CIG

GPON ONT G-97RG2F
Platform Briefing

VERSION4

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Partnership for the Next Generation Broadband Solution

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■ Overview

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-97RG2F 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-97RG2F supports the full Triple Play of services including voice, video, and high speed internet access service. Compliant with standard OMCI definition, G-97RG2F is manageable at remote side and supports the full range FCAPS functions including supervision, monitoring and maintenance.

■ Service

Data

The GPON RGU is delivered with four 10/100/1000 Base-T Ethernet data interfaces, supporting:

- 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
- 802.11 b/g/n WLAN interface
- USB 2.0 storage

Voice

The G-97RG2F ONT can optionally be delivered with up to two POTS interface ports for carrier-grade voice services, supporting:

- 5 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-97RG2F ONT also supports interfacing external IAD box or Home Router with voice capability through the Ethernet Interface.

Video

The G-97RG2F ONT supports two kinds of video services: one with Video Overlay and the other is delivered in form of data (by multicast or unicast).

In supporting of Video Overlay, where a dedicated wavelength is used for carry video broadcast signal to the

subscriber, a Triplexer (the three wavelength GPON optical transceiver) will be equipped. The output level of the analog RF signal is at +17dBmV.

As default, the pass band of this analog video interface is 47 MHz to 1000 MHz. But as required in some specific applications, the ONT can optionally provide an additional remote band control function to support for "Basic Services" and "Premium Service".

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.

■ Interface

Product	10/100/1000 Base-T interface	POTS interface	Wi-Fi interface	USB interface	RF Video interface
G-97RG2F	4	2	1	1	1

■ Specification

Dimensions

- 228mm x176mm x 41mm (W x Dx H, without bracket)
- 228mm x176mm x 49mm (W x Dx H, with bracket)

Power Supply

- +12V (feed via external AC/DC adapter)
- 8-PIN power input with UPS monitoring and 2-PIN power adaptor input
- Dying Gasp support
- Power switch
- Power Consumption: less than 13.34W

Working Environment

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

Safety & EMI

- CE certificate
- FCC/UL compliant

Installation

- Desktop mounting & wall mounting

GPON Interface

- Compliant with ITU-T G.984 GPON standards
- SFF type laser, SC/APC connector
- 1.244 Gbps 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

- 10/100/1000 Base-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

- Multiple SSIDs

- 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

- RJ-11 connectors

- 5-REN

- Balanced Ring, 55V RMS

- DTMF Dialing and Pulse Dialing

- Multiple Codecs:

  - G.711 (μ-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

Analog Video Interface

- Standard F-Type connector

- Analog RF video over dedicated 1550nm wavelength

- RF output level of +17 dBmV

- RF Passband: 47 MHz~ 1000MHz

- Optionally remote band control function:

  - Basic services: 47MHz - 870MHz

  - Premium services: 47MHz - 1000MHz, pass or block, software provisionable

- Switched on/off by remote control

USB Interface

- 1 USB Host interface

- Compliant to USB 2.0

- Network storage

LED

- POWER

- LINK

- AUTH

- LAN1~4

- TEL1~2

- Internet

- WPS

- WLAN

- USB

- VID

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, VoIP, and RF, etc. by subset of TR-098 and TR-104

- Provision RF service over OMCI

- 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 integrity checking and automatic rollback

■ Enclosure

■ Contact Information

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