



ITU-T G.984.X  
GPON ONT

1\* GPON SC/APC  
or SC/UPC Uplink  
port optional

1\*2.5G High  
Speed LAN  
Port

1:128 Fiber  
Splitting Ratio

802.1Q  
VLAN, 802.1P  
QoS DBA

Datasheet V1.1.6

### SGN8601GR1B-V3 2.5 G GPON ONT Description:

The SGN8601GR1B-V3 is an ITU-T G.984.x based GPON ONT that supports 2.5G downstream and 1.25G upstream bandwidth. It offers 1\*GPON SC/APC or SC/UPC port and 1\*2.5G Ethernet LAN port for internet outputs. The SGN8601GR1B-V3 is a single family ONU, it supports 8 T-counts and up to 32 Gem port IDs. It is a 2.5G GPON ONT for ISPs integrating high speed Internet services over single fiber.

### Main Features:

- Complies with ITU-T G.984.x GPON standard, interoperable with Huawei, ZTE, Fiberhome, Nokia, CHIMA GPON OLTs.
- Offers 1 GPON SC/APC or SC/UPC WAN port, support 1.25G upstream and 2.5G downstream
- Offers 1\*2.5G LAN port, support network bridge and Router functions
- Max 1:128 Fiber ration, max transmission distance can reach 20km
- Support AES 128-bit encrypted and key switching, enhancing transmission security
- Support 8 Tcounts and 32 GEM Port IDs, enabling multiple services on a single subscriber CPE.
- Support FEC (Forward Error Correction), ensures high reliable and precise data transmission
- Support Rich layer 2 Management features, applicable to the biggest ISP networks
- Support FBA (Flexible Bandwidth Assignment), dynamic assign bandwidth automatically
- Support Dynamic Bandwidth Allocation (DBA), smarter bandwidth assignment and usage
- High security, data encrypted at upstream and downstream directions
- Support L2 Switching features, such as IEEE802.1Q VLAN, 802.1P QoS, etc
- Support OMCI and TR069 Management, manage subscribers remotely
- Supports IPv4 and IPv6, highly applicable in both IP type based networks

### GPON Parameters

ITU-T G.984.x GPON, -30dBm BOSA inside, SC/APC or SC/UPC connectors optional  
1310nm upstream & 1490nm downstream  
Support G.984.1 General Characteristics  
Support G.984.2 Physical Media Dependent (PMD) layer specification  
Support G.984.3 Transmission convergence layer specification  
Support G.988 OMCI protocol  
GPON transceiver transmitting power: 0.5-5dbm, Optical receiving sensitivity: -30dBm  
Transmission wavelength: Upstream: 1310nm / Downstream: 1490nm  
Support 1:128 Fiber Ratio at 20km transmission distance.  
Fiber Transmission cable: G.652 single mode optical fiber cable  
Configurable AES decryption on downstream payload.  
Configurable FEC on both upstream and downstream payloads.  
Multi-Application Processor queues for dedicated connections for in-band.  
Enhanced GPON debug and diagnostic functions.  
Support up to 8 Transmission Container (T-Cons), 32 GEM Port IDs  
Support NSR/SR Dynamic Bandwidth Allocation (DBA)  
Support Forward Error Correction (FEC)  
Maximum 2.5 Gbps Downlink/1.25 Gbps uplink  
Support Dying Gasp

### Hardware Features:

- ITU-T G.984.x GPON standard,
- Realtek RTL9601D single Core 300MHz processor
- Come with a 512M DDR3 SDRAM, come with a 64M Nand Flash
- Offers 1\*GPON SC/APC or SC/UPC port, support 2.5G at downstream and 1.25G at upstream
- Offers 2.5G Ethernet LAN port
- Support 2Gbps Backplane bandwidth
- LED Indicators for Power, PON, LOS and LAN
- Desktop and wall mount design, plastic housing,
- Plug and play operation
- External Power Supply
  - Power Supply, AC 110V-240V input, DC 12V, 0.5A output, 4KV surge protection
  - Support Asia, Europe, U.S, U.K, AU standard power plugs

### Software Features:

- Support IEEE802.1Q VLAN, Port Based VLAN
- Support IEEE802.1P QoS, Tos, Cos
- Support IEEE802.1d Spanning Tree
- Support IEEE802.1W Rapid Spanning Tree
- Support MAC address translation and MAC addresses limitation
- Support IGMP V1, V2 and IGMP Snooping for multicast
- Support IEEE802.3X full duplex, half duplex backpressure flow control

- Support MAC, IP, or TCP/UDP protocol based ACLs (Access Control protocol)
- Support Bandwidth Control
- Support CLI management, SNMP based NMS management and Monitor
- Support TR069 ACS management
- Support 4k VLAN
- Support MAC Learning, 1k MAC address table

#### Interoperable GPON OLT Models

- CHIMA** SGT8000A, SGT8016A, SGT8000B, SGT8016B, SGT9000B series GPON OLTs
- HUAWEI** MA5680T, MA5606T, MA5683T GPON OLT  
[\[Huawei R11/R13/R15/R17/R18 versions interoperable\]](#)
- ZTE** C220, C300 GPON OLT  
[\[All ZTE OLT firmware versions interoperable\]](#)
- Alcatel Lucent** 7342, 7360 ISAM GPON OLT
- Nokia** 7360 ISAM GPON OLT
- Fiberhome** AN5516-01, AN5516-02 GPON OLT  
[\[Fiberhome RP700, RP1000 versions interoperable\]](#)
- Ericsson** BM1500 GPON OLT
- Aurora** Trident7, T7-PIM-8802/COLT GPON OLT
- Dlink** DPN-3012-E GPON OLT
- Ubiquoss** C9500, C9516, C9016, C9264 GPON OLT
- Raisecom** ISCOM5508, ISCOM5800E, ISCOM6800 GPON OLT
- H3C** S3600-2P-OLT, S7502E, S7503E, S7506E, S7510E, S7506E-V GPON OLT

#### Specifications:

|                       |                                                                                                                                                                                           |              |             |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| Standards             | ITU-T G.984.1, 984.2, 984.3, 984.4 GPON, ITU-T G.988 OMCI, IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3x, IEEE 802.3z, IEEE 802.1d, IEEE 802.1P, IEEE 802.1Q, IEEE 802.1X            |              |             |
| Topology              | Star Topology                                                                                                                                                                             |              |             |
| Uplink Ports          | 1 GPON port, SC/APC or SC/UPC connectors optional                                                                                                                                         |              |             |
| Downlink Ports        | 1*2.5G LAN Port                                                                                                                                                                           |              |             |
| Transmission Rate     | 1.25Gbps at upstream, 2.5Gbps at downstream                                                                                                                                               |              |             |
| Transmission Distance | Maximum 20Km                                                                                                                                                                              |              |             |
| LED Indicators        | Power, PON, LOS, LAN                                                                                                                                                                      |              |             |
| Ethernet Cable        | 10Base-Tx: UTP category 3, 4, 5, up to 100m<br>100Base-Tx: UTP category 5, up to 100m<br>1000Base-Tx: UTP category 5, 5E, 6, up to 100m<br>2500Base-Tx: UTP category 5, 5E, 6, up to 100m |              |             |
| Fiber Cable           | 8.3μm, 8.7μm, 9μm and 10μm single mode fiber cable                                                                                                                                        |              |             |
| Power Supply          | AC 110-240V, DC 12V, 0.5A, External Power Supply, 4KV Surge protection                                                                                                                    |              |             |
| Temperature Humidity  |                                                                                                                                                                                           | Temperature  | Humidity    |
|                       | Working                                                                                                                                                                                   | 0°C - 45°C   | 10% - 90%   |
|                       | Standby                                                                                                                                                                                   | -40°C - 70°C | 5% - 90% RH |

## Order Information

| Model No.      | Description                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| SGN8601GR1B-V3 | 2.5G GPON ONU<br>Realtek RTL9601D 300MHz CPU<br>Power Supply: DC12V, 0.5A, 4KV Surge Protection<br>SC/APC or SC/UPC connector optional |