

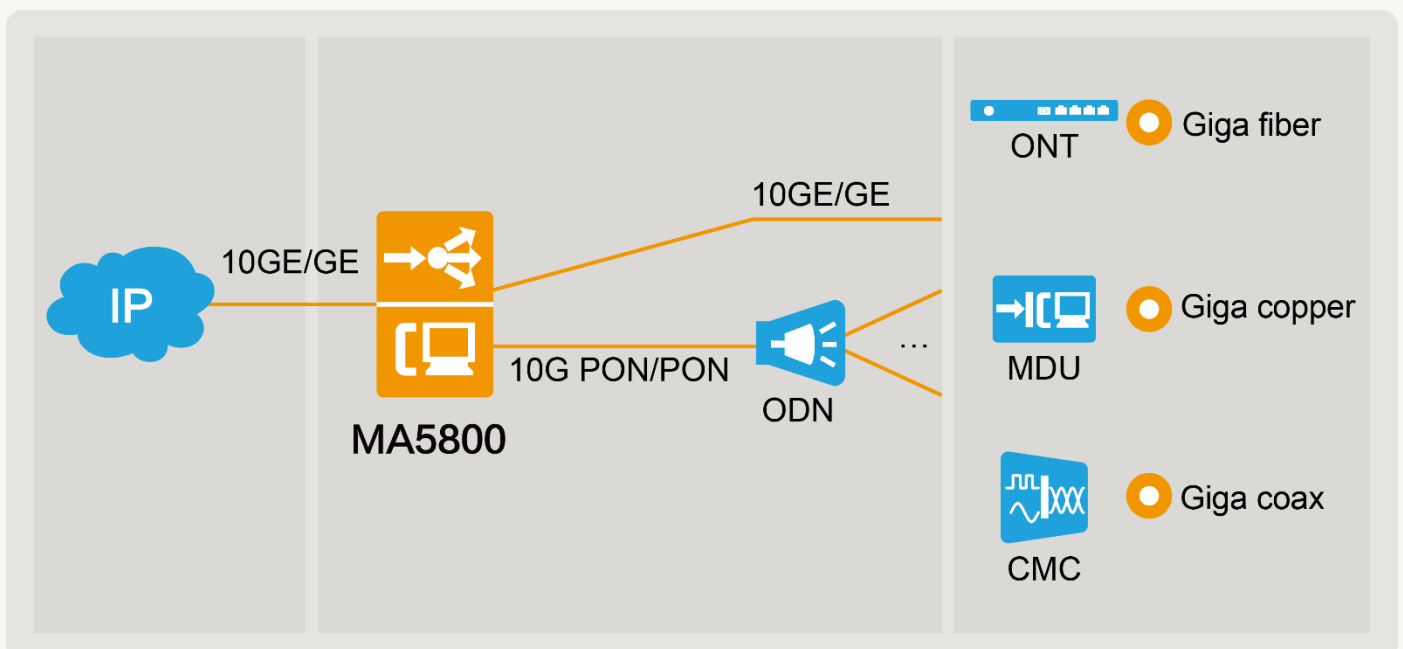
MA5800

Product Description



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 GPON (including XG-PON and XGS-PON), P2P GE, and 10GE access, the MA5800 supports deployment on FTTH, FTTD, FTTB, FTTC, and distributed converged cable access platform (D-CCAP) 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.

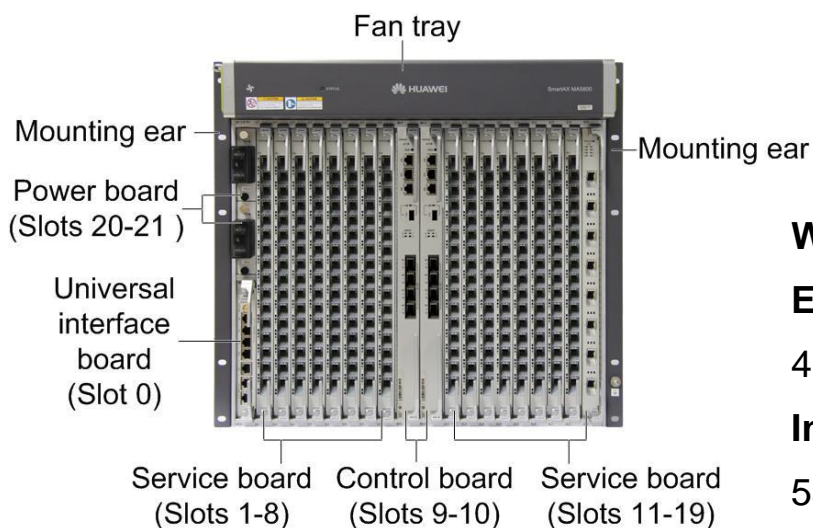


Product Appearance

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 and H901BPLD (V100R018C00 and later versions).



W x D x H

Excluding mounting brackets:

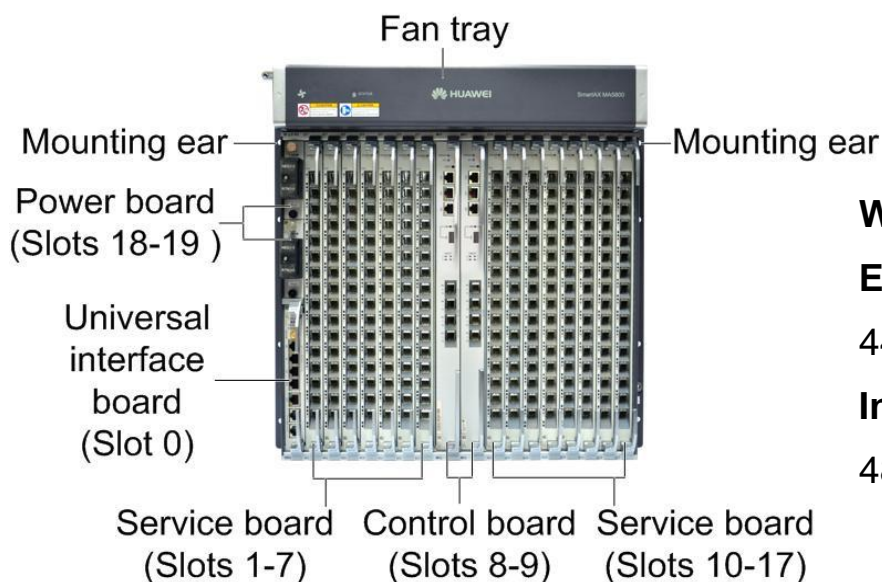
493 mm x 287 mm x 486 mm

Including mounting brackets:

535 mm x 287 mm x 486 mm

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

MA5800-X15 supports 15 service slots with backplane H901BPIB.



W x D x H

Excluding mounting brackets:

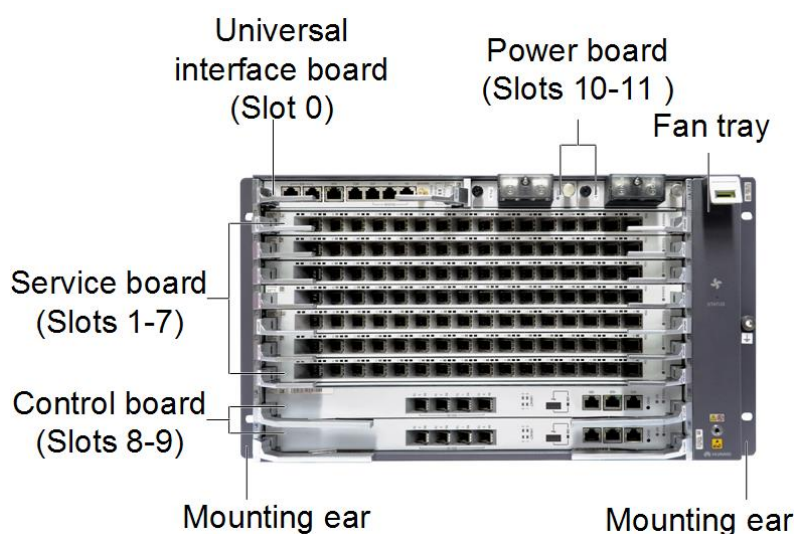
442 mm x 287 mm x 486 mm

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.



W x D x H

Excluding mounting brackets:

442 mm x 268.7 mm x 263.9 mm

Including IEC mounting brackets:

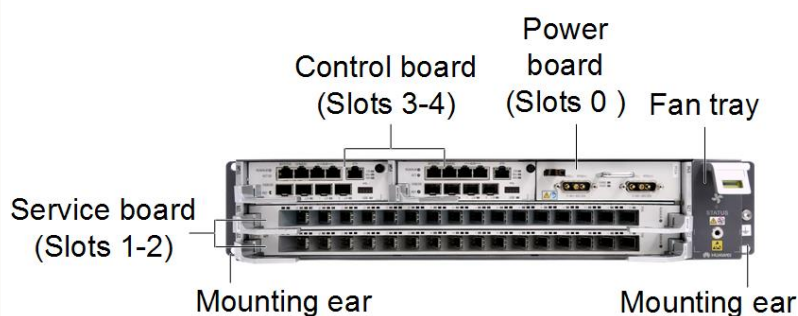
482.6 mm x 268.7 mm x 263.9 mm

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.



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

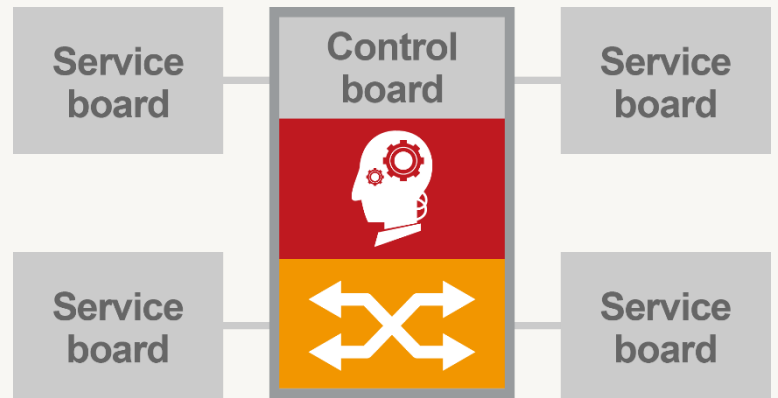
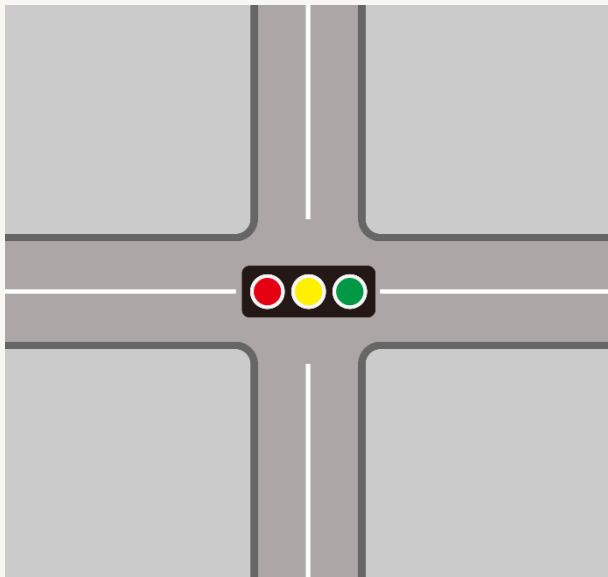
Product Highlights

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.

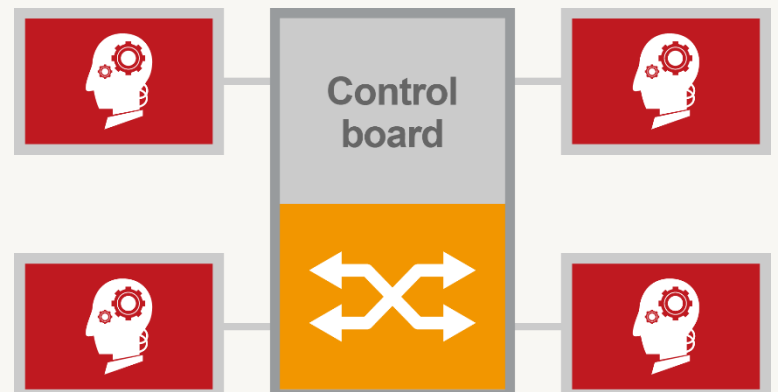
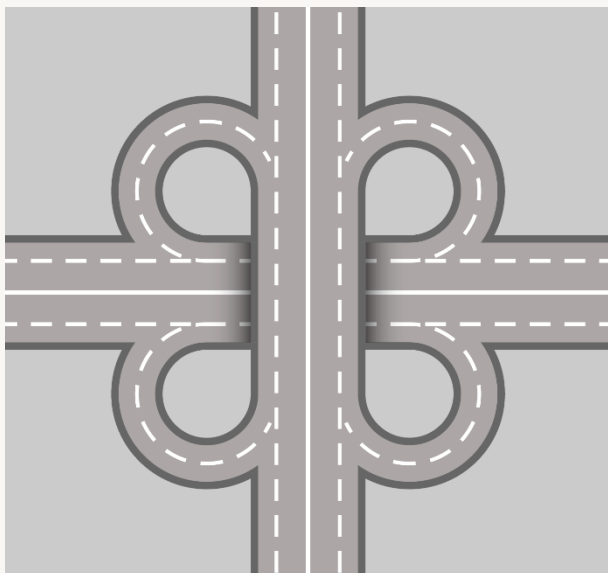
- ◆ **Centralized:** switching and service processing are implemented on the control board (for low traffic scenarios)



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)

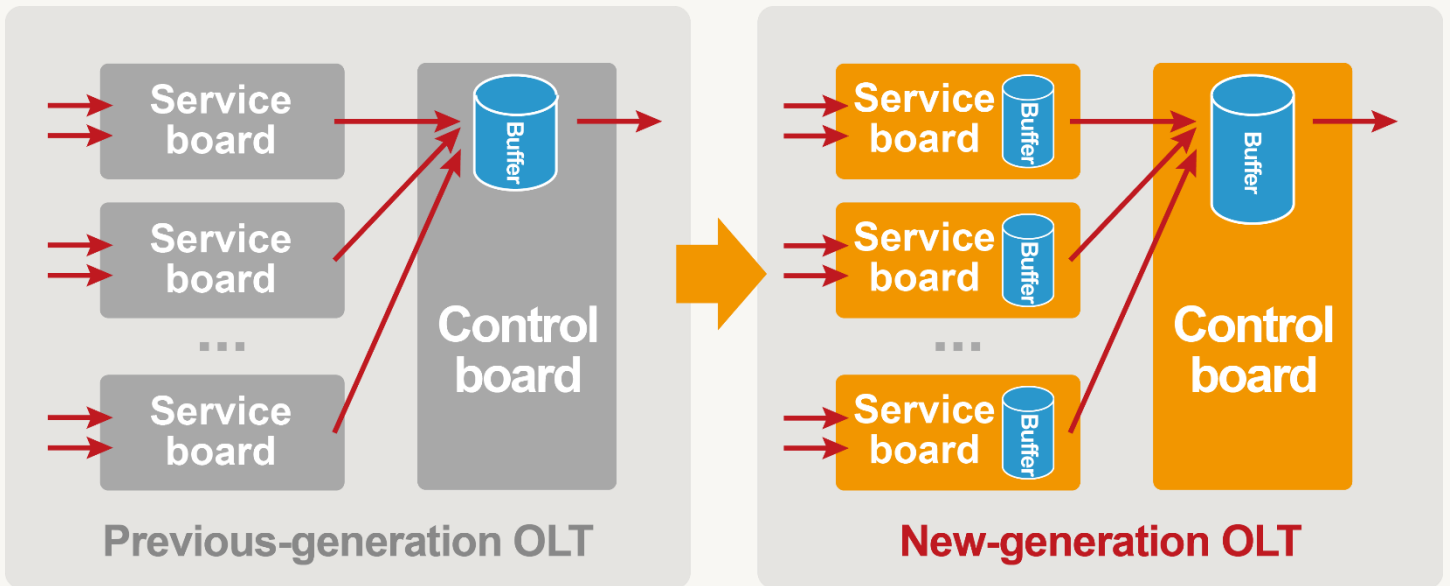


Distributed scheduling

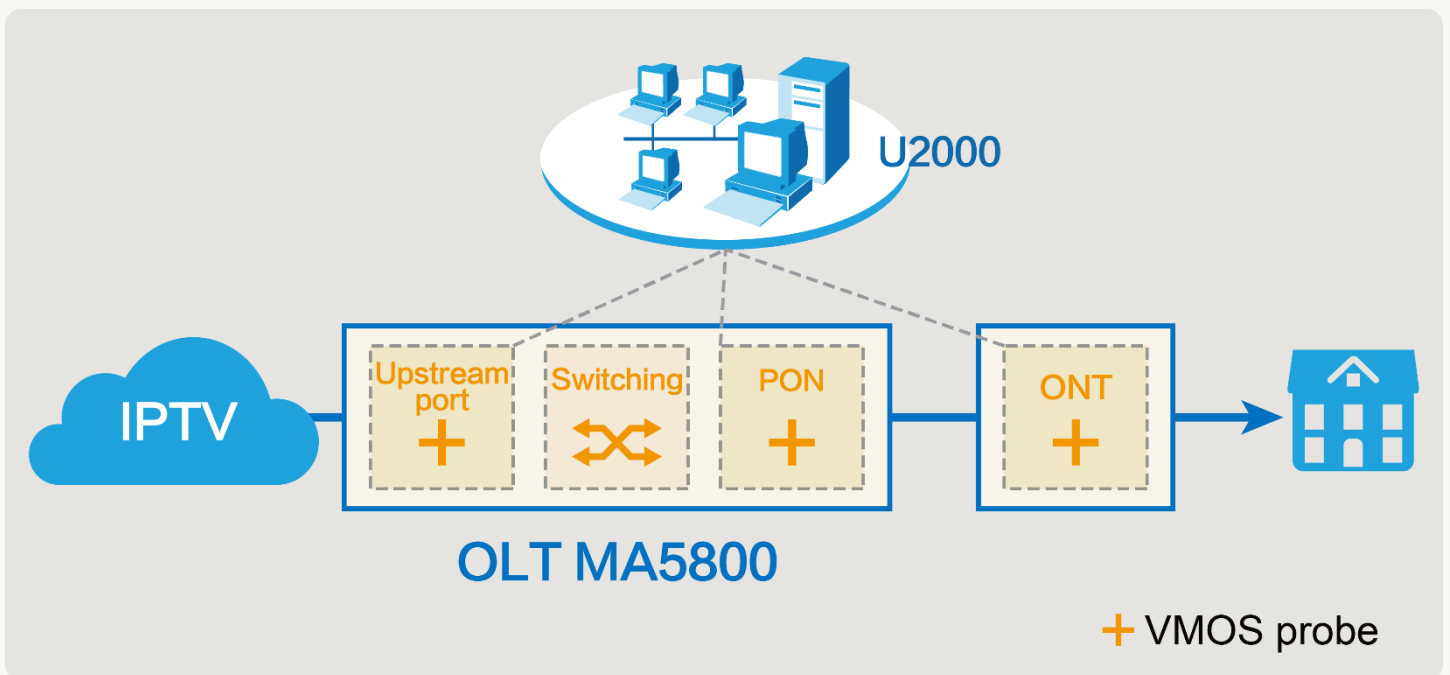
Switching, high service throughput, easy expansion

Optimum video experience

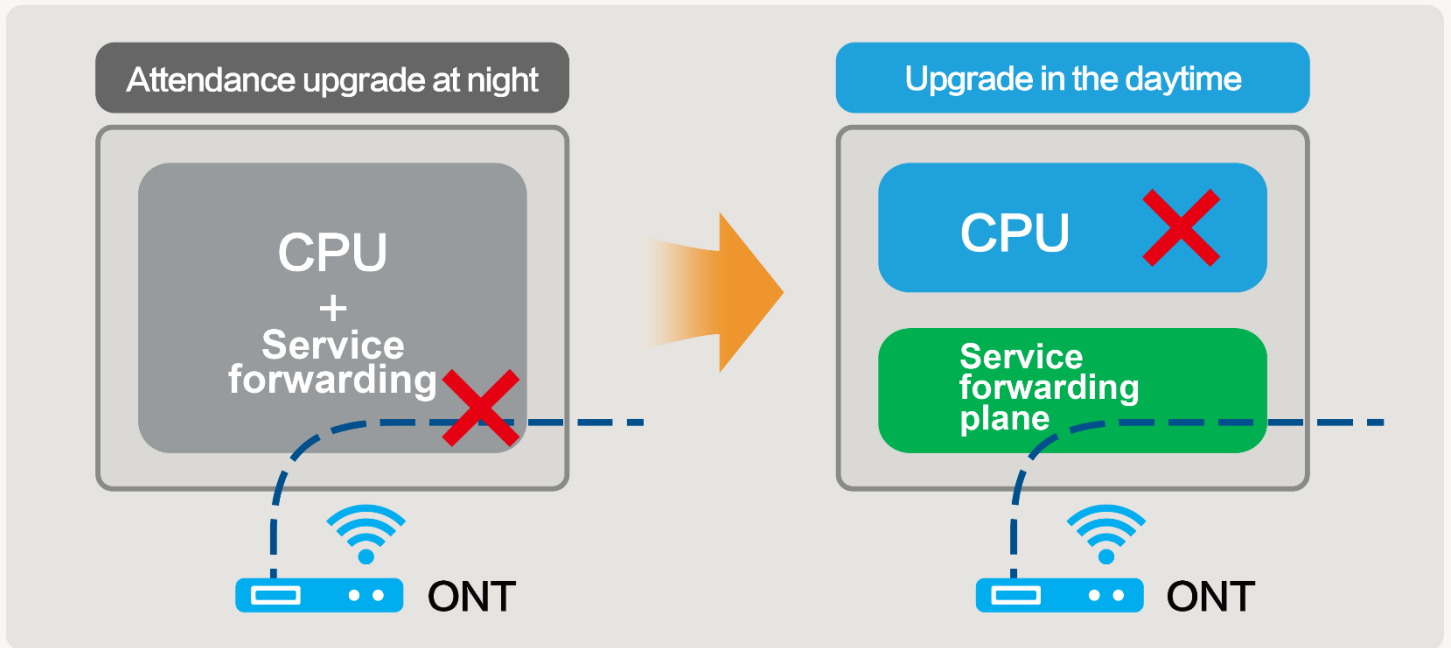
- ◆ The MA5800 supports cache in the distributed architecture for fast 4K/8K video start or channel zapping.



- ◆ Supports VMOS 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.

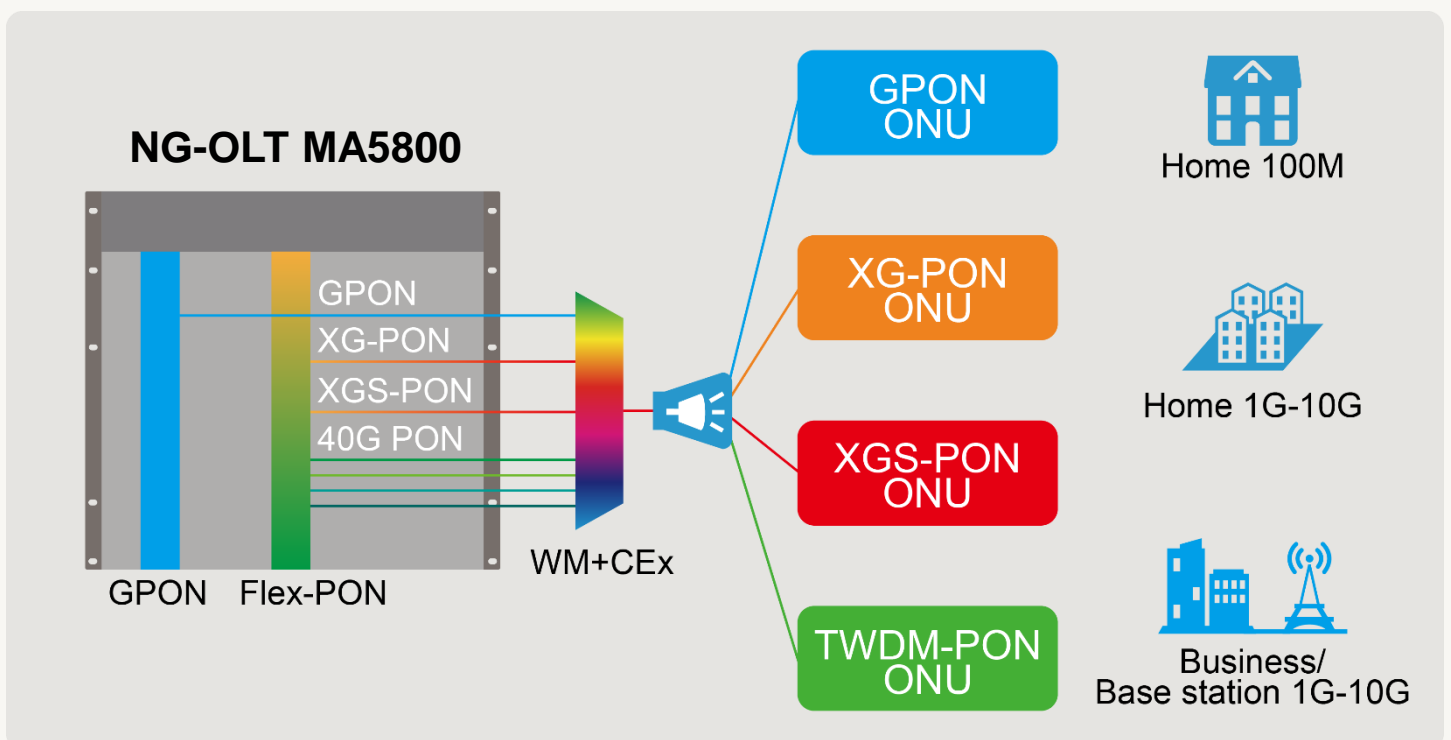


- ◆ Video service is not interrupted during an OLT upgrade, enhancing user experience.



Smooth evolution to 40G

The maximum bandwidth per service slot reaches 200 Gbit/s at the most, which supports the non-convergence access of 10G PON ports and supports 40G PON boards in the future. The MA5800 can smoothly evolve to 40G PON without replacing subracks, which protects carriers' investments.



Technical Specifications

Physical Specifications

Item	MA5800-X17	MA5800-X15	MA5800-X7	MA5800-X2
Supported cabinet	N63E-22.	N66E-22	N63E-22 and N66E-22	N63E-22
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 for backup)			DC power support (dual for backup) AC power supply + battery for backup
Working voltage range	-38.4 V DC to -72 V DC			DC power supply: -38.4 V to -72 V AC power supply: 100 V to 240 V
Rated voltage	-48V/-60V			DC power supply: -48 V/-60 V AC power supply: 110 V/220 V

Physical Specifications

Ambient temperature	<p>-40°C to +65°C*</p> <p>The MA5800 can start up at a lowest temperature of -25°C .</p> <p>*The +65°C temperature refers to the highest temperature measured at the air intake vent.</p>
Ambient humidity	5% RH to 95% RH
Atmospheric pressure	70 kPa to 106 kPa
Altitude	<p>< 4000m**</p> <p>**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.</p>

Maximum Number of Ports in a Subrack

Item	MA5800-X17	MA5800-X15	MA5800-X7	MA5800-X2
GPON ports	272	240	112	32
XG-PON ports	272	240	112	32
XGS-PON ports	272	240	112	32
GE/FE ports	816	720	336	96
10GE ports	408	360	168	16
E1 ports	544	480	224	64

System Specifications

Item	MA5800-X17	MA5800-X15	MA5800-X7	MA5800-X2
Switching capacity of the control board (load sharing mode)	<ul style="list-style-type: none"> MPLA: 3.6 Tbit/s MPLB: 7 Tbit/s 			MPSC: 480 Gbit/s
Maximum bandwidth per service slot (load sharing mode)	<ul style="list-style-type: none"> MPLA: 100 Gbit/s MPLB: 200 Gbit/s 			MPSC: 80 Gbit/s
System Layer 2 packet forwarding rate (load sharing mode)	<ul style="list-style-type: none"> MPLA: 5298 Mpps MPLB: 10357 Mpps 			MPSC: 714 Mpps
Maximum number of concurrent 4K video users	16000		8000	2000
Maximum number of MAC address	262143			
Maximum number of IPv4 routing tables	65536			
Maximum number of IPv6 routing tables	16384			
Maximum number of ARP tables	<ul style="list-style-type: none"> Before the V100R017C10 version: 66048 V100R017C10 version: 98816 V100R018C00 and later versions: 131072 			<ul style="list-style-type: none"> V100R017C10 version: 98816 V100R018C00 and V100R018C10 versions: 131072 V100R019C00 and later versions: 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 μ s.			
Bit error rate (BER) in full load	A BER smaller than 10 e-7 for a port that transmits data in full load			

System Specifications

System reliability specifications

System availability for the typical configuration: > 99.999%
Mean time between failures (MTBF): about 45 years. *
*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 related Huawei engineers.

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
(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

D-CCAP

(V100R016C10 and later versions)

- DOCSIS 3.1
- RF access and output
- CM management
- Centralized management
- PacketCable
- DOCSIS multicast
- EQAM
- Admission control
- Built-in optical transceiver
- SAV
- PNM
- DSG
(V100R018C10 and later versions)

MPLS&PWE3

- MPLS LDP
- MPLS RSVP-TE
- MPLS OAM
- MPLS BGP IP VPN
- Tunnel protection switching
- TDM/ETH PWE3
- PW protection switching

IPv6

- IPv4/IPv6 dual stack
- IPv6 L2 and L3 forwarding
- DHCPv6 relay

VXLAN

(V100R018C00 and later versions)

Virtual eXtensible LAN

System reliability

- GPON type B/type C protection
- 10G GPON type B protection
- BFD (V100R016C10 and later versions)
- ERPS (G.8032)
- MSTP
- Monitor Link
(V100R018C10 and later versions)
- Intra-board and inter-board LAG
- In-service software upgrade (ISSU) of the control board
- 2 control boards and 2 power boards for redundancy protection
- In-service board fault detection and rectification
- Service overload control

Eco-friendly and energy-saving

In compliance with the Code of Conduct v5 released by the European Commission

Standards Compliance

EMC standards

IEC 61000-3-2	ETSI ES 201 468
IEC 61000-3-3	ETSI EN 300 386
IEC 61000-4-2	ETSI EN 300 132-2
IEC 61000-4-3	ETSI EN 300 253
IEC 61000-4-4	VCCI V-3
IEC 61000-4-5	EN 55024
IEC 61000-4-6	EN 55032
IEC 61000-4-11	ITU-T K.20
IEC 61000-4-29	CISPR 24
EN 61000-3-2	CISPR 32
EN 61000-3-3	ITU-T K.11
EN 61000-4-2	ITU-T K.20
EN 61000-4-3	ITU-T K.44
EN 61000-4-4	
EN 61000-4-5	
EN 61000-4-6	
EN 61000-4-29	

Environment protection standards

2011/65/EU (RoHS)
EN 50581:2012
EC NO. 1907/2006 (REACH)
2012/19/EU (WEEE)

Environment standards

ETS 300 019 1-1
ETS 300 019 1-2
ETS 300 019 1-3
ETS 300 019 2-1
ETS 300 019 2-2
IEC 60068-2
IEC 60721-2-6
IEC 60721-3-1
IEC 60721-3-2
IEC 60721-3-3
ETSI EN 300 753

Security standards

EN 60950-1
EN 60825-1
EN 60825-2
IEC 60825-1
IEC 60825-2
IEC 60950-1

Reliability standards

MIL-HDBK-217F
BELLCORE TR-332/SR-332

PON interface standards

ITU-T G.984.1
ITU-T G.984.2
ITU-T G.984.3
ITU-T G.984.4

ITU-T G.987.1
ITU-T G.987.2
ITU-T G.987.3
ITU-T G.988
ITU-T G.9807.1