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Super Access Ability

- · High capacity and Density carrier-class 10 Gigabit PON platforms supporting 256 PON ports, switch card capacity of 3.84T and backplane bus capacity of 5.12 Tbit/s
- Support 1*10GE+ 4*GE, 2*10GE+ 2*GE and 6*GE (optical or electrical).
 Support redundancy error-check protection for services, controller and Support STM-1/E1 private uplink interface and up to 16×16GE downlink
- . It has capability to support split-ratio of 1:32/64/128 long haul transmission and CLASS C+ optical module

Multi-service Access

- · Provide Internet, Voice, IPTV, CATV and TDM services
- · Support IEEE 1588v2 protocol and 1PPS+TOD Clock interface
- · Support OSPF, VRRP and RIP L3 protocols
- . Unify platform of MSAN/EPON/GPON/10G PON/P2P for FTTX Smooth evolution

High Reliability Optimization Design

- Standard 19" inches cabinet supporting 16 service slots
- · Full front card and front access design
- · Support hot plug for all cards and PON modules
- · End-to-end protection, uplink ports RSTP/LACP protection and downlink PON port millisecond level switch protection

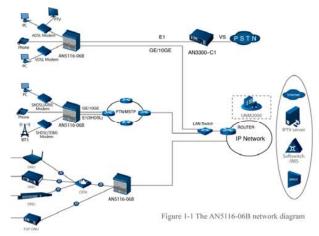
Green Energy

- · The overall power consumption is lower than the average industry level
- . Use the high performance and lower consumption chip
- · 8-level intelligent temperature control fan and support idle ports sleeping mode and energy saving

Typical Application Scenarios

The AN5116-06B is suitable for the application of FTTH / FTTB / FTTC / FTTV / FTTM/etc.. And it is usually placed in a residential community or a central office.

An illustration of the AN5116-06B network diagram is shown in Figure 1-1.



Feature		Specification		
Switch card	capacity	3.84T		
Backplane I	bus capacity	5.12 Tbit/s		
Uplink card	type	1*10GE+ 4*GE , 2*10GE+ 2*GE, 6*GE		
	Uplink interface	10GE optical interface, GE optical interface, GE electrical interface, STM-1 optical interface, E1 electrical interface		
	Subscriber interface	POTS/SHDSL/ADSL2+/VDSL2/GE interfaces EPON/GPON/10GEPON/XGPON interfaces		
Service	Management interface	EMS interface, GE interface, Console interface (using RS-232 interface protocol), RJ-45 interface (using RS-232 interface protocol)		
Interface Type	Dry contact interface	RJ-45 interface		
	External clock interface	Clock coaxial interface		
	Alarming interface	RJ 45 interface		
Physical dir	nensions	Height: 471.65mm Depth: 262.7mm Width: 480.8mm		
Power inpu	ts	Equipment room voltage: -48V DC (-40V ~ -57V)		
Power cons	sumption	<600W (Fully loaded with EPON cards) <850W (Fully loaded with GPON cards)		
Weight		Empty subrack (fans included): 20kg Subrack (fully loaded with cards): 30kg		
Operating t	lemperature	-10 C ~ +55 C		
Operating r	relative humidity	£90%		
Atmospher	ic pressure	86kPa ~ 106kPa		
Electromagnetic compatibility standards		CISPR 22, CISPR 24, EN 300 386, EN 55022, EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, ETSI EN 300132-2, ETSI EN 300386 V 1.4.1, IEC 61000-4-2, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, ITU-T K20, ITU-T K43, ITU-T K48		
Safety standards		EN 60825-1, EN 60825-2, EN 60950-1, IEC 60825-1, IEC 60825-2, IEC 60950-2001, UL 60950-1:2003		



- · Suitable for medium-sized density equipment users
- · Dimensions (mm) 530W/265H/230D
- Total Slot: 10
- · Service Slot: 6
- · Switch eard capacity; 976G
- · Backplane bus capacity: 1.92T
- · Support 96 PON high-density service card
- · Unify platform of EPON/GPON/10G PON/P2P
- · Unify software and interface card sharing with AN5116-06B



Typical Application Scenarios

The AN5516-06 is suitable for the application of FTTH / FTTB / FTTC / FTTO. It is usually placed in a residential community or a central office.

An illustration of the AN5516-06 network diagram is shown in Figure 1-1.

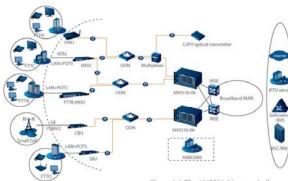


Figure 1-1 The AN5516-06 network diagram

Feature		Specification	
Switch car	rd capacity	976G bps	
Backplane	bus capacity	1.92T	
Uplink car	rd type	1*10GE+ 4*GE , 2*10GE+ 2*GE, 6*GE	
	Uplink interface	10GE optical interface, GE optical interface, GE electrical interface, STM-1 optical interface, E1 electrical interface	
	Subscriber interface	EPON/GPON/10GEPON/XGPON interfaces	
Service	Management interface	FE interface, 10 GE / GE interface, RJ-45 port (using RS-232 interface protocol)	
Interface Type	Environment supervision interface	RJ-45 port (using RS-485 interface protocol)	
3883	Dry contact interface	RJ-45 port	
	External clock interface	Clock coaxial interface	
	Alarming interface	RJ-45 port	
Physical d	imensions	Height: 265.9mm Depth: 230.5mm Width: 530mm	
Power inp	uts	Equipment room voltage: -48V DC (-40V to -57V)	
Power cor	nsumption	< \$50W (Fully loaded with cards)	
Weight		Empty subrack (fans included): 12kg Subrack (fully loaded with cards):21kg	
Operation	temperature	-10 C +55 C	
Operation	relative humidity	10% ~ 90%	
Atmosphe	eric pressure	86kPa ~ 106kPa	
Electroma	gnetic compatibility standards	CISPR 22, CISPR 24, EN 300 386, EN 55022, EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, ETSI EN 300132-2, ETSI EN 300386 V 1.4.1, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-5, IEC 61000-4-6, ITU-T K.20, ITU-T K.23, ITU-T K.48, YD/T 1244-2002	
Safety star	ndards	EN 60825-1, EN 60825-2, EN 60950-1, IEC 60825-1, IEC 60825-2, IEC 60950-2001, UL 60950-1:2003	



PON features

- Unify platform for EPON/GPON/10G PON/P2P
- Sharing service cards with AN5116-06B
- · Up to 32 PON ports per chassis
- Flexible uplink card: 2*10GE+2*GE, 1*STM-1, 32*E1

Reliability features

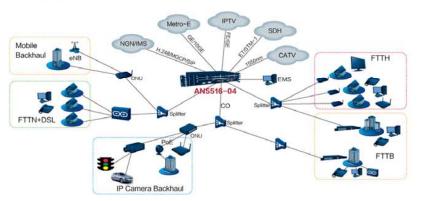
- · Core card 1+1 redundancy
- · OSPF dual homing
- STP/RSTP/MSTP ring protection
- · Trunk/LACP for uplink protection

Synchronization features

- High precision sync-Ethernet & 1588v2
- 1PPS+ToD output



Typical Application Scenarios



Feature		Specification	
Dimens	sions(mm)	88(H)/ 239.5(D)/480(W)	
Tot	al slot	6	
Serv	rice slot	2	
	Uplink	2*10GE+2*GE, 1*STM-1, 32*E1	
	EPON	8/16 ports EPON cards	
Service Interface	GPON	8/16 ports GPON cards	
Service interface	10G GPON	4 ports 10G GPON card	
	10G EPON	4/8 ports 10G EPON cards	
	P2P Ethernet	16 ports P2P Ethernet card	
Powe	er inputs	Equipment room voltage: -48V DC (-40V ~ -57V)	
Down or	onsumption	<200W (Fully loaded with EPON cards)	
romer co	anaunpuon	<200W (Fully loaded with GPON cards)	
W	eight	Empty subrack (fans included): 4.1kg	
Operation	temperature	-10 C ~ +55 C	
Operation relative humidity		≤90%	

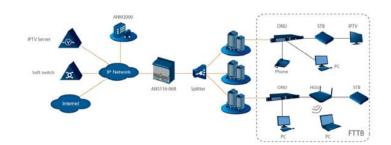


Features and Benefits

- · Meet diverse FTTB network requirements with rich specifications
- High performance IPTV service management such as strong service switching & packet forwarding capability. It also enables high integration with the feature of carrier-class multicast operation
- · Perfect voice features support basic services (voice/fax/ modem) and supplementary services (three-way calling, call-waiting, call transfer and calling restriction)
- · Efficient management and maintenance supporting remote opening and remote patch upgrade facility and remote fault location
- · Passive cooling without any fans help to reduce power consumption and noise
- · Support two voice-channel wiring models of --hybrid I/O in different situations
- · Carrier-class reliability under consideration of flexible and reliable indexes in hardware or software with systems to ensure the operation of equipment

Scenarios

The AN5506 series MDU are used on FTTB network and installed in corridor or outdoor eabinet which is connecting to Optical Line Terminal (OLT) through GPON uplink ports, and meet the requirements of Voice //Data/IPTV for downlink by using CAT5 cable medium.



Specifications

Туре	AN5506-06-EG	AN5506-09	ANS506-07	AN5506-10
Diagram		HH 8 1	- HHHHH 8 .	HILLIAM C.
Dimensions (W*D*H)	440mm×190mm×44mm	440mm×(190/225)mm×44mm	440mm×(190/225)mm×44mm	440mm×(190/225)mm×44mm
User-side Interface	4GE+8E1	8FE/8FE+8POTS	16FE/16FE+16POTS	24FE/24FE+24POTS
Power Supply	AC: 220V DC: -48V	AC: 220V DC: -48V	AC: 220V DC: -48V	AC: 220V DC: -48V
Power Consumption	<25W	<25W	<35W	<40W
Lightning Prevention Capability	Power module:6KV User-side Interface:4KV	Power module:6KV User-side Interface:4KV	Power module:6KV User-side Interface:4KV	Power module:6KV User-side Interface:4KV
Operating Temperature	-30.C ~55.C	-30 € ~55 €	-30 € −55 €	-30 C ~ 55 C
Ambient humidity	10% to 90%, non-condensing	10% to 90%, non-condensing	10% to 90%, non-condensing	10% to 90%, non-condensing

Features

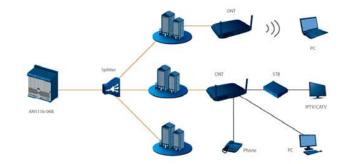
GPON	ITU G.984-compliance	
	4K VLAN, supporting QinQ, VLAN 1:1 and N:1 translation	
Broadband	16K MAC addresses	
broadband	Dual management modes based on DBA technology	
	ACL rules filtering and unknown unicast, broadcast and multicast packets suppression	
	IGMPv2 and IGMPv3	
Multicast	IGMP proxy and Snooping	
	A maximum of 1024 configurable multicast	
	PPPoE+ and DHCP option82	
	Triple churning algorithm to downstream data encryption	
Security	Supports MAC/IP address filtering and binding functions	
	Anti-DOS attack and firewall	
	Line loopback detection	
Maintenance and management	Remote upgrade and monitoring	

Features and Benefits

- · Suitable for home broadband, e-government and enterprise access with integrated access demands of broadband, voice, data and video etc
- Provides complete series of FTTH solutions for pure data, double play and triple play services. Besides, both indoor and outdoor types can be applied to meet the different application environment
- . The outdoor type of ONT with cast-aluminium shell adopts an industrial design
- · Support 16 PON high-density service card
- · High efficiency management and maintenance with port based mode configuration as well as port based status query
- · Carrier-level reliability in hardware/software and other system design to fully guarantee the normal operation of equipment

Scenarios

ONT is applied to meet multi-service demands for single family or enterprise in FTTH/FTTO scenarios, which get uplink access through PON and is deployed in the houses for the user's differential demands like broadband/voice and video etc.



GPON Series ONT Specifications

Type	ANS506-01-A	AN5506-04A	ANS506-04-8	AN5506-04C	AN5506-04-D	AN5506-04FG	ANS506-04G
Diagram							
H/W/D	32×128×107	32×170×130	32×170×130	35×210×150	36×211×154	36×211×154	36×211×154
Network Side Interface	GPON	GPON	GPON	GPON	GPON	GPON	GPON
User Side Interface	1*GE	4*FE/GE	4*FE/GE+2*POTS	4*GE+2*POTS+ 1*CATV	4*GE+1*WIFI	4°GE+2°POTS+ 1°WIFI	4*GE+2*POTS+ 1*WIFI+1*CATV
Power Supply	AC: 220V DC:12V/1A	AC: 220V DC:12V/1A	AC: 220V DC:12V/1A	AC: 220V DC:12V/1.5A	AC: 220V DC:12V/1.5A	AC: 220V DC:12V/1.5A	AC: 220V DC:12V/1.5A
Power	<5W	<8W	<10W	<11.5W	<10W	≤12W	<12W
Lightning Protection	Power 4KV user interface 1,5KV	Power 4KV user interface 1.5KV	Power 4KV user interface 1.5KV	Power 4KV user interface 1,5KV	Power 4KV user interface 1.5KV	Power 4KV user interface 1,5KV	Power4KV user interface 1.5KV
Operating Temperature	-5 C ~ 45 C	-5 C ~45 C	-5 C ~45 C	-5 C ~45 C	-10 C ~45 C	-5 C ~45 C	-5 C ~ 45 C
Ambient Humidity	Non-condensing 10% 90%	Non-condensing 10%~90%	Non-condensing 10% = 90%	Non-condensing 10%~90%	Non-condensing 10% 90%	Non-condensing 10%~90%	Non-condensing 10%~90%

Product Characteristics

GPON Feature	Complied with ITU G.984 series of standards		
	VLAN number: 4K, QinQ, VLAN 1:1 and N: 1 translation		
Broadband	Support dual management model based on DBA technology and priority		
broadband	ACL filtering and unicast/multicast/broadcast service suppression for unknown packet		
Multicast	Support IGMP V2/V3, Support IGMP Snooping/IGMP Proxy, Multicast programs: 1024		
Voice	H.248/SIP protocol		
	PPPoE+ and DHCP Option82		
	Downlink data encryption by triple stir algorithm		
Security	MAC/IP filtering and binding functions		
	Anti-DOS attack and firewall functions		
	Online loopback monitoring function for Ethernet ports		
Maintenance Management	Port state query, remote upgrading and remote monitoring		
	Power supply mode configuration for ports		
OAM	Query of port status		
	Remote upgrade and monitoring		



- · Superior quality and large capacity of single cabinet, which provides up to 1024 lines and 16 service slots
- Versatile interfaces such as uplink interfaces of FE/GE/XGE/E1 etc., and user interfaces of ADSL/ADSL2+,G.SHDSL,POTS etc., and FE/GE/XGE management interface/ -48 DC power supply interface
- · Flexible solution with PSTN voice service, pure XDSL data service and Triple Play etc
- · Smoothly upgraded to PON network by replacement of PON uplink card
- · Perfect voice access function and voice processing protocols like SIP, H.248, etc
- With perfect multicast function, IGMP V2/V3 is supported at both user side and network side interfaces of the equipment, so that a flexible multi-cast solution can be achieved for the customer
- With flexible QinQ VLAN function, strong VLAN stacking and VLAN translation functions are provided, so that user's services can be managed effectively and network security improved
- Provide strong QoS guarantees end to end QoS solution for the whole network. Different QoS are provided to different customers and services, which lays a
 foundation for management of various services
- · Perfect security mechanisms, designed with carrier-class reliability, which can fully guarantee the security of subscriber's services
- High reliability with consideration of system reliability in system/software design and hardware design of the MSAN product. Redundant protection is provided for the power supply, fans, cards and interfaces together with the optical line protection switching mechanism to ensure normal operation of the equipment
- Maintenance and Management of network functions like configuration management, security management, performance management and fault management tools user's routine maintenance and fault diagnosis

Scenarios



Figure 1-1 The AN5006-20's positioning in the network

At the network side, the AN5006-20 can provide the E1/GE uplink port. And at the client side, the AN5006-20 can access multi-services such as the broadband service, PSTN voice service and 1PTV service.

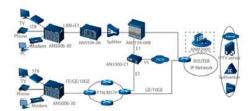


Figure 1-2 The AN5006-30's positioning in the network

At the network side, the AN5006-30 provides the FE / GE/ 10GE / E1 uplink interface. And at the client side, the AN5006-30 provides multiple voice and data interfaces such as the ADSL2+ and POTS interfaces.

MSAN Series Technical Specifications

Туре	AN5006-20	AN5006-30
H/W/D	88mm×486mm×253mm	335mm x 444.8mm x 267.75mm
Network Interface	El	E1
Network Interface	FE/GE	FE/GE/10GE
User Interface	POTS/ADSL2+/VDSL2/G.SHDSL/E1	POTS/ADSL2+/VDSL2/G.SHDSL
Power Supply	AC: 220V DC: -48V	DC: -48V
Power Consumption	<300W	<1300W
Anti-lightning	6KV	6KV
Operation Temperature	-30 C ~55 C	-10 °C ~55 °C
Ambient Humidity	Non-condensing, 10% ~ 95%	Non-condensing, 10%~95%
Weight (Fully Configured)	12kg	29.1kg

Product Characteristics

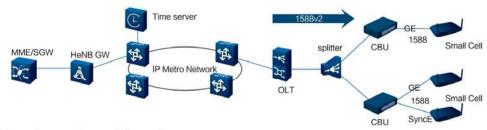
E1	Support ITU-T G.703 series of standards	
Ethernet	Support IEEE 802.3, 802.3u, 802.3x, 802.3z, 802.3ad, 802.3ab, 802.3ae, 802.1D 802.1Q, 802.1P, 802.1w standards etc	
	VLAN quantity: 4K, support flexible QinQ function, support 1:1 and N:1translation of VLAN	
Broadband	MAC address quantity: 16K	
broadband	DBA technology and priority based dual management model	
	ACL filtering, unknown unicast, multicast and broadcast packet suppressing	
Multicast	IGMP V2/V3, IGMP Snooping/IGMP Proxy, Multicast programs: 1024	
	PPPoE+ and DHCP Option82	
	Downlink data encryption by triple stir algorithm	
Security	MAC/IP filtering and binding functions	
	Anti-DOS attack and firewall functions	
	Online loopback monitoring function for Ethernet ports	
OAM	Power supply mode configuration for ports, query of port status Remote upgrade and monitoring	
CISPR 22, CISPR 24, EN 300 386, EN 55022, EN 55024, EN 61000-4-2, EN 61000-4-4, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, ETSL EN 300132-2, ETSL EN 300 IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6 ITU-T K.43, ITU-T K.48		
Safety Standards	EN 60825-1, EN 60825-2, EN 60950-1, IEC 60825-1, IEC 60825-2, IEC 60950-2001, UL 60950-1:2003	



- 6*GE auto-adapting port : 4 copper+2 optical
- Precision clock & phase synchronization: support SyncE & 1588v2, capable of small cell backhaul
- High QoS: ensure delay & packet loss requirements using hierarchy QoS
- Plug and play: offline provision, support remote configuration, upgrading and diagnosis
- · Fanless design: lower noise and power consumption
- Carrier grade design: reliability consideration during hardware, software and system design



Typical Application Scenarios



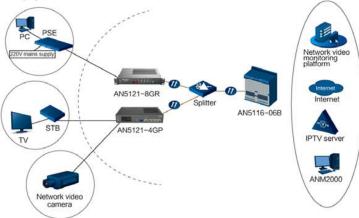
reature	Specification	
PON features	Comply with ITU G.984/IEEE 802.3ah standards	
	4K VLAN, supporting QinQ, VLAN 1:1 and N:1 translation	
Broadband features	16K MAC addresses	
proadband features	Dual management modes based on DBA technology	
	ACL rules filtering and unknown unicast, broadcast and multicast packets suppression	
	IGMPv2 and IGMPv3	
Multicast features	IGMP proxy and Snooping	
	A maximum of 1024 configurable multicast	
Clock features	Sync-Ethernet & 1588v2	
	1pps+ToD & 2M clock output	
	Type B/C PON protection	
	PPPoE+ and DHCP option82	
Patter Harrison	Triple chuming/AES-128 algorithm to downstream data encryption	
Reliability features	Supports MAC/IP address filtering and binding functions	
	Anti-DOS attack and firewall	
	Line loopback detection	
Maintenance features	Remote upgrade and monitoring	
W/D/H	250 mm×200mm×44 mm	
Uplink interface	2*GPON/2*EPON/2*GE	
User interface 6 GE(4 RJ-45 & 2 SFP)		
Power Input	AC: 220V, DC: -48V	
Power Consumption	<20W	
Working temperature	-30 C ~ 60 C	
Working humidity	10%~90%	



- . High environmental suitability: Use sealed structure with the functions of strong water-proof and dust-proof. Steady operation in extreme conditions
- Perfect function of PoE/ RPoE: Supports the PoE/RPoE function, based on the IEEE 802.3af / at standard. Support RPoE function
- . High QoS: Ensure delay & packet loss requirements using hierarchy QoS
- Plug and play: Offline provision, support remote configuration, upgrading and diagnosis
- · Carrier grade design: Reliability consideration during hardware, software and system design



Typical Application Scenarios



Product Specifications

PON features	One GPON interface is available, which meets the ITU-T G.984 standard
	Supports the IEEE 802.1Q / 802.1P VLANs and VLAN-based selective QinQ Supports 4095 VLANs at most
Service parameters	The capacity of the system MAC address table is 16 kB
Service parameters	All ports support line rate forwarding
	Supports eight priority queues at most. Supports the SP, WRR, and SP +WRR scheduling modes
Maintenance features	Remote upgrade and monitoring

	AN5121-8GR	AN5121-4GP
H/W/D	44mm × 230 mm × 145 mm	45 mm × 240 mm × 150 mm
Uplink interface	1*GPON	1*GPON
User interface	8*FE	4*GE
Power Input	RPOE(internal PD)	220AC
Power Consumption	<10W	<130W
Working temperature	-30 ℃ ~ 60 ℃	-30 C ~60 C
POE	N/A	802.3af/802.3at

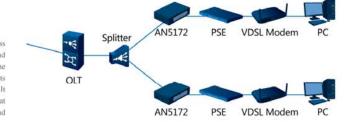


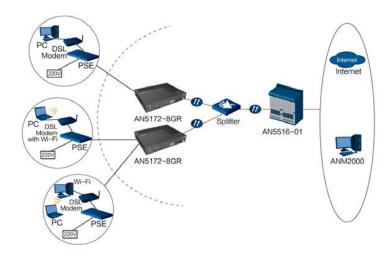
Features and Benefits

- · Uplink: 1 GPON
- · Downlink: 8 VDSL2
- Save: Waterproof and dustproof, Lightning protection, IP55 standard High
- · QoS: Ensure delay & packet loss requirements using hierarchy QoS
- · Plug and play: Offline provision, support remote configuration, upgrading and diagnosis
- · Flexible: Suitable for outdoor application, support pole and wall installation

Scenarios

AN5172-8GR is mainly applied in the FTTC access scenarios. It obtains the feed from the user side PSE, and provides conventional data transmission services for the users. The AN5172-8GR is characterized by its adaptability to multiple outdoor installation scenarios. It can serve as the network access equipment in a field or at public locations (e.g. residential communities and buildings).





Key features

Feature	Specification
PON features	Complied with ITU G.984 series of standards
Broadband features	VLAN number: 4K, QinQ, VLAN 1:1 and N: 1 translation Support dual management model based on DBA technology and priority All ports support L2 line rate forwarding Supports eight priority queues at most. Supports the SP, WRR, and SP+WRR scheduling modes ACL filtering
Multicast features	* IGMP v2 * IGMP Snooping * Multicast program number: 1024
Security features	PPPoE+ and DHCP Option82
Maintenance features	Support port state query Support remote upgrading and remote monitoring
Outdoor case size	95mm×330mm×400mm (height×width ×depth)
Equipment size	43.5mm×250mm×200mm (height×width×depth)
Weight	AN5172-8GR: 1.5kg Outdoor case (empty): 4.6kg
Uplink interface	A GPON interface compliant with the ITU-T G.984 standard is provided
User interface	An eight-channel DB25-type DSL interface is provided, which is adaptive to PTM-TC and ATM-TC Supports the DSL Vectoring function Supports the RPF (Reverse Power Feeding) function as specified in IEC 60950-1 Standard
Power supply mode	RPF (Reverse Power Feeding); 60V
Power Consumption	<20W
Working temperature	-40 C ~ 55 C
Storage temperature	-55 C to 125 C
Working humidity	10% to 90% (no condensation)