

MA5800

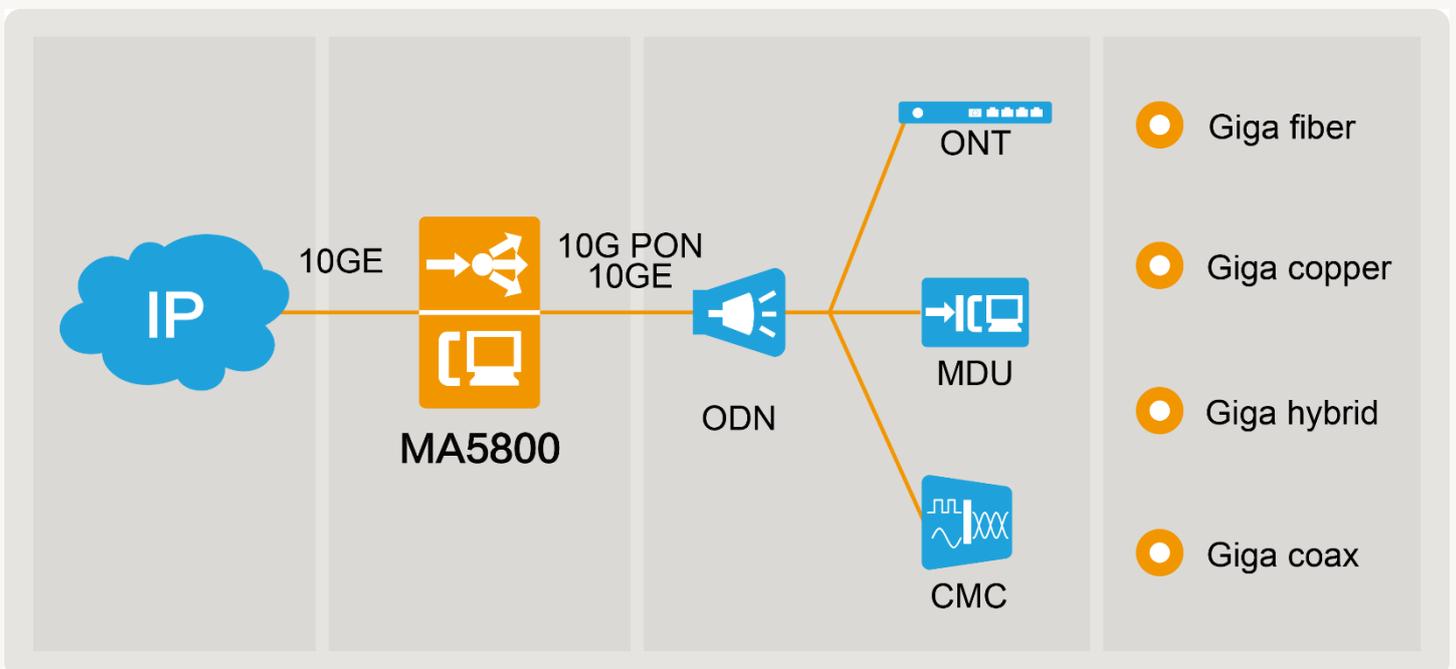
Product Description

V100R018C00



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.

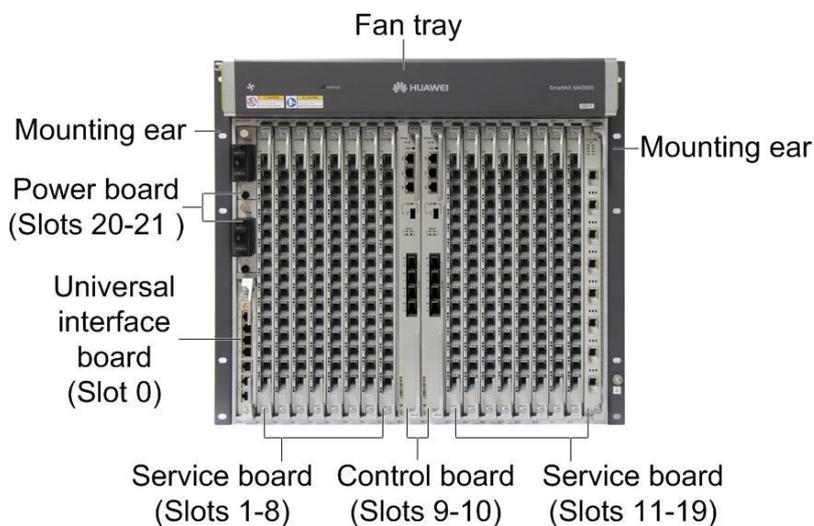


Product Appearance

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 and backplane H901BPLB.



11 U high and 21 inch wide

Excluding mounting brackets:

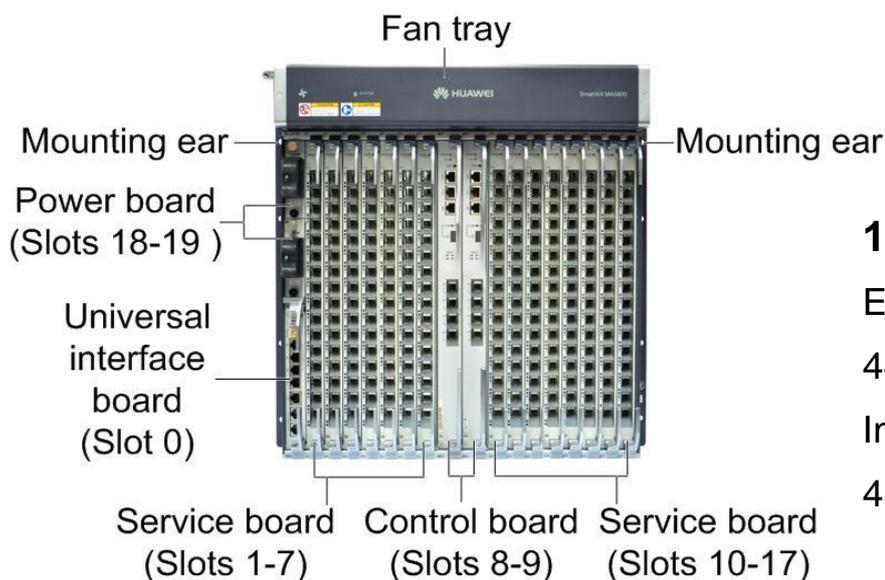
493 mm x 287 mm x 486 mm

Including mounting brackets:

535 mm x 287 mm x 486 mm

MA5800-X15 (large-capacity, IEC)

MA5800-X15 supports 15 service slots and backplane H901BPIB.



11 U high and 19 inch wide

Excluding mounting brackets:

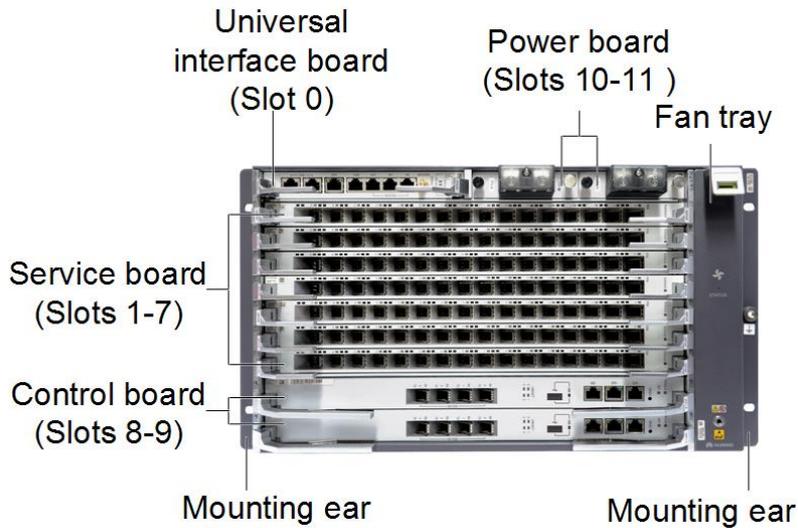
442 mm x 287 mm x 486 mm

Including mounting brackets:

482.6 mm x 287 mm x 486 mm

MA5800-X7 (medium-capacity)

MA5800-X7 supports 7 service slots and backplane H901BPMB.



6 U high and 19 inch wide

Excluding mounting brackets:

442 mm x 268.7 mm x 263.9 mm

Including IEC mounting brackets:

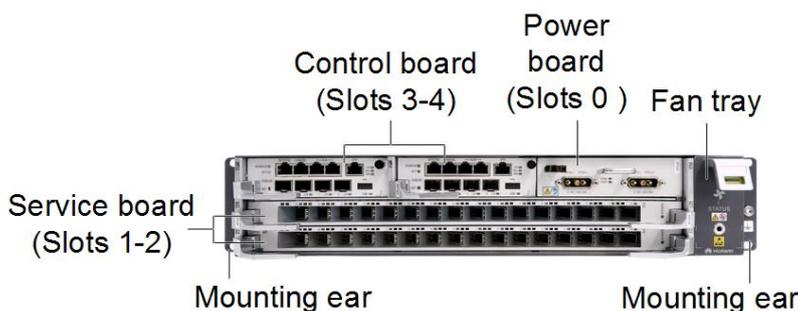
482.6 mm x 268.7 mm x 263.9 mm

Including ETSI mounting brackets:

535 mm x 268.7 mm x 263.9 mm

MA5800-X2 (small-capacity)

MA5800-X2 supports 2 service slots and backplane H901BPSB.



2 U high and 19 inch wide

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

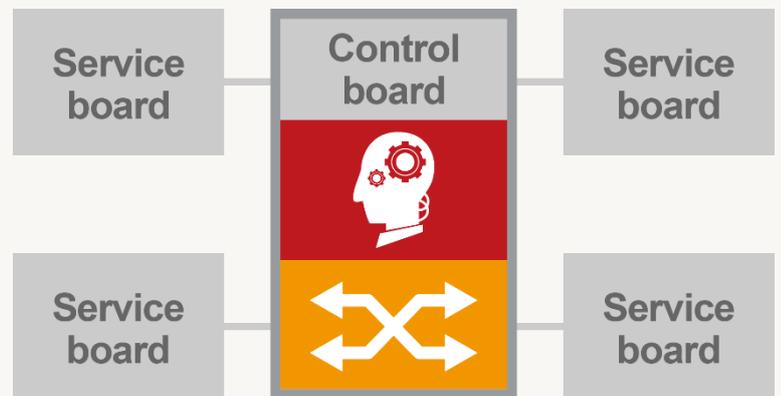
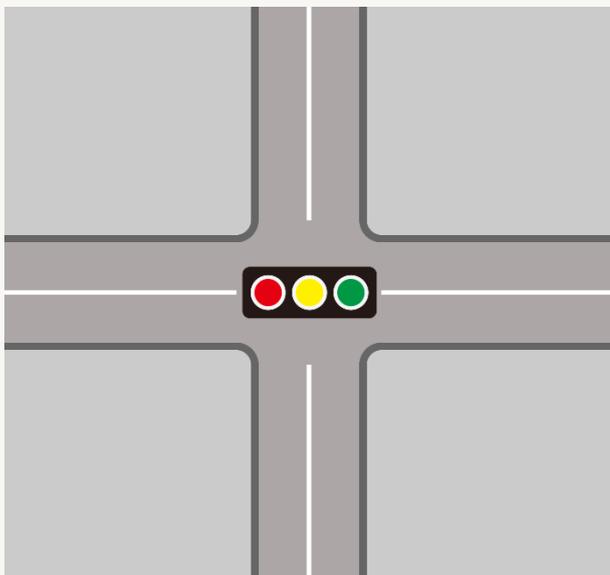
Product Highlights

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.

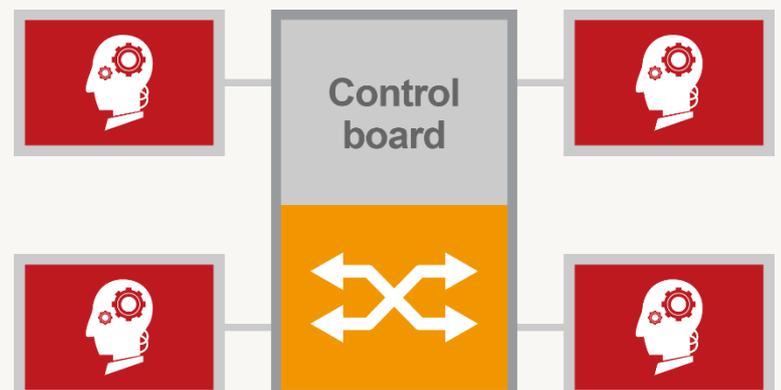
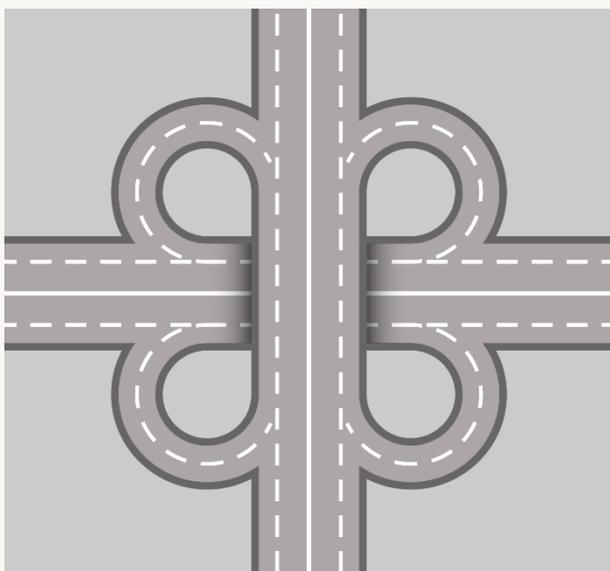
- ◆ **Centralized:** switching and service processing are implemented on the control board (for low traffic scenarios)



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)

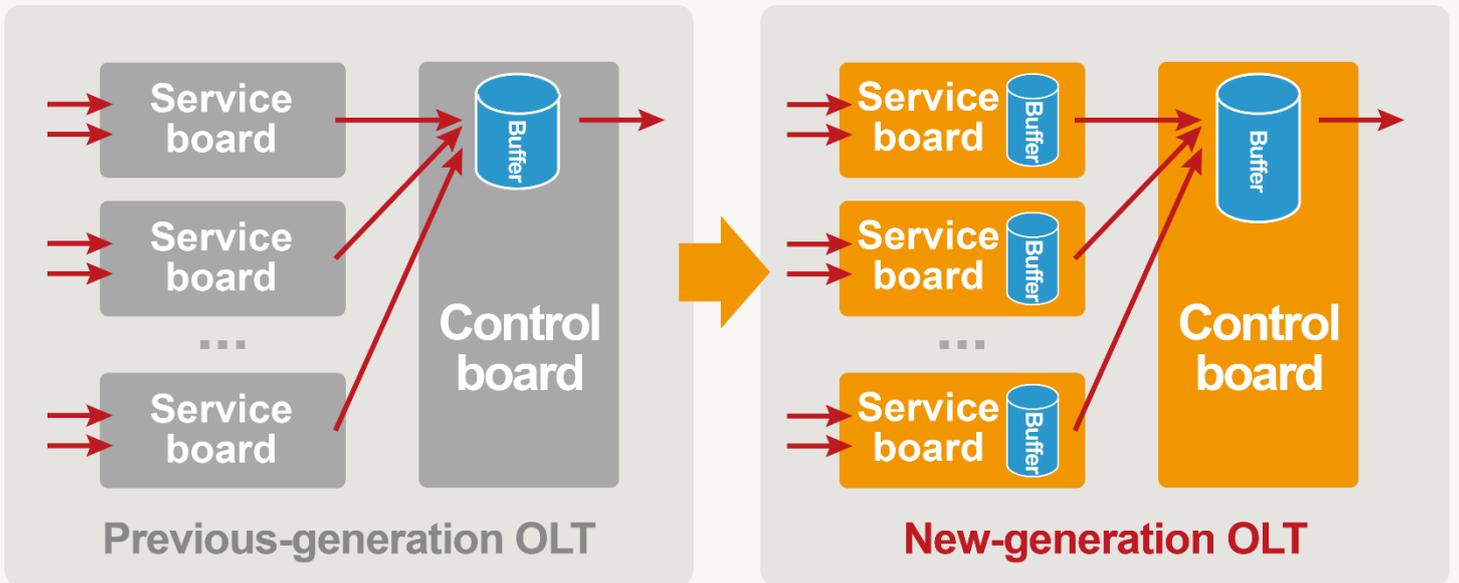


Distributed scheduling

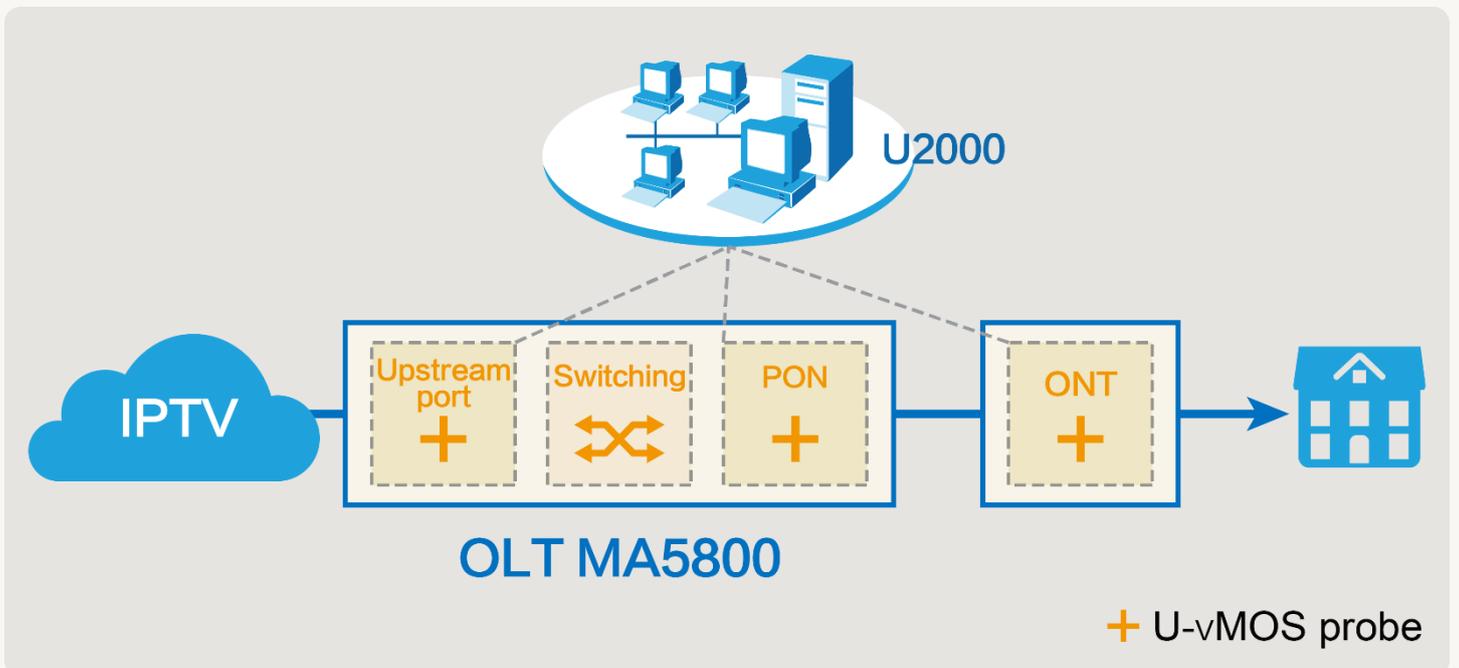
Switching, high service throughput, easy expansion

Optimum video experience

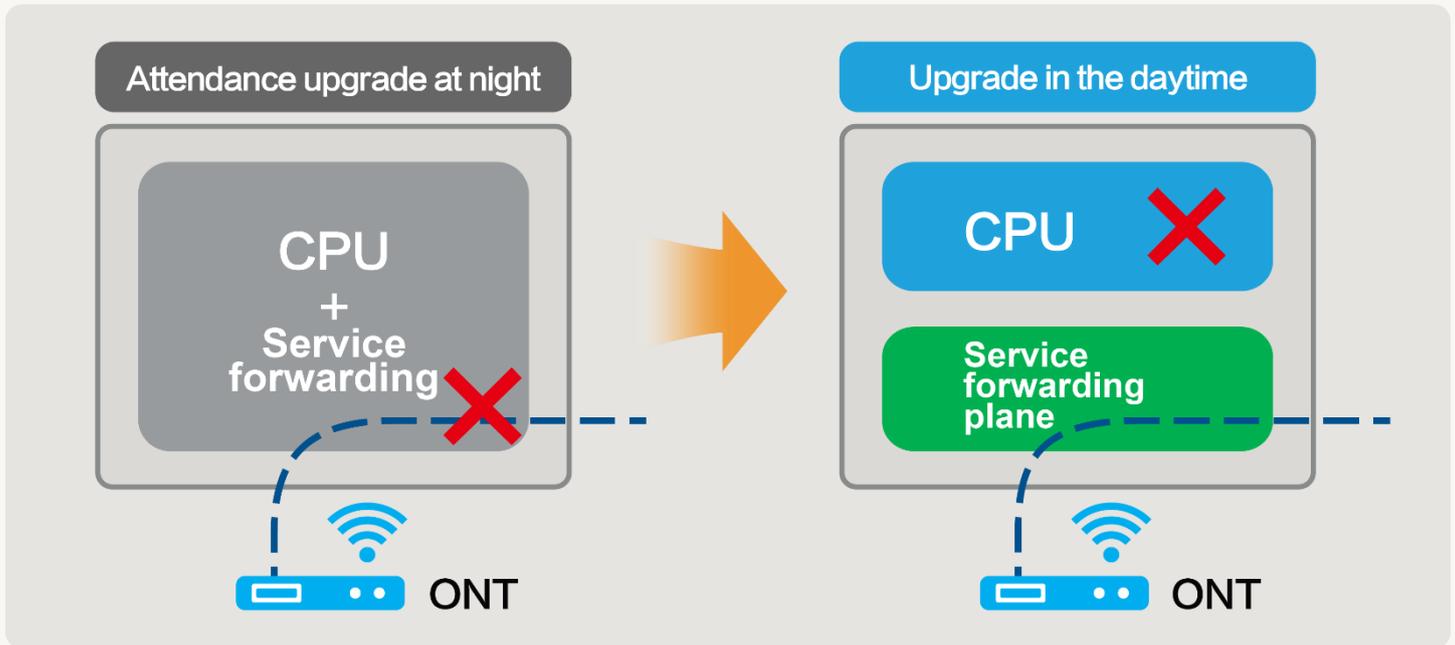
- ◆ The MA5800 supports cache in the distributed architecture for fast 4K/8K video start or channel zapping.



- ◆ Supports U-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.

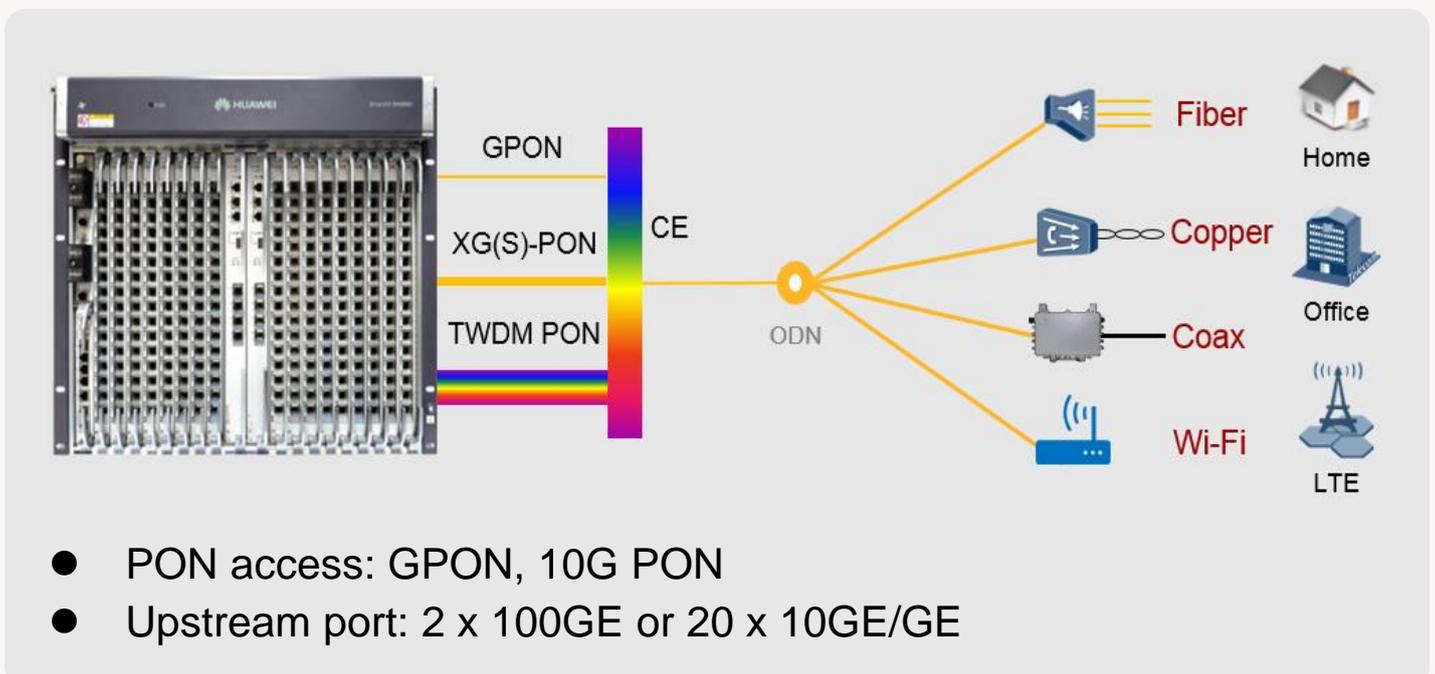


- ◆ Video service is not interrupted during an OLT upgrade, enhancing user experience.



Smooth evolution to 40G/100G

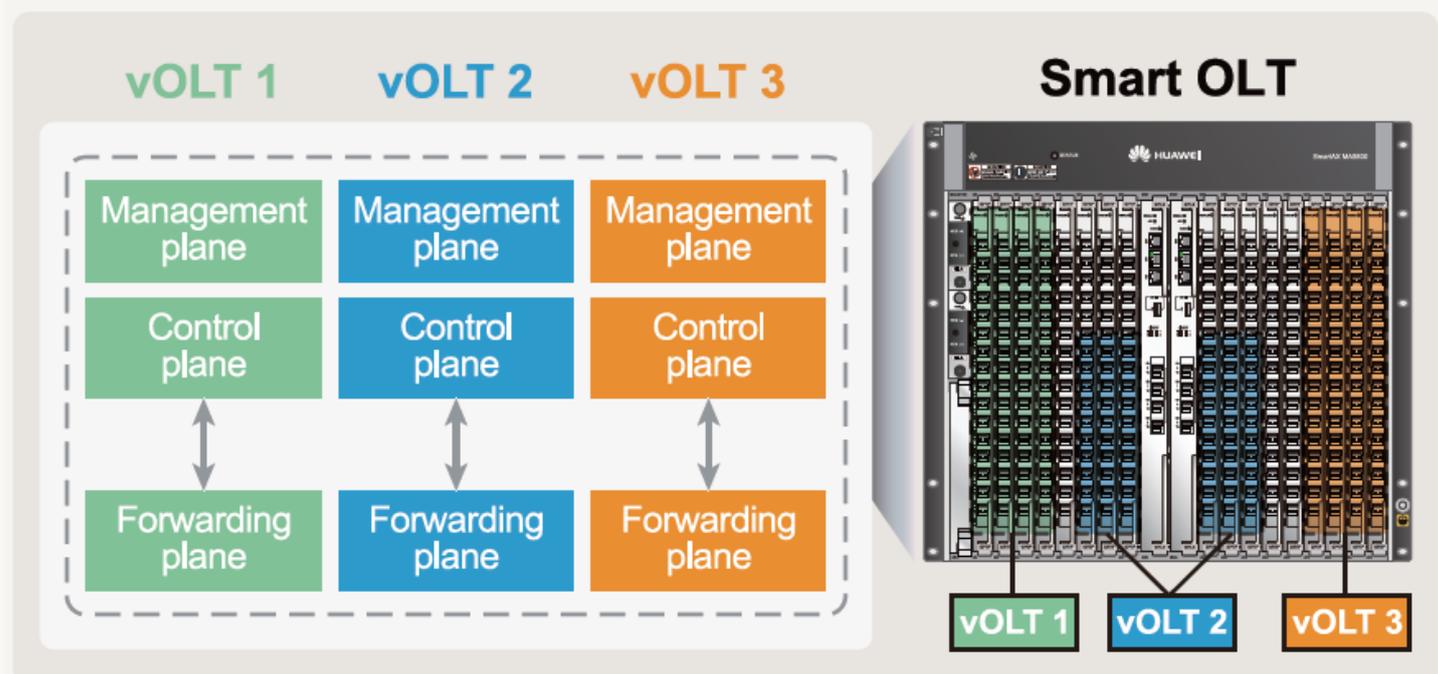
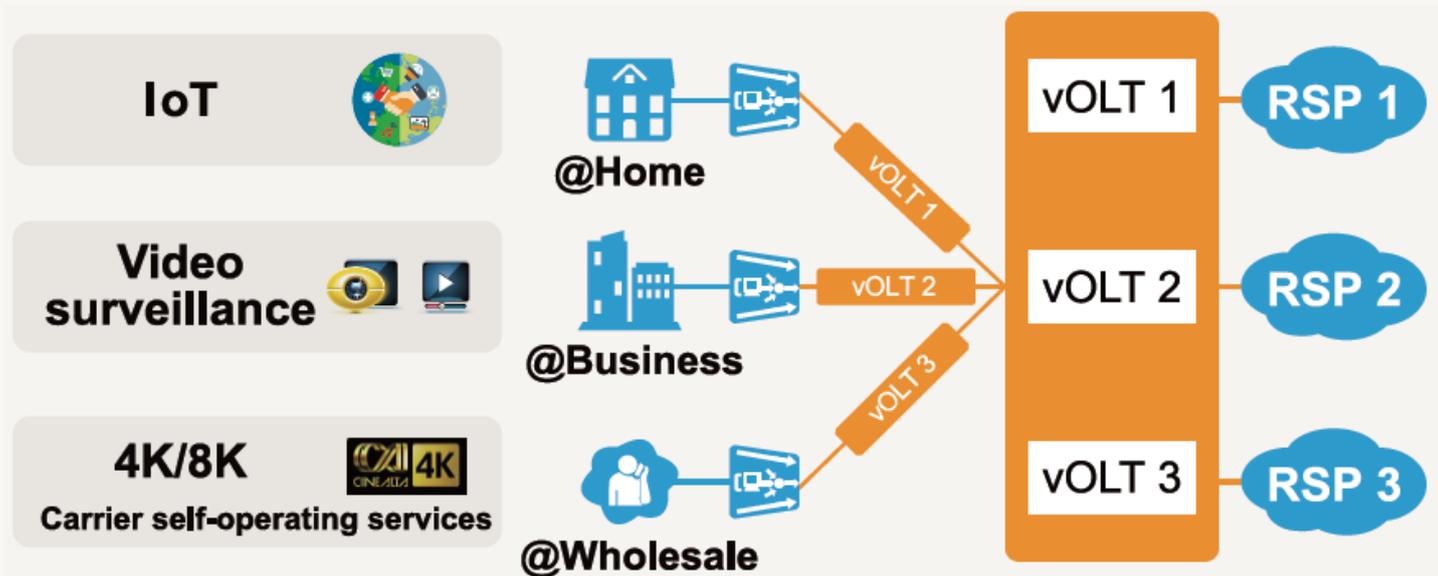
The maximum bandwidth per service slot reaches 200 Gbit/s at the most, which supports the non-convergence access of 10G PON ports and supports 40G/100G PON boards in the future. The MA5800 can smoothly evolve to 40G/100G PON without replacing subracks, which protects carriers' investments.



Multi-service virtualized platform

One physical OLT is virtualized to multiple OLTs. All these virtualized OLTs can be separately configured and managed so that multiple services are carried over the same network.

- ◆ Multiple OLTs are combined into one, saving CO equipment room space.
- ◆ Software and hardware resources are isolated, assuring security and reliability.
- ◆ Domain-based management, making easy maintenance.



Independent
Hardware Resources

Independent
Software Resources

Authority- and
Domain-based Management

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

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 | 136 | 120 | 56 | 16 |
| GE/FE ports | 816 | 720 | 336 | 32 |
| 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) | H901MPLA/H902MPLA: 3.6 Tbit/s H901MPLB: 7 Tbit/s | | | H901MPSC: 480 Gbit/s |
| Maximum bandwidth per service slot (load sharing mode) | H901MPLA/H902MPLA: 100 Gbit/s H901MPLB: 200 Gbit/s | | | H901MPSC: 80 Gbit/s |
| System Layer 2 packet forwarding rate (load sharing mode) | H901MPLA/H902MPLA: 5298 Mpps H901MPLB: 10357 Mpps | | | H901MPSC: 714 Mpps |
| Maximum number of concurrent 4K video users | 16000 | | 8000 | 2000 |
| Maximum number of MAC address | 262143 | | | |
| Maximum number of ARP/routing entries | 131072 | | | |
| 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 10×10^{-7} for a port that transmits data in full load | | | |

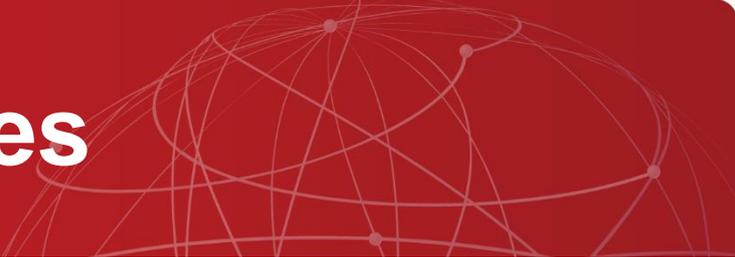
System Specifications

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
- MLD Proxy/Snooping
- VLAN-based IPTV multicast

QoS

- Traffic classification
- Priority processing
- trTCM-based traffic policing
- WRED
- Traffic shaping
- HQoS
- PQ/WRR/PQ+WRR
- ACL

D-CCAP

- DOCSIS 3.1
- RF access
- CM management
- Centralized management
- PacketCable
- DOCSIS multicast
- EQAM
- Admission control
- Built-in optical transceiver
- SAV
- PNM
- RF switch

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

- Virtual eXtensible LAN

System reliability

- GPON type B/type C protection
- 10G GPON type B protection
- BFD
- ERPS (G.8032)
- MSTP
- Smart Link and Monitor Link
- 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

VAN

- vOLT multi-service isolation and separate management

Standards Compliance

EMC standards

| | |
|----------------|-------------------------|
| IEC 61000-4-2 | ETSI ES 201 468 V1.4.1 |
| IEC 61000-4-3 | ETSI EN 300 386 V 1.6.1 |
| IEC 61000-4-4 | ETSI EN 300 132-2 |
| IEC 61000-4-5 | VCCI V-3 |
| IEC 61000-4-6 | EN 55022 |
| IEC 61000-4-8 | EN 55024 |
| IEC 61000-4-11 | EN 55032 |
| IEC 61000-4-6 | ITU-T K.20 |
| IEC 61000-4-8 | CISPR 22 |
| IEC 61000-4-11 | CISPR 24 |
| IEC 61000-4-29 | CISPR 32 |
| EN 61000-4-29 | ITU-T K.11 |
| EN 61000-4-2 | ITU-T K.20 |
| EN 61000-4-3 | ITU-T K.27 |
| EN 61000-4-4 | ITU-T K.32 |
| EN 61000-4-5 | ITU-T K.41 |
| EN 61000-4-6 | ITU-T K.44 |
| | ITU-T K.45 |
| | FCC part 15 |
| | ICES-003 |

Environment standards

IEC 60529
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 60721-3-3
GR-63-CORE

Security standards

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

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

Reliability standards

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