

# 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 OSSIPv3 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.

## 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)<br>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<br>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)<br>5 to 65 MHz (12U CAM) |
|-----------------------|------------------------------------------------|

|            |                              |
|------------|------------------------------|
| Modulation | QPSK, 16 QAM, 32 QAM, 64 QAM |
|------------|------------------------------|

|              |                            |
|--------------|----------------------------|
| Channel Type | TDMA, ATDMA,<br>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 |
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|                                                           |
|-----------------------------------------------------------|
| Out-of-Band Management via dedicated Ethernet port on SCM |
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|                                  |
|----------------------------------|
| Console (serial) port on SCM PIC |
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## 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

Contact Customer Care for product information and sales:

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