C3200
DOCSIS 3.0 CMTS

Casa Systems C3200 Series

Casa Systems manufactures the industry's only DOCSIS 3.0 Cable Modem Termination Systems (CMTSs) that have earned full gold-level DOCSIS 3.0 qualification from CableLabs and comply with the full DOCSIS 3.0 feature set.

The C3200 - DOCSIS 3.0 CMTS provides increased flexibility and downstream density at a much lower cost per channel than previous generations of DOCSIS devices.

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Casa Systems C3200 CMTS

Feature Highlights

Full DOCSIS 3.0 Qualified
Multi-channel DRFI RF for Annex A, B, & C, downstream channel bonding up to 16 channels, upstream channel bonding up to 16 channels, IPv6, AES encryption/decryption, multicast QoS, bonded channel multicast, full DOCSIS 3.0 MIBs, and IPDR

Separate Downstream and Upstream Modules
Provide a flexible downstream to upstream ratio

Cost Effectiveness
Industries lowest cost per DOCSIS 3.0 channel, delivering an economical solution for high bandwidth multimedia applications

Software Licensing
Ability to remotely activate additional channels as needed up to the available physical capacity of the module

Superior Density
Offering the highest channel density in the industry, ranging from 80DSx16US for IP video to 48DSx48US for typical broadband service deployment in a single chassis

Best Multi-Channel RF Performance
Exceeds DOCSIS DRFI specification

Overview

Casa System's C3200 Cable Modem Termination System (CMTS) is a DOCSIS 3.0 qualified cable edge device in a high density, 3RU platform.

As a third-generation CMTS, the C3200 has several unique capabilities in addition to it's complete DOCSIS 3.0 features.

The C3200 supports complete separation of downstream channel capacity from upstream channel capacity in a single physical chassis providing a flexible downstream to upstream channel ratio. This flexibility allows cable operators to add downstream channels and upstream channels completely independently within the same chassis allowing them to address specific end user requirements. For example, business users typically require a symmetrical downstream to upstream traffic ratio while residential users require a more asymmetric ratio. For IPTV or video-over-IP applications, significantly more downstream traffic is required than the upstream traffic.

The C3200 delivers very high channel density, supporting up to 80 downstream QAM channels per platform. The superior downstream channel density makes it extremely cost effective for cable operators to enable next generation services such as video-over-IP.

In addition to channel density, the C3200 goes beyond the DOCSIS 3.0 specification by delivering dynamic channel bonding capability in both the downstream (up to 16) and the upstream (up to 16) directions.

The C3200 provides an unprecedented opportunity for cable operators to cost-effectively provision high- bandwidth IP services such as IPTV, interactive gaming, traditional broadband access and Voice over IP (VoIP) services.

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DOCSIS 1.1 and 2.0 Features
Complete DOCSIS/EuroDOCSIS 1.1 and 2.0 feature sets; PacketCable and PCMM support, L2VPN, and DSG

Rich Operational Features
Rich operational features include; show cable modem, flap list, spectral management and IP bundling

High Availability
Hot-swappable modules include; dual AC or DC power supplies, fan trays and line card modules including GigE link redundancy

Modular and Flexible Architecture

The C3200 CMTS comes in a compact 3RU form factor. It is based on a modular architecture that gives cable operators the maximum flexibility in tailoring their networks according to the requirements of their services. The C3200 consists of a base system with one Switch and Management Module slot and six slots for DOCSIS interface modules (downstream DQM modules or upstream DCU modules).

Extensive DOCSIS 3.0 Features

As a full DOCSIS 3.0 CMTS, the C3200 offers the highest channel bonding capability on the market today. In the downstream direction, up to 16 QAM channels (with DQM16 module) can be bonded, yielding up to 800Mbps of instantaneous bandwidth per subscriber. The C3200 also supports IPv6, AES encryption/decryption, and full, multicast capabilities.

Rich Operational Features

The C3200 supports industry standard Command Line Interface (CLI) and SNMP for configuration and management. Some of the operational features supported are; static and dynamic load balancing for single and bonded channels, extensive show cable modem commands, spectral management, system resource reporting, and user privilege management.

Acting as a Layer 3 routing device, the C3200 supports static as well as dynamic routing protocols such as OSPF, IS-IS, BGP, RIP, and PIM-SM.

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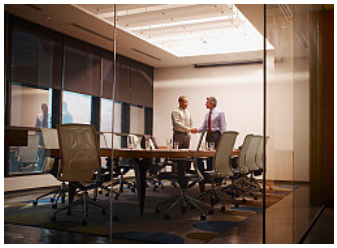

System

24x2 Gbps switching capacity
Six DOCSIS module slots per system
1~5 Downstream modules per system
1~5 Upstream modules per system

IP Features

OSPFv2
IS-IS (IPv4 & IPv6)
RIPv2
BGP (IPv4 & IPv6)
PIM-SM
IGMP snooping
IGMP v2 and v3
Static IP routing
DHCP Relay and option 82
DHCPv6
DHCP prefix delegation
Multiple DHCP servers
Proxy ARP
IP subnet bundling
Multiple default routes
Access Control Lists
L2VPN VLAN tagging

DOCSIS Features

Full DOCSIS 3.0 qualified (May 2008)
Full Euro-DOCSIS 3.0 compliant
DOCSIS 3.0 downstream channel bonding up to 16 channels
DOCSIS 3.0 upstream channel bonding up to 16 channels
DOCSIS 3.0 AES encryption/decryption
DOCSIS 3.0 IPv6
DOCSIS 3.0 multicast
Complete DOCSIS/EuroDOCSIS 1.1 features
DOCSIS/EuroDOCSIS A-TDMA (standard)
DOCSIS/EuroDOCSIS S-CDMA (optional)
PacketCable 1.5 compliant
PacketCable MultiMedia (PCMM) 1.0
DSG
L2VPN

Management

RS232 Serial port (RJ45)
10/100BASE-T management port
Command line interface (CLI)
Telnet
SNMPv1, v2, and v3
Standard DOCSIS and IETF MIBs
Casa Systems Enterprise MIBs
IPDR
Event logging through syslog
Resource usage reporting
TACACS+ and RADIUS

Additional Features

Dynamic upstream & downstream load balancing
Spectrum management
Software defined MAC domains
Software channel licensing
Ingress cancellation filtering

Switch and Management Module (SMM)

10/100/1000 Mbps interfaces
12-port GigE copper or fiber SFP
Full line-rate support

DOCSIS QAM Module (DQM)

Num of ports	4 ports per module
DQM04	4 channels (ch), 1 ch per port
DQM08	8 channels, 2 ch per port
DQM16	16 channels, 4 ch per port
QAM modulation	Annex A, B or C
QAM constellations	64, 128 & 256 QAM
Data rates (DOCSIS)	27 Mbps @ 64 QAM 38 Mbps @ 256 QAM
Data rates (EuroDOCSIS)	36 Mbps @ 64 QAM 51 Mbps @ 256 QAM
Connector	F-type, 75 Ω
Frequency range	48 to 1002 MHz
Frequency accuracy	+/- 5 ppm
Frequency step size	5 kHz
Channel width	6 to 8 MHz (tunable)

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Max output power per channel	61 dBmV@1-ch/port
	57 dBmV @2-ch/port
	53 dBmV @4-ch/port
Output step size	0.1 dB
Return loss	50 ~ 870 MHz, 14 dB
	870 ~ 1002 MHz, 10 dB
Modulation error rate	43 dB (equalized)
Wideband noise	-73 dBc

DOCSIS Control and Upstream Module (DCU)

DCU04	4 channels in 4 ports
DCU08	8 channels in 8 ports
DCU16	16 channels in 8 ports
Modulation	QPSK, 16, 32 & 64 QAM
Data rate per channel	0.32 – 30.72 Mbps
Input frequency range	5 – 42 MHz (DOCSIS)
	5 – 65 MHz (EuroDOCSIS)
	5 – 55 MHz (J-DOCSIS)
Connector	F-type, 75 Ω
Input range	-4 to 26 dBmV

Mechanical

Form Factor	3RU
Height	5.25 in. / 133.35 mm
Width	19 in. / 482.6 mm
Depth	23.5 in. / 597 mm
Weight	70 lbs
Mounting	19 inch, 3 rack unit high
Front Panel LED	power, alarm

Regulatory Compliance

Safety: UL/IEC/CSA 60950-1

EMC: FCC Part 15 Class A & CISPR Class A

Immunity: EN61000-4

Environmental

Operating temperature	0° to 50° C
Storage temperature	-40° to 70° C
Operating humidity	5% to 95%,non-cond.
Power supply:	
AC operating range	90 to 264 V (dual)
DC operating range	-36 to -60 V (dual)
Power consumption	< 700 W (nominal)

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