C4® CMTS

System Release 5.2

- Meets High Speed Data (HSD) subscriber demands for increased bandwidth and services
- Delivers differentiated, measureable, and dynamic services such as streaming IP video for new revenue generating services
- Reduces operational costs while supporting advanced services with unmatched system scalability
- Delivers increased subscriber satisfaction and retention with carrier-grade reliability and superior service performance

The ARRIS C4® CMTS Release 5.2 system is a carrier-class PacketCable™ 1.1/1.0, DOCSIS® 2.0, Euro-DOCSIS 2.0, DOCSIS Set-top Gateway (DSG/ADSG), and PacketCable Multimedia (PCMM) ready Cable Modem Termination System. The C4 CMTS is an edge router that delivers unprecedented service availability and wire-speed performance under all operating conditions. Its 99.999% system availability increases subscriber satisfaction and retention with a self healing design that maintains system services without interruption. The C4 CMTS Release 5.2 introduces an array of QoS capabilities to deploy revenue-generating services. System Release 5.2 value-added features include, but are not limited to, IPDR, legal intercept, enhanced routing protocols, and device classifications.

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 C4 CMTS to provide carrier-grade integrated Layer 3 edge routing and advanced CMTS functionality combined in a single chassis.

Four types of modules are available for C4 CMTS release 5.2:

- System Control Module (SCM)
- Fabric Control Module (FCM)
- Network Access Module (NAM)
- 2Dx12U Cable Access Module (2Dx12U CAM)

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 Layer 3 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.

Network Management Services

Release 5.2 incorporates new network management capabilities with Internet Protocol Detail Record (IPDR) traffic collection, device class support for subscriber CPE devices, and command line interface (CLI) support for measurement of per subscriber bandwidth utilization. The IPDR traffic collection feature measures subscriber bandwidth usage for periodic transfer to IPDR record-keeping servers and advanced billing collection systems. The device classes feature is utilized for identifying subscriber devices such as cable modems, E-MTAs, and set-top boxes and supplying this information to network management systems. This feature includes support for class-based selection of DOCSIS IP filter groups. A CLI command enhancement for subscriber bandwidth utilization assists cable operator's network operations centers in monitoring network utilization of individual subscribers.

Enhanced Routing Support—release 5.2 adds routing protocol support for border gateway protocol (BGP) for deployments in large-scale network along with enhanced support for up to 5 Virtual Route Forwarders (VRFs) with OSPF and layer 3 802.1Q-tags.

Security Enhancements—release 5.2 includes a new CPE IP key for Legal Intercept (LI) taps.

Superior Density & Scalability—*the* C4 CMTS with Release 5.2 supports data capacity up to 52,000 cable modems per chassis or voice capacity of up to 32,000 lines per chassis.

Specifications

Installation Environmental

RF Interfaces	External 'F' type connector
Network-side Interfaces	10/100 Base-T Ethernet; Gigabit Ethernet
Power	Dual DC voltage mains: -48 V_{DC} (-44 to -72 V_{DC}) Optional AC power configuration
Power Consumption	2800 W max at -48V_{DC}

RF Downstream

Frequency Range, MHz	91-857 (DOCSIS 2.0), 112-858 (Euro-DOCSIS 2.0)
Modulation, QAM	64, 256
Data Rate, Mbps	30.34 – 55.62 per channel
RF Output Level, dBmV	50-61

RF Upstream

Frequency Range, MHz	5-42 (DOCSIS 2.0), 5-65 (Euro-DOCSIS 2.0) or 5-55
Modulation	QPSK, 8-QAM,16-QAM, 32-QAM, 64-QAM,
Data Rate, Mbps	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	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)	166(75.5)

Software Support

DOCSIS 2.0	IEEE 802.1p priority bit mapping
Euro-DOCSIS 2.0 (A-TDMA & S-CDMA)	Command Line Interface (CLI)
PacketCable 1.0/1.1	SNMP v1, v2c and v3
DOCSIS Set-top Gateway (DSG)	DOCSIS MIBs and Cadant® enterprise MIBs
PacketCable Multimedia Support	Dynamic Cable Modem Load Balancing
RIPv2 (RFC 1723), OSPFv2 (RFC 2328), BGP4, IS-IS	Integrated Upstream Agility
DHCP Relay Agent (Option 82)	Lawful Intercept (SII Encapsulation)
ICMP (RFC 792)	Flexible Full US to DS Mapping within CAM
CIDR (Classless Inter-Domain Routing) (RFC 1519)	Telnet, SSH2, and SFTP
PIM-SSM, IGMPv2, and multicast flows	IP DiffServ
Interface Bundling across any number of RF interfaces	Advanced CM Config File Verification
Virtual Route/Forwarding Instances (VRFs)	Cable Modem Proxy
Subinterfaces	Extended ACLs & Named ACLs
802.1Q VLAN tagging	

Regulatory

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

Ordering Information

Part Number	Description
713877	ARRIS C4 Chassis, 21 Slot Chassis Assembly 14RU Chassis, 3 High Speed Fans
718100	System Control Module II (SCM II)
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
708267	Fabric Control Module
719356	2Dx12U Cable Access Module (CAM) DOCSIS 2.0
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
710459	Physical Interface Card (PIC) for 4-Ethernet Ports & GBIC Port
708149	Network Access Module (NAM) 4 x 10/100 Base T Ethernet
719151	Gigabit Ethernet NAM with 1-Port LLX long haul GBIC module (70km)
719152	Gigabit Ethernet NAM with 1-Port LX medium haul GBIC module (10km)
719153	Gigabit Ethernet NAM with 1-Port SX short haul GBIC module (550m)
719149	Gigabit Ethernet NAM with 1-Port TX electrical GBIC module (100m)
Software Required for each CMTS	
722812	ARRIS C4 CMTS System Software Rel 5.2 License per Downstream
Maintenance Plan (required)	
708387	Software Maintenance - Phone Plus Gold