



EC1000 R-CCAP

Product Specifications

TOPVISION TECHNOLOGIES CO., LTD.

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EC1000 Introduction

EC1000 is a high-performance and cost-effective cable network edge device, which is designed based on DOCSIS 3.0/ Euro-DOCSIS 3.0/ C-DOCSIS.



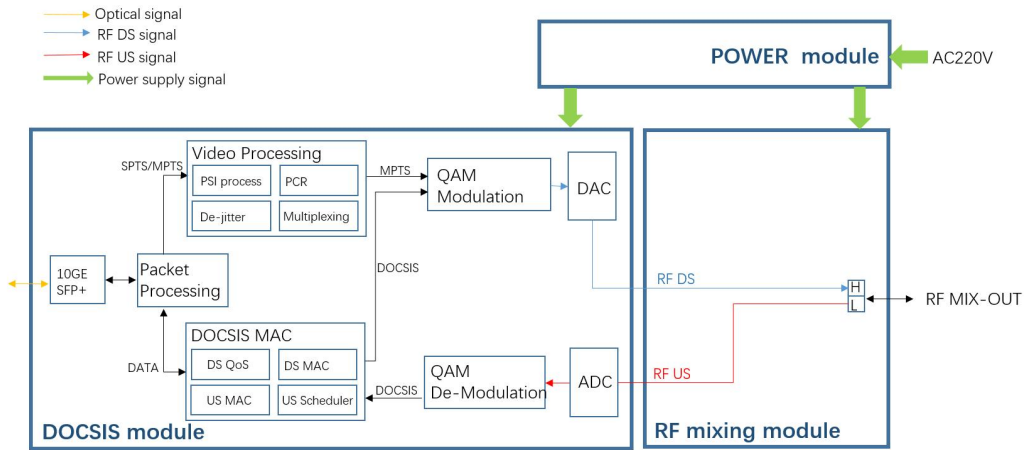
Product Features

- Compatible with DOCSIS 3.0/ 2.0/ C-DOCSIS, thus the existing investment is protected
- Support DAA/R-CCAP access architecture, support operation and management through remote distribute controller
- Support up to 32*DS and 8*US
- Provide maximum downstream rate of 1.6 Gbps and upstream rate of 200 Mbps
- Support up to 64 CM are recommended, no need to change optical node
- Support DOCSIS, PacketCable/PCMM, EQAM and Optical receiver, which can satisfy applications including internet, voice, VoD and CATV application
- More installation methods: supports corridor installation, wall-mounted
- A variety of management and maintenance modes: support CLI/standalone Web/ EMS, and other management modes

Performance and Specifications

EC1000 Introduction

EC1000 is mainly composed of DOCSIS module, power module and RF module.



- DOCSIS module: Support up to 32*DS and 8*US, provide 10G Combo SFP+ Interface,
- Support DOCSIS/EQAM function
- RF module: Support up to 1GHz.
- Power module: Local power supply (AC110/ AC220V)
- (Optional) Industrial grade SFP+ optical module

Overall characteristic

| Specifications | Description |
|--|--|
| Dimension | 227mm×225mm×61mm |
| Product form | Cast aluminum half shell, port exposed |
| Weight | <3kg (rough weight) |
| Ingress protection rating | IP20 |
| Operating temperature | 0~40°C |
| Operating humidity | 10%-90% (non-condensing) |
| Power supply | Local power supply |
| Power consumption | <40W |
| Device grounding | PGND |
| LED indicators | Support |
| Optional status monitoring and control | Support |
| Number of ports | |
| Power supply port | 1 |
| RF out port | 1 |
| RF in port | 1 |
| Frequency division | 65/ 87MHz, 85/ 108MHz |
| Output impedance | 75ohm |
| Default RF port type | F type |

DOCSIS Module

DOCSIS module provide 10G Combo SFP+ Interface and DOCSIS/EQAM function. It supports centralized management through RMD Controller which can greatly simplify the installation and maintenance and unified network management. It provides the user experience similar to using behavior of traditional CMTS.

DOCSIS module characteristic

| Specifications | Description | |
|----------------------------|---|---|
| Standard | DOCSIS 3.0/ Euro-DOCSIS 3.0 DOCSIS 2.0/ Euro-DOCSIS 2.0 C-DOCSIS | |
| SNI | 1*10GE SFP+ | |
| Management interface | 1*MGMT RJ45 management interface 1*RJ45 console interface | |
| CM Qty. supported | | |
| DOCSIS 3.0 & 2.0 CM | ≤64 | |
| Working channel | DS | US |
| Channel frequency range | | |
| European standard | 87 / 108 ~ 1006MHz | 5 ~ 65 / 85MHz |
| American Standard | 54 ~ 1002MHz | 5 ~ 42MHz |
| Working channel | 32 | 8 |
| Channel width | 6/ 8MHz | 1.6/ 3.2/ 6.4MHz |
| Communication protocol | / | ATDMA |
| Modulation mode | 64/256/1024 QAM | QPSK, 16/ 32/ 64/ 256 QAM |
| Reception level range | / | -7-+23dBmV@6.4MHz -10-+20dBmV@3.2MHz -13-+17dBmV@1.6MHz |
| MER | ≥35dB (Equalizer off) ≥43dB (Equalizer on) | / |
| Maximum output power level | 104 dBuV@32channels | / |
| System function | | |
| MTU | 1532 Byte | |
| IP Stack | Support IPv4 and IPv6 dual-stack | |
| DHCP | Support DHCP relay/ snooping Support DHCP bundle Support DHCP lease query Support according to Option 60 to identify equipment type Support insert Remote-ID, Interface-ID, CMTS capabilities and CM MAC | |
| DHCPv6 | Support DHCPv6 relay/ snooping Support DHCPv6 bundle Support DHCPv6 lease query Support DHCPv6-PD Support according to Option 60 to identify equipment type Support insert Remote-ID, Interface-ID, CMTS capabilities and CM MAC | |
| VLAN&L2VPN | Support 802.1ad/ 802.1q/ subnet VLAN Support service flow-based VLAN addition or deletion Support VLAN addition according to device type Support the L2VPN Support VLAN conversion | |
| MAC domain management | Support MDD & MDF enable and disable Support MTC & MRC enable and disable Support UDC enable and disable Support upstream automatic frequency hopping Support piggyback, shared-secret, channel bonding | |
| Multicast | Support multicast authentication Support static multicast Support IGMP V2/ V3 Snooping Support MLD V1/ V2 Snooping | |
| Load balance | Support RLBG/ GLBG | |
| QoS | Support load balance priority Support static/ dynamic service flow Support service class | |

| | |
|---------------------------------|--|
| Packetcable | Support best effort, UGS, UGS-AD, RTPS, NRTPS Support the DOCSIS 3.0 USCB scheduling Support PowerBoost Support Packetcable 1.5/2.0 & PCMM Support DQoS |
| Management & Monitor | |
| CM management | Support CM status review Support CM steer Support CM blacklist Support remote query Support flaplist Support admission control |
| CPE management | Support CPE query and clear |
| Network management | Support SSH/telnet Support SNMP Support SYSLOG Support graphical standalone WEB management Support integrate to NMS (graphical EMS) Support RMD Controller centralized management |
| System diagnostic and monitor | Support system information acquisition and monitoring Support optical receiver information monitoring Support showtech Support ping, DOCSIS ping, tracert Support spectrum monitor Support PNM using Pre-equalization |
| IPDR | Support IPDR/SP over TCP Support DOCSIS IPDR Support based on the data IPDR/XDR encoding |
| Security guarantee | Support time interval/event-based/adhoc data acquisition method Support AAA (TACACS+, RADIUS) Support RA guard Support BPI+ Support EAE Support source verify Support prevent DoS attack |
| Software upgrade | Support blacklist, white list, the firewall Support CLI/ WEB GUI/ RMD Controller/ EMS(NM3000) upgrade Support remote upgrade, version reversion when upgrade failure |

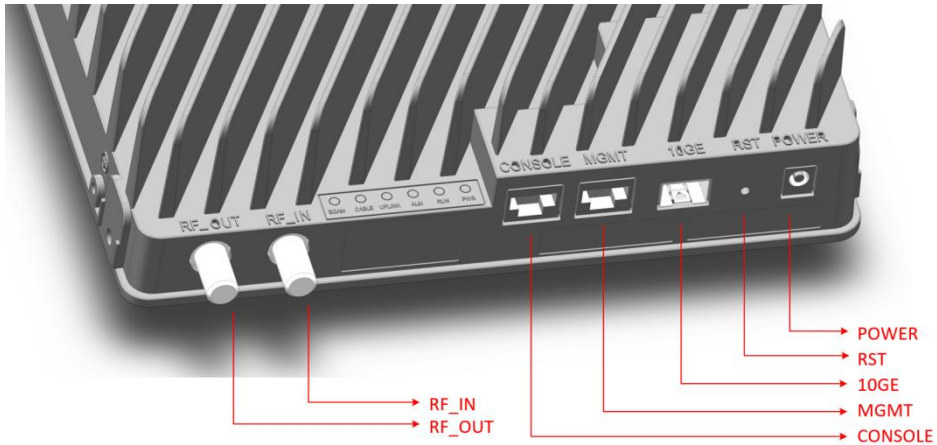
AC Adapter

EC1000 supports an AC adapter.

AC adapter characteristic

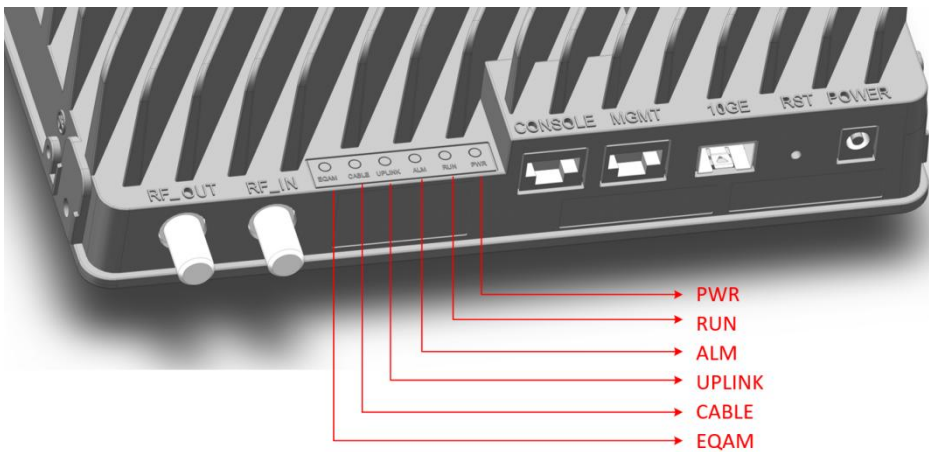
| Specifications | Description |
|---------------------|------------------------|
| Power supply | |
| Input voltage range | 100V-240V AC, 50/60 Hz |
| Output voltage | 12V DC |
| Max. output power | 60W |

External Interfaces



| Silk screen | Interface | Description |
|-------------|----------------------|--|
| RF_OUT | RF output interface | 1 RF mixed RF signal output interface |
| RF_IN | CATV input interface | 1 RF input interface |
| POWER | Power | Only used for the AC 220 V/AC 110 V mains power supply |
| RST | Reset button | Hardware reset button of the EC1000 |
| 10GE | Uplink interface | 1* SFP+ |
| MGMT | Management interface | RJ-45 |
| CONSOLE | Serial interface | RJ-45, Serial interface |

LEDs



| Silk screen | Description |
|-------------|---|
| PWR | Power indicator |
| RUN | Running state |
| ALM | Alarm indicator |
| UPLINK | Status indicator of the optical interface |
| CABLE | CMs online indicator |
| EQAM | EQAM indicator |

(Optional) Industrial-grade Optical Module

GE Industrial Optical Module

| No. | 1 | 2 |
|-----------------------------------|-------------|-------------|
| Central Wavelength | TX: 1310nm | TX: 1550nm |
| | RX: 1550nm | RX: 1310nm |
| Package | SFP | SFP |
| Rate (Gbps) | 1.25 | 1.25 |
| Connector | BIDI LC/UPC | BIDI LC/UPC |
| Fiber type | Single mode | Single mode |
| Transmission distance | 20km | 20km |
| Launched power range (dBm) | -9~-3 | -9~-3 |
| Receive power range (dBm) | -23~-3 | -23~-3 |

10GE Industrial Optical Module

| No. | 1 | 2 |
|-----------------------------------|-------------|-------------|
| Central Wavelength | TX: 1270nm | TX: 1330nm |
| | RX: 1330nm | RX: 1270nm |
| Package | SFP+ | SFP+ |
| Rate (Gbps) | 10 | 10 |
| Connector | BIDI LC/UPC | BIDI LC/UPC |
| Fiber type | Single mode | Single mode |
| Transmission distance | 20km | 20km |
| Launched power range (dBm) | -3~3 | -3~3 |
| Receive power range (dBm) | -14.5~0.5 | -14.5~0.5 |

Industrial GPON SFP ONT

| | |
|-----------------------------------|-------------------|
| Type | Class B+ |
| Central Wavelength | TX: 1310nm |
| | RX: 1490nm |
| Package | SFP |
| Rate(Gbps) | TX: 1.25; RX: 2.5 |
| Connector | SC/UPC |
| Fiber type | Single mode |
| Launched power range (dBm) | 0.5~5 |
| Receive power range (dBm) | -28~-8 |



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