

SmartAX MA5821/MA5822

V800R016C10

Product Overview

The SmartAX MA5821/MA5822 is a multi-service access module launched by Huawei Technologies Co., Ltd. The MA5821/MA5822 applies to fiber to the building (FTTB) or fiber to the curb (FTTC) network applications for providing voice, data, and multicast services for community users. The MA5821 applies to video surveillance scenarios.



MA5821



MA5822

Product Highlights

10G GPON Upstream Transmission

- ✓ 10G GPON provides a higher bandwidth to meet service requirements.
- ✓ The 10G GPON transmission complies with ITU-T Recommendation G.987 and ITU-T Recommendation G.988, and provides asymmetric transmission rates in the upstream direction and the downstream direction.
- ✓ 10G GPON networks can coexist with the current GPON networks to fully use the existing optical distribution network (ODN) resources.

Rich and Complete Specifications

The MA5821/MA5822 provides multiple specifications. Carriers can choose the ideal one according to the user density, which best balances the input and output. The following table lists the configurations of the MA5821/MA5822.

Device Name	Port Configuration	Control Board	Service Board	Uplink port
MA5821	8FE	H825XPUB	H821EPFD	Provides one small form-factor pluggable (SFP) port to support the following upstream transmission modes: <ul style="list-style-type: none"> • 10G GPON (asymmetric) • GPON
	16FE	H825XPUB	H821EPFB	
	24FE	H825XPUB	H821EPFA	
	8GE	H826XPUB	HS22EPGD	
	16GE	H826XPUB	HS22EPGB	
	24GE	H825XPUB	HS22EPGE	
MA5822	8FE+8POTS	H825XPUB	H821EPFD H848ASLB	
	16FE+16POTS	H825XPUB	H821EPFB H822ASNB	
	24FE+24POTS	H825XPUB	H821EPFA H822ASMB	

	8GE+8POTS	H826XPUB	HS22EPGD H848ASLB	
	16GE+16POTS	H826XPUB	HS22EPGB H822ASNB	
	24GE+24POTS	H826XPUB	HS22EPGE H822ASMB	

A Rich Variety of Services

The MA5821/MA5822 support a rich variety of services, such as voice, data, and multicast services, and quality of service (QoS) assurance solutions.

- ✓ Supports high-performance multicast services.
- ✓ Supports IPv6 features.
- ✓ Provides effective QoS management.

Comprehensive Management and Maintenance

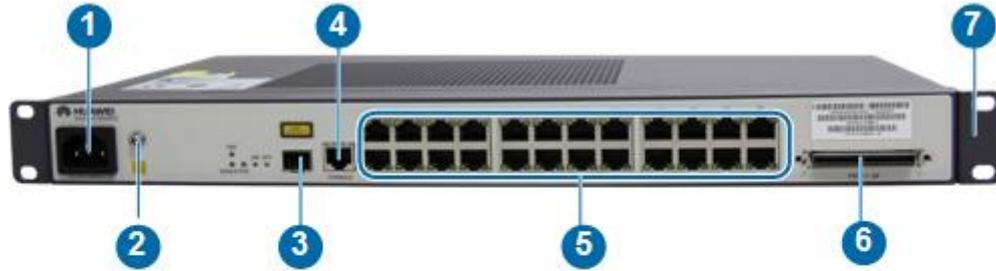
The MA5821/MA5822 support multiple high efficient management and maintenance functions, such as remote software commissioning, acceptance, upgrade and patch installation, and fault location.

- ✓ Supports one-stop deployment and plug-and-play. When transmitting services upstream through a PON port, the MA5821/MA5822 support offline deployment and plug-and-play. It automatically obtains configuration data from the iManager U2000 network management system (U2000) and reports its status to the U2000 after going online. The configuration data automatically takes effect.
- ✓ Supports remote batch upgrade. The MA5821/MA5822 provides a software-and-patch integrated package for one-stop upgrade, and supports automatic batch upgrade and rollback in case of an upgrade failure.
- ✓ Supports zero-touch routine maintenance. The MA5821/MA5822 supports remote fault location and rectification, data backup and uploading, and log collection.
- ✓ Supports network performance monitoring. The MA5821/MA5822 supports network optimization and user monitoring.

High-Reliability Design

- ✓ Complies with carrier-class reliability specifications.
- ✓ Passes the electrostatic discharge (ESD) test.
- ✓ Provides surge protection and anti-interference functions.
- ✓ Complies with the following surge protection standards:
 - AC power port: 6 kV common mode; 6 kV differential mode.
 - User port: 4 kV common mode for GE/FE ports; 4 kV common mode and differential mode for POTS ports.
- ✓ Uses derating designs for electronic components, improving system reliability.
- ✓ Uses an anticorrosion design and fewer lines routed across the surface of a board to achieve a proper heat dissipation effect (producing a temperature difference to prevent condensation).

Product Hardware



- 1 AC power port
- 2 Grounding point
- 3 Uplink optical port
- 4 Maintenance network port
- 5 GE electrical ports
- 6 POTS ports
- 7 Mounting ear

Port	Silkscreen	Description
AC power port	None	Connects to 110 V or 220 V AC power.
Ground point	None	Connects the device to the ground.
Uplink port	None	Provides GPON upstream transmission using an SFP uplink optical port.
Maintenance serial port	CONSOLE	Provides local maintenance. Supports system configuration using tools, such as HyperTerminal, through CLI.
Maintenance network port	None	Supports local device management through any service port.
GE electrical ports	None	Provides gigabit Ethernet adaptive access rates of 10 Mbit/s, 100 Mbit/s and 1000 Mbit/s.
POTS ports	POTS 1-24	Supports POTS access and provides the VoIP, FoIP, and MoIP services.

Technical Specifications

Dimensions (Without the Mounting Brackets)		Dimensions (With the Mounting Brackets)	
MA5821 8FE: 250 mm x180 mm x 43.6 mm Other devices: 442 mm x 220 mm x 43.6 mm		MA5821 8FE: 482.6 mm x180 mm x 43.6 mm Other devices: 482.6 mm x 220 mm x 43.6 mm	
Weight			
MA5821	8 FE: 1.23 kg 16 FE: 2.10 kg 24 FE: 2.18 kg 8 GE: 2.02 kg 16 GE: 2.10 kg 24 GE: 2.18 kg	MA5822	8 FE+8 POTS: 2.12 kg 16FE+16 POTS: 2.35 kg 24FE+24 POTS: 2.43 kg 8 GE+8 POTS: 2.12 kg 16 GE+16 POTS: 2.35 kg 24 GE+24 POTS: 2.43 kg



Ambient Temperature	Ambient Humidity	Atmospheric Pressure	Altitude
-40°C to +55°C *	5%RH to 95%RH	70 kPa to 106 kPa	≤ 4000 m **
<p>* The device can start up at -25°C and run at -40°C.</p> <p>** The air density varies with the altitude, which affects the heat dissipation of a device. Therefore, the working environment temperature of the cabinet varies with the altitude.</p>			
Power Supply Mode		Working Voltage Range	
220 V AC		100 V AC to 240 V AC	
Static Power Consumption			
MA5821	8FE: 7W 16FE: 8W 24FE: 9W 8 GE: 12.3W 16GE: 14W 24GE: 14W	MA5822	8FE+8POTS: 10W 16FE+16POTS: 12W 24FE+24POTS: 13W 8GE+8POTS: 17.7W 16GE+16POTS: 18.7W 24GE+24POTS: 21.1W
Maximum Power Consumption			
MA5821	8FE: 10W 16FE: 14W 24FE: 18W 8GE: 14.2W 16GE: 19W 24GE: 23W	MA5822	8FE+8POTS: 17W 16FE+16POTS: 30W 24FE+24POTS: 40W 8GE+8POTS: 27.5W 16GE+16POTS: 38.9W 24GE+24POTS: 52.6W
Maximum input current			
MA5821	8FE: 0.5 A Other devices: 1 A	MA5822	1 A

Optical Port Specifications

Parameter	10G GPON	GPON
Optical module type	One-fiber bi-directional	One-fiber bi-directional
Port mode	Single-mode	Single-mode
Connector type	SC/PC (UPC)	SC/PC (UPC)
Maximum transmission distance (km)	60	20
Center wavelength (nm)	Tx: 1270 Rx: 1577	TX: 1310 RX: 1490
TX optical power (dBm)	2 to 7	0.5 to 5
Extinction ratio (dB)	8.2	> 10
Maximum RX sensitivity (dBm)	-28	-27
Overload optical power (dBm)	-8	-8

Primary Function List

Upstream transmission modes

10G GPON

GPON

Voice

H.248

Session Initiation Protocol (SIP)

Semi-permanent connections (SPCs)

Voice signal processing

Voice service test and maintenance

Reliability of voice services

Multicast

IGMP v2/v3

IGMP Proxy

IGMP Snooping

MLD Proxy

MLD Snooping

Multicast CAC

Layer 2 management

MAC address management

Virtual local area network (VLAN) management

SVLAN+MAC forwarding

SVLAN+CVLAN forwarding

Transparent transmission of protocol packets

QoS

Priority processing

Traffic management

Traffic Policing

Congestion management

Access control list (ACL) policies

User security

Policy Information Transfer Protocol (PITP)

DHCP Option82

802.1x authentication

Relay agent info option (RAIO)

Anti-MAC address transfer

Anti-MAC address spoofing

Anti-IP address spoofing

Fault diagnosis

Point-to-Point Protocol over Ethernet (PPPoE) dialup service emulation

Dynamic Host Configuration Protocol (DHCP) dialup service emulation

Call emulation

Multicast emulation

Nameplate Description

The MA5821/MA5822 in different models can be differentiated from the model printed on the nameplate attached on the top of the device. The following shows nameplates using the 8-port MA5821/MA5822 as an example.



NOTE

Model printed on the nameplate of the MA5821 (GE access): MA5821-XGE, X indicates the number of ports.

Model printed on the nameplate of the MA5822 (GE+POTS access): MA5822-XGE, X indicates the number of ports and POTS is not displayed.

Model printed on the nameplate of the MA5821 (FE access): MA5821-X, X indicates the number of ports.

Model printed on the nameplate of the MA5822 (FE+POTS access): MA5822-X, X indicates the number of ports and POTS is not displayed.

Product	Nameplate
MA5821 8 GE	 <p>SmartAX MA5820 Series\MA5821 型号 Model:SmartAX MA5821-8GE 多业务接入设备 Multi-Service Access Equipment 电源额定值 POWER RATING: ~100-240V;50/60Hz;1.0A</p> <hr/> <p>Hungary-Budapest-Kozraktar u. 30-32, Riverpark, 1st floor</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">1类激光产品 CLASS 1 LASER PRODUCT</div>     </div> <hr/> <p>华为技术有限公司 HUAWEI TECHNOLOGIES CO.,LTD. 中国制造 MADE IN CHINA</p>
MA5822 8 GE+8 POTS	 <p>SmartAX MA5820 Series\MA5822 型号 Model:SmartAX MA5822-8GE 多业务接入设备 Multi-Service Access Equipment 电源额定值 POWER RATING: ~100-240V;50/60Hz;1.0A</p> <hr/> <p>Hungary-Budapest-Kozraktar u. 30-32, Riverpark, 1st floor</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">1类激光产品 CLASS 1 LASER PRODUCT</div>     </div> <hr/> <p>华为技术有限公司 HUAWEI TECHNOLOGIES CO.,LTD. 中国制造 MADE IN CHINA</p>
MA5821 8 FE	 <p>SmartAX MA5821 Series 型号 Model:SmartAX MA5821-8 多业务接入设备 Multi-Service Access Equipment 电源额定值 POWER RATING: ~100-240V;50/60Hz;0.5A</p> <hr/> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">1类激光产品 CLASS 1 LASER PRODUCT</div>   </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;">     </div> <hr/> <p>华为技术有限公司 HUAWEI TECHNOLOGIES CO.,LTD. 中国制造 MADE IN CHINA</p>
MA5822 8 FE+8 POTS	 <p>SmartAX MA5822 Series 型号 Model:SmartAX MA5822-8 多业务接入设备 Multi-Service Access Equipment 电源额定值 POWER RATING: ~100-240V;50/60Hz;1.0A</p> <hr/> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">1类激光产品 CLASS 1 LASER PRODUCT</div>   </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;">     </div> <hr/> <p>华为技术有限公司 HUAWEI TECHNOLOGIES CO.,LTD. 中国制造 MADE IN CHINA</p>

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