



SmartAX MA5671A

Multi-service Access Module



The MA5671A is a mini-PON access device developed by Huawei dedicated for the radio bearer solution. It applies to PON network reconstruction for switches and routers and wireless base station backhaul.

Product Overview



Featuring small size and simple installation, the MA5671A can be installed in a base station device that is equipped with a standard small form-factor pluggable (SFP) slot for small-cell service radio backhaul and enterprise private line service bearing.

In small-cell service radio backhaul scenarios: In the downstream direction, the MA5671A connects to a base station through a GE port to provide the integrated access service; in the upstream direction, the MA5671A connects to an optical line terminal (OLT) through a GPON port and then to the upper-layer IP network.

In enterprise access scenarios: In the downstream direction, the MA5671A connects to a switch or router through a GE port to provide the high-speed Internet (HSI) and VoIP services; in the upstream direction, the MA5671A connects to an OLT through a GPON port.

The MA5671A supports convenient remote management functions. It supports operation, administration and maintenance (OAM) and optical network terminal management and control interface (OMCI) protocols, and uses the OLT to manage all terminals on an entire network in a unified manner. The MA5671A supports remote fault diagnosis, service provisioning, and performance statistics.



Product Highlights

Flexible Environmental Adaptability

The small-size and light weight MA5671A supports various installation scenarios.

Convenient Deployment

The MA5671A is plug-and-play and supports one-stop deployment. When the MA5671A uses GPON upstream transmission, it supports offline deployment. The MA5671A automatically obtains configurations from the U2000 and the configurations automatically take effect on the MA5671A. When the MA5671A goes online, it automatically reports its online state to the U2000.

Abundant Services

The MA5671A provides high bandwidths and concurrently supports abundant services, such as data service and high definition (HD) videos. In addition, the MA5671A provides comprehensive QoS assurance for each service, meeting users' differentiated service requirements.

Comprehensive Management and Maintenance

The MA5671A supports multiple high efficient management and maintenance functions, such as remote software commissioning, acceptance, upgrade and patch installation, and fault location.

- Remote batch upgrade: The MA5671A supports automatic batch upgrade and version rollback in the event of an upgrade failure, which ensures system and data security.
- Zero-touch routine maintenance: The MA5671A supports comprehensive information collection, self-check and diagnosis, accurate fault location, and remote troubleshooting.

Version Mapping

Product Name	Product Version
MA5671A	V800R017C00
OLT	V800R016C00SPH103
U2000	V200R015C50SPC200

Technical Specifications

Technical Specifications

Dimensions			
Weight	Width	Depth	High
(With fiber caps): 19 g (Without fiber caps): 18 g	12.5 mm	72 mm	14.1 mm
Environment Specifications			
Ambient Temperature	Ambient Humidity	Atmospheric Pressure	Altitude
Operating temperature: -40°C to +85°C Storage temperature: -40°C to +85°C	5%RH ~ 95%RH	70kPa ~ 106kPa	< 4000 m*
*The air density varies with the altitude, which affects the heat dissipation of a device. Therefore, the ambient temperature of the MA5671A varies with the altitude.			
Power Consumption			
Power Consumption	Power Supply Voltage	Power Supply Current	
≤ 2.0 W	+3.3 V DC (ripple and noise ≤ 100mV)	≤ 610 mA TX VCC ≤ 500 mA RX VCC ≤ 500 mA	

Optical Port Indicators

Parameter	Value	Parameter	Value
Transmission rate	TX: 1.244 Gbit/s RX: 2.488 Gbit/s	Standard compliance	ITU-T G.984
Connector type	SC/APC	Maximum transmission distance	20 km
RX sensitivity	≤ -27 dBm	Overload optical power	≥ -8 dBm
TX optical power	0.5 dBm to 5.0 dBm	Extinction ratio (ER)	≥ 10 dB
Tburst_on duration	≤ 12.8 ns	Tburst_off duration	≤ 12.8 ns
Average shutdown optical power	≤ -45 dBm	-20 dB spectral width	≤ 1 nm
SMSR	≥ 30 dB	TX wavelength range	1290 nm to 1330 nm Center wavelength: 1310 nm
TX laser type	DFB	RX wavelength range	1480 nm to 1500 nm Center wavelength: 1490 nm
RX PD type	APD	-	-

Electrical Port Indicators

Parameter	Value	Parameter	Value
Interface type	SGMII	Interface bandwidth	1 GE/2.5 GE
TX-end input level standard	CML	TX-end electrical port coupling mode	DC
TX-end differentiated input signal swing	200 mV to 1600 mV	TX enabling voltage	2–3.3 V (disabled) ≤ 0.8 (enabled)
Ttxdisable_on duration of the TX_Disable module	≤ 2 ms	Ttxdisable_off duration of the TX_Disable module	≤ 100 us
RX+/- output level standard	CML	RX+/- output coupling mode	AC
RX+/- output signal swing	300 mV to 1200 mV	IIC interface rate	≤ 90 kHz
LOS Assert	≥ -45 dBm	LOS De assert	≤ -29 dBm

DDM Monitoring Performance Indicators

Parameter	Value	Parameter	Value
Digital diagnostic monitoring (DDM) ** monitoring standard	SFF 8472	Voltage monitoring report error	±3% (Unit: V)
RX optical power report error	±3 dB	Bias current monitoring report error	±10% (Unit: mA)
TX optical power report error	±3 dB	Temperature monitoring report error	±3 (Unit: ° C)

** A monitoring method, which is used to monitor optical transceiver parameters, including temperature, power supply, voltage, optical bias current, TX optical power, and RX optical power.

PON MAC Indicators

Parameter	Value	Parameter	Value
Flash memory	16 MB	DDR capacity	64 MB
Protocol compliance	GPON	.	.

Standard Compliance

Environment Standard	EMS Standard	Safety Standard
ROHS5/REACH	EN55022/FCC IEC61000-4-2 IEC61000-4-3	IEC60950-1/EN60950-1/UL60950-1 IEC60825-1 Class 1 FDA 21CFR 1040.10/1040.11



Primary Function List

Layer 2 Management

- MAC address management
- VLAN+MAC forwarding

QoS

- Priority processing
- Traffic management
- Hierarchical quality of service (HQoS)
- Congestion management
- Access control list (ACL) policies

Fault diagnosis

- GPON line diagnosis
- Ping operations

Software management

- Automatic remote bulk upgrades configured and started through the U2000
- Immediately taking effect or taking effect the next time for an upgrade
- Remote GPON upgrades using OMCI
- Configuration file rollback
- SFF-8472-compliance