

E6000[®] Converged Edge Router

Downstream Cable Access Module 2 (DCAM-2)



PRODUCT OVERVIEW

The E6000[®] Converged Edge Router (CER) is a next-generation Converged Cable Access Platform (CCAP[™]) that provides cable operators unprecedented advances in channel density, power efficiency, and cost savings in a redundant, integrated architecture designed from the ground up for high availability. This powerful design enables operators to converge all services (video, high speed data, and voice) on a single physical connector, enabling additional savings in capital and operational expenditures along with increased operational efficiency. The DCAM-2 is an integral component of the second generation (known as “Gen 2”) set of line cards for the E6000 CER; the Gen 2 modules have been created to deliver additional service group density and greater throughput per service group. Both of these capabilities provide significant benefits for operators by enabling advanced service offerings while requiring less space and power in the head-end. Operators deploying the DCAM-2 can realize up to a 71% increase in total service groups per E6000 chassis; in addition, the DCAM-2 supports mass deployment of DOCSIS[®] 3.1 while maintaining all existing DOCSIS 3.0 channels and services. Use of the DCAM-2 requires the RSM-2 and can be implemented via field migration with simple changes to the E6000 chassis. The DCAM-2 can be used to provide the downstream MAC processing to enable Remote PHY (R-PHY operation) on the E6000 CER with a future software upgrade.

Roadmap for future capabilities is subject to change.

DCAM-2 provides a total of 16 physical ports per slot, delivering a 2x improvement in DS-SG as compared to the Gen 1 DCAM. For each of these 16 physical ports, DCAM-2 supports a downstream RF band up to 1.2 GHz. In addition, DCAM-2 is capable of supporting multiple 192 MHz OFDM channels per port. With these capabilities, DCAM-2 enables more service groups per chassis with more throughput in each service group. Operators receive significant benefits in terms of operational simplicity, cost savings, and competitive advantages by deploying DCAM-2. Use of DCAM-2 requires the RSM-2. DCAM-2 is not compatible with the Gen 1 RSM.

Roadmap for future capabilities is subject to change.



SUMMARY OF DCAM-2 FEATURES AND CAPABILITIES (PARTIAL LIST)

16 Physical Ports per Module (requires DPIC-2)

Full Spectrum Capable (108 MHz to 1218 MHz)

DCAM-2 Hardware Capable of Up to Four (4) Output Blocks per Port (Support in Software Determined by Release)

SC-QAM Output Block Supports Up to 32 SC-QAMs (Annex B) or 24 SC-QAMs (Annex A)

OFDM Output Block 192 MHz Wide

48 SC-QAMs (Max 32 DOCSIS/EuroDOCSIS™) plus 192 MHz OFDM per Port in Rel. 5.0

48 DOCSIS SC-QAM maximum per Port in Rel. 5.0 (Annex B, without IEQ or OFDM)

Additional SC-QAM and/or OFDM Density per Port in Later Releases (No Hardware Changes Required)

Downstream MAC Processing for Remote PHY Operation on the E6000 CER Acting as a CCAP Core (Future Software Upgrade)

DCAM-2 OPERATIONAL DIFFERENCES COMPARED TO DCAM GEN 1

DCAM-2 requires DPIC-2, does not operate with DPIC (Gen 1)

DPIC-2 uses MCX connectors (not F connectors like DPIC (Gen 1))

DCAM-2 does not have an RF test port (but power measurements are available in software via the DPIC-2)

DCAM-2 does not support SC-QAMs in the spectrum below 108 MHz

DCAM-2 is not compatible with the Gen 1 RSM, and the Gen 1 DCAM is not compatible with the RSM-2

Managing the E6000® CER is typically done via SNMP and/or CLI. The E6000 CER has multiple options available for IPDR, a useful tool for measuring bandwidth usage. Physical maintenance of the E6000 CER is very simple. Air filters, one in the front and another in the rear of the chassis, should be inspected and/or replaced per recommendations in the E6000 CER User Guide.

Roadmap for future capabilities is subject to change.

SPECIFICATIONS

RF Downstream

Frequency Range (MHz)	108 to 1218 (edge to edge)
Modulation (QAM)	All required by DOCSIS 3.0 and DOCSIS 3.1 (Specific software support varies by release)
Max OFDM Channel Width (MHz)	192 (Multiple channels supported per port)
Max SC-QAMs per Port	128 (Sum total DOCSIS and IEQ)
SC-QAM Data Rate (Mbps) (Max.)	30.34 to 55.62 per channel
SC-QAM RF Output Level (dBmV)	25 to 60

Physical

Power	-48 VDC
Power Consumption (W)	540 (typical at 25 °C)
Operating Temperature: Short Term °F (°C) Long Term °F (°C)	+23 to +131 (-5 to +55) +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)	13.8 x 1.2 x 17.8 (35.0 x 3.0 x 45.3)
Weight lbs. (kg)	Approx. 10.2 (4.6)

SPECIFICATIONS

Installation Environment (System Level)

Management Interfaces	100/1000 Mbps Ethernet (RJ-45) plus Console (serial port, RJ45)
NSI Connector Access	RSM-2 ports via front of chassis, RPIC-2Q ports via rear

Management Access (System Level)

In-band Management with Access Control Lists via any NSI port
Out-of-Band Management via dedicated Ethernet port on RPIC-2Q
Console (serial) port on RPIC-2Q

ORDERING CODES

Part Number	Description	Part Number	Description
1000508	Router System Module 2 (RSM-2)	1000509	Physical Interface Card for RSM-2 (RPIC-2Q)
1000536	GEN-2 Duplex Chassis Kit - Two RSM-2s, No CAMs	1000445	UCAM-2 (Must purchase PN 1000443 - 48 Upstream DOCSIS 3.0 licenses with this item)
1000537	GEN-2 Simplex Chassis Kit - One RSM-2, No CAMs	1000443	48 INITIAL US D3.0 UCAM-2 License Bundle - For Channels 1-48
1000506	DCAM-2 (Must purchase PN 1000488 - 128 DS DOCSIS 3.0 licenses with this item)	1000483	72 INITIAL US D3.0 UCAM-2 License Bundle - For Channels 1-72
1000488	128 INITIAL DS D3.0 DCAM-2 Annex A License Bundle - For Channels 1-128	1000458	96 INITIAL US D3.0 UCAM-2 License Bundle - For Channels 1-96
1000600	160 INITIAL DS D3.0 DCAM-2 Annex A License Bundle - For Channels 1-160	1000456	144 INITIAL US D3.0 UCAM-2 License Bundle - For Channels 1-144
1000489	192 INITIAL DS D3.0 DCAM-2 Annex A License Bundle - For Channels 1-192	1000457	192 INITIAL US D3.0 UCAM-2 License Bundle - For Channels 1-192
1000490	256 INITIAL DS D3.0 DCAM-2 Annex A License Bundle - For Channels 1-256	1000561	138 INITIAL US D3.0 UCAM-2 License Bundle - For Channels 1-138
1000493	128 INITIAL DS D3.0 DCAM-2 Annex B License Bundle - For Channels 1-128	1000515	24 US DOCSIS 3.0 SC-QAM License Bundle (UCAM-2 Only)
1000601	160 INITIAL DS D3.0 DCAM-2 Annex B License Bundle - For Channels 1-160	1000516	32 US DOCSIS 3.0 SC-QAM License Bundle (UCAM-2 Only)
1000494	192 INITIAL DS D3.0 DCAM-2 Annex B License Bundle - For Channels 1-192	1000444	48 US DOCSIS 3.0 SC-QAM License Bundle (UCAM-2 Only)
1000226	DOCSIS 3.1 Downstream Licenses - 1 MHz DS License Bundle.	1000325	Router System Module 2 Kit - 1 RSM-2 and RPIC-2Q
1000526	48 DS DOCSIS 3.0 SC-QAM Annex B License Bundle (DCAM-2 Only)	801169	E6000 Software Maintenance – Phone Plus Gold
1000535	48 DS DOCSIS 3.0 SC-QAM Annex A License Bundle (DCAM-2 Only)		

Full Price List available from ARRIS

CUSTOMER CARE

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