MA5633 D-CCAP (Distributed Converged Cable Access Platform)

Compact, rugged CCAP solution supporting ultra high capacity DOCSIS channels for the delivery of IP and RF video services to a single service group with standard Cable Modems and Set Top Boxes for a variety of fiber-deep deployment scenarios.

MA5633

D-CCAP

DOCSIS Downstream

Frequency range	54/102 – 1002 MHz
Channel width	6 MHz
Modulation	64, 256, and 1024 QAM
Number of channels	32
Maximum bandwidth	1.28 Gbps
Transmit level	60 dBmV @ 1-ch
	45 dBmV @ 32-ch
Optional amplifier gain	19 dB

DOCSIS Upstream

Frequency range	5-42/85 MHz
Channel width	1.6 MHz, 3.2 MHz, and 6.4 MHz
Modulation	ATDMA/SCDMA (QPSK, 16, 32,64,128 and 256 QAM)
Number of channels	8
Maximum bandwidth	320 Mbps

RF Coax Ports: 2/4 output RF ports.

RF Optical port:
- 1310nm RX for RF downstream signals
- 1150nm TX for OOB RF return signals (compatible with SCTE-55-1 and SCTE-55-2)

Uplink Port:
- GPON port
- 10G GPON port (1Q16)
- Copper GigE port
- Optical GigE port
- Optical 10G GigE port (1Q16)

Cable Modem (CM) Management
- Supports up to 1024 CM's
- Channel bonding, load balancing
- CM info query, CM event reporting, CM registration and management, limiting number of CPE attached to CM

WDM Option:
1550nm RX for RF downstream signals over GPON or GigE port

Layer 2
MAC address management, L2 forwarding (VLAN+MAC)

Layer 3
DHCP, DHCP option 82, ARP, Static

QoS
ACL's, traffic management, priority processing, HQoS, congestion Management

Security
AAA, RAIO, Anti-MAC spoofing, user isolation, source address Verify (SAV), X.509, BPI+, TFPT proxy

As bandwidth demands continue to increase, Huawei's D-CCAP solution is designed to provide a cost-effective alternative to the hub-based solutions by driving baseband digital fiber deeper into the HFC network for various HFC applications with a migration path toward DOCSIS 3.1 and Fiber-to-the-Home.

- Leading edge distributed cable access solution providing high capacity and non-blocking Gigabits DOCSIS bandwidth, dedicated to a single service group.
- Leverage existing QAM video head-end infrastructure and fully compatible with broadcast and narrowcast QAM video services.
- Digital fiber uplink with migration path toward next-generation PON and DOCSIS 3.1 to meet future bandwidth demand.

The MA5633 solution uses PON or GigE for feeder fiber and reuses existing coax plant or in-building coax, existing DOCSIS modems and RF video infrastructure. With GPON, feeder fibers can be split in the desired ratio in fiber-limited applications.

As a variant of the CCAP solution, the MA5633 supports multi-service delivery to a single service group. D-CCAP provides up to 1.28 Gbps downstream with 32 channels and 320 Mbps upstream with 8 channels and terminates up to 1024 CMs. It is fully compatible with broadcast and narrowcast QAM videos as well as OOB forward and return. With its multicast capabilities the MA5633 also supports IPTV for the delivery of IP video over DOCSIS.

With its weather-proof sealed enclosure, the MA5633 can be installed in a cabinet, pole, wall, or strand mounted, outdoors or indoors, and can be powered using standard CATV 60/90 VAC line powering systems or with standard 110/220VAC local power.

Deployed in conjunction with a Huawei OLT, MA5633's can be aggregated at a hub site using GPON, 10G GPON, GigE or 10GigE baseband optical technologies. Centrally managed via the OLT, the MA5633 supports plug-n-play installation and a host of remote maintenance and diagnostic functions.

Distributed CCAP designed in a rugged compact enclosure for outside plant applications supporting:
- Up to 1.28 Gbps downstream and 320 Mbps upstream DOCSIS 3.0
- Up to 1024 Cables Modems
- GPON, 10G GPON, GigE or 10GigE uplinks
- Integrated RF optical forward and return paths
- Higher order OAM modulation for improved DOCSIS performance
- Migration path toward DOCSIS 3.1-DS: 32*D3.0 & 2*D3.1, US: 8*D3.0, 2*D3.1

MA5633 Applications
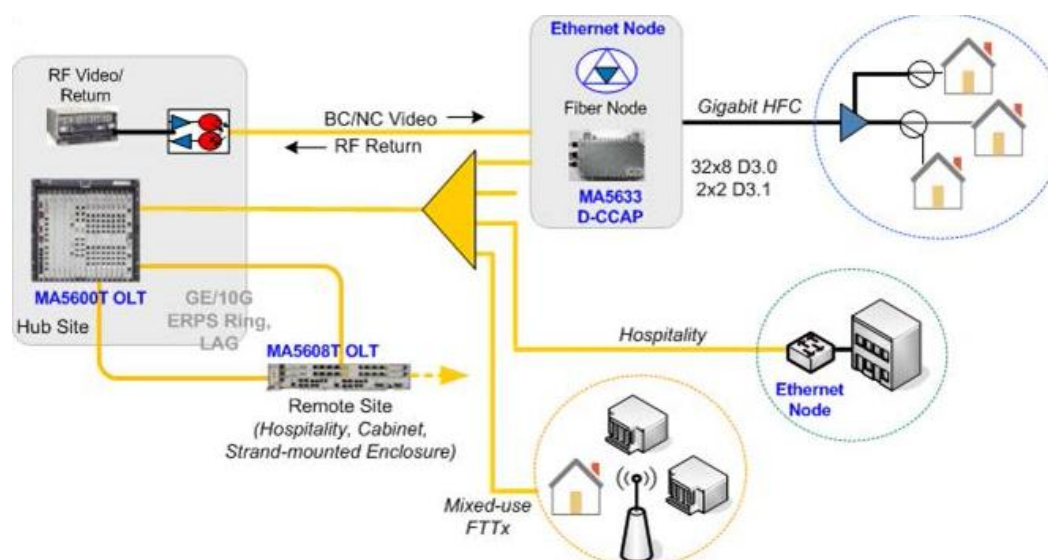
With GPON, 10G GPON, GE or 10GE uplink, Huawei's MA5633 D-CCAP delivers cost-effective, Gigabit bandwidth over existing coax infrastructure in various HFC migration applications. Flexible networking and deployment scenarios including:

- Dramatically improved downstream and upstream bandwidth s for IPTV and OTT applications
- Continued use of standard RFTV Set Top Boxes and video network infrastructure.

In conjunction with Huawei OLT, the MA5633 provides a highly flexible and cost-effective solution package for the HFC network with a migration path toward DOCSIS 3.1 and FTTx.

MA5633 Specifications

Powering Options	60 / 90 VAC line powering (35 to 90 VAC input range)
	110/220 VAC local powering (90 to 300 VAC input range)
Power Consumption	120W with power amplifier
Dimensions	14.4" W x 8.7" H x 6.9" D (365mm W x 220mm H x 175mm D)
Weight	18.9 lbs (8.6kg) fully configured
Cooling	Passive
Operating Temperature	-40C to 55 C (-40F to 131F)
Operating Humidity	0% to 100% RH
Operating Altitude	197 ft (60 m) below sea level to 13,123 ft (4,000 m) above sea level
Ingress Protection (IP) rating	IP65
Regulatory and Safety	Safety: UL/cUL UL60950-1, CE Mark EN60950-1, CB Scheme IEC950-1, AS/NZS60950, Laser safety: 21CFR1040, CE Mark 60825-1/-2, EMC: FCC Part 15 Class A, CE Mark EN55022 Class A & EN300 386-2

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Connected Possibilities