

## 2000-04G GPON HGU ONT

To deliver triple-play services to the subscriber in Fiber-to-the-Home or Fiber-to-the-Premises application, the GPON RGU (Residential Gateway Unit) G-93RG1 incorporates interoperability, key customers' specific requirements and cost-efficiency.

Equipped with ITU-T G.984 compliant 2.5G Downstream and 1.25G Upstream GPON interface, G-93RG1 supports the full Triple Play of services including voice, video, and high speed internet access service.

Compliant with standard OMCI definition, G-93RG1 is manageable at remote side and supports the full range FCAPS functions including supervision, monitoring and maintenance





Interfaces

Item	DT2000-04G
Port	1*GPON uplink port 4*10/100BASE-TX 1*WLAN 2*VOIP (Optional)



### **Dimensions**

- 195mm x188mm x33mm (Wx Dx H, without bracket)
- 195mm x188mm x51mm (W x DxH, with bracket)

### **Power Supply**

- +12V (feed via external AC/DC adapter)
- 2-PIN power adaptor input
- Dying Gasp support
- Power switch
- Power Consumption: less than 15W

### **Working Environment**

- Temperature: 0°C ~ 40°C
- Humidity: 5% ~ 95% relative humidity

### **Safety & EMI**

- CE certificate
- FCC/ULcompliant

### **Installation**

- Desktop mounting & wall mounting

### **GPON Interface**

- Compliant with ITU-T G.984 GPON standards
- SFF type laser, SC/APC connector
- CIG patented BoSA on board optical solution
- 1.244Gbps Burst Mode Upstream Transmitter
- 2.488 Gbps Downstream Receiver
- Compliant with ITU-T G.984.2 Amd1, Class B+
  - 0.5dBm ~+5dBm launch power, -27dBm sensitivity, and -8dBm overload
- Wavelengths:
  - US 1310nm, DS 1490nm
- Laser compliant with FCC 47 CFR Part 15, Class B, and FDA 21 CFR 1040.10 and 1040.11, Class I, ONT support Class C or Class C+ optics as an option



- Support G.984.5 Blocking Filter as an option
- Multiple T-CONTs per device
- Multiple GEM Ports per device
- Flexible 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.

### **Ethernet Interface**

- 10/100Base-T interface with RJ-45 connectors
- Ethernet port auto negotiation or manual configuration
- MDI/MDIX automatically sense
- Hardware priority queues on the downstream direction in support of CoS
- 802.1D bridging
- Virtual switch based on 802.1q VLAN
- VLAN tagging/detagging per Ethernet port
- VLAN stacking (Q-in-Q) and VLAN Translation
- IP ToS/DSCP to 802.1p mapping
- Class of Service based on UNI, VLAN-ID, 802.1p bit, ToS/DSCP
- Marking/remarking of 802.1p
- IGMP v2/v3 snooping
- Broadcast/Multicast rate limiting

### **Gateway Features**

- Multiple WAN interfaces supporting
- WAN connection
  - Point-to-Point Protocol over Ethernet (PPPoE)



- Dynamic Host Configuration Protocol (DHCP)
  - Static
- DHCP server for LAN devices
- 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
- Access Control List (ACL)
- VPN Pass thru for Point to Point Tunneling Protocol (PPTP), Layer 2 Tunneling Protocol (L2TP) and IP Security Protocol (IPSec)
- Firewall
- Application Layer Gateway (ALG)
- Demilitarized Zone (DMZ)
- Dynamic Domain Name Server (DDNS)
- Network Time Protocol (NTP)
- 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
- 2.4GHz



- MIMO:2x2
- MultipleSSIDs
- 64 and 128 bit Wireless Encryption Protocol (WEP) support
- Wireless Protected Access support including Pre Shared Key (WPA-PSK)
- Radio switched on/off function Support WPS

**POTS Interface (Optional)**

- RJ-11 connectors
- 3-REN
- Balanced Ring, 55V RMS
- DTMF Dialing and Pulse Dialing
- Multiple Codecs:
  - 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)
- MEGACO v2 (H.248)
- 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.38 FAX
- Configurable dial plan
- Country specific ring tone generation
- DHCP Client or static IP configuration
- Metallic Loop Testing



### USB Interface

- 1 USB Host interface
- Compliant to USB 2.0
- Network storage

### LEDs

- POWER
- LINK
- AUTH
- LAN1~4
- TEL1~2
- INTERNET
- WPS
- WLAN
- USB

### OAM

- Standard compliant OMCI (the embedded operations channel) interface as defined by ITU-T G.988
- Compliant to TR-069
- Provisioning all kinds of services including Ethernet, WLAN and VoIP, etc. by subset of TR-098 and TR-104
- Alarming and AVC report, performance monitoring
- Remotely software image download over OMCI, as well as activation and rebooting

Hold two software sets with software image integr

## **Services**

### Data

The GPON RGU is delivered with four 10/100 Base-T Fast Ethernet data interfaces, supporting:

- Auto-negotiation and MDI/MDIX auto-sensing



- Data transferring at wire-speed for all packet size
- Built-in layer-2 switch
- Advanced data features such as VLAN tag manipulation, classification, and filtering
- Built-in layer-3 routing and residential gateway
- 802.11 b/g/n WLAN interface
- USB 2.0 storage

### **Voice (Optional)**

The G-93RG1 ONT can optionally be delivered with up to two POTS interface ports for carrier-grade voice services, supporting:

- 3 REN per line, balanced Ring at 55V RMS, DTMF dialing and pulse dialing
- Multiple voice codec
- Echo Cancelling, VAD, CNG
- Supporting static or dynamic jitter buffer
- Various CLASS services - Caller ID, Call Waiting, Call Forwarding, Call Transfer, etc.
- SIP (RFC3261)
- MEGACO v2 (H.248)
- Common architecture, drop-in replacement

To enable VoIP access, the G-93RG1 ONT also supports interfacing external IAD box or Home Router with voice capability through the Ethernet Interface.

### **Video**

The G-93RG1ONT supports video contents delivered in the form of data (by multicast or unicast).

In case where multicast technology is used for delivering video contents through data channel, the ONT supports the dedicated multicast GEM port on the Downstream. 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, the ONT supports IGMP snooping function to be applied for further optimization. When IGMP snooping is enabled, the ONT monitors the member joining and leaving activities at the Ethernet service port, and then selectively delivers the multicast streams.