



ITU-T G.984.x
GPON standard

1.25G upstream
2.5G downstream

RTL9602C
625MHz CPU

Multi-WAN
Route/Bridge

IPv4/IPv6
VLAN, QOS
Firewall, ACL

Datasheet V1.1.5

SGN725X Series GPON ONT:

The SGN725X is ITU-T G.984.x based GPON ONT that supports 2.5G downstream and 1.25G upstream bandwidth. It supports full Home Gateway features, such as Multiple WAN connections, VLAN, QOS, etc. It is a cost effective WiFi GPON ONT for Fiber to the home deployments.

Main Characters

- ITU-T G.984.x GPON standard, compatible with Huawei, ZTE, Fiberhome, CHIMA GPON OLTs
- Offers 1 GPON WAN Port, support 1.25G upstream and 2.5G downstream
- LAN Ports can be configured in both Route or Bridge modes
- Offers FXS port for high quality Voice over IP deployment
- Offers 300Mbps 2T2R WiFi Router features
- Max 1:128 Fiber ratio, max transmission distance can reach 35km
- Support AES 128-bit encrypted and key switching, enhancing transmission security

- Support 8 Tconts 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

Technical Parameters

GPON Parameters

ITU-T G.984.x GPON, built-in with a bosa or 2*10 SFF packaged GPON transceiver, SC/PC connector

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 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 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

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, 2K 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

300Mbps WiFi + Turbo WiFi Router Features

Offers an IEEE802.11n WiFi Router, 2.4GHz frequency
2 LAN Ports, 1GE and 1FE port
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, NAT, 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

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

Interoperable GPON OLT Models

CHIMA SGT8000A, SGT8016A series GPON OLTs
HUAWEI MA5680T, MA5606T, MA5683T GPON OLT
ZTE C220, C300 GPON OLT
Alcatel Lucent 7342, 7360 ISAM GPON OLT
Fiberhome AN5516-01, AN5516-02 GPON OLT
LSCABLE LST20016 GPON OLT
ERICSSON BM1500 GPON OLT
AURORA Trident7, T7-PIM-8802/COLT GPON OLT
ZHONG HONG MX-180/280, MXK 319, 819, 823, MXK-F1419, MXK-F1421

Hardware Interfaces:

Built with Realtek RTL9602C GPON SOC
CPU covered with cooling unit, support Hardware NAT.
1*GPON SC Port, 2.5G downstream, 1.25G Upstream
10/100/1000Base-Tx Gigabit Ethernet Port
10/100Base-Tx Fast Ethernet Port
FXS port, support analog phones
1*IEEE802.11b/g/n 300Mbps WiFi Router, 2*5dBi external antennas

Hardware parameters

Built on powerful GPON SOC, Dual Core CPU at 625Mhz
CPU covered with cooling unit.
Support Hardware NAT.
16-bit DDR3 SDRAM, come with a 1Gb DDR3 SDRAM
Nand Flash, come with a 1Gb Nand Flash
1*GPON SC Port, 2.5G downstream, 1.25G Upstream
1GE + 1FE ports
300Mbps WiFi router up to 23dBm
2*5dBi external antennas optional
1 FXS port, support analog phones.
IEEE802.3x flow control Full duplex and half duplex,
LED Lights: Power, PON, LOS, INTERNET, VOIP, GE,
FE, WiFi, WPS
External power supply, DC 12V, 1-1.5A

VoIP Parameters


Offers 1 FXS port 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
coders
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 Digital Map configuration






IEEE802.3x flow control Full duplex and half duplex
LED Indications: Power, PON, LOS, INTERNET, VOIP, GE,
FE, WiFi, WPS
1*Reset button, 1*WPS button, 1*ON/OFF button
External Power Supply: DC 12V, 1-1.5A
Desktop design, Plastic housing

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		
Topology	Star Topology		
Uplink Port	1 GPON SC Uplink port, SC/PC Connector		
GPON Transmission Distance	Up to 35Km		
Downlink Port	10/100/1000Base-Tx Gigabit LAN		
	10/100Base-Tx Fast Ethernet Port		
	FXS port		
WiFi	IEEE802.11B/G/N 300Mbps WiFi Router, 2T2R Max 23dBm WiFi Power Output		
LED Indicators	Power, PON, LOS, INTERNET, VOIP, GE, FE, WiFi, WPS		
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	AC 96-260V, DC 12V, 1A, External Power Supply		
Temperature Humidity		Temperature	Humidity
	Working	0°C - 45°C	10% - 90%
	Standby	-40°C - 70°C	5% - 90% RH

Order Information

Product Family	Model No.	Product Description
	SGN7254FVWG1	1GE+1FE+1FXS+300M WiFi GPON ONT, 2*5dBi external antennas, 2T2R, 16~23dBm WiFi Power output

	SGN7253FWG1	1GE+1FE+300M WiFi GPON ONT, 2*5dBi external antennas, 2T2R, 16~23dBm WiFi Power output
	SGN7253VWG1	1GE+1FXS+300M WiFi GPON ONT, 2*5dBi external antennas, 2T2R, 16~23dBm WiFi Power output
	SGN7252WG1	1GE+300M WiFi GPON ONT, 2*5dBi external antennas, 2T2R, 16~23dBm WiFi Power output
	SGN7253FVG1	1GE+1FE+1FXS GPON ONT
	SGN7252VG1	1GE+1FXS GPON ONT

	<p>SGN7252FG1</p>	<p>1GE+1FE GPON ONT</p>
	<p>SGN7251G1</p>	<p>1GE GPON ONT (Support PPPOE and Router)</p>