TOPVISION E2CMTS
Edged and Enhanced Cable Modem Terminal System

The E2CMTS is a rugged, sealed node providing DOCSIS/RF video interfaces to the subscriber. The E2CMTS is a high performance cable edge device designed to deliver triple play services over coax in remote, hard-to-reach areas. The sealed, passively cooled design eliminates fan noise and allows it to be deployed in outside plant locations without a cabinet.

Overview

Equipped with a DOCSIS-compliant 16 channel downstream/4 channel upstream interface, this sealed node supports the full triple play services including voice, video (RF and IPTV) and high-speed Internet access over the traditional point-to-multipoint coax infrastructure.

The E2CMTS is designed for installation deep in the network so that the number of subscribers connected to each coax segment can be reduced, increasing the bandwidth available per subscriber. On top of delivering traditional DOCSIS services, the device can act as well as a mini CCAP offering RF video services to the end user with a built-in edge QAM module.

Key features
- Supports up to 200+ DOCSIS 2.0/3.0 cable modems
- 16 downstream channels to provide up to 800 Mb/s download speeds
- 4 upstream channels to provide up to 120 Mb/s upload speeds
- Optional integrated WDM filter to split incoming fiber into RF overlay signal and xPON signal
- Optional integrated CATV optical receiver (fiber node)
- Integrated IP QAM functionality to modulate incoming IP MPEG stream into RF format
- Choice between GPON or Gigabit Ethernet (GE) uplink interface to fit into every distributed network architecture
- Dynamic CM load balancing (utilization or service flow based) and partial service
- 802.1Q VLAN tagging
- Packet Cable 1.5 & PCMM
- Multicast support (IPTV over DOCSIS)
- IPv4/IPv6 support
- Line power monitoring
- Power boost

Benefits

- Fiber like bandwidth without the cost and burden of penetrating the fiber in the home
- Allows service providers to rapidly and cost effectively deliver ultra-broadband services over the existing last-mile coax plant
- Suites multiple deployment options
- Support industry-standard reverse powering over coax to avoid issue with local power
- Flexible migration scenarios

Specifications

Dimensions

Two possible sizes

- CC8800C: H x W x D: 255 mm x 395 mm x 152 mm (10 in. x 15.6 in. x 6 in.); weight: 13 kg (28.1 lb)
- H x W x D: 195 mm x 265 mm x 129 mm (7.7 in. x 10.4 in. x 5.1 in.); weight: 5 kg (11.4 lb)
-

Working environment

- IP67

- Temperature: -40°C ~ +65°C (-40°F ~ +149°F)

- Humidity: 5% ~ 95% relative humidity (non-condensing)

Safety

- Lightning protection: 6000 V

Power supply

Choice between

- Local power: 90V AC - 264V AC, 50/60 Hz

- Remote power: 36V AC – 110V AC, 50/60 Hz

Power consumption: < 95 W; < 55W (smaller version)

Overcurrent protection: 15 A

External RF Connectors

- 1,2 or 4 TV IN ; 2 or 4 RF OUT

GPON interface

- Compliant to G.984 GPON standards

- Via SFP ONT (separate datasheet)

GE interface

- Active point-to-point GE cage:
  - Gigabit Ethernet over fiber (SFP)
  - Multiple SFP options available (see seperate datasheet for details)

RF downstream

- Maximum 16 downstream channels, random select in 192 MHz (from 54 (standard DOCSIS)/87 MHz
  (EuroDOCSIS™) to 1002 MHz)

- Modulation schemes: 64/256 QAM

- Data rate (maximum): 800 Mb/s over 16 channels

- RF output level: ≤ 112 dBuV @ 16 channels per port (optical variant), maximum 104 (RF – only variant)

- TV insertion loss

  - ≤ 5 dB (< 870 MHz)

  - ≤ 6 dB (870 MHz – 1002 MHz)

- Service flow quantity: 1024

- Reflection loss: > = 16 dB (< 870 MHz)

- Reflection loss: > = 14 dB (870 MHz – 1002 MHz)

- Channel width: 6 MHz (Standard DOCSIS) /8 MHz (EuroDOCSIS)

RF upstream

- Maximum 4 upstream channels, random select in 5-42 Mhz (Standard DOCSIS) /65 MHz (EuroDOCSIS)

- Modulation schemes: QPSK, 16/32/64 QAM

- Upstream communication: SCDMA/ATDMA

- Data rate (maximum): up to 30.72 Mb/s per channel

- RF receive level:

    - -7 dBmV to +23 dBmV (6.4 MHz)

    - -10 dBmV to +20 dBmV (3.2 MHz)

    - -13 dBmV to +17 dBmV (1.6 MHz)

- Channel width: 1.6 MHz/3.2 MHz/6.4 MHz

- MER: ≥ 43 dB (equilibrium ON)

- Reflection loss: ≥ 16 dB

-

IP QAM modulation (maximum 8 DS channels)

- Modulation mode: 64/256 QAM

- Channel width: Annex A

- Frequency range: 87 MHz – 1002 MHz

- Number of supported frequency points:

    - Maximum 8

    - Supports channel mute

- TS multiplexing:

    - VoD service: single frequency point supports 32 programs, each program supports 16 PIDs

    - Supports total of 256 UDP ports and 4096 PIDs

- Control protocol: compatible with NGOD and D6/R6 standard

- Incoming streams:

    - UDP/IP/Ethernet

    - MPEG2, MPEG4, H.264, AVS, DATA (including VBR and CBR formats)

- Performance parameters:

    - Network delay jitter: ≤ 1000 ms

    - PCR jitter tolerance: ≤ 500 ns

-

CATV optical receiver

- Receiving wavelength: 1290 nm – 1600 nm

- Optical interface: SC/APC

- Frequency range: 54 (US)/87 MHz (EU) – 1002 MHz

- Input optical power range: -7 dBm – +2 dBm

- Automatic gain control (AGC) range: -7 dBm – +2 dBm

- Flatness: ± 0.75 dB

- C/N: > 51 dBc (-1 dBm optical input, 59 PAL-D analog and 39 digital channels, 108 dBuV output, 8 dB slope)

- CTB: > 65 dBc (-1 dBm optical input, 59 PAL-D analog and 39 digital channels, 108 dBuV output, 8 dB slope)

- CSO: > 60 dBc (-1 dBm optical input, 59 PAL-D analog and 39 digital channels, 108 dBuV output, 8 dB slope)

- Integrated management of Optical receiver to configure the AGC setting and monitor Optical RSSI information

Regulatory compliance

CE MARK
- Safety compliancy: EN 60950-1 (EN60065), EN 60950-22
- EMC: EN 300 386 (Emission class B, Immunity OTC), EN 55022
- RoHS compliancy EU Directive 2002/95/EC
- European directive 89/336/EEC & 2004/108/EC

WEEE (waste)
- EU Directive 2002/96/EC

Network management functions

- Support CLI over SSH , Telnet and local RJ45 serial port
- Support SNMP V1/V2/V3 with support of standard DOCSIS MIBS to ease integration in legacy OSS systems
- Support Syslog and IPDR for logging
- Support stand-alone WEB Management (WEBGUI)