MA5800-X17&X15&X7&X2 Product Datasheet

The MA5800 is the industry's first smart aggregation OLT with a distributed architecture. It is positioned as the next-generation OLT for NG-PON.

ISSUE： 06

Date： 2022-07-05

Product Overview

The MA5800 is the industry's first smart aggregation OLT with a distributed architecture. It is positioned as the next-generation OLT for NG-PON. The product is designed to help carriers build networks with larger bandwidths, higher speeds, and smarter connectivity to deliver better service experience.

- Providing GPON, 10G PON (including XG-PON and XGS-PON), P2P 10GE/GE access, the MA5800 supports deployment on FTTH, FTTD, FTTB, and FTTC networks. This makes it applicable to home access, enterprise access, mobile backhaul, and Wi-Fi hotspot backhaul scenarios to aggregate all services on one fiber network.

- The MA5800 functions as a large-capacity aggregation device on the network to aggregate the traffic from ONTs, MDUs, and campus switches, thereby simplifying the network architecture and reducing the OPEX.
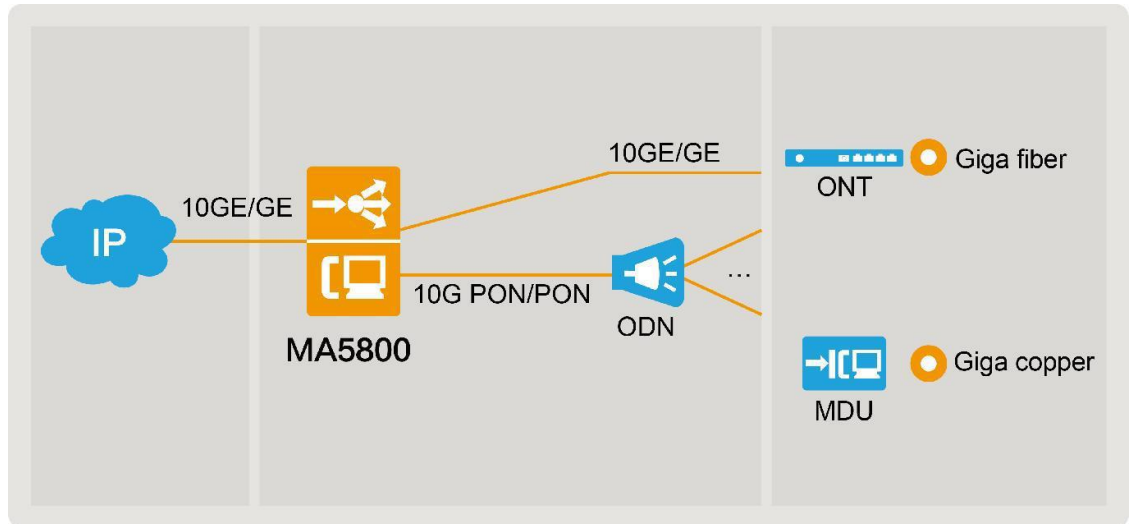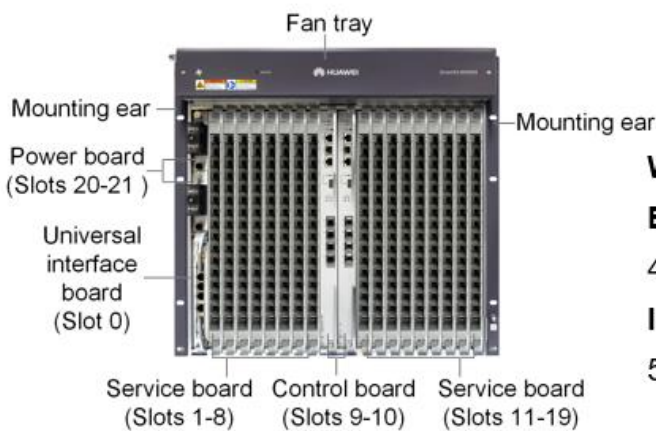

Product Appearance

The MA5800 supports four types of subracks. The only difference between these subracks relies on the service slot quantity (they have the same functions and network positions).
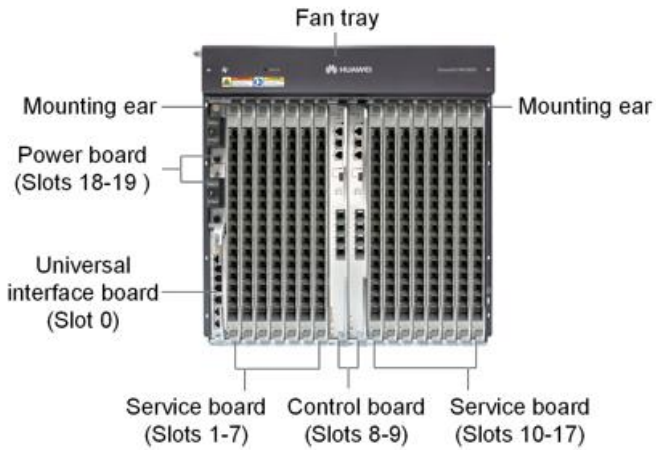
MA5800-X17 (large-capacity, ETSI)

MA5800-X17 supports 17 service slots with backplane H901BPLB.

MA5800-X15 (large-capacity, IEC, V100R016C10 and later versions)

MA5800-X15 supports 15 service slots with backplane H901BPIB.

Fan tray

Mounting ear

Mounting ear

Power board
(Slots 18-19)

Universal
interface board
(Slot 0)

Service board
(Slots 1-7)

Control board
(Slots 8-9)

Service board
(Slots 10-17)

W x D x H

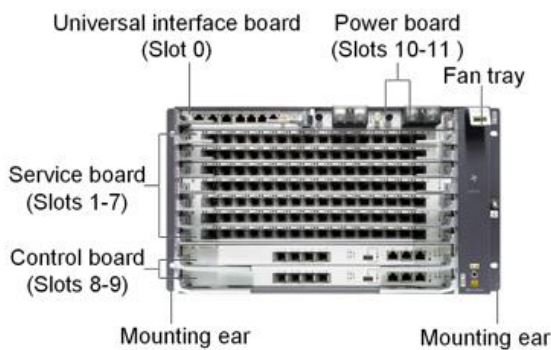**Excluding mounting brackets:**

442 mm x 287 mm x 486 mm

Including mounting brackets:

482.6 mm x 287 mm x 486 mm

MA5800-X7 (medium-capacity, V100R016C00 and later versions)

MA5800-X7 supports 7 service slots with backplane H901BPMB.

Universal interface board
(Slot 0)

Power board
(Slots 10-11)

Fan tray

Service board
(Slots 1-7)

Control board
(Slots 8-9)

Mounting ear

Mounting ear

W x D x H

Excluding mounting brackets:

442 mm x 268.7 mm x 263.9 mm
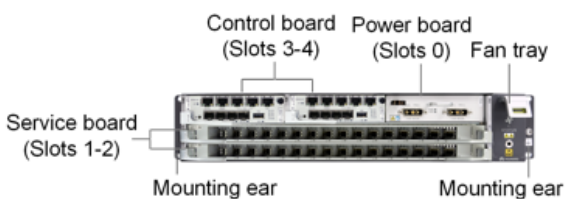
Including IEC mounting brackets:

482.6 mm x 268.7 mm x 263.9 mm

Including ETSI mounting brackets:

535 mm x 268.7 mm x 263.9 mm

MA5800-X2 (small-capacity, V100R017C10 and later versions)

MA5800-X2 supports 2 service slots with backplane H901BPSB.

Control board
(Slots 3-4)

Power board
(Slots 0)

Fan tray

Service board
(Slots 1-2)

Mounting ear

Mounting ear

W x D x H

Excluding mounting brackets:

442 mm x 268.7 mm x 88.1 mm

Including IEC mounting brackets:

482.6 mm x 268.7 mm x 88.1 mm

**Including ETSI mounting brackets:**

535 mm x 268.7 mm x 88.1 mm

Product Highlights

Distributed architecture

The MA5800 uses the distributed architecture (the same as the router). Under such an architecture, service processing on the control board is distributed to every service board, improving system switching capacity and performance, and reliability.

◆ **Centralized:** switching and service processing are implemented on the control board (for low traffic scenarios)
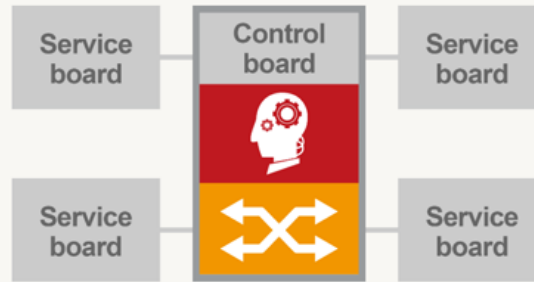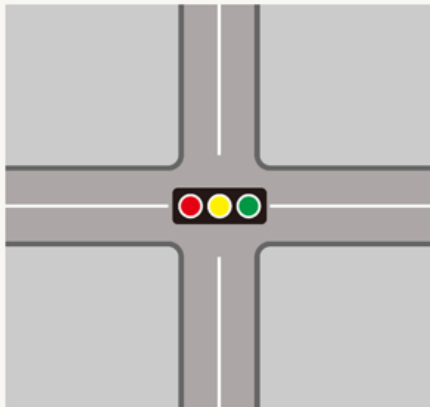
Centralized scheduling
Centralized forwarding table lookup and scheduling limits service throughput and expansion

◆ **Distributed:** switching is implemented on the control board and service processing is implemented on service boards (for heavy traffic scenarios)
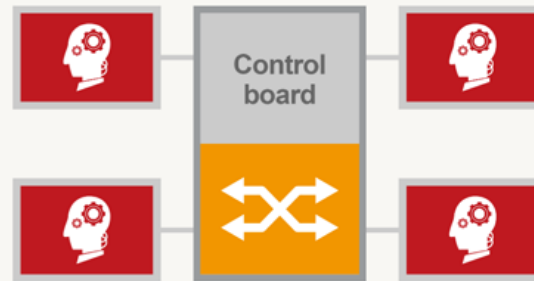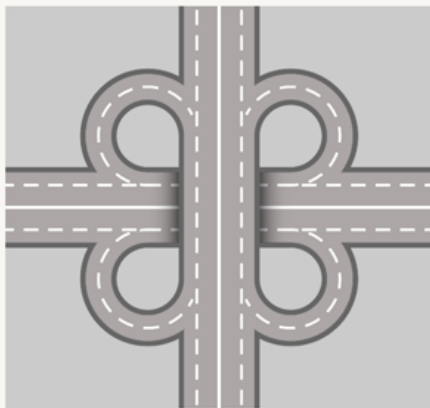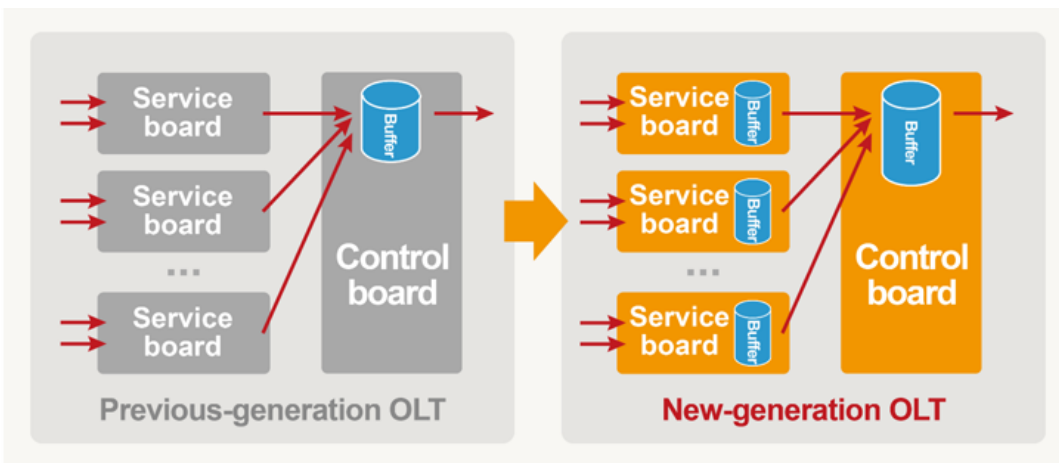

**Distributed scheduling**
Switching, high service throughput, easy expansion

Optimum video experience

The MA5800 supports distributed cache for fast 4K/8K video start or channel zapping.

Supports vMOS/eMDI video quality monitoring. Built-in probes on boards are used to collect video indicators and the NMS is used for remote monitoring and monitoring result query, improving video O&M experience.
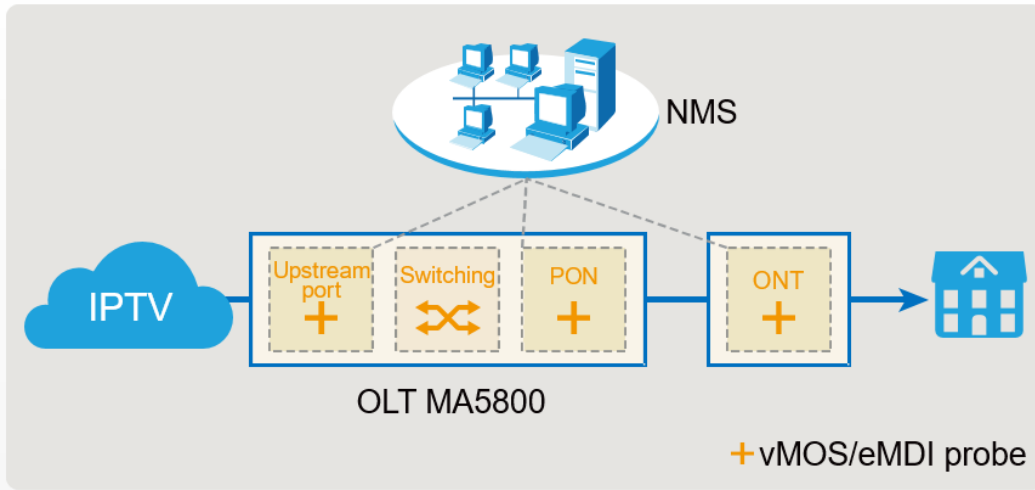
Video service is not interrupted during an OLT upgrade, enhancing user experience.
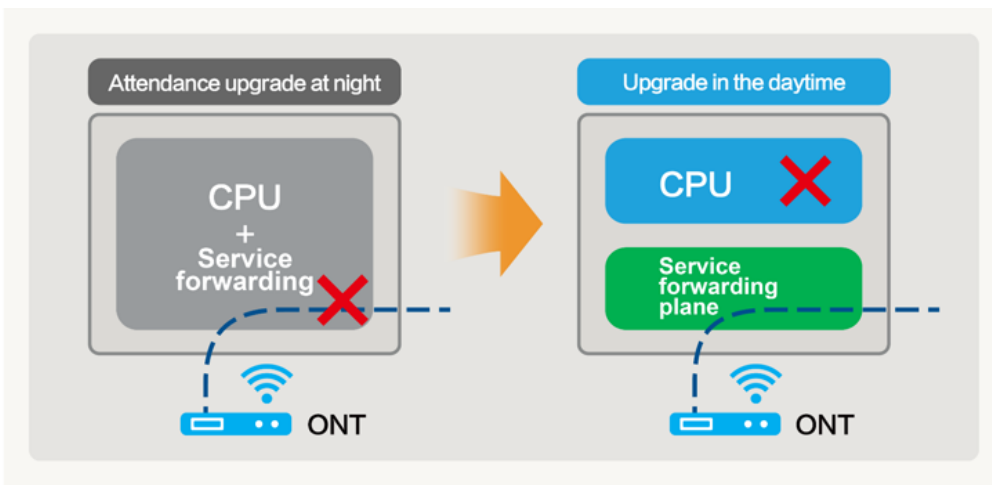
PON Combo

The MA5800 supports the PON combo technology, and can work with the built-in WDM1r optical module to support smooth evolution from GPON to XG(S)-PON.

Flex-PON

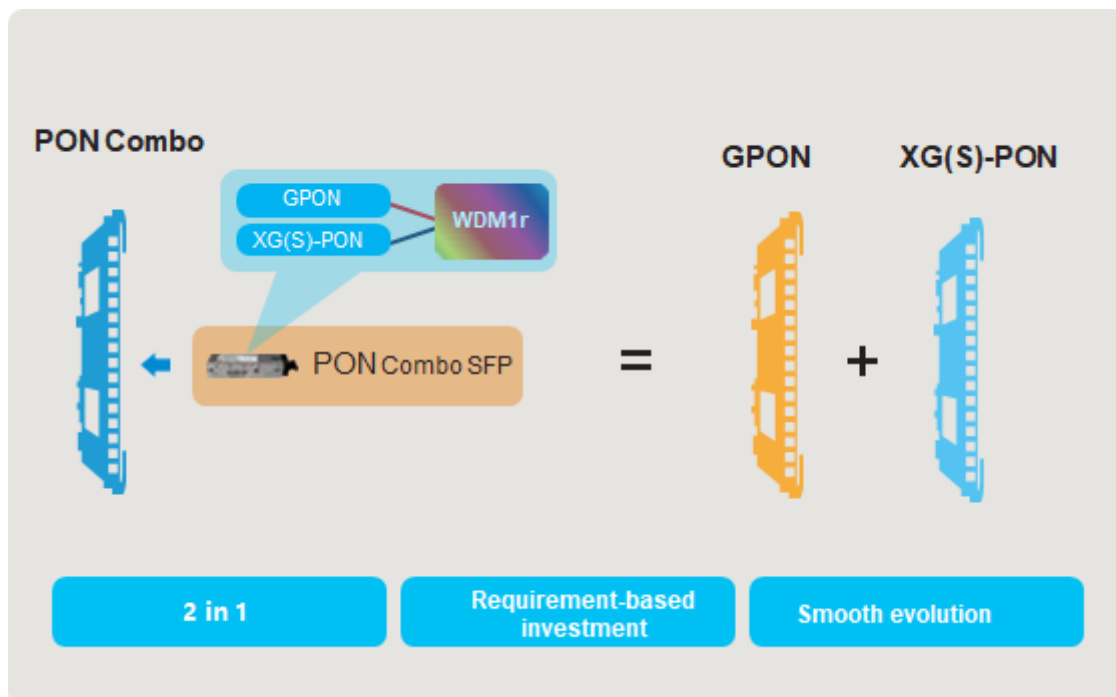A Flex-PON board supports GPON, XG-PON, XGS-PON, XG-PON&GPON combo, XGS-PON&GPON combo and TWDM PON with the corresponding optical module, and reduces OPEX by smooth   evolution without board replacement.
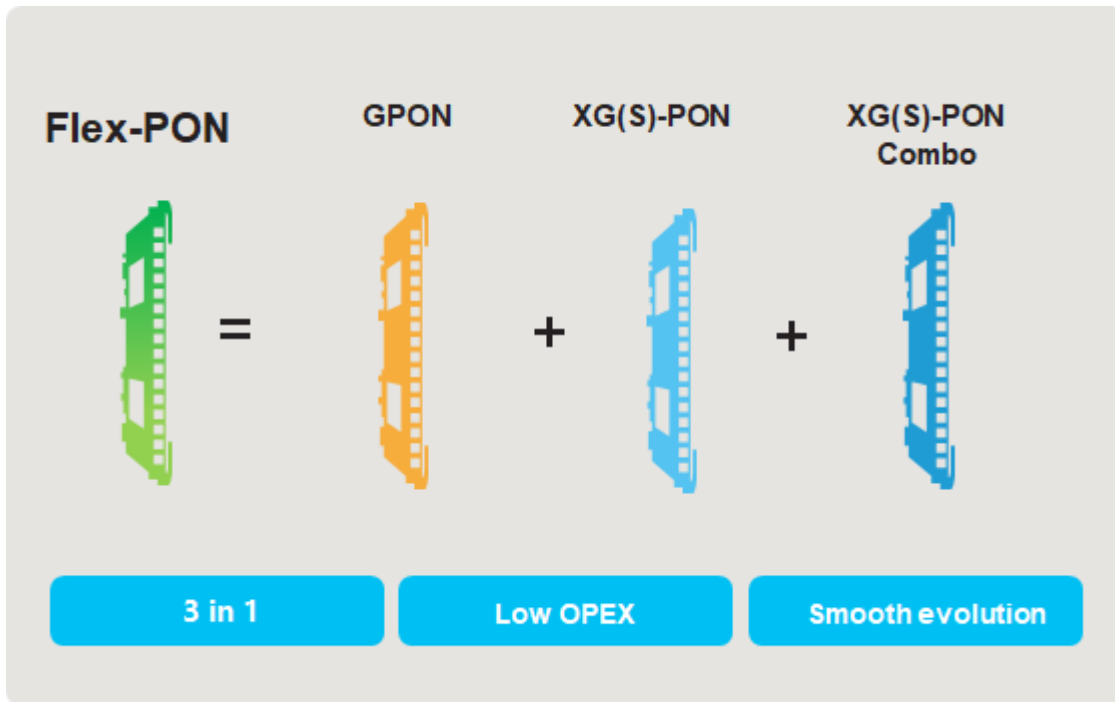
Slicing Technology

The E2E slicing technology provides differentiated bearing for services with different SLA requirements, achieving application-level bandwidth and latency commitment.
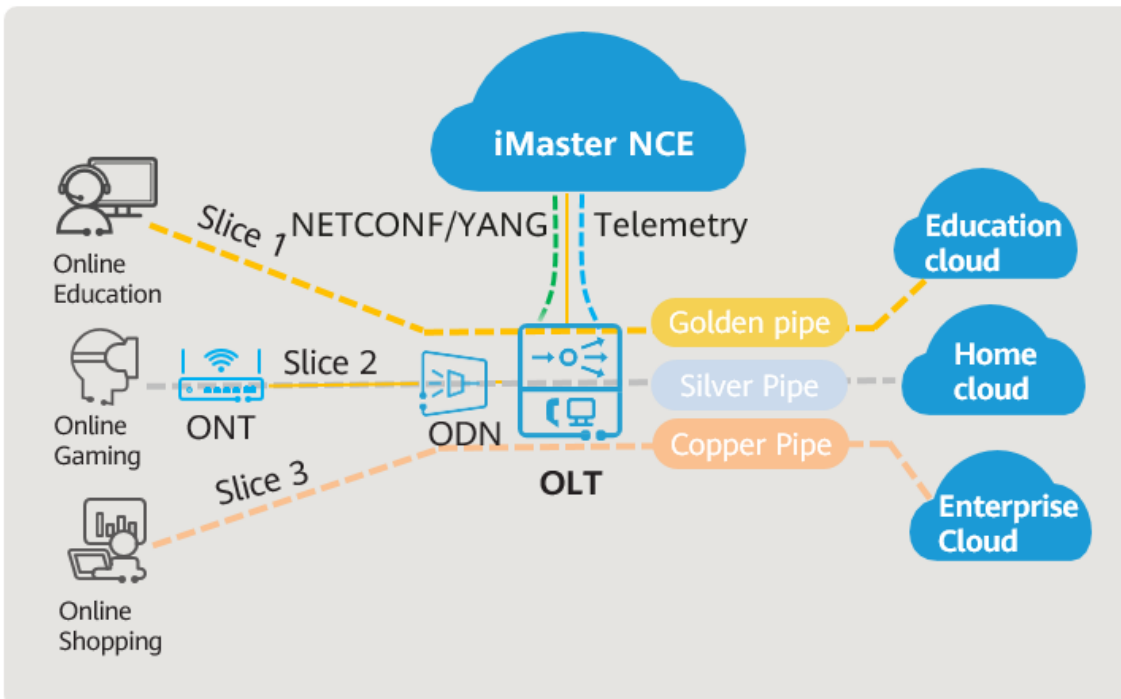
Primary Features

Access 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 (V100R016C10 and later versions)	MLD Proxy/Snooping (V100R016C10 and later versions)
VLAN-based IPTV multicast	IPv4 PIM and PIM-SSM (V100R017C00 and later versions)
QoS	
Traffic classification	Priority processing
trTCM-based traffic policing	WRED
Traffic shaping	HQoS
PQ/WRR/PQ+WRR	ACL
MPLS&PWE3	
MPLS LDP	MPLS RSVP-TE
MPLS OAM	MPLS BGP IP VPN
PW protection switching	Tunnel protection switching
TDM/ETH PWE3	
IPv6	
IPv4/IPv6 dual stack	IPv6 L2 and L3 forwarding
DHCPv6 relay	
System reliability	
GPON type B/type C protection	ERPS (G.8032)
BFD (V100R016C10 and later versions)	10G GPON type B/type C protection
Monitor Link (V100R018C10 and later versions)	Intra-board and inter-board LAG
Service overload control	MSTP
2 control boards and 2 power boards for redundancy protection	In-service board fault detection and rectification
In-service software upgrade (ISSU) of the control board	
Application security	
802.1x	AAA

Eco-friendly and energy-saving
In compliance with the Code of Conduct v8 released by the European Commission(V100R021C10 and later versions)
VXLAN (V100R018C00 and later versions)
Virtual eXtensible LAN
SRv6 (V100R019C1x and later versions)
Segment Routing IPv6
Slice (V100R021C00 and later versions)
Service slicing
Aggregation (V100R022C00 and later versions)
Aggregation management

Product Specifications

Item	MA5800-X17	MA5800-X15	MA5800-X7	MA5800-X2
Supported cabinet	N63E-22, N66E-18	N66E-22	N63E-22, N66E-22	N63E-22
Board configuration	Control board slots: 9, 10 Service board or upstream interface board slots: 1–8, 11–19 Universal interface board slot: 0 Power board slots: 20, 21	Control board slots: 8, 9 Service board or upstream interface board slots: 1–7, 10–17 Universal interface board slot: 0 Power board slots: 18,19	Control board slots: 8,9 Service board or upstream interface board slots: 1–7 Universal interface board slot: 0 Power board slots: 10, 11	Control board slots: 3,4 Service board or upstream interface board slots: 1–2 Does not support the universal interface board. Power board slot: 0
Dimensions (W x D x H) (mm)	Excluding mounting ears: 493 x 287 x 486 Including mounting ears: 535 x 287 x 486	Excluding mounting ears: 442 x 287 x 486 Including mounting ears: 482.6 x 287 x 486	Excluding mounting ears: 442 x 268.7 x 263.9 Including IEC mounting ears: 482.6 x 268.7 x 263.9 Including ETSI mounting ears: 535 x 268.7 x 263.9	Excluding mounting ears: 442 x 268.7 x 88.1 Including IEC mounting ears: 482.6 x 268.7 x 88.1 Including ETSI mounting ears: 535 x 268.7 x 88.1
Maximum weight (including mounting brackets)	45 kg	35 kg	26 kg	9.4 kg
Maximum input current	60 A	60 A	40 A	DC power supply: 20 A AC power supply: 8 A
Power supply mode	DC power support (dual backup)			DC power support (dual backup) AC power supply + battery for backup
Working voltage	–38.4 V DC to –72 V DC			DC power supply: –

Item	MA5800-X17	MA5800-X15	MA5800-X7	MA5800-X2
range				38.4 V to –72 V AC power supply: 100–240 V
Rated voltage	–48 V/–60 V			DC power supply: –48 V/–60 V AC power supply: 110 V/220 V
Ambient temperature	–40°C to +65°C The MA5800 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 MA5800 varies with the altitude.			
Payload switching capacity of the control board (load sharing mode)	MPLA: 3.6 Tbit/s MPLB: 7 Tbit/s MPLG: 7.3 Tbit/s			MPSA/MPSG: 248 Gbit/s
Maximum payload bandwidth per service slot (load sharing mode)	MPLA: 100 Gbit/s MPLB/MPLG: 200 Gbit/s			MPSA/MPSG: 40 Gbit/s
Maximum number of concurrent 4K video users	17000		7000	2000
Maximum number of MAC addresses	262143			
Maximum number of IPv4 routing tables	65536			
Maximum number of IPv6 routing tables	16384			
Maximum number of ARP tables	131072			32768
Switching/Forwarding delay	Short forwarding delay: The 100 Mbit/s Ethernet port sends the 64-byte Ethernet packets at a delay shorter than 20 µs.			
Bit error rate (BER) in full load	A BER smaller than 10 e-10 for a port that transmits data in full load			
System reliability specifications	System availability for the typical configuration: > 99.999% Mean time between failures (MTBF): about 45 years **NOTE** Due to different network environments and different boards used by devices, the preceding MTBF (45 years) of the MA5800 is only for reference. The average repair time for field replaceable units (FRUs) is about 2 hours. The preceding values are only for reference. For details, contact the			

Item	MA5800-X17	MA5800-X15	MA5800-X7	MA5800-X2
	related Huawei engineers.			
Upstream ports (dual control boards for upstream transmission)	MPLA/MPLB: 8 x 10GE/GE MPLG: 2 x 100GE + 4 x 10GE/GE			MPSA/MPSG: 4 x 10GE/GE + 4 x GE
GPON ports	272	240	112	32
XG-PON ports	272	240	112	32
XGS-PON ports	272	240	112	32
GE ports	816	720	336	96
10GE ports	408	360	168	16

Huawei Technologies Co., Ltd.

Address:Huawei Industrial Base Bantian, Longgang Shenzhen 518129 People's Republic of China

Website:www.huawei.com