ARRIS

C4c™ CMTS

Release 8.3

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

Release 8.3 adds a set of important features that provide operational enhancements for C4c CMTS operators. This software update also includes some features that are either already available in E6000® CER or planned for upcoming E6000 software releases. New features in Rel. 8.3 include hitless dynamic downstream and upstream bonded modem load balancing, which provides increased operational efficiencies for operators while preserving subscribers' quality of experience. Rel. 8.3 also includes support for the Energy Management ECN, which is an important component of many cable operators' energy-saving initiatives.

SUMMARY OF NEW & EXISTING FEATURES (PARTIAL LIST)

Hitless Dynamic DS and US Bonded Modem Load Balancing	Hitless Bonded Modem Movement
Upstream Channel Bonding (USCB) Graceful Reduction	Energy Management ECN (MULPI v3.0-N-12.1071-10)
Additional OSSIv3 IPDR Schemas (CMTS-CM-REG-STATUS and CMTS-CM-US-STATS)	DHCP Option 82.9 Support for MSO Defined Text
Filter Group Text Descriptions	IPv6 Device Classes – For Subscriber Management Filters
IPv6 Support, Including:	Extended CM Transmit Power (for USCB)
- IS-IS Multi-Topology Support	Multicast CAC for IP Video
- OSPFv3	Policy-Based Routing with Recursive Next Hop
- DHCPv6 Prefix Delegation with Route Injection	IPv6 Support for PCMM
- Cable Source Verify with DHCP Lease Query	BPI+ Enforce
- TFTP Enforce & Dynamic Shared Secret for IPv6 CMs	TFTP Enforce and Dynamic Shared Secret
BSoD L2 VPN	Integrated Upstream Agility
5 – 85 MHz Support (24U CAM)	PIM-SSM, IGMPv2, and static multicast
MP-BGP w/ IPv6 Address Family	RIPv2 (RFC 1723), OSPFv2 (RFC 2328), IS-IS, BGPv4
Intelligent TCS Assignment	SII Lawful Intercept (RFC 3924)
TCS Reduction	Load Balancing of D3.0 Voice Flows (DS and US)
Integrated Service Class Agility	DSG 3.0
Ethernet Link Aggregation (1 Gbps ports)	802.1Q VLAN tagging

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 Guide.

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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)

GENERAL SPECIFICATIONS (CONT'D)

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

ORDERING CODES

Part Number	Description
1000219	C4c CMTS System Software Release 8.3DOCSIS 3.0 Licensed per Downstream for 16D/XD CAM
1000220	C4c CMTS System Software Release 8.3 DOCSIS 3.0 Licensed per Upstream for 12U/24U CAM
713877	C4 Chassis, 21 Slot Chassis Assembly 14RU Chassis, 3 High Speed Fans
799087	System Control Module (SCM) 3 (requires Rel. 8.2 or later software)
793931	System Control Module II Enhanced Memory (Updated) (SCM II EM(U))
722013	Router Control Module (RCM)
722891	Router Control Module Crossover Connector
794041	Optimized 24D Cable Access Module (CAM) Kit (Active) Licensed for 24 Downstreams, EuroDOCSIS 3.0
794044	Optimized 24D Cable Access Module (CAM) Kit (Spare) Licensed for 24 Downstreams, EuroDOCSIS 3.0
794042	Optimized 32D Cable Access Module (CAM) Kit (Active) Licensed for 32 Downstreams, DOCSIS 3.0
794045	Optimized 32D Cable Access Module (CAM) Kit (Spare) Licensed for 32 Downstreams, DOCSIS 3.0
790562	24U Cable Access Module (CAM) Kit (Even) Licensed for 24 Upstreams, DOCSIS/EuroDOCSIS 3.0
790563	24U Cable Access Module (CAM) Kit (Odd) Licensed for 24 Upstreams, DOCSIS/EuroDOCSIS 3.0
790564	24U Cable Access Module (CAM) Kit (Spare) Licensed for 24 Upstreams, DOCSIS/EuroDOCSIS 3.0
708387	Software Maintenance - Phone Plus Gold (Required)
1000219	C4 CMTS System Software Release 8.3DOCSIS 3.0 Licensed per Downstream for 16D/XD CAM

Full Price List available from ARRIS

CUSTOMER CARE

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