Casa Systems C1G CMTS
(DOCSIS 3.0 Release)

Feature Highlights

DOCSIS 3.0 Compliant
Multi-channel DRFI RF for Annex A, B & C, downstream channel bonding up to 8 channels, upstream channel bonding up to 8 channels, IPv6, AES encryption/decryption, multicast QoS, bonded channel multicast, full DOCSIS 3.0 MIBs and IPDR

Extremely Compact
38.1 cm x 22.2cm x 1RU (15 in x 8.75 in x 1.75 in)

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

Easily Upgraded
Add channels remotely by adding SW license keys

Best Multi-Channel RF Performance
Exceeds DOCSIS DRFI specification

Extended Frequency Range
Downstream frequency range up to 1GHz (48~1002MHz)

Overview

The Casa Systems C1G Cable Modem Termination System (CMTS) is a new class of cable edge device that implements all of the DOCSIS 3.0 features enabling service providers to cost effectively offer highly scalable broadband services such as IPTV, video-over-IP, interactive gaming, as well as traditional broadband access and VoIP services.

Due to its extremely compact size (15 in x 8.75 in x 1RU), the C1G can be easily deployed in locations such as Multi-Dwelling Units (MDU), hotels and motels (hospitality), and small hubs.

The C1G supports 1 downstream QAM port, 2 DOCSIS upstream ports and 2 GbE (SFP) network ports. Configurations for the C1G range from 2DS x 2US up to 8DS x 8US. Additional features supported include upstream and downstream channel bonding, AES encryption/decryption, Quality of Service (QoS) and a rich IP feature set.

The C1G's revolutionary compact size and cost per bit of DOCSIS bandwidth provides an unprecedented opportunity for service providers to cost-effectively provision highly scalable broadband services to locations that were thought to be cost ineffective.

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

Rich Operational Features
Rich operational features such as show cable modem, flap list, spectral management and IP bundling ready for deployment

Compact Architecture

The C1G CMTS comes in a compact 38.1cm x 22.2cm x 1RU (15 in x 8.75 in x 1RU) chassis that provides operators the maximum flexibility in deploying cost-effective solutions. The C1G is a complete CMTS solution with 1 downstream QAM port, 2 DOCSIS upstream ports and 2 GbE (SFP) network ports.

The C1G can scale from a 2DS x 2US to an 8DS x 8US configuration as your subscriber base grows. Channels can be added remotely by simply activating license keys.

In the downstream direction for Annex A, the C1G provides from 100 Mbps to 400 Mbps of bandwidth.

When using Annex B, the C1G delivers from 80 Mbps to 320 Mbps of bandwidth in the downstream direction. On the upstream link, the C1G supports up to 2 logical channels per physical channel.

Rich Operational Features

The C1G supports industry standard Command Line Interface (CLI) and SNMP for configuration and management. Operational features such as show cable modem, spectral management, CPU and memory resource reporting and user privilege management are available. It also comes with factory-installed basic configuration to bring up GigE ports and CLI on boot-up.

The C1G functions as a Layer 3 routing device. It supports static as well as dynamic routing protocols. For route redundancy, multiple default routes can be configured. Layer 2 bridging, VLAN, RIP, BGP, OSPF, IS-IS, PIM-SM and L2VPNs are supported.

Extensive IP features such as DHCP Relay and option 82, multiple DHCP servers, proxy ARP, IGMP snooping, IGMP v2 and v3 are available.

Applications

The C1G enables the delivery of DOCSIS-based IP applications, such as broadband access, VoIP, IPTV and video-over-IP to the MDU, hospitality and rural markets.

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System

2x1 Gbps network interfaces
1 downstream interface per system
2 upstream interfaces per system

DOCSIS Features

Full DOCSIS 3.0 compliant
Full EuroDOCSIS 3.0 compliant
DOCSIS 3.0 downstream channel bonding from 2 to 8 channels
DOCSIS 3.0 upstream channel bonding from 2 to 8 channels
DOCSIS 3.0 AES encryption/decryption
DOCSIS 3.0 IPv6
DOCSIS 3.0 Multicast
Complete DOCSIS/EuroDOCSIS 1.1 features
DOCSIS/EuroDOCSIS 2.0 A-TDMA
PacketCable 1.5 compliant
PacketCable MultiMedia
DSG
L2VPN

IP Features

DHCP Relay & option 82
Multiple DHCP servers
Proxy ARP
IP subnet bundling
Static IP routing
Multiple default routes
IGMP snooping
IGMP v2 & v3
Access control list
BGP, RIPv2, OSPFv2 & IS-IS
PIM-SM
L2VPN VLAN tagging

GigE Interfaces

Dual SFP fiber/copper 1GigE
CWDM
Full line-rate support

Management

RS232 Serial port (RJ45)
Command line interface (CLI)
Telnet & SSH
SNMPv1, v2 & v3
Standard DOCSIS & IETF MIBs
IPDR
Casa Systems Enterprise MIBs
Event logging through syslog
Electronic mail notification
Resource usage reporting
TACACS+ & RADIUS

DOCSIS QAM Interface

Number of ports	1 port per system
Number of channels	2–8 channels 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 (center)	48 to 999 MHz (standard)
Frequency accuracy	+/– 5 ppm
Frequency step size	5 kHz
Channel width	6 to 8 MHz (tunable)
Maximum 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

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Additional Features

Dynamic upstream & downstream load balancing

Spectrum management

Software-defined MAC domains

Software channel licensing

Ingress cancellation filtering

DOCSIS Upstream Interface

Number of ports	2 ports per system
Number of channels	1–4 channels per port
Logical channels	2 logical per physical channel
Modulation	QPSK, 8, 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	1RU
Height	1.75 in. / 4.4 cm
Width	8.75 in. / 22.2 cm
Depth	15 in. / 38.1 cm
Weight	6 lbs / 2.72 kg
Mounting	19 in., 1 rack unit high
Front Panel LED	Power, alarm

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	110 to 240 V (Dual external)
Power consumption	< 80 W (max)

Regulatory Compliance

Safety: UL/CSA/EN60950–1
EMC: FCC Part 15, Subpart B
EN55022
EN55024

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