

C4c™ CMTS

Release 8.2.5



PRODUCT OVERVIEW:

The ARRIS C4c™ CMTS is a compact DOCSIS® 3.0 platform based on the proven hardware and software of the larger C4® CMTS solution. It allows an operator to cost-effectively deploy DOCSIS, PacketCable™, DSG/ADSG, and PacketCable Multimedia (PCMM™) services in small-to-medium size headends where space and power are often limited. The C4c CMTS supports DOCSIS 1.1/2.0/3.0 and PacketCable features, providing operators with a large array of Quality of Service capabilities to deploy revenue-generating services. Both AC-powered and DC-powered options are available. The following modules are supported:

- System Control Module (SCM), including support for the SCM II, SCM II EM, SCM II EM(U), and SCM 3
 - Router Control Module (RCM)
 - Downstream and Upstream Cable Access Modules (CAMs) — 16D CAM, XD CAM, 12U CAM, 24U CAM
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Release 8.2.5 delivers a significant set of value-added capabilities for C4c CMTS customers. With Rel. 8.2.5, cable operators deploying the C4c CMTS can utilize a 5 – 85 MHz band for the return frequency spectrum (24U CAM only) and also are able to bond up to eight (8) upstream channels (24U CAM only). Mult-Protocol BGP routing support with the IPv6 Address Family is included in Rel. 8.2.5; this provides an important Layer 3 capability for operators deploying IPv6. Rel. 8.2.5 also supports marking the DiffServ Code Point (DSCP) for downstream subscriber traffic which allows MSOs to apply QoS principles within the subscriber premises. In addition, Rel. 8.2.5 supports a PCMM ECN which allows a single gate to use both an IPv4 and an IPv6 classifier; Rel. 8.2.5 also supports Password Challenge functionality for RADIUS Authentication.

FEATURES

- DSCP Marking for DHCP Packets
- PCMM ECN MM-N-13.0697-1 Support (IP4 and IPv6 Classifiers per Gate)
- DSCP Marking for Downstream Subscriber Traffic
- RADIUS Password Challenge
- Bonding of 8 US (24U CAM)
- Support for Multi-tuner Modems (without static RCCs)
- CLI Assignment for BSoD L2VPNs
- Annex A Mixed Modulation per F Connector
- 5 – 85 MHz Support (24U CAM)
- MP-BGP w/ IPv6 Address Family
- Intelligent TCS Assignment
- TCS Reduction
- MIB Support for Modem Count per Fiber Node

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Managing the C4c CMTS is typically done via the SNMP or CLI interfaces. The C4c CMTS has multiple options available for IPDR, a useful tool for measuring bandwidth usage. Physical maintenance of the C4c CMTS is very simple. Air filters should be inspected and/or replaced per recommendations in the C4c CMTS User Guides.

GENERAL SPECIFICATIONS

RF Downstream

Frequency Range (MHz)	91 to 999 (DOCSIS® 3.0); 112 to 999 (EuroDOCSIS™ 3.0)
Modulation (QAM)	64, 256
Data Rate (Mbps) (Max.)	30.34 to 55.62 per channel
RF Output Level (dBmV)	41 to 60
Symbol Rate (Msym/sec)	5.361 (DOCSIS); 6.952 (EuroDOCSIS)
Bandwidth (MHz)	6 (DOCSIS), 8 (EuroDOCSIS)
Output (load) impedance (ohms)	75

Physical

Power	-48 VDC (-44 to -72 VDC) 115/220 VAC (100 to 240 VAC, 47 to 63 Hz)
Power Consumption (full-fill system)	At -48 Vdc: 900 W nominal and 1,200 W max At 115 VAC: 1,000 W nominal and 1,350 W max
Operating Temperature:	
Short Term °F (°C)	+23 to +131 (-5 to +55)
Long Term °F (°C)	+41 to +104 (+5 to +40)
Storage Temperature °F (°C)	-40 to +158 (-40 to +70)
Operating Humidity (Min.-Max.)	5 to 85% (Non condensing)
Dimensions (H x W x D) in. (cm)	12.25 x 18.05 x 22.5 (31.1 x 44.3 x 57.2)
Weight lbs. (kg) (full-fill system)	116.2 (52.7)

RF Upstream

Frequency Range (MHz)	5 to 85 MHz (24U CAM) 5 to 65 MHz (12U CAM)
Modulation	QPSK, 16 QAM, 32 QAM, 64 QAM
Channel Type	TDMA, ATDMA, TDMA/ATDMA
Data Rate (Mbps) (Max.)	30.72 per channel
RF Input Level (dBmV)	-16 to +29
Frequency Resolution (KHz)	< 1

Installation Environment

Management Interfaces	10/100/1000 Mbps Ethernet (RJ-45) plus Console (serial port, RJ45)
Network-side Interfaces	10 Gigabit Ethernet (SFP+) auto-baud, eight per card
Connector Access	NSI Ethernet ports via front of chassis, management ports via rear

Management Access

In-band Management with Access Control Lists via any NSI port
Out-of-Band Management via dedicated Ethernet port on SCM
Console (serial) port on SCM PIC



The C4c CMTS provides cable operators with significant improvements in DC power consumption per downstream channel as compared to other compact DOCSIS 3.0 platforms. This leads to reduced powering and cooling requirements for the operators' facilities, which can provide savings in operational and capital expenditures.

SOFTWARE RELEASE 8.2.5 FEATURES (PARTIAL LISTING)

DSCP Marking for DHCP Packets	IPv6 Support, Including:
PCMM ECN Support (IP4 and IPv6 Classifiers per Gate)	IS-IS Multi-Topology Support
DSCP Marking for Downstream Subscriber Traffic	OSPFv3
RADIUS Password Challenge	DHCPv6 Prefix Delegation with Route Injection
Bonding of 8 US (24U CAM)	Cable Source Verify with DHCP Lease Query
Support for Multi-tuner Modems (without static RCCs)	TFTP Enforce & Dynamic Shared Secret for IPv6 CMs
CLI Assignment for BSoD L2VPNs	DOCSIS 3.0 Multicast IP Video Support (via IGMPv3)
Annex A Mixed Modulation per F Connector	Multicast CAC for IP Video (Phase 1)
5 – 85 MHz Support (24U CAM)	Policy-Based Routing with Recursive Next Hop
MP-BGP w/ IPv6 Address Family	Dynamic CM Load Balancing, including Cross-MAC Domain
Intelligent TCS Assignment	16D CAM, XD CAM
TCS Reduction	12U CAM, 24U CAM
MIB Support for Modem Count per Fiber Node	BSoD L2 VPN
Ethernet Link Aggregation (1 Gbps ports)	BPI+ Enforce
Integrated Service Class Agility	TFTP Enforce and Dynamic Shared Secret
IPv6 Support for PCMM	Integrated Upstream Agility
Load Balancing of D3.0 Voice Flows (DS and US)	PIM-SSM, IGMPv2, and static multicast
DSG 3.0	RIPv2 (RFC 1723), OSPFv2 (RFC 2328), IS-IS, BGPv4
Extended CM Transmit Power (for USCB)	SII Lawful Intercept (RFC 3924)
802.1Q VLAN tagging	

ORDERING INFORMATION

780151	C4c Chassis, 8 Slot Chassis Assembly – 7 RU Chassis
780271	C4c AC Power Supply Module
780272	C4c DC Power Supply Module
708369	Physical Interface Card (PIC) for the SCM with Fan Controller
793931	System Control Module II Enhanced Memory (Updated) (SCM II EM(U))
722013	Router Control Module (RCM)
794046	Optimized 16D Cable Access Module (CAM) Kit (Active) Licensed for 16 Downstreams, DOCSIS/EuroDOCSIS 3.0
794048	Optimized 24D Cable Access Module (CAM) Kit (Active) Licensed for 24 Downstreams, EuroDOCSIS 3.0
794047	Optimized 32D Cable Access Module (CAM) Kit (Active) Licensed for 32 Downstreams, DOCSIS 3.0
794069	24U CAM Kit (Even) – 24U CAM, Even CAM PIC, and 24 Upstream Licenses, DOCSIS/EuroDOCSIS 3.0
794070	24U CAM Kit (Odd) – 24U CAM, Odd CAM PIC, and 24 Upstream Licenses, DOCSIS/EuroDOCSIS 3.0
782360	C4c CMTS Rel. 8.2 DOCSIS 3.0 License per Downstream for 16D/XD CAM
782361	C4c CMTS Rel. 8.2 DOCSIS 3.0 License per Upstream for 12U/24U CAM
708387	Software Maintenance - Phone Plus Gold (Required)

Full price list available from ARRIS.

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