environment)
	EIRP	20dBm EIRP for 2.4G 23dBm EIRP for 5G
	Antenna	Internal omnidirectional antenna of 3dBi

Table4-2-3 Wi-Fi Specifications