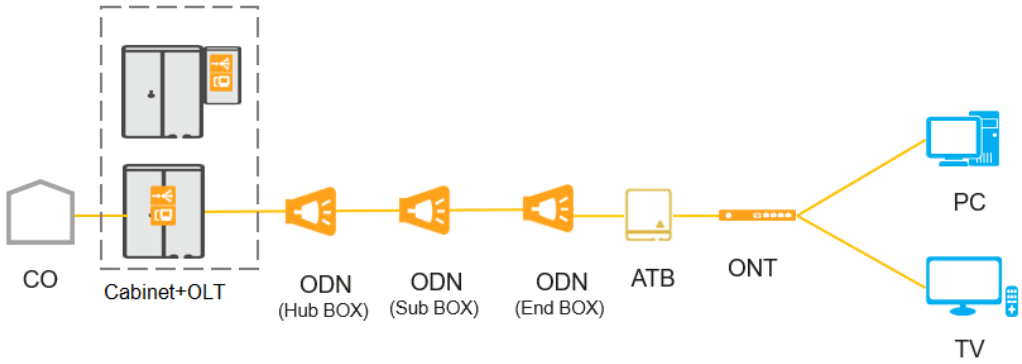
Product Datasheet

OptiXaccess EA5801E-GP16

Product Overview

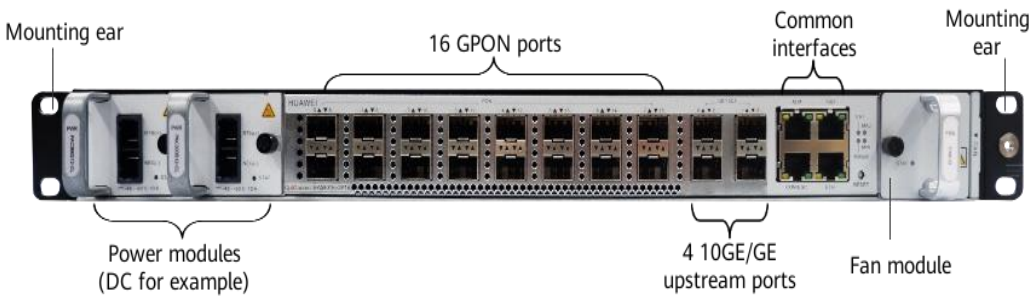
With the continuous promotion of new services, such as 4K/VR videos, home networks, and network cloudification, optical fiber access has become an important means for countries around the world to popularize broadband networks. As optical fiber access nodes keep moving closer to end users, OLTs are closer to end users. Deployment scenarios are complex and diversified. In this case, network needs OLTs with small volume and low density.

The EA5801E-GP16 is a compact and low-density box-shaped OLT. It provides GPON access, and supports passive optical LAN (POL) and fiber to the home (FTTH) solutions. It carries all services over one fiber network, simplifying network architecture and reducing OPEX.



Appearance and Structure

The product is a box-shaped OLT. It houses integrated control and service module, 1 pluggable fan module and 2 pluggable power modules. Its mounting ears are applicable to IEC specifications and ETSI specifications, and are used in racks or cabinets of different specifications.



Highlights

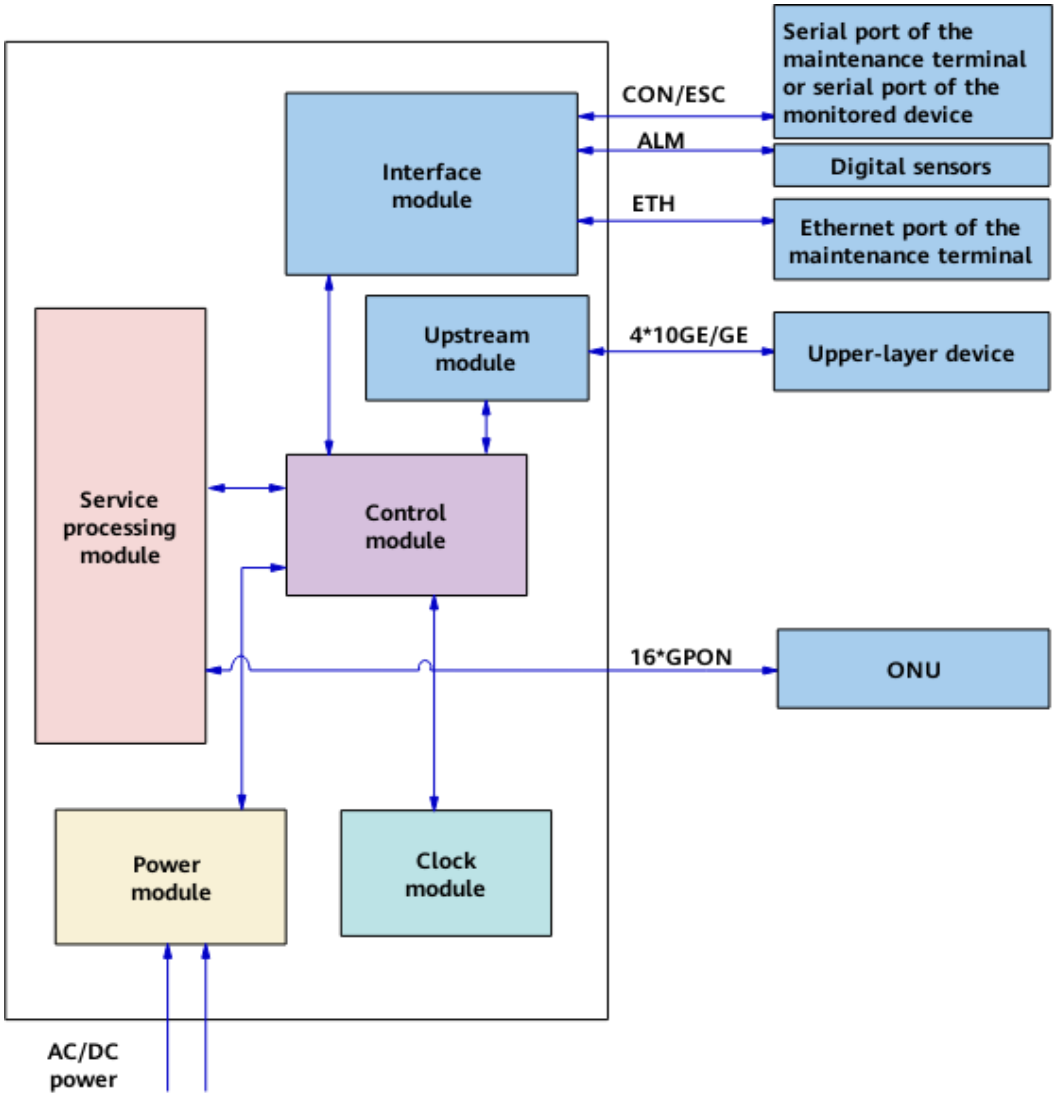
Light-Weight OLT, Adapting to Various Scenarios

The product is a box-shaped OLT that requires 1 U installation space, making it applicable to access point convergence on a small scale. It is suitable for lightweight deployment in enterprises. One OLT can meet the service-carrying requirements for an enterprise or campus.

Rapid Deployment, Facilitating Installation and Saving Engineering Cost

The product can be installed in indoors or outdoors cabinets. When installed outdoors, it can be easily deployed in high temperatures, conserving man power and cabinet space.

Working Principle



Control module: It is the core of the system control and service switching and aggregation. It can also function as the management and control core of the integrated network management system (NMS).

Upstream module: It can provides four 10GE/GE upstream ports.

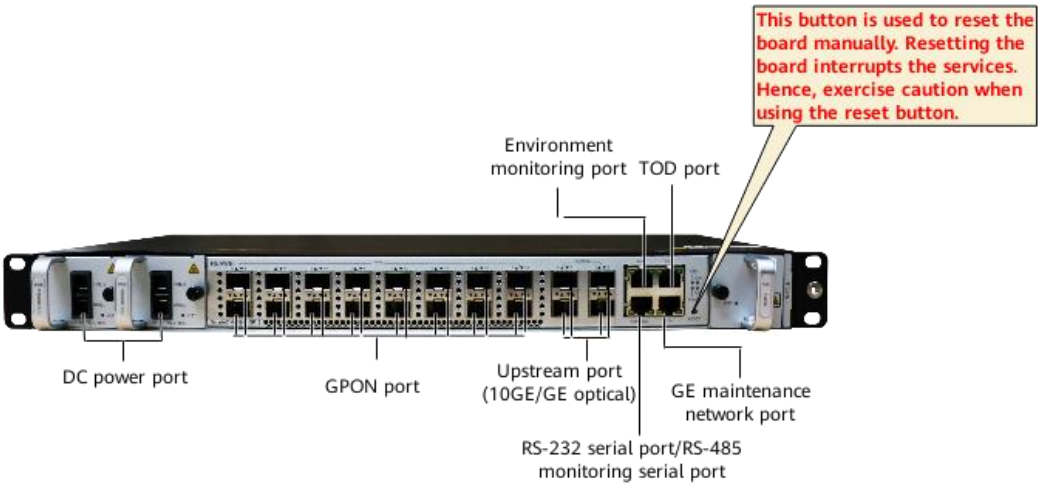
Service processing module: It works together with the optical network unit (ONU) to provide GPON access services.

Interface module: It supports functions such as input and output of alarm digital parameters.

Clock module: It supplies power to each functional module of the board.

Power module: It provides clock signals for each functional module of the board.

External Ports



NOTE

The product provides 2 slots for power boards so that 1 or 2 power modules can be configured as required. If only one power module is configured, a filler panel must be installed in the other slot. AC and DC are incompatible.

Port Name	Silk Screen	Number of Ports	Function
DC power port	–	2	Connects to –48/–60 V DC power.
AC power port	–	2	Connects to 110/220 V AC power.
Reset button	RESET	1	This button is used to reset the board manually. Resetting the board interrupts the services. Hence, exercise caution when using the reset button.
GPON port	PON: 0–15	16	Provides 16 GPON ports for GPON service access.
Upstream port (10GE/GE optical)	10GE/GE: 0–3	4	Provides 4 10GE/GE ports for upstream transmission.
GE maintenance network port	ETH	1	10/100/1000M BASE-T maintenance port. Connected to the Ethernet port of the maintenance terminal.
RS-232 serial port/RS-485 monitoring serial port	CON/ESC	1	Connected to the serial port of the maintenance terminal/Connected to the serial port of the monitored device.
TOD port	TOD	1	Reserved.
Environment monitoring port	ALM	1	Connected to digital sensors.

Indicators

Panel Indicators

Indicator	Name	Color	Status	Description
RUN/ALM	Running status indicator	Green	Blinking slowly (on for 1s and off for 1s repeatedly)	The board functions properly.
		Green	Blinking quickly (on for 0.25s and off for 0.25s repeatedly)	Indicates that program loading is in progress.

Indicator	Name	Color	Status	Description
		Orange	Blinking	A high-temperature alarm is generated.
		Red	On	The board is faulty.
		Red	Blinking (on for 0.25s and off for 0.25s repeatedly)	The board is starting.
CRI	Alarm indicators	Red	On	The system has generated a critical alarm.
MAJ	Alarm indicators	Orange	On	The system has generated a major alarm.
MIN	Alarm indicators	Yellow	On	The system has generated a minor alarm.
PON 0–15	Link/data status indicator	Green	On	The ONT connected to the related PON port is online.
		Green	Blinking	The optical module does not take effect.
		-	Off	The ONT connected to the related PON port is not offline.
	-	-	Off	Reserved

Indicator on The Upstream Port

Ports	Indicator	Name	Color	Status	Description
Upstream optical port	LINK	Link status indicator	Green	On	A connection is set up on the port.
			-	Off	No connection is set up on the port.
	ACT	Data status indicator	Yellow	Blinking	Data is being transmitted.
			-	Off	No data is being transmitted.

Indicator on DC Power

Indicator	Name	Color	Status	Description
INPUT	Power input indicator	Green	On	The power input is in the normal state.
		-	Off	The power supply has no input or the input voltage is lower than the normal voltage range.
OUTPUT	Power output indicator	Green	On	The output is normal.
		Green	Blinking	The power supply is in hiccup protection mode.
		-	Off	The output is abnormal, that is, the power supply is abnormal.

Indicator on AC Power

Indicator	Name	Color	Status	Description
INPUT	Power input indicator	Green	On	The power input is in the normal state.
		-	Off	The power supply has no input or the input voltage is lower than the normal voltage range.
OUTPUT	Power output indicator	Green	On	The output is normal.
		Green	Blinking	The power supply is in hiccup protection mode.
		-	Off	The output is abnormal, that is, the power supply is abnormal.

Indicator on Fan

Indicator	Color	Status	Meaning	Operation Description
STATUS	Yellow	Blinking (on for 0.25s and off for 0.25s repeatedly)	The fan module is not registered.	If the fan module is not registered, no action is required.
	Green	Blinking (on for 1s and off for 1s repeatedly)	The fan module works in the normal state.	No action is required.
	Red	Blinking (on for 0.25s and off for 0.25s repeatedly)	The fan module is faulty.	Replace the faulty fan module.

Primary Features

Layer 2 features	
VLAN+MAC forwarding	SVLAN+CVLAN forwarding
PPPoE+	DHCP option82
Layer 3 features	
Static route	RIP/RIPng
OSPF/OSPFv3	IS-IS
BGP/BGP4+	ARP
DHCP relay	VRF
Multicast	
IGMP v2/v3	IGMP Proxy/Snooping
MLD v1/v2	MLD Proxy/Snooping
VLAN-based IPTV multicast	IPv4 PIM and PIM-SSM
QoS	

Traffic classification	Priority processing
trTCM-based traffic policing	WRED
Traffic shaping	HQoS
PQ/WRR/PQ+WRR	ACL
IPv6	
IPv4/IPv6 dual stack	IPv6 L2 and L3 forwarding
DHCPv6 relay	
System reliability	
GPON type B/type C protection	ERPS (G.8032)
2 power boards for redundancy protection	In-service board fault detection and rectification

Product Specifications

Item	Value
Dimensions (W x D x H) (mm)	Excluding mounting ears: 442 x 220 x 43.6 Including IEC mounting ears: 482.6 x 220 x 43.6 Including ETSI mounting ears: 535 x 220 x 43.6
Maximum fully-loaded weight (DC)	4.2 kg
Maximum fully-loaded weight (AC)	4.6 kg
Power supply mode	• DC power supply (dual backup) • AC power supply (dual backup)
Working voltage range	• DC power supply: –38.4 V to –72 V • AC power supply: 100–240 V
Rated voltage	• DC power supply: –48 V/–60 V • AC power supply: 110 V/220 V
Maximum input current	• DC power supply: 6 A • AC power supply: 2.5 A
Ambient temperature	–40°C to +65°C The device can start up at a lowest temperature of –25°C. **NOTE** The +65°C temperature refers to the highest temperature measured at the air intake vent of a service subrack.
Ambient humidity	5%–95% RH
Atmospheric pressure	70–106 kPa
Altitude	< 4000 m. The air density varies with the altitude and will affect the heat dissipation of a device. Therefore, the working environment temperature of the device varies with the altitude.
System switching capacity	140 Gbit/s
MAC addresses	32768

Item	Value
Access ONT	1024
IPv4 routing table	8192
IPv6 routing table	4096
ARP table	16384
Bit error rate (BER) in full load	A BER smaller than 10 e-7 for a port that transmits data in full load
10GE/GE upstream ports	4
Service ports	16 GPON
Power consumption	Static power consumption: 55W Typical power consumption: 95W Maximum power consumption: 140W **NOTE** The power consumption of a product is tested in the following conditions: • Static power consumption: 25°C, no optical module in optical ports, and no service. • Typical power consumption: 25°C, 4 x 10GE upstream ports, 16 x GPON ports on the user side, full services, and maximum traffic. • Maximum power consumption: 65°C, 4 x 10GE upstream ports, 16 x GPON ports on the user side, full services, and maximum traffic.

Supported Optical Modules

One-channel Two-fiber Bidirectional GE Optical Module

Type	One-channel two-fiber bidirectional optical module	
No.	1	2
Operating Wavelength	1310 nm	1310 nm
Encapsulation Type	eSFP	eSFP
Port Rate	1.25 Gbit/s	1.25 Gbit/s
Minimum Output Optical Power	-9 dBm	-5 dBm
Maximum Output Optical Power	-3 dBm	0 dBm
Maximum Receiver Sensitivity	-20 dBm	-23 dBm
Optical Connector Type	LC	LC
Optical Fiber Type	Single-mode	Single-mode
Reach	10 km	40 km
Overload Optical Power	-3 dBm	-3 dBm
Extinction Ratio	9 dB	9 dB

One-channel One-fiber Bidirectional GE Optical Module

Type	One-channel one-fiber bidirectional optical module			
No.	1	2	3	4
Operating Wavelength	Tx: 1310 nm Rx: 1490 nm	Tx: 1490 nm Rx: 1310 nm	Tx: 1310 nm Rx: 1490 nm	Tx: 1490 nm Rx: 1310 nm
Encapsulation Type	eSFP	eSFP	eSFP	eSFP
Port Rate	1.25 Gbit/s	1.25 Gbit/s	1.25 Gbit/s	1.25 Gbit/s
Minimum Output Optical Power	-9 dBm	-9 dBm	-2 dBm	-2 dBm
Maximum Output Optical Power	-3 dBm	-3 dBm	3 dBm	3 dBm
Maximum Receiver Sensitivity	-19.5 dBm	-19.5 dBm	-23 dBm	-23 dBm
Optical Connector Type	LC	LC	LC	LC
Optical Fiber Type	Single-mode	Single-mode	Single-mode	Single-mode
Reach	10 km	10 km	40 km	40 km
Overload Optical Power	-3 dBm	-3 dBm	-3 dBm	-3 dBm
Extinction Ratio	6 dB	6 dB	9 dB	9 dB

One-channel Two-fiber Bidirectional 10GE Optical Module

Type	One-channel two-fiber bidirectional optical module		
No.	1	2	3
Operating Wavelength	850 nm	1310 nm	1550 nm
Encapsulation Type	SFP+	SFP+	SFP+
Port Rate	10 Gbit/s	10 Gbit/s	9.95-11.1 Gbit/s
Minimum Output Optical Power	-7.3 dBm	-8.2 dBm	-4.7 dBm
Maximum Output Optical Power	-1 dBm	0.5 dBm	4 dBm
Maximum Receiver Sensitivity	-9.9 dBm	-12.6 dBm	-14.1 dBm
Optical Connector Type	LC	LC	LC
Optical Fiber Type	Multi-mode	Single-mode	Single-mode
Reach	0.3 km	10 km	40 km
Overload Optical Power	-1 dBm	0.5 dBm	0.5 dBm
Extinction Ratio	3 dB	3.5 dB	3 dB

One-channel One-fiber Bidirectional 10GE Optical Module

Type	One-channel one-fiber bidirectional optical module

No.	1	2	3	4
Operating Wavelength	Tx:1270nm Rx:1330nm	Tx:1330nm Rx:1270nm	Tx:1330nm Rx:1270nm	Tx:1270nm Rx:1330nm
Encapsulation Type	SFP+	SFP+	SFP+	SFP+
Port Rate	2.5Gbit/s–11.3Gbit/s	2.5Gbit/s–11.3Gbit/s	9.95Gbit/s–10.3Gbit/s	9.95Gbit/s–10.3Gbit/s
Minimum Output Optical Power	-8.2dBm	-8.2dBm	0dBm	0dBm
Maximum Output Optical Power	0.5dBm	0.5dBm	5dBm	5dBm
Maximum Receiver Sensitivity	-14.4dBm	-14.4dBm	-18dBm	-18dBm
Optical Connector Type	LC	LC	LC	LC
Optical Fiber Type	Single-mode	Single-mode	Single-mode	Single-mode
Reach	10km	10km	40km	40km
Overload Optical Power	0.5dBm	0.5dBm	-9dBm	-9dBm
Extinction Ratio	3.5dB	3.5dB	3.5dB	3.5dB

GPON Optical Module

Type	One-fiber bidirectional optical module, class B+	One-fiber bidirectional optical module, class C+	One-fiber bidirectional optical module, class C++
No.	1	2	3
Operating Wavelength	Tx: 1490 nm Rx: 1310 nm	Tx: 1490 nm Rx: 1310 nm	Tx: 1490 nm Rx: 1310 nm
Encapsulation Type	SFP	SFP	SFP
Port Rate	Tx: 2.488 Gbit/s Rx: 1.244 Gbit/s	Tx: 2.488 Gbit/s Rx: 1.244 Gbit/s	Tx: 2.488 Gbit/s Rx: 1.244 Gbit/s
Minimum Output Optical Power	1.5 dBm	3 dBm	6 dBm
Maximum Output Optical Power	5 dBm	7 dBm	10 dBm
Maximum Receiver Sensitivity	-28 dBm	-32 dBm	-35 dBm
Optical Connector Type	SC	SC	SC
Optical Fiber Type	Single-mode	Single-mode	Single-mode

Overload Optical Power	-8 dBm	-12 dBm	-15 dBm
Extinction Ratio	8.2 dB	8.2 dB	8.2 dB

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