SmartAX MA5600T

Global First All-in-one Access Platform

SmartAX MA5600T is the global first OLT which integrates the functionality of aggregation switch and edge router. It can provide highdensity GPON, 10GPON and Ethernet P2P optical access, triple-play service, TDM/ATM/Ethernet leased line services for business customers and high precision clock, and high density GE/10GE interfaces for cascading remote access equipments. MA5600T helps to simplify network architecture, to improve network reliability and lower TCO essentially.

There are three types of frame of MA5600T series product. The large frame has 16 service slots while the middle frame (which named MA5603T) has 6 service slots, the small frame (which named MA5608T) has 2 service slots. The service card and software are all compatible between MA5600T, MA5603T and MA5608T.

HUAWEI TECHNOLOGIES CO., LTD.

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Platform History

- 2006, global first T-bit OLT for commercial deployment, and IEC InfoVision Award for creative in access platform
- 2008, global first "10G PON ready" OLT, enable FTTx seamless evolution
- 2009, global first access and aggregation Integrated OLT, simplify network architecture
- 2010, global first "IPV6 ready" (phase 2 enhanced) access device certificated by IPV6 forum
- 2011, 40G PON prototype release
- 2012, 16-port GPON and 10GPON commercial deployment
- 2012,9, Huawei and Slovak Telecom completed the world's first TWDM PON network test

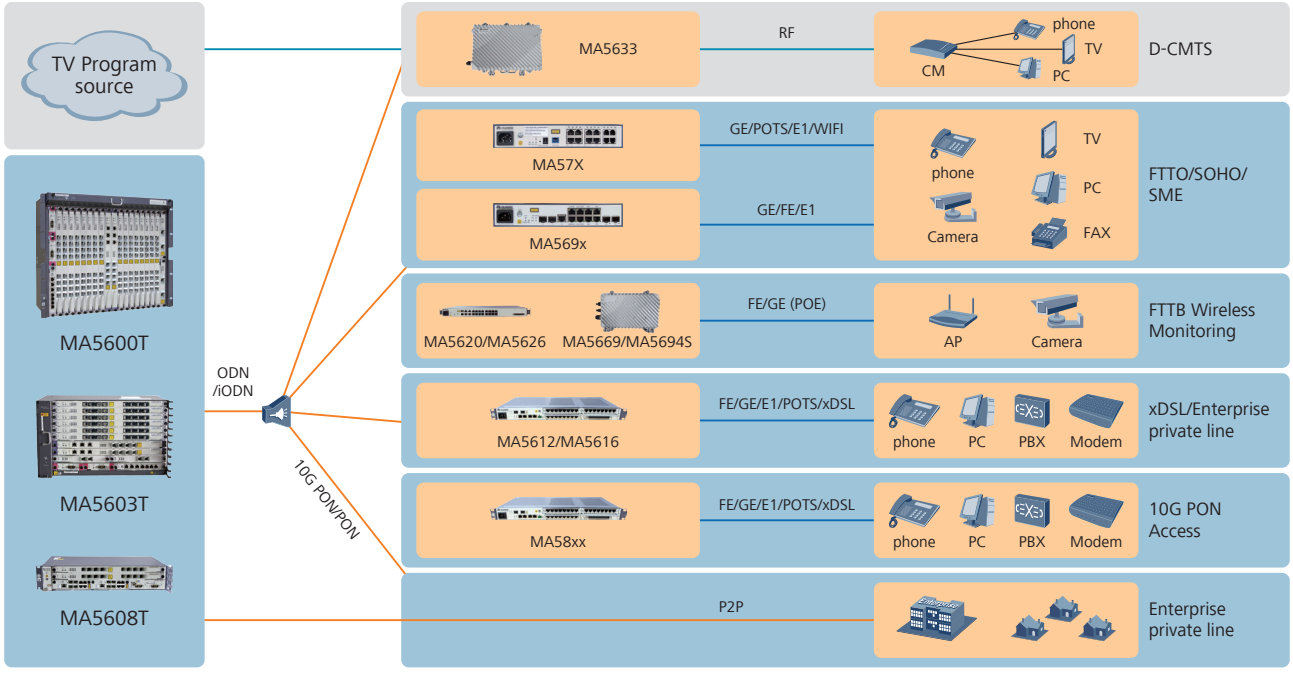
Product Appearance

MA5600T

MA5603T

MA5608T

Application Scenarios



Highlights

Convergence and access integration

- Provides super large convergence switching capacity. Specifically, an MA5600T series device supports 3.2 Tbit/s backplane capacity, 1,920 Gbit/s switching capacity, and 512,000 MAC addresses.

- Provides super high-density cascading capability. Specifically, an MA5600T series device supports a maximum of 46 x 10GE or 768 GE services, with no additional convergence switches.

High reliability

- Provides highly reliable networking capabilities and ensures dual-OLT hot backup, remote disaster tolerance, and service upgrades without interruption.
- Provides comprehensive Quality of Service (QoS) functions and supports traffic classification management, priority control, and bandwidth control. The Hierarchical-Quality of Service (H-QoS) function meets various Service Level Agreement (SLA) requirements of commercial customers.
- Provides an End-to-End (E2E) highly reliable design, enabling Bidirectional Forwarding Detection (BFD), Smart Link, Link Aggregation Control Protocol (LACP) redundancy protection and GPON type B/type C line protection in the upstream direction.

Multi-scenario access

- Supports access of multiple E1 private line services, and Native Time-Division Multiplexing (TDM) or Circuit Emulation Services over Packet (CESoP)/ Structure-Agnostic TDM over Packet (SAToP) function.
- Supports the Emulated Local Area Network (ELAN) function and Virtual Local Area Network (VLAN)-based internal traffic exchange, satisfying enterprise and community network application requirements.
- Supports non-convergence access of Internet Protocol television (IPTV) users. One subrack supports 8,000 multicast users and 4,000 multicast channels.

Smooth evolution

- Supports GPON, 10G Passive Optical Network (PON), and 40G PON on a platform, enabling smooth evolution and achieving ultra-bandwidth access.
- Supports IPv4/IPv6 dual stacks and IPv6 multicast, enabling smooth evolution from IPv4 to IPv6.

Energy saving

- Uses special chips for conserving power. Specifically, 16 ports on a GPON board consume less than 73 W of power.
- Supports idle board automatic power-off and intelligent fan speed adjustment, effectively lowering idle board power consumption.

Key Features

System Performance

- 3.2T bit/s backplane capacity, 960G bit/s switch capacity, 512K MAC addresses
- Line speed L2/L3 switching
- Static route/RIP/OSPF/MPLS
- TDM private line service with Native TDM or CESoP
- BITS/E1/STM-1/Ethernet Synchronization/IEEE 1588v2/1PPS+ToD

GPON Line Card

- 8/16*port per card with pluggable SFP optical module(Class B+ or Class C+ are optional)
- Up to 1:128 splitting ratio
- Bidirectional FEC
- ONU-based and queue-based traffic shaping
- Rogue ONT detection and isolation
- Type B / Type C protection and Type C dual-homing
- Optical power meter (can support ±1dB precision)
- eOTDR (1:8 splitting ratio)

10G GPON Line Card

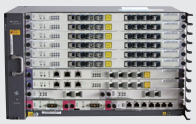
- 4*port per card with pluggable XFP optical module
- Up to 1:128 splitting ratio (N1)
- Bidirectional FEC
- Rogue ONT detection and isolation
- Type B / Type C protection and Type C dual-homing

- Coexist with GPON

Ethernet P2P Line Card

- 48 port per card with CSFP optical module, 768 ports per shelf
- Port-based and queue-based traffic shaping
- Single fiber double direction access, 100Mbit/s or 1000Mbit/s per port
- DHCP Option 82 relay agent and PPPoE relay agent
- Ethernet OAM
- Ethernet synchronization

Specifications

Appearance	 MA5600T	 MA5603T	 MA5608T
(W/D/H) mm	490×275.8×447	442×283.2×263	442×233.5×88
Operating Environment	Temperature: -25°C to +55°C Relative Humidity (RH): 5% to 95%	Temperature: -40°C to +65°C RH: 5% to 95%	Temperature: -40°C to +65°C RH: 5% to 95%
Power Parameter	Supports -48 V DC power input, dual-power supply protection, and working voltage range of -38.4 V to -72 V.	Supports -48 V DC power input, dual-power supply protection, and working voltage range of -38.4 V to -72 V.	Supports DC and AC power supply modes, and dual-power supply protection. Provides battery for power backup when AC power is used.
Cabinet	Indoor: N63E-22, N66E-18 Outdoor: F01D500	Indoor: N66E-18 Outdoor: F01D500, F01S300	Indoor: N63E-22 Outdoor: F01S200
configuration	control board: 2 Service board: 16 Universal Interface board: 1 Upstream interface board: 2 Power interface board: 2	control board: 2 Service board: 6 Universal Interface board: 1 Upstream interface board: 2 Power interface board: 2	control board: 2 Service board: 2 Power interface board: 1
MTBF	≈45 years	≈45 years	≈45 years
Switching Capacity of the Backplane Bus	3.2Tbit/s	1.5Tbit/s (H801MABO) 2Tbit/s (H802MABO)	720Gbit/s
Switching Capacity of the Control Board	SCUN/SCUK: 480Gbit/s (Standby mode), 960Gbit/s (Load-sharing mode) SCUH: 960Gbit/s (Standby mode), 1920Gbit/s (Load-sharing mode) 960Gbit/s		MCUD/MCUD1: 128Gbit/s (Standby mode), 256Gbit/s (Load-sharing mode)
Access Capacity	• 128*10G GPON • 256*GPON • 768*GE/FE	• 48*10G GPON • 96*GPON • 288*GE	• 8*10G GPON • 32*GPON • 96*GE
Maximum uplink port (GIU)	• 4*GE • 4*10GE	• 4*GE • 4*10GE	-

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Version No.: M3-039776-20141205-C-1.0

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