

AN6001-GF16 Optical Line Terminal Equipment Datasheet

Overview

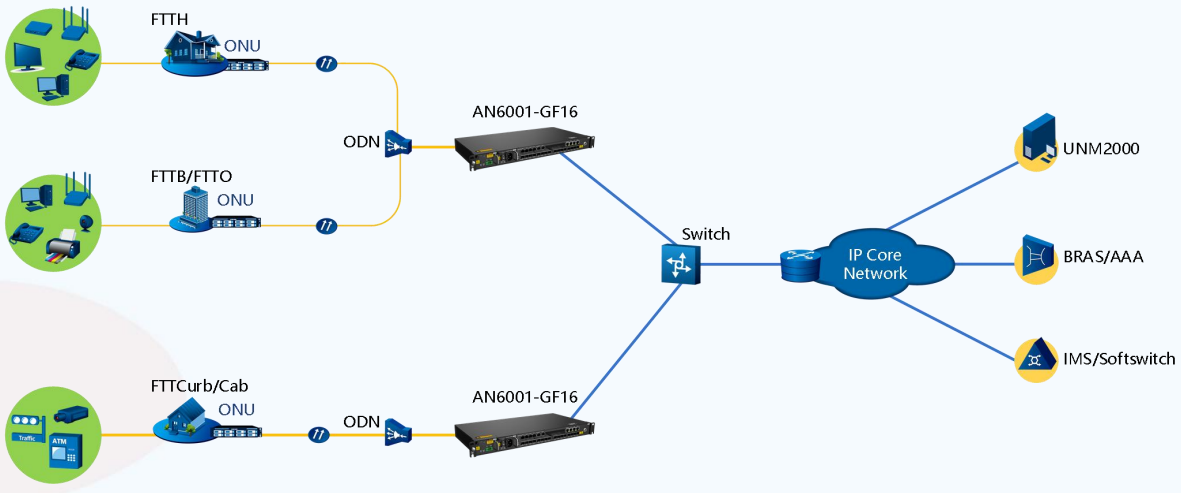
The AN6001-GF16 is a mini box-shaped OLT with 16 Agile-PON ports. It can be deployed in an outdoor cabinet and applied to outdoor scenarios such as rural areas, towns, and urban villages with low user density, insufficient equipment rooms, and poor environment, catering for family and enterprise access services.

The AN6001-GF16 addresses customers' pain points as follows:

- Enables wide network coverage in sparsely-populated rural areas.
- Reduces network construction costs by making efficient use of spaces inside existing outdoor cabinets.
- Lowers transmission costs for cabled TV and broadcast signals by integrating an EDFA and allowing triple play.

Application

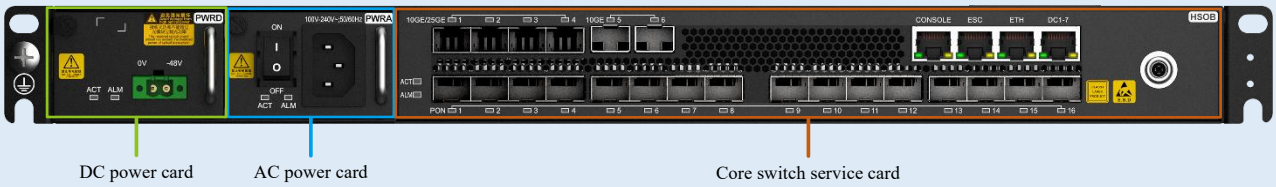
The AN6001-GF16 provides multiple PON (such as GPON, XG-PON and XGS-PON) access services in diverse scenarios like FTTH, FTTB, FTTO and FTTC.



Appearance

The AN6001-GF16 is a 1U Mini box-shaped optical line terminal (OLT). It is designed with an integrated core switch service card to provide more interfaces, as well as pluggable power cards and optical modules for easy installation, deployment and maintenance.

It supports three power supply schemes: DC-AC, dual-DC, and dual-AC. The figure below shows the AN6001-GF16 using DC-AC power supply.



Features

❖ Small Size and High Density

- 1U high with modular power cards for easy installation and replacement
- Connection to 2048 ONUs
- 16 Agile-PON ports
- 4 × 10GE/25GE upstream ports, 2 × 10GE upstream ports

❖ Carrier-class Reliability

- 1+1 redundancy protection for PON ports, upstream ports, and power interfaces, with all the slots allowing fault tolerance
- Type B / Type C PON protection; detection of rogue ONUs and optical link faults; TWAMP test
- Service switching with WTR time less than 50 ms

❖ Flexible Deployment and Smart O&M

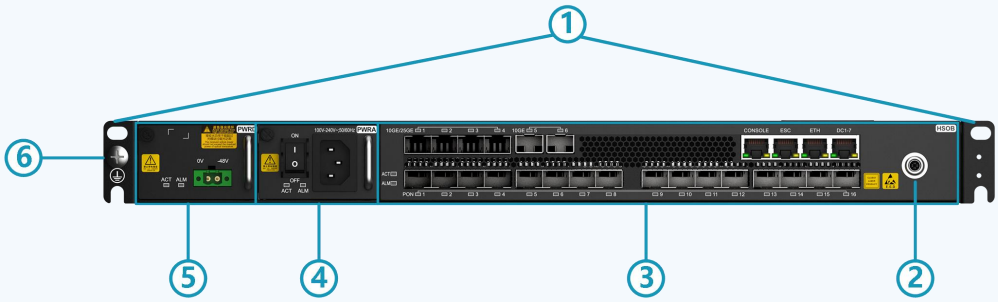
- Quick and flexible deployment: allowing mounting in a 19-inch / 21-inch cabinet, an outdoor cabinet, or on a wall
- Device management through network management systems based on web pages, GUIs, or CLI
- Remote software upgrade

❖ Diverse Interfaces

- GPON, XG-PON Combo and XGS-PON Combo ports catering to the demands for access, management and maintenance
- Flexible networking through communication interfaces like RS-232 and smart dry contact interfaces
- RS-485 environment monitoring interface

Structure

The figure below shows components of an AN6001-GF16 subrack using AC-DC hybrid power supply.



No.	Name	Function
①	Mounting ears	Secure the subrack in a cabinet.
②	ESD protection earth ground fastener	Connects with an ESD protection unit.
③	Core switch service card	Processes Agile-PON services; provides 25GE/10GE upstream ports and interfaces for management, monitoring and debugging.
④, ⑤	Power card	The AC power card leads in 100-240 V AC power, while the DC power card leads in -48 V DC power.
⑥	Subrack earth ground point	Connects with a subrack protection earth ground cable.

Interfaces

Identifier	Meaning	Description
PON 1-16	Agile-PON ports	Connect to ONUs via an ODN.
10GE/25GE	10GE/25GE upstream ports	Connect to an IP network.
10GE	10GE upstream ports	Connect to an IP network.
CONSOLE	RS-232 local debugging serial port	Connects to a PC to enable equipment commissioning.
ESC	RS-485 environment monitoring port	Connects to an environment monitoring device and reports environment status to a network management system.
ETH	Out-of-band network management interface	Connects to an out-of-band network management computer.
DC 1-7	Dry contact interface	Connects to dry contact signals.

Indicators

Identifier	Meaning	Color	Status	Description
ACT Note 1	Working status indicator	Green	ON	The card is operating properly.
			Blinking slowly	The card is being initialized.
			OFF	The card is not powered on.
ALM	Alarm indicator	Red	ON	The card has alarms.
			OFF	The card has no alarms.
10GE/25GE 1-4 10GE 5-6	Port status indicator	Green	ON	The port is connected to an upper-layer device.
			Blinking	The port is transmitting or receiving data.
			OFF	The port is not connected to an upper-layer device.
PON 1-16	Port status indicator	Green	ON	The port is connected to an ONU at the far end, and the ONU has been authorized.
			OFF	The port is not connected to an ONU at the far end, or the far-end ONU is not authorized.
	Link status indicator	Green	ON	The port is connected to an upper-layer device.
			OFF	The port is not connected to an upper-layer device.
	Data status indicator	Yellow	Blinking	The port is transmitting or receiving data.
			OFF	The port is not transmitting or receiving data.
Note 1: Indicators of power cards do not have the “blinking slowly” status.				

Features

Layer 2 Features	
VLAN+MAC forwarding	SVLAN+CVLAN forwarding
PPPoE+	DHCP option82
Layer 3 Features	
Static routing	RIP/RIPng
OSPF/OSPFv3	IS-IS
BGP/BGP4+	ARP
DHCP Relay / Snooping / Server	VRF
Multicast	
IGMP V1/V2/V3	IGMP Proxy / Snooping
MLD V1/V2	MLD Proxy / Snooping
VLAN-specific IPTV multicast	IPV4 PIM and PIM-SSM

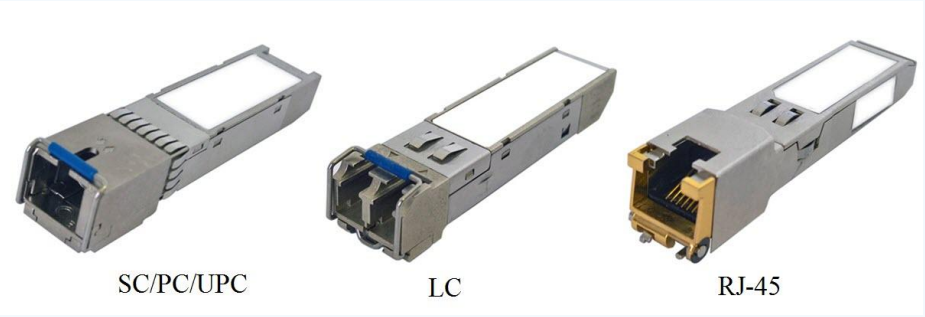
QoS	
Traffic classification	Priority processing
Traffic policing based on TrTCM	WRED
Traffic shaping	HQoS
PQ / WRR / PQ+WRR	
IPv6	
Dual stacking of IPv4 and IPv6	IPv6 Layer 2 and Layer 3 forwarding
DHCPv6 relay	
System Reliability	
Type B / Type C PON protection	ERPS
Power card redundancy protection	Remote card detection and repair

Specifications

Item		Specification
Dimensions of a subrack without mounting ears (H × W × D)		• 44.4 mm × 443 mm × 220 mm
Dimensions of a subrack with mounting ears for 19-inch cabinets (H × W × D)		• 44.4 mm × 480 mm × 225 mm
Dimensions of a subrack with mounting ears for 21-inch cabinets (H × W × D)		• 44.4 mm × 530 mm × 233 mm
Card dimensions (H × W × D)	Core switch service card (HSOB)	• 33.2 mm × 272 mm × 215 mm
	AC power card (PWRA)	• 39.6 mm × 64 mm × 226 mm
	DC power card (PWRD)	• 39.6 mm × 64 mm × 226 mm
Power supply	DC voltage range	• -38.4 V DC to -57.6 V DC
	AC voltage range	• 90 V AC to 290 V AC
Weight		• 3.75 kg
Power consumption		• Maximum power consumption: 185.5 W • Static power consumption: 90 W
Operating temperature		• -40° C to 55° C • Lowest start-up temperature: -25° C
Operating relative humidity		• 5% to 95% (non-condensing)
Operating altitude		• ≤ 4000 m
System switching capability		• 640 Gbit/s
Maximum upstream ports in the system		• 4 × 10GE/25GE upstream ports + 2 × 10GE upstream ports
Maximum Agile-PON ports in the system		• 16
Maximum ONUs connected to the system		• 2048
Maximum transmission distance (PON port)		• 60 km
System reliability		• Basic reliability: 30 000 hours • Task reliability: 50 000 hours • Note: The mean time to repair (MTTR) for the entire system is 0.5 hour.

Modules

The pluggable optical modules applied to the AN6001-GF16 have three encapsulation formats: SFP, SFP+ and SFP28. Interface types of the modules include SC/PC/UPC, LC, and RJ-45 (electrical module).



The table below describes the mappings between modules and equipment interfaces.

Interface	Module Type
PON 1-16	XGS/GP-COMBO enhanced (allowing data encryption)
	XG/GP-COMBO enhanced (allowing data encryption)
	GPON optical module (CLASS D)
	GPON optical module (CLASS C++)
	GPON optical module (CLASS C+)
	GPON optical module (CLASS B+)
10GE	Electrical module
	GE optical module (10 km)
	10GE optical module (10 km)
25GE	25GE optical module (10 km)