C4c™ CMTS

System Release 7.1

Features

- DOCSIS 3.0 downstream channel bonding
- Compact, high-density design for smaller headends
- Based on field-proven DOCSIS 3.0 C4 CMTS technology
- Independent downstream and upstream channel deployments

The ARRIS C4c™ CMTS Release 7.1 is a compact DOCSIS® 3.0 CMTS based on the proven hardware and software of the larger C4® CMTS solution. The C4c CMTS allows an operator to cost effectively deploy DOCSIS, PacketCable™, DSG/ADSG, and PCMM services in small-to-medium size headends where space and power are often limited. The ARRIS 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. The C4c CMTS brings a host of value-added features including DOCSIS downstream channel bonding, independent scaling of upstream and downstream channels, and IPv6 management of cable modems.

The ARRIS C4c CMTS is a 7 rack unit, 8-slot chassis with a mid-plane based architecture designed for continuous system operation. This unique architecture allows the ARRIS C4c CMTS to provide integrated Layer 3 edge routing and advanced CMTS functionality combined in a single chassis. Four types of modules are available:

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

Superior Availability and Throughput

All modules in the ARRIS C4c CMTS are designed for “hot-swap” operation and can be inserted or removed while the system remains powered. The control complex modules and cable access modules are the same as used in the field-proven C4 CMTS. CAM sparing capability is designed into the C4c chassis hardware that also supports redundant AC or DC dual power supply modules. The ARRIS C4c CMTS features a programmable switch fabric designed to provide unique queuing and congestion control capabilities for optimal switching performance.

Compact High-Density Design

The C4c CMTS is perfect for smaller headends where rack space, powering, or the number of data/VoIP subscribers is limited. Six CAM slots are provided in the chassis for a total capacity of 12 to 60 upstream channels and 16 to 80 downstream channels.

Enhanced Routing & Networking Technology

The C4c CMTS with the RCM provides enhanced routing and forwarding, including integrated one 10GE and ten 1GE network interfaces for direct connection to a cable operator's IP network. Advanced DOCSIS 3.0 services including IPv6 and service flow classification are available in the C4c CMTS with Release 7.1.

DOCSIS 3.0 Downstream Channel Bonding

The C4c CMTS Rel. 7.1 supports DOCSIS 3.0 downstream channel bonding with variable size bonding groups. This allows for the aggregation of two or more DOCSIS channels to support ultra high bandwidths. For example, four bonded channels provide a 160 Mbps data stream to a subscriber's DOCSIS 3.0 cable modem.

Independent Downstream and Upstream Channel Deployments

The C4c CMTS supports independent downstream and upstream modules allowing an operator to "tailor" available service bandwidth in both the downstream and upstream directions within the same C4c CMTS chassis.

Specifications

Installation Environment		
RF Interfaces	External 'F' type connector	
Network-side Interfaces	10/100 BaseT Ethernet; Gigabit Ethernet;10 Gigabit Ethernet	
Power	Single power module (DC or AC) or dual power modules (AC/DC, AC/AC or DC/DC) -48 VDC (-44 to -72 VDC) 115 VAC (100 to 240 V AC, 47 to 63 Hz)	
Power Consumption	At -48 VDC: 900 W nominal and 1200 W max At 115 VAC: 1000 W nominal and 1350 W max	
RF Downstream		
Frequency Range (MHz)	91-953 (DOCSIS 3.0); 112-953 (Euro-DOCSIS 3.0)	
Modulation (QAM)	64 or 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	
Receive Input Level (dBmV)	-16 to 29	
Physical		
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.)	5-85% (Non condensing)	
Dimensions (H x W x D) in. (cm)	12.25 x 17.45 x 22.5 (31.1 x 44.3 x 57.2)	
Weight lbs. (kg)	116.2 (52.7)	

Software Support Release 7.1

DOCSIS 3.0
Euro-DOCSIS 3.0
PacketCable 1.0/1.1
DOCSIS Set-top Gateway (DSG)
PacketCable Multimedia Support
BPI Hybrid Support
Multiple VRFs
RIPv2 (RFC 1723), OSPFv2 (RFC 2328)
OSPF in 5 VRFs
DHCP Relay Agent (Option 82)
ICMP (RFC 792)
CIDR (Classless Inter-Domain Routing) (RFC 1519)
PIM-SSM, IGMPv2, and multicast
Layer 3 802.1Q VLAN tagging
Lawful Intercept (SII)
IP Data Record/Streaming Protocol (IPDR/SP)
Interface Bundling across any number of RF interfaces
Command Line Interface (CLI)
SNMP v1, v2c and v3
DOCSIS MIBs and ARRIS enterprise MIBs
Dynamic Cable Modem Load Balancing
Flexible Full US to DS Mapping
Telnet
IP DiffServ
Extended ACLs & Named ACLs
Intelligent Channel Optimizer Support

Regulatory:

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

C4c™ CMTS System Release 7.1

Ordering Information

Part Number	Description
780151	ARRIS C4c Chassis, 8 Slot Chassis Assembly – 7 RU Chassis
780271	C4c AC Power Supply Module
780272	C4c DC Power Supply Module
785169	System Control Module II
722013	Router Control Module (RCM)
722014	16D Cable Access Module (CAM) DOCSIS 3.0
722015	12U Cable Access Module (CAM) DOCSIS 3.0
708369	Physical Interface Card (PIC) for the SCM with Fan Controller
722016	16 D CAM Physical Interface Card (PIC) for Active-slot Position
710424	12 U CAM Physical Interface Card (PIC) for Even-slot Position
710425	12 U CAM Physical Interface Card (PIC) for Odd-slot Position
Software Required for Each CMTS	
780265	ARRIS C4c CMTS System Software Rel 7.1 License per Downstream
780266	ARRIS C4c CMTS System Software Rel 7.1 License per Upstream
780267	ARRIS C4c CMTS System Software Rel 7.1 on CD-ROM (optional)
Ethernet Network Interface Options	
722093	C4c CMTS SFP Optical Interface, 1000Base-SX
780180	C4c CMTS SFP Optical Interface, 1000Base-ZX
728965	C4c CMTS SFP Optical Interface, 1000Base-LX
722872	C4c CMTS SFP Electrical Interface, 1000Base-TX
722873	C4c CMTS XFP Optical Interface, 10GBase-SR
728887	C4c CMTS XFP Optical Interface, 10GBase-LR/LW
780243	C4c CMTS XFP Optical Interface, 10GBase-ER
780244	C4c CMTS XFP Optical Interface, 10GBase-ZR
Maintenance Plan (required)	
TBD	Software Maintenance - Phone Plus Gold

Specifications subject to change without notice.