

4 LAN Ports  
2 FXS Ports

300M WiFi  
Router



2.5Gbps  
GPON Fiber  
WAN Port

40 T-CONs  
256 GEM Port  
IDs

Multiple WAN  
Connections

Bridge &  
Route Mode

IPv4 & IPv6  
QOS & VLAN

Datasheet V1.1.5

### SGN8668MVW GPON ONU:

The SGN8668MVW is a series of ITU-T G.984.x based GPON ONU designed for home and Office users. It offers 4 LAN ports that supports mixed GE and FE ports. Its uplink interface is a GPON SC port, supports 2.5G for downstream and 1.25G for upstream. The SGN8668MVW series also offers 2 FXS ports and a 300Mbps WiFi Router for VoIP and Home wifi networking applications. Built for FTTx deployments, it supports powerful home gateway/CPE features, such as Multiple WAN, QOS, VLAN, Firewall, ACL, etc. It is an Internet Data, Voice and WiFi all-in-one GPON CPE for ISPs deploying Triple Play networks over single fiber.

### Main Features:

ITU-T G.984.x GPON standard, compatible with Huawei, ZTE, Fiberhome, CHIMA GPON OLTs.

Offers 1\*GPON WAN Port, support 2.5G for downstream and 1.25G for upstream

Offers 4 \* Ethernet LAN ports, supports mixed GE and FE ports

Offers 2\*FXS ports for high quality Voice over IP deployments.

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Offers 300Mbps WiFi Router for Home WiFi applications  
AES 128-bit encrypted and key switching, enhancing transmission security  
40 Tconts and 256 GEM Port IDs, enabling multiple services on a single Subscriber CPE.  
Layer 2 Switching, support 802.1Q VLAN, 802.1P QOS, Bandwidth Control, Spanning Tree, etc  
Layer 3 Home Gateway/CPE features with Hardware NAT, support Multiple WAN, Route/Bridge mode, etc  
Port Binding, different LAN ports can be assigned with different WAN services  
Max 1:128 Fiber ration, max transmission distance can reach 35km  
Support FEC (Forward Error Correction), ensures high reliable and precise data transmission  
Support Dynamic Bandwidth Allocation (DBA), Smarter bandwidth assignment and usage.  
Support OMCI and TR069 Management, manage subscribers remotely.  
Supports IPv4 and IPv6, highly applicable in both IP type based networks.

## Technical Parameters

### GPON Parameters

ITU-T G.984.x GPON compliant, Class B+ 2\*10 SFF GPON transceiver, SC/APC  
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  
GPON transceiver sending power: 0.5-5dbm, receiving sensitivity: -27dbm  
Transmission wavelength: Upstream: 1310nm / Downstream: 1490nm  
Support 1:128 Fiber Optic Ratio at 35km 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 40 Transmission Container (T-Cons)  
Support 256 bidirectional GEM Port IDs  
Support NSR/SR Dynamic Bandwidth Allocation (DBA)  
Support Forward Error Correction (FEC)  
Maximum 2.488 Gbps Downlink/1.244 Gbps Uplink  
Support Dying Gasp

### QOS

IEEE802.1P QOS, DSCP, TOS:  
SP, WRR, SP+WRR dispatching Algorithm  
Source & DST-MAC based QOS  
VLAN ID, Vlan Priority based QOS  
Source DST-IP based QOS

### Home Gateway/CPE Features

Multi-WAN, support up to 8 WAN connections  
Support Route and/or Bridged WAN  
Port Binding, Data/VoIP/IPTV services can be bound to different LAN ports  
Configurable VLAN ID for each WAN  
Configurable QOS queues for each WAN  
Multi-services bound to the same WAN

### Networking Features

MAC Learning, 4K MAC address table  
Bridged or Route network mode  
Support RIP v1, v2 for routing  
Static Route, Dynamic Rout, DNS Proxy,  
IPv4 & IPv6 TCP, UDP, RTP, SNTP, NAT, DHCP, DNS  
IEEE802.1Q VLAN, Port VLAN  
IEEE802.1x, MAC, IP, or TCP/UDP based ACLs  
Port Bandwidth Control, IEEE802.3x flow control  
Storm Control: Broadcast/Multicast/unknown unicast, ARP  
Port Isolation, Port Mirror, Auto MDI/MDIX  
IEEE802.1d STP, Port Loop detection  
IGMP v2, v3 & IGMP Snooping for IPv4  
MLD v2, v3 & MLD Snooping for IPv6

### VoIP Parameters

Offers 2 FXS ports for Phone connections  
2 Calls can be made/received simultaneously  
SIP V1, V2 (RFC3261, RFC3262, RFC3264, RFC3265)  
SIP & H.248, support registering 2 SIP accounts  
G.711, G.723.1, G.729A-8kbps, G.726, G.722, ILBC voice codecs  
DTMF Tone Detection, DTMF Tone Relay,  
Multiple Calling Tone, FSK Caller ID  
Calling line Identification Presentation  
Calling line Identification Restriction  
Call forwarding, call transfer, call hold, three-way conference, etc  
QOS and TOS to ensure voice packets pass through in priority  
Support RFC62 Echo protocol,  
Support T.38 Fax Machine  
Support Digital Map configuration

### Interoperable GPON OLT Models

CHIMA SGT8000A, SGT8016A series  
Huawei MA5680T, MA5683T OLTs  
ZTE C200, C220, C300 series OLTs  
Fiberhome AN5516 OLT

### Management Features

Serial interface maintenance using UART  
Web UI Management  
OMCI & NMS Management  
CLI command line management  
FTP/TFTP/HTTP Auto Provision Management  
TR069 ACS management

### 300Mbps WiFi Router Features

Offers an IEEE802.11n WiFi Router, 2.4GHz frequency  
4 LAN Ports, support mixed GE and FE ports  
MIMO, support 2-IN-2-OUT, Max 300Mbps WiFi throughput  
WiFi Transmission Distance: 150m for indoors, 300m for outdoors  
WPS one-key protection over your wifi network  
Support DHCP, Static IP and PPPOE  
DHCP Server, DHCP Relay, DHCP Client, Static IP assignation  
Static Routing from source IP to destination IP  
Firewall, NAT, NAPT, UPnP  
DDNS, DMZ Host, Port Forwarding  
64/128 bit WEP, IEEE802.1x, WPA and WPA2 authentications  
Max 4 SSID broadcasting, Hidden SSID  
Automatically choose the best signal channel  
STA mutual isolation and ACL table based on MAC Accesses  
Wifi Multimedia (WMM), enhanced QOS for multimedia packets

### Hardware Parameters

Built on powerful GPON SOC, Dual Core CPU at 400Mhz  
CPU covered with cooling unit.  
Support Hardware NAT.  
16-bit DDR3 SDRAM, come with a 512Mb DDR3 SDRAM  
Nand Flash, come with a 1Gb Nand Flash  
1\*GPON SC Port, 2.5G downstream, 1.25G Upstream  
4\* LAN ports, supports 4FE/2GE+2FE/1GE+3FE/4GE Ports  
300Mbps WiFi Router,  
2\*7dB or 2\*5dB external antennas optional  
2 FXS ports, support analog phones and T.38 fax machine.  
IEEE802.3x flow control Full duplex and half duplex,  
LED Lights: PWR,PON,Los,WAN,VoIP1-2,LAN1-4,WiFi,WPS,USB  
External power supply, DC 12V, 1-1.5A.

### Hardware Interfaces

1*GPON WAN Ports	2*5dB or 2*7Db External Antennas (2T2R)
4 FE or 2GE+2FE or 1GE+3FE or 4GE Ports	1*WiFi Button
2*FXS VoIP Ports	1*WPS Button
1*300Mbps WiFi Router	1*Reset button
Power Supply: DC 12V, 1-1.5A	1*USB port
LED Indications: Power, PON, LOS, WAN, VoIP1, VoIP2, LAN1, LAN2, LAN3, LAN4, WIFI, WPS, USB	

## Specification Table

Standards	IEEE 802.3, IEEE 802.3u, IEEE802.3ab, IEEE 802.3x, IEEE802.1Q, IEEE802.1P, IEEE802.1D, IEEE802.11b/g/n, ITU-T G.984.1, ITU-T G.984.2, ITU-T G.984.3, ITU-T G.984.4		
WAN Port	1*GPON WAN Port, Class B+, SC/APC Connectors		
LAN Ports	4 FE or 2GE+2FE or 1GE+3FE Ports		
VoIP Ports	2*FXS Ports		
WiFi	IEEE802.11b/g/n 300Mbps WiFi		
Ethernet Cable	10Base-Tx: UTP category 3, 4, 5, up to 100m 100Base-Tx: UTP category 5, up to 100m 1000Base-Tx: UTP category 5, 5E, 6, up to 100m		
Fiber Cable	8.3μm, 8.7μm, 9μm and 10μm single mode fiber cable		
Power Supply	AC110-240V Input, DC 12V, 1-1.5A output		
Temperature & Humidity		Temperature	Humidity
	Working	0 to 50°C	10% - 90%
	Standby	-20 to 70°C	5% - 90% RH

## Order Information

Model NO.	Description	
Notice: All models supports Router or Bridge mode, or mixed Router/Bridge mode		
4 FE Models	SGN8668M	4FE GPON ONU
	SGN8668MV	4FE+2FXS GPON ONU
	SGN8668MW	4FE+300M WiFi Router GPON ONU, 5dB antennas
	SGN8668MW-7dB	4FE+300M WiFi Router GPON ONU, 7dB antennas
	SGN8668MVW	4FE+2FXS+300M WiFi Router GPON ONU, 5dB antennas
	SGN8668MVW-7dB	4FE+2FXS +300M WiFi Router GPON ONU, 7dB antennas
2GE+2FE Models	SGN8668MG2	2GE+2FE GPON ONU
	SGN8668MVG2	2GE+2FE+2FXS GPON ONU
	SGN8668MWG2	2GE+2FE+300M WiFi Router GPON ONU, 5dB antennas
	SGN8668MWG2-7dB	2GE+2FE+300M WiFi Router GPON ONU, 7dB antennas
	SGN8668MVWG2	2GE+2FE+2FXS +300M WiFi Router GPON ONU, 5dB antennas
	SGN8668MVWG2-7dB	2GE+2FE+2FXS +300M WiFi Router GPON ONU, 7dB antennas
4 GE Models	SGN8668MG4	4GE GPON ONU
	SGN8668MVG4	4GE+2FXS GPON ONU
	SGN8668MWG4	4GE+300M WiFi Router GPON ONU, 5dB antennas
	SGN8668MWG4-7dB	4GE+300M WiFi Router GPON ONU, 7dB antennas
	SGN8668MVWG4	4GE+2FXS +300M WiFi Router GPON ONU, 5dB antennas
	SGN8668MVWG4-7dB	4GE+2FXS +300M WiFi Router GPON ONU, 7dB antennas