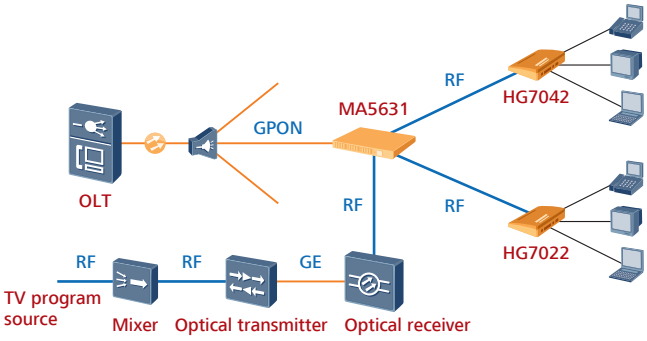
SmartAX MA5631

The SmartAX MA5631 (the MA5631 for short) is an Ethernet over Coax (EoC) head end launched by Huawei and used in passive optical network (PON)+EoC bidirectional network restructuring solutions (namely, mutual opening between telecom and broadcasting industries). The MA5631 uses the mainstream low-frequency HomePlug AV modulation technology. Integrating the functions of the optical network unit (ONU), EoC head end, and mixer, the MA5631 provides two GPON or GE uplink ports and supports a bandwidth of 300 Mbit/s for a single channel. By providing a bidirectional transmission path for broadcast and television services, the MA5631 increases the access bandwidth of the broadcast and television services and provides quality Internet access, voice, IPTV, VoIP, and video monitoring services, meeting operators' requirements for deploying multiple services.

Usage Scenario



The MA5631, HG7042 and HG7022 are used in the convergence of three networks (telecommunications, broadcast TV and Internet). The MA5631 connects to the optical line terminal (OLT) through a GPON uplink port, connects to the optical transceiver through a radio frequency (RF) port, and modulates broadband and TV signals over a coaxial cable. EoC terminals (the HG7042 and HG7022) are installed at users' homes. They extract broadband and TV signals from the cable, connect to TV sets through the TV output ports, and connect to PCs through FE ports.

Appearance

MA5631

Highlights

- First product integrating the functions of the ONU, EoC, and mixer in the industry, reducing network elements and IP resources and facilitating management, operation, and maintenance.
- Modular EoC configuration: The MA5631 supports one to four hot swappable EoC modules and supports a maximum of 256 users. This meets requirements of few subscribers at the initial stage of broadcast TV services and requirements for capacity expansion in the future.
- MA5631 support 4 RF in and 4 RF out.
- Industry-leading EoC modulation technology: The MA5631 uses the mainstream low-frequency HomePlug AV modulation technology, supports VoD, meeting EoC requirements of multiservice operators (MSOs).
- High-bandwidth: The MA5631 supports the bandwidth of 300 Mbit/s for a single channel, meets high-bandwidth requirements for integration of three networks.
- Strong compatibility with terminals: The MA5631 is compatible with EoC terminals that use Intellon AR6400 and Intellon AR7400 chips.
- Automatic adaptation to GPON and GE modes: The MA5631 provides two uplink ports using the small form-factor pluggable (SFP) optical modules, meeting different site requirements.
- High reliability: The two uplink ports using the SFP optical modules

HUAWEI

enable the MA5631 to support dual-PON protection.

- GE electrical port: The MA5631 can be used in the scenario where the ONU and EoC terminal are installed separately, meeting different network restructuring requirements.
- Strong adaptability to environment: With the operating temperature of -40°C to 55°C, dust-proof, water-proof, and radiation protection functions, the MA5631 can be installed against a pole or on a wall, meeting outdoor usage requirements and various installation scenarios.
- Universal PON+EoC network management: The MA5631 supports ONU and EoC as a single network element, and its service provision can be finished one time. And MA5631 also supports batch deployment and remote upgrade of EoC head ends and terminals, meeting the end-to-end operation and maintenance requirements of network deployment, service provisioning, and fault diagnosis, and reducing operation expenditure (OPEX).

Features

GPON	ITU G.984-compliance
	32 T-CONTs
	1024 GEM ports
Broadband	4096 VLANs, supporting QinQ and stacking VLANs
	4096 MAC addresses
	802.1p, supporting PQ and WRR flow control, and ACL
EoC key specifications	Modulation technology: HomePlug AV
	Physical layer rate: 500 Mbit/s; MAC layer rate: 300 Mbit/s
	Frequency band range: 7.5 MHz to 65 MHz
	Modulation modes: OFDM, 1024/256/64/16QAM, QPSK, and BPSK
	Working modes: CSMA/CA and TDMA
RF port	Maximum output level: 118 dBuv
	Input and output impedance: 75 ohms
	Echo loss: ≥19dB
	Receive sensitivity: -65dBm
	Channel isolation: ≥45dB (at 7.5 MHz ~862MHz)
	Maximum current passed along the cable: 3 A
Security	128-bit AES encryption
	PPPoE+ and DHCP option82
	Static and dynamic MAC address binding
	Anti-MAC and anti-IP spoofing; source MAC address and IP address filtering
	Anti-DoS attack and firewall
Maintenance and management	SNMPv1, SNMPv2, and SNMPv3
	Telnet and SSHv2
	Remote and batch pre-deployment
	Remote upgrade and monitoring

Specifications

Dimensions (W×D×H)	307.8mm×222.5mm×148.1mm
Network-side port	The MA5631 supports 4*RF signals input. The MA5631 provides two uplink ports using the SFP optical modules and one GE electrical port, supporting the following configurations: • 2×GPON • 2×GE (optical) • 1×GE (optical) + 1×GPON • 1×GE (electrical)
User-side port	The MA5631 supports one to four channels for transmitting RF signals and features module design and flexible configuration.
Operating temperature	-40°C to 55°C
Humidity	5% to 95% (non-condensing)
Heat dissipation mode	Not providing fans; passive cooling
Power supply	220 V/110 V/60 V AC 60-V voltage transmitted over the cable
Weight	< 6.8 kg