C4® CMTS
2Dx12U Cable Access Module

Application
The ARRIS C4 CMTS 2Dx12U Cable Access Module (CAM) provides two RF downstream channels and twelve RF upstream channels with two integrated upconverters for the ARRIS C4 Cable Modem Termination System (CMTS). The C4 CMTS is a high-performance, next-generation carrier-class CMTS for advanced IP services. The C4 CMTS supports up to sixteen CAMs in the 21 slot system chassis. The C4 CMTS with the 2Dx12U CAM is DOCSIS® 2.0 and Euro-DOCSIS 2.0 qualified.

FlexCAM™ Technology
The C4 CMTS contains patented FlexCAM™ technology that provides superior reliability and flexibility. This includes support for multiple flexible RF sparing groups. With "hitless" RF sparing, if a failure occurs on a DOCSIS CAM, all of the cable modems connected to the failed CAM are immediately switched to the spare CAM in the sparing group. For "hitless" RF sparing, up to seven active modules are supported in a sparing group while up to 15 CAMs are supported per sparing group with basic CAM sparing. The C4 CMTS continues to lead the industry with multiple and flexible sparing groups that allow an operator to "mix and match" sparing groups of various sizes in the same C4 CMTS chassis. In this way, operators can engineer particular nodes for system availability based on the traffic classification of planned services. For example, an operator may choose to deploy 7+1 redundancy for voice services, 4+1 redundancy for business class services, and other redundancy ratios for residential data services.

Flexible Mapping
The 2Dx12U CAM provides flexible upstream-to-port and upstream-to-downstream mapping. The upstream-to-downstream mapping provides the ability to map any number of the 12 upstreams to either of the downstreams. The result is that operators have a number of options available for system configuration (e.g., 1:4 & 1:8, 1:6 & 1:6, 1:11 & 1:1, etc.) which provides greater flexibility to meet different DS:US ratios that many advanced services such as telephony, peer-to-peer, gaming, and commercial services require.

The 2Dx12U CAM also supports flexible upstream port mapping. This allows any number of the 12 upstream channels to be assigned to any of the eight physical RF ports without affecting other subscribers already receiving service. This enables virtual node splits that can help to reduce or even eliminate physical wiring changes normally associated with node splits.

Ingress Cancellation
Ingress noise cancellation and the spread spectrum characteristics of S-CDMA provide critical performance improvements by increasing the immunity of the upstream carriers to ingress noise. The 2Dx12U CAM has demonstrated that it is capable of handling noise sources above 0 dBc in power. Additionally, cancellation of as many as 16 different ingress sources has been successfully demonstrated.

Spectral Monitoring
The 2Dx12U CAM design incorporates an all-digital RF front end. The entire available spectrum (5-42 MHz, 5-55 MHz or 5-65 MHz) is digitized on each of the CAM's eight upstream physical ports. By using digital signal processing techniques, the C4 CMTS can report upstream signal-to-noise ratio (SNR) with increased accuracy and on a per-cable modem basis.

- **High density**
- **Flexible upstream mapping**
- **Symmetric services and improved upstream performance using advanced DOCSIS 2.0 capabilities**

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Specifications

RF Downstream:	Frequency Range (MHz) ..... 91-857 (DOCSIS); 112-858 (Euro-DOCSIS)
	Modulation (QAM) 64, 256
	Data Rate (Mbps) (max.) ..... 30.34 to 55.62
	RF Output Level (dBmV) ..... 50 to 61
	Typical Modulation Error Ratio (MER) (dB) 47
	Symbol Rates ..... 5.057 Msym/sec (64 QAM)
	5.361 Msym/sec (256 QAM)
	Bandwidth (MHz) ..... 6 (DOCSIS); 8 (Euro-DOCSIS)
	Output (load) impedance (ohms) 75
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
	RF Input Receive Level (dBmV) ..... -16 to +29
	Bit rate range per channel (Mbps) ..... 0.32 to 30.72
	Input impedance (ohms) 75
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 (HxWxD) in. (cm) ..... 24.5 x 17.4 x 20.0
	(64.6 x 44.2 x 50.8)
	Weight lbs (kg) ..... approx 4 (1.8)

C4 CMTS 2Dx12U CAM Ordering Codes & Descriptions

#719356 ..... 2Dx12U Cable Access Module (CAM)
DOCSIS 2.0