



# NetCircle® xPON ONT HG7142A ( Dual Band Wireless Home Gateway )



HG7142A

## Overview

NetCircle® HG7142A is a Home Gateway which is designed and developed by GENEW. It can deliver triple-play services to the subscriber in FTTH (Fiber-to-the-Home ) or FTTP (Fiber-to-the-Premises) application as well as Residential Gateway.

With the mature G/EPON chipset solution, HG7142A supports ITU-T G.984 2.5G Downstream and 1.25G Upstream GPON interface and IEEE 802.3ah 1.25G Downstream and 1.25G Upstream EPON interface. HG7142A is compliant with standard OMCI and OAM definition. It provides the full triple-play of services including voice, video and high speed internet access service. They are manageable at remote side, such as supervision, monitoring and maintenance etc.

HG7142A integrated high performance WiFi access point compliant with 802.11 b/g/n/ac (2T2R@2.4GHz and 2T2R@5GHz).



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# NetCircle® xPON ONT

## HG7142A ( Dual Band Wireless Home Gateway )

### Service

#### 1. Data

The HG7142A is delivered with 4 \*10/100/1000 Base-T Ethernet data interface, supporting as follows:

- Auto-negotiation and MDI/MDIX auto-sensing;
- Built-in layer-2 switch;
- Advanced data features such as VLAN tag manipulation, classification and filtering;
- Built-in layer-3 routing and residential gateway ;(according to requirements to select);
- USB 2.0 + USB 3.0 Storage;

#### 2. Voice

The HG7142A is delivered with 2 \* POTS interface for carrier-grade voice service, supporting as follows:

- DTMF dialing and pulse dialing;
- Multiple voice codec;
- Echo Cancelling ,VAD,CNG;
- Supporting static or dynamic jitter buffer ;
- Various CLASS service- Caller ID ,Call Waiting, Call Forwarding, Calling Transfer and more
- SIP (RFC3261)
- Common architecture, drop-in replacement

To enable VoIP access, the HG7142A also supports interfacing external IAD box or Home Router with voice capability through the Ethernet Interface.

### 3. Video

HG7142A support delivered in form of data (by multicast or unicast).

In case where multicast technology is used for delivering video contents through data channel, HG7142A supports the dedicated multicast GEM port on the Downstream in GPON mode. So the video contents are received and processed by all the ONTs through the unified channel and this greatly improves the bandwidth efficiency.

In addition, HG7142A supports IGMP snooping function to be applied for further optimization. When IGMP snooping is enabled, ONT monitors the member joining and leaving activities at the Ethernet service port, and then selectively delivers the multicast streams.

## Specification

### Dimensions

178 x 120 x 30 (W x D x H) (mm)

### Power Supply

- +12V, 1.5A (Feed via external AC/DC adaptor)
- 2-PIN Power adaptor input (optionally different adaptor for your area )
- Dying Gasp support
- Power Consumption: less than 12W

### Working Environment

- Temperature: 0°C ~ 50°C
- Humidity: 10%~ 90% relative humidity

### Installation

Desktop mounting & wall mounting



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### GPON interface

- Compliant with ITU-T G.984 GPON Standards
- SFP type LASER, SC/APC connector
- 1.244Gbps Burst Mode Upstream / 2.488Gbps Downstream (GPON)
- Compliant with GPON Class B+
- Wavelengths: US 1310nm, DS 1490nm
- Support G.984.5 Blocking Filter as an option
- Multiple mapping between GEM ports and T-CONT
- Activation with automatic discovered SN and password in conformance with ITU-T G.984.3
- AES-128 Decryption with key generation and switching
- FEC(Forward Error Correction) in both directions
- DBA reporting by piggyback reports in the DBRu (Mode 0 and mode 1)
- 802.1P mapper service profile on U/S
- Mapping of GEM Ports into a T-CONT with priority queues based scheduling
- Support Multicast GEM port and incidental broadcast GEM Port

### EPON interface

- Compliant with IEEE 802.3ah EPON Standards
- 1.244Gbps Burst Mode Upstream / 1.244Gbps Downstream (EPON)
- Compliant with EPON PX20+
- Support authentication MAC / Loid / Loid+Password
- Support Upstream and Downstream FEC
- Support AES
- Support Key switching
- Full compliance to IEEE 802.3ah specification & OAM function



# NetCircle® xPON ONT HG7142A ( Dual Band Wireless Home Gateway )

## Ethernet Interface

- 10/100/1000Base-T interface with RJ-45 connector
- Ethernet port auto negotiation or manual configuration
- MDI/MDIX automatically sense
- 2K MAC address table
- Hardware priority queues on the down stream direction in support of CoS
- 802.1D bridging
- 64 full range VLAN ID
- VLAN Tagging/Untagging per Ethernet port
- VLAN stacking(Q-in-Q) and VLAN Translation
- IP ToS/DSCP to 802.1P mapping
- Class of service base on UNI,VLAN-ID, 802.1P bit and combination
- Marking/Remarking of 802.1p
- IGMP v2/v3 snooping and IGMP Snooping with proxy report
- Broadcast/Multicast rate limiting

## Gateway Features

- Multiple WAN interfaces supporting
- WAN Connection Bridging or/and Routing with
  - ✓ Point-to-Point Protocol over Ethernet (PPPoE)
  - ✓ Dynamic Host Configuration Protocol (DHCP)
  - ✓ Static IP
- DHCP server for LAN/WLAN devices with Multi-Subnets
- DHCP Client or static IP configuration
- DNS relay
- Network Address Translation(NAT)/Network Address Port Translation (NAPT)
- Port forwarding
- Static routing
- Traffic classification and QoS based on Layer 3 and Layer 4 Identifier
- GUI Access Control List (ACL)
- VPN Pass thru for point to point Tunneling Protocol(PPTP), Layer2 Tunneling Protocol(L2TP) and IP Security Protocol (IP Sec)
- Firewall – MAC & IP/Port Filtering, URL & Domain blocking
- Application Layer Gateway (ALG)
- Demilitarized Zone (DMZ)
- Dynamic Domain Name Server (DDNS)
- Network Time Protocol (NTP)



# NetCircle® GPON ONT

## HG7142A ( Dual Band Wireless Home Gateway )

### Gateway Features (Con.)

- Universal Plug and Play (uPnP)
- IGMP Proxy
- IPv6
- Stateless Address Autoconfiguration (SLAAC)
  - ✓ DHCPv6
  - ✓ PPPoEv6
  - ✓ DNSv6

### WLAN Interface

- Compliant with IEEE 802.11 b/g/n/ac
- 1166Mbps Throughput (2T2R@2.4GHz and 2T2R@5GHz)
- Multiple SSIDs
- Maximum 128 users
- 64 and 128 bit Wireless Encryption Protocol (WEP) support
- Wireless Protected Access support including Pre Shared Key (WPA-PSK)
- Support WPS
- Radio Switched on /off function

### POTS Interface

- RJ11 connector
- DTMF Dialing and Pulse Dialing
- Multiple Codec
  - ✓ G.711( $\mu$ -Law and A-Law)
  - ✓ G.729 (A and B)
  - ✓ G.723.1
- Echo Cancellation
- Voice Activity Detection and Comfortable Noise Insertion
- SIP (RFC3261)
- SDP (RFC2327)
- RTP (RFC3550/3551)
- DTMF encoding by RFC 2833 or SIP INFO method
- Support various CLASS services - Caller ID, Call Waiting, Call Forwarding, Call Transfer, Call Toggle, Three Way Calling, Distinctive Ringing, etc.
- G.711 for FAX, modem connection
- T.30 / T.38 / G.711 FAX
- Configurable dial plan
- Country specific ring tone generation
- Metallic Loop Testing



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## USB interface

- 1 USB 2.0 Host interface
- Compliant to USB 2.0

## OAM

- Standard compliant OMCI (the embedded operations channel) interface as defined by ITU-T G.984.4 and G.983.2
- Standard compliant OAM as defined by IEEE 802.3ah
- Compliant to TR-069
- Support of TR-104 and TR098 Data Model for the service provisioning of Ethernet, WLAN, VoIP and more
- Alarming, AVC report and performance monitoring
- Remotely CPE Firmware Upgrade over OMCI, as well as activation and rebooting
- CPE equipped with dual flash memory chipset for software image integrity check and automatic rollback after remote upgrade Firmware upgrade.



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## Ordering information

Model	Description	Remark
HG7142A	HG7142A, 1*G/EPON uplink,4*10/100/1000M + 2*POTS/VoIP + WiFi (IEEE802.11b/g/n/ac) downlink, 4 external Antenna, 1 USB 2.0, with power adapter 220V AC.	