

4 LAN Ports
2 FXS Ports

300M WiFi
1*CATV RF



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

SGN8668MVWT GPON ONT:

The SGN8668MVWT is a series of ITU-T G.984.x based GPON ONT designed for home and Office users.

It offers 4 LAN ports that supports mixed GE and FE ports. The WAN port is a GPON SC port, supporting 2.5G for downstream and 1.25G for upstream. The SGN8668MVWT GPON ONT family also offers 2 FXS ports, 1 CATV RF interface and a 300Mbps WiFi Router for VoIP, TV 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, TV and WiFi all-in-one GPON CPE for ISPs deploying Triple Play networks over single fiber.

Main Characters

- 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, supports 4GE, 2GE+2FE and 4FE ports
- Offers 2*FXS ports for high quality Voice over IP deployments.
- Offers 1 CATV RF port, support high quality TV image transmissions over 1550nm Fiber.
- 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
1310nm upstream & 1490nm downstream, SC/APC connectors
Support G.984.1, G.984.2, G.984.3, G.984.4, G.988 GPON & OMCI protocols
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

CATV Parameters

Built-in WDM coupler, combining 1550nm wavelength for CATV
CATV Frequency range: 40~860Mhz (STV Optional: 40~2200MHZ)
RF 75ohm Coaxial Cable TX port: Metric F or England F
RF output power: $\geq 80\text{dBuV}$ at input optical power $= -6\text{dBm}$
Band Flatness: TV $\pm 1\text{dB}$, (Optional: STV $\pm 2\text{dB}$)
CNR $\geq 47\text{dB}$, CSO $\leq -61\text{dB}$, CTR $\leq -61\text{dB}$
Support Enable or Disable CATV service remotely

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

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

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

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

Hardware Parameters

Built on powerful GPON SOC, Dual Core CPU at 400Mhz
 Self Cooling unit over original CPU
 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/4GE Ports
 300Mbps WiFi Router,
 1*CATV RF port
 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 Indicators: PWR,PON,Los,WAN,VoIP1-2,LAN 1- LAN 4,WiFi,
 WPS,TV, USB
 External power supply, DC 12V, 1.5-2A

Hardware Interfaces

1*GPON WAN Port	2*5dB or 2*7Db External Antennas (2T2R)
4GE, 4FE or 2GE+2FE LAN Ports	1*WiFi Button
2*FXS VoIP Ports	1*WPS Button
1*300Mbps WiFi Router	1*Reset button
1*CATV RF port	1*USB port
Power Supply: DC 12V, 1.5-2A	1*Led On/Off button
LED Indications: PWR, PON, Los, WAN, VoIP1, VoIP2, LAN 1, LAN2, LAN3, LAN4, WiFi, WPS, TV,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, ITU-T G.988 RFC2543, RFC3261, RFC3262, RFC3264, RFC3265		
WAN Port	1*GPON WAN Port, SC/APC Connectors		
LAN Ports	4GE, 4FE or 2GE+2FE LAN Ports		
VoIP Ports	2*FXS Port		
CATV Port	1 CATV RF Port		
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, 1.5-2A 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	SGN8668MT	4FE + 1 CATV RF GPON ONT
	SGN8668MVT	4FE + 2FXS + 1 CATV RF GPON ONT
	SGN8668MWT	4FE + 300M WiFi + 1 CATV RF GPON ONT, 5dB antennas
	SGN8668MWT-7dB	4FE+300M WiFi + 1 CATV RF GPON ONT, 7dB antennas
	SGN8668MVWT	4FE+2FXS+300M WiFi + 1 CATV RF GPON ONT, 5dB antennas
	SGN8668MVWT--7dB	4FE+2FXS +300M WiFi + 1 CATV RF GPON ONT, 7dB antennas
2GE+2FE Models	SGN8668MG2T	2GE+2FE +1 CATV RF GPON ONT
	SGN8668MVG2T	2GE+2FE+2FXS + 1 CATV RF GPON ONT
	SGN8668MWG2T	2GE+2FE+300M WiFi + 1 CATV RF GPON ONT, 5dB antennas
	SGN8668MWG2T-7dB	2GE+2FE+300M WiFi + 1 CATV RF GPON ONT, 7dB antennas
	SGN8668MVWG2T	2GE+2FE+2FXS +300M WiFi + 1 CATV RF GPON ONT, 5dB antennas
	SGN8668MVWG2T-7dB	2GE+2FE+2FXS +300M WiFi + 1 CATV RF GPON ONT, 7dB antennas
4 GE Models	SGN8668MG4T	4GE + 1 CATV RF GPON ONU
	SGN8668MVG4T	4GE+2FXS + 1 CATV RF GPON ONU
	SGN8668MWG4T	4GE+300M WiFi + 1 CATV RF GPON ONU, 5dB antennas
	SGN8668MWG4T-7dB	4GE+300M WiFi + 1 CATV RF GPON ONU, 7dB antennas
	SGN8668MVWG4T	4GE+2FXS +300M WiFi + 1 CATV RF GPON ONU, 5dB antennas
	SGN8668MVWG4T-7dB	4GE+2FXS +300M WiFi + 1 CATV RF GPON ONU, 7dB antennas