



C4® CMTS

System Release 7.1



Features

- IP Detail Records / Streaming Protocol (IPDR/SP) for standards-based billing and subscriber management
- SII Lawful Intercept provides tap capability for any service routed through CMTS
- Customer traffic segmentation via multiple VRFs with OSPF
- High bandwidth for DOCSIS 3.0 applications
- Legendary C4 CMTS “hitless” sparing and redundancy and hot swappable modules
- Independent downstream and upstream channel deployments
- DOCSIS 3.0 downstream channel bonding
- Advanced services and improved upstream performance using DOCSIS 3.0 capabilities

The ARRIS C4® CMTS Release 7.1 system is a carrier-class DOCSIS® 3.0 CMTS. It allows an operator to cost effectively deploy DOCSIS, PacketCable™, DSG/ADSG, and PCMM services. Its 99.999% system availability increases subscriber satisfaction and retention with a self healing design that maintains system services without interruption. The ARRIS C4 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. Release 7.1 brings a host of value-added features, such as IP Detail Records (IPDR/SP), OSPF in five VRFs, 802.1Q VLAN tagging, SII Lawful Intercept, and scaling to 20,000 subscriber devices. The C4 CMTS is the most dense DOCSIS 3.0 system available.

The ARRIS C4 CMTS system is a 21 slot chassis with a mid-plane based architecture designed for continuous system operation. This unique architecture allows the ARRIS C4 CMTS to provide carrier-grade integrated Layer 3 edge routing and advanced CMTS functionality combined in a single chassis. Five types of modules are available

- System Control Module (SCM)
- Router Control Module (RCM)
- 16D Cable Access Module (16D CAM)
- 2Dx12U Cable Access Module (2Dx12U CAM)
- 12U Cable Access Module (12U CAM)

DOCSIS IPDR/SP

The C4 CMTS Internet Protocol Detail Record (IPDR) Streaming Protocol feature provides the capability to report bulk service flow (SF) counts for subscriber cable modems (CMs) and Embedded Multi-media Terminal Adapters (E-MTAs) on a periodic basis via report intervals. IPDR/SP is a powerful tool enabling usage-based billing and subscriber bandwidth management.

Service-Independent Intercept (SII)

The C4 CMTS SII feature provides operators a standards-based mechanism for meeting legal requirements to intercept all IP data and voice traffic originating from or destined to subscribers on their network.

Multiple VRFs with OSPF and VLAN Q-tagging

The C4 CMTS supports enabling OSPF in five different VRFs simultaneously providing a flexible means of segmenting customer traffic. 802.1Q tags on the network-side interfaces identify which VRF should be used for routing a particular packet.

Superior Throughput and Availability

All modules in the ARRIS C4 CMTS are designed for “hot-swap” operation and can be inserted or removed while the system remains powered. The ARRIS C4 CMTS features a programmable switch fabric designed to provide unique queuing and congestion control capabilities for optimal switching performance.

The C4 CMTS includes a fully integrated RF switch that enables “hitless” RF sparing without any external wiring or equipment configuration. With “hitless” RF sparing, if a failure were to occur on any RF module, all the devices connected to the failed module would immediately switch to a spare in the group. Up to seven sparing groups can be provisioned in the same chassis to allow an operator to “mix and match” sparing requirements of various sizes.

Specifications

RF Downstream

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|-------------------------|--|
| Frequency Range (MHz) | 91-999(DOCSIS 3.0) 112-999(Euro-DOCSIS 3.0) |
| Modulation (QAM) | 256 |
| Data Rate (Mbps) (max.) | 30.34–55.62 per channel |
| RF Output Level (dBmV) | 44-60 |

RF Upstream

| | |
|-------------------------|------------------------------|
| Frequency Range (MHz) | 5-65 (DOCSIS 3.0) |
| Modulation | QPSK, 16 QAM, 32 QAM, 64 QAM |
| Data Rate (Mbps) (max.) | Up to 30.72 |
| RF Receive Level (dBmV) | -16 to 29 |

Installation Environment

| | |
|----------------------------|---|
| RF Interfaces | External F-type connector |
| Network-side Interface | 10/100 BaseT Ethernet; Gigabit Ethernet, 10 Gigabit Ethernet |
| Power | Dual DC voltage mains: -48 Vdc (-44 to -72 Vdc) Optional ac power configuration |
| Power Consumption (Note 1) | 2800 W max at -48Vdc |

Physical

| | |
|--------------------------------|---|
| Operating Temperature °F (°C) | |
| Storage Temperature °F (°C) | -40 to 158 (-40 to +70) |
| Operating Humidity (min – max) | 5–85% (Non-condensing) |
| Dimensions (W x H x D) in (cm) | 17.4 x 24.5 x 20.0 (44.2 x 62.2 x 50.8) |
| Weight lbs (kg) | 178 (80.9) |

Software Support Release 7.1

DOCSIS 3.0 (Bronze Qualified in CableLabs® CW56)
Euro-DOCSIS 3.0
PacketCable 1.0/1.1
DOCSIS Set-top Gateway (DSG)
PacketCable Multimedia Support
IPDR/SP
SII Lawful Intercept (RFC 3924)
802.1Q VLAN tagging
RIPv2 (RFC 1723), OSPFv2 (RFC 2328),
DHCP Relay Agent (Option 82)
ICMP (RFC 792)
CIDR (Classless Inter-Domain Routing) (RFC 1519)
PIM-SSM, IGMPv2, and multicast
Interface Bundling across any number of RF interfaces flows (RFC1112)
Command Line Interface (CLI)
SNMP v1, v2c and v3
DOCSIS MIBs and Cadant® enterprise MIBs
Dynamic Cable Modem Load Balancing
Flexible Full US to DS Mapping
Telnet
IP DiffServ
Extended ACLs & Named ACLs

Regulatory:

Designed to NEBS Level 3 Requirements
Safety: UL® 60950, CSA C22.2 No. 950, IEC60950
EMC: GR-1089-CORE (ESD, Grounding Electrical Safety)
FCC Part 15 Class A, EN300 386-2 (CISPR 22, Class A)
Environmental: GR-63-CORE, ETS 300 019

Notes:

1. Nominal power consumption for DOCSIS 3.0 Duplex full-fill chassis with 1:1 active upstream to downstream ratio.

Ordering Information

| Part Number | Description |
|-------------|---|
| 708369 | Physical Interface Card (PIC) for Slot 19 for Use with SCM with Fan Controller |
| 708963 | Physical Interface Card (PIC) for Slot 20 for Use with SCM without Fan Controller |
| 710424 | 2Dx12U or 12 U CAM Physical Interface Card (PIC) for Even-slot Position |
| 710425 | 2Dx12U or 12 U CAM Physical Interface Card (PIC) for Odd-slot Position |
| 710426 | 2Dx12U or 12 U CAM Physical Interface Card (PIC) for Spare-slot Position |
| 713877 | ARRIS C4 Chassis, 21 Slot Chassis Assembly 14RU Chassis, 3 High Speed Fans |
| 718100 | System Control Module II (SCM II) |
| 722013 | Router Control Module (RCM) |
| 722014 | 16D Cable Access Module (CAM) DOCSIS 3.0 |
| 722015 | 12U Cable Access Module (CAM) DOCSIS 3.0 |
| 722016 | 16D CAM Physical Interface Card (PIC) for Active-slot Position |
| 722017 | 16D CAM Physical Interface Card (PIC) for Spare-slot Position |
| 722891 | C4 CMTS Router Control Module Crossover Connector |

Software Required for each CMTS

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| 728976 | ARRIS C4 CMTS System Software Rel 7.1 License per Downstream |
| 728977 | ARRIS C4 CMTS System Software Rel 7.1 License per Upstream |

Ethernet Network Interface Options

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|--------|---|
| 722093 | C4 CMTS SFP Optical Interface, 1000Base-SX |
| 722872 | C4 CMTS SFP Electrical Interface, 1000Base-TX |
| 722873 | C4 CMTS XFP Optical Interface, 10GBase-SR |
| 718887 | C4 CMTS XFP Optical Interface, 10GBase-LR/LW |

Maintenance Plan (required)

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| 708387 | Software Maintenance - Phone Plus Gold |
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