

Overview

The Spectra xPON 1GE-R is a cost-effective, dual-mode G/EPON Optical Network Terminal (ONT) designed specifically for FTTH (Fiber to the Home) and FTTB (Fiber to the Building) deployments. Built on a robust single-chip architecture, it fully complies with ITU-T G.984 (GPON) and IEEE 802.3ah (EPON) standards. In GPON mode, it delivers high-speed performance with data rates up to **2.5Gbps downstream** and **1.25Gbps upstream**.

Equipped with a Gigabit Ethernet port, the ONT ensures a stable Layer 2 connection. Its **auto-sensing technology** allows seamless switching between GPON and EPON modes, offering "plug-and-play" compatibility with various OLT vendors without requiring manual configuration, such as Huawei, ZTE, Fiberhome, BDCOM, C-DATA OLT etc.

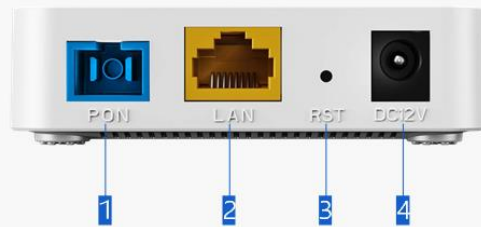
Highlight Features

- Chipset: Realtek RTL9603C, stable and affordable design
- Auto-sensing technology of GPON&EPON switching
- Compatibility with various OLT vendors
- SFU and HGU hybrid modes support
- Support PPPOE and IPoE in the router mode
- Rich features and multi-scenario adaptation

Hardware parameters

Item	Specification
Dimension	78mm×76mm×23mm (L×W×H) Without package 85mm×80mm×70mm (L×W×H) with package
Net weight	56g
Operating	Operating temperature: -10 °C- +50°C Operating humidity: 10% - 90% (non-condensing)
Storage	Storage temperature: -40℃ - +70℃ Storage humidity: 5% - 95% (non-condensing)
Power	DC 12V/0.5A, external AC-DC power adapter
Power consumption	3W
Interfaces	1*G/EPON Optical interface 1*1000Mbps RJ45 interface 1* RST button
Indicators	4, POWER/PON/LOS/LAN(See details in below)

Diagrams and Descriptions:



- 1 PON
- 2 LAN
- 3 RST
- 4 DC12V

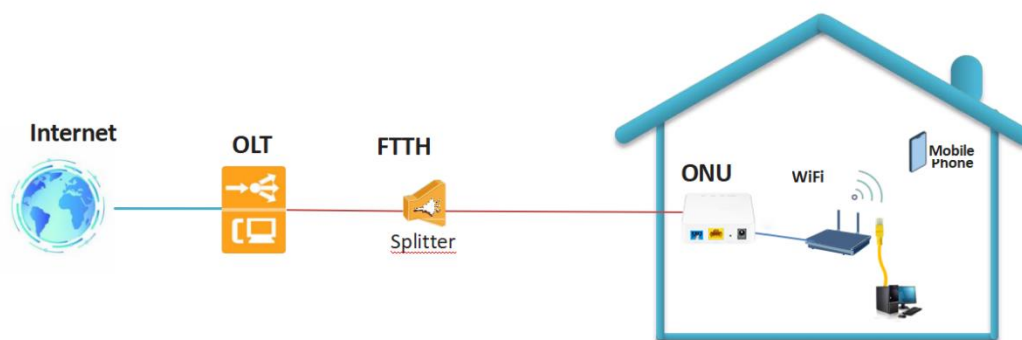
Interface			Description
1	PON	SC/UPC or SC/APC fiber optical port	Connect the fiber to the OLT device, communicate the data through PON protocol
2	LAN	RJ45 port	100M/1000Mbps adaptive RJ45 port, connect PC or Wireless router for internet access.
3	RST	Factory reset button	Factory reset button, press and hold for 10 seconds and ONT will reboot with the factory default configuration.
4	DC12V	Power interface	Connect 12V power
LED Indicators			Description
1	PWR	Power status	On: The ONT is power on; Off: The ONT is Power off;
2	PON	ONU Register	On: Success to register to OLT; Blinking: In process of registering to OLT; Off: In process of registering to OLT;
3	LOS	G/EPON optical signals	Blinking: Optical power lower than receiver sensitivity ; Off: Optical in normal
4	LAN	LAN port status	On: Ethernet connection is normal; Blinking: Data is being transmitted through the Ethernet port; Off: Ethernet connection is not set up;

Features support

Item	Parameters	Specification
PON Features	PON Physical	1*G/EPON Adaptive port (GPON Class B+) (Optional Class C+) Wavelength: Tx1310nm, Rx 1490nm SC/UPC or SC/APC connector Receiving sensitivity: ≤-28dBm Overload optical power: -3dBm(EPON) - 8dBm(GPON) Transmitting optical power: 0 ~ +5dBm Transmission distance: 20KM Support DDMI
	PON Protocol	OMCI comply with ITU-T G984 EPON OAM comply with CTC 2.0 and 2.1 Dual-Mode Compatibility auto-sensing technology allows seamless switching between GPON and EPON modes Multiple OLT support
Ethernet	Ethernet Port Physical	1*GE Auto-negotiation RJ45 connector Full Duplex / Half-Duplex Auto-MDI/MDI-X Transmission Distance 100 Meter Jumbo frame
	Ethernet port feature	Support Port rate limiting Support Loop detection Support Flow control Support Storm control
Management	OMCI&OAM WEB GUI TELNET CLI	Compliant with ITU - T G.984 Standard, Support ONU auto-discovery/Link detection/remote upgrade of software Support SN and LOID+Password multiple registration methods Support Multiple language of WEB UI interface
Basic features	Layer2 features	Support Bridge mode by default Support Routing mode (Auto detected by the configuration) Support PPPOE and IPOE 802.1p_Mark ARP table query
	VLAN	Support VLAN tag mode Support VLAN transparent mode Support VLAN trunk mode (max 8 VLANs) Support VLAN 1:1 translation mode (max 8 VLANs)
	Multicast	Support IGMPv1/v2 Support IGMP Snooping

		Support Multicast VLAN
Advance features	Layer3 features	Support DHCP server IP routing (For IPV4 and IPV6) Support RIP Support SNTP Support Dynamic DNS
	IPV6	IPV4&IPV6 dual stack DHCPV6 IPV6 RADVD
	Advance application	Support UPnP, Port forwarding feature Support QOS MLD proxy DMZ ALG
Security & Firewall	ACL	Support IPV4 /IPV6 ACL Support IP filtering and Port filtering Support MAC Filtering Support Domain blocking
O&M Features	Diagnose And debugging	Ping test for IPV4 and IPV6 Tracert test for IPV4 and IPV6 Multicast upgrade (Batch upgrade in boot mode) Factory reset (Hardware and Software reset) Firmware upgrade via Web GUI and OMCI Configuration backup and restore System logs and remote backup Support PON&LAN statistic Support OMCI debugging Support Port mirror
	Alarm	Support Dying Gasp Support Port Loop Detect Support Eth Port Los

Application Diagram



Ordering information

Product Name	Product Model	Descriptions
1GE XPON ONU (Chipset Realtek)	Spectra xPON 1GE-R	1*GE Ethernet interface, 1*E/GPON interface, plastic casing, external power supply adapter 12V 0.5A DC