

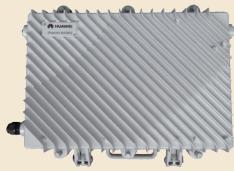


SmartAX MA5633

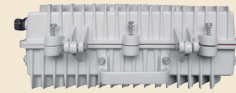
With the rapid development of the telecommunication and broadcasting television technologies, the traditional cable television (CATV) network is evolving into the next-generation broadcasting television network. Meanwhile, users expect more from the CATV network including its quality and support for services. Hence, the CATV network needs to be digitalized and bidirectionally restructured to meet the growing service demands and three-network convergence (telecom, broadcasting TV and Internet). Against this backdrop, Huawei launches the SmartAX MA5633 distributed-CMTS head end device. MSOs are intend to provide higher bandwidth service and build a converged full service access network, and explores new market space for broadcast television customers, without any changes to the current Hybrid Fiber-Coaxial (HFC) network structure.

SmartAX MA5633 products are D-CMTS office-end devices launched by Huawei. It's mainly applied in PON+D-CMTS scenarios and can greatly improve Cable Modem Termination System (CMTS) bandwidth. Specifically, the downstream bandwidth can be 800 Mbit/s, while the upstream bandwidth is 160 Mbit/s.

Product Appearance

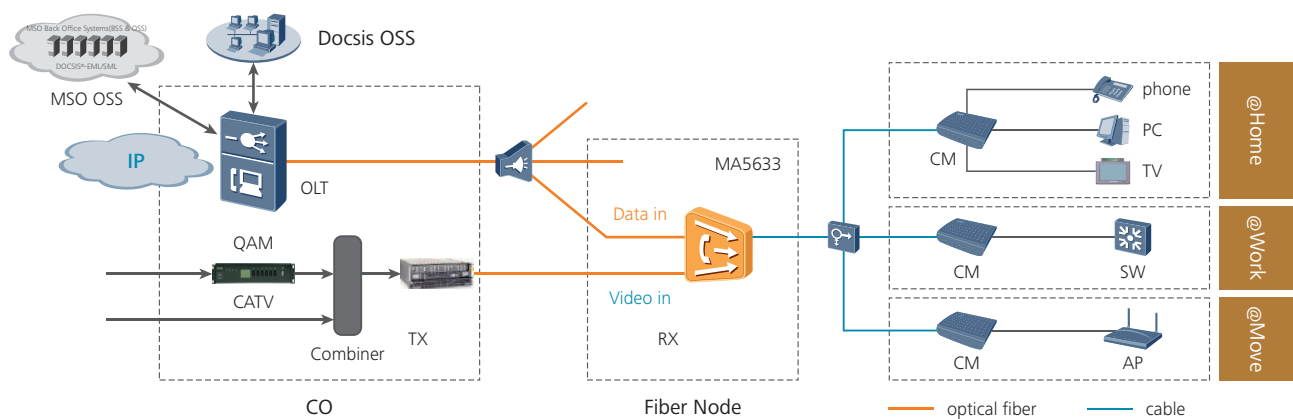


MA5633



Application Scenarios

Huawei proposed the converged broadband cable solution, integrated the FTTx and the distributed CCAP architecture (D-CCAP). By this solution, optical line terminals (OLTs) are deployed in the hub equipment room and CMTS devices formerly deployed in the equipment room are transferred to fiber nodes. In addition, it connects to the optical receiver through the Radio Frequency (RF) port so that they modulate broadband and television signals into the co-axial cable. In the down-stream direction, the MA5633 connects to the Set Top Box (STB) and Personal Computer (PC) respectively through the RF port and FE port, providing high-quality broadband, voice, and television services.



Highlights

Traditional CMTS-like O&M

- D-CMTS follows DOCSIS standard. It is compatible with current HFC networks, CM terminals, and OSS.
- D-CMTS supports centralized management that makes the maintenance mode remains exactly the same as that of traditional CMTS.
- D-CMTS supports DOCSIS-like FTTH provisioning, and the existing B/OSS system, work process and the O&M team almost need no changes for supporting both cable and FTTH services provision.

Converged FTTx&CMTS save 60% TCO

- The converged broadband cable solution integrated the distributed CCAP (D-CCAP), FTTH, FTTO and FTTW to support unified access of resident users, business leased line, Wi-Fi, and mobile base stations. It helps carriers to enhance efficiency of the network investments, construction and O&M, and to shorten TTM.
- Digital Hub: The solution removes CMTS devices from the hub equipment room, which greatly reduces the number of devices in the hub, saving 70% of room and reducing power consumption by 50%.
- Digital Fiber: By using GPON, four fiber nodes need only one trunk fiber, 80% less compared to the traditional solution.

Bandwidth

- Can be used on various sites with the high-density outdoor design.
- Automatically adapts to GPON and GE upstream transmission.
- The MA5633 supports 16 channels in the down-stream direction, of which the rate can be 800 Mbit/s, while it supports 4 channels in the up-stream direction, of which the rate can be 160 Mbit/s.
- Supports 8 MHz (European standard) and 6 MHz (NA standard) downstream channel frequency bands, 1.6 MHz, 3.2 MHz, and 6.4 MHz upstream channel frequency bands.

Highly Integrated Site

- Can be installed in an outdoor cabinet, mounted to a wall, or mounted to a cable.
- No optical receivers need to be purchased or installed in new optical sites, which simplifies engineering and reduces construction costs.
- One MA5633 can replace an existing optical receiver on the network if the MA5633 is installed in a ground-mounted cabinet, which saves installation space.
- One MA5633 can replace an existing cable-mounted optical receiver on the network if the MA5633 is installed in cable-mounted mode, which reduces the number of cable-mounted devices.

QoS

- Monitors user traffic to ensure that the user traffic meets service level agreement (SLA) requirements.
- Uses access control list (ACL) rules to filter specific data packets.
- Provides comprehensive quality of service (QoS) solutions to manage various services.
- Supports traffic burst, which transiently improves user bandwidth and enhances user experience without changing QoS parameter settings.

Manageability and Maintainability

- Supports one-site deployment and plug-and-play.
- Automatically obtains configuration data from the NMS and reports its online status to the NMS. (The configuration data automatically takes effect.)
- Supports remote software commissioning in GE upstream transmission mode.
- Supports remote batch upgrade. The MA5633 supports remote batch upgrade and version rollback in case of an upgrade failure. The MA5633 supports one-step package loading for upgrade because it integrates the software and patch into a package.
- Supports zero touch routine maintenance. The MA5633 supports remote fault identification and location, and comprehensively collects information.
- Monitors network performance. The MA5633 supports network optimization and user monitoring.

Key Features

Product	MA5633	
CATV	Channel frequency range	Upstream: 87-1002MHz; Downstream: 5-65MHz
	Channel depth	Upstream: 1.6MHz, 3.2MHz, 6.4MHz Downstream: 6MHz(American Standard)/8MHz(European standard)
	Width of a single channel	Downstream: 50Mbps; Upstream: 40Mbps
	maximum rate	Downstream: 800M Upstream: 160M
	number of support terminal	DOCSIS 2.0 CM 384; DOCSIS 3.0 CM 256
	Standard	C-DOCSIS/DOCSIS 2.0/DOCSIS 3.0/Euro-DOCSIS 2.0/Euro-DOCSIS 3.0
	Downstream output level of the backplane	110 dBuV
	Input and output impedance	75Ω
	Emission depletion	> 16 dB

GPON	Connector type	SC/PC (UPC)
	Maximum transmission distance	20km
	Center wavelength	Receive (Rx): 1490 nm Transmit (Tx): 1310 nm
	Standards compliance	ITU-T G.984.2 CLASS B+
Security Standards	Subscriber security	• DHCP option 82 • Authentication, authorization and accounting (AAA) • Relay agent info option (RAIO) • MAC address anti-spoofing • MAC address anti-flapping • Source address verification (SAV) • User isolation • BPI+ • X.509 authentication • Message integrity check • TFTP proxy
	System security	• Destination IP address filtering (IP address access list) • Anti-DoS (denial of service) attack • Anti-ICMP or anti-IP address attack • Destination MAC address filtering • Source route filtering • Firewall and blacklist • Setting of permitted or denied source IP address segments

Specifications

Product	MA5633
W/D/H	400mm×153mm×275mm; 308mm×153mm×189mm
Network-side port	GPON/GE
RF port num	4*RF OUT/2*RF OUT
Weight	<8.6kg
Power supply	60 V AC or 90 V AC remote power supply 110 V AC or 220 V AC local power supply
Power Consumption	without a built-in power amplifie: 39W; with a built-in power amplifie: 93W
Operating environment	-40°C ~ +55°C; 5% ~ 95%, RH
EMC	ClassB
Installation method	outdoor cabinet mounted, wall mounted, cable mounted, pole mounted
Lighting proof	Power port: 6Kv; The impact of current differential mode 3kA/ mode 5kA Coaxial port core of skin 3K

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