



## Casa Systems C2800 Digital Media Manager

The C2800 is an intelligent digital video head-end in a box. It is a provisioning and bandwidth management platform for digital media services such as digital broadcast video, digital simulcast video, switched broadcast video and unicast video (VOD and netPVR). It combines video switching and transport gateway functionalities with advanced digital media processing such as grooming, trans-rating and statistical multiplexing, and digital program insertion.

### Compact and Modular Architecture

The C2800 comes in a compact 1RU form factor. It is based on a modular architecture that gives video service providers the flexibility in tailoring their networks according to the requirements of their services. The C2800 consists of a base system with built-in Layer2/Layer3 Ethernet/IP switch and four slots for Media Processing Engine Modules, DVB-ASI modules, or QAM modules. The flexible architecture utilized by the C2800 allows for any combination of 1 to 4 Media Processing Engine Modules, 1 to 3 DVB-ASI modules, and 1 to 3 QAM modules. A minimum of one Media Processing Engine Module is needed in the system for advanced media processing. In aggregate, the C2800 achieves the highest port density in the industry, which contains 4 Gigabit Ethernet ports, up to 48 QAM channels, and up to 24 DVB-ASI ports.

### Advanced Media Processing and Management

The media processing engine at the core of the C2800 provides the most powerful MPEG processing capabilities available on the market today. It de-multiplexes multiple program transport streams, grooms the programs for the right channel line-up, trans-rates the programs to the desired number of streams per channel, inserts ad programs at the right spot, and re-multiplexes the programs to form new multiple program transport streams or single program transport streams to be sent to an internal QAM

or an external IP network. The digital program insertion function complies with industry standard and can interface with ad servers complying with SCTE 30 2001 (DVS-380) and SCTE 35 2001 (DVS-253). It can simultaneously groom up to 512 SD MPEG streams or 128 HD streams and performs concurrently advanced packet processing such as trans-rating and digital program insertion for up to 96 SD MPEG streams or 24 HD streams in a 1RU platform. It is the highest capacity grooming and trans-rating platform on the market today.

### MPEG Switching and Transport Gateway

The C2800 provides MPEG switching capability from any port to any port. It also aggregates program streams received on DVI-ASI interfaces and encapsulates the single program transport streams or multiple program transport streams into UDP/IP datagrams and outputs them into the GbE interfaces to be transported over IP networks.

## APPLICATIONS

### 1. Digital Broadcast and Digital Simulcast

The C2800 is perfect for digital broadcast or digital simulcast services. It provides all the functional components needed in deploying digital broadcast and digital simulcast services in a high reliability platform. It provides grooming and re-multiplexing, trans-rating, conditional access scrambling (DVB Simulcrypt) and QAM modulation and upconversion in a single box.

### 2. Ad Insertion

The digital program splicing capability built into this platform is ideal for local ad insertion. The splicing capacity of this platform enables targeted local ad insertion in a much finer granularity than available with other systems in its category and thus giving the service providers added revenue generating capability.

## FEATURE HIGHLIGHTS

### Grooming

Provides program line-up management flexibility at the edge of the network with the large capacity grooming function

### Trans-rating and Statistical Multiplexing

Offers statistical multiplexing of VBR traffic and intelligent trans-rating to maximize channel efficiency and bandwidth savings

### Digital Program Insertion

Provides the highest capacity program splicing for digital ad insertion

### MPEG Switching

Allows any of the incoming MPEG sources to be dynamically processed and routed to any output port

### High Capacity

Offers grooming of up to 512 streams and splicing and trans-rating of up to 256 concurrent streams in 1RU space

### High Reliability

Redundancy features for all critical components in the system

### Integrated QAM

Modular platform enables the integration of QAM modules

### System

24 Gbps switching capacity  
Ethernet switching and IP routing  
MPEG switching from any port to any port  
Four module slots  
Four types of modules: Media Processing Engine, DVB-ASI input, DVB-ASI output, and QAM

### GbE Interfaces

10/100/1000 Mbps  
4-port Copper or fiber SFP  
CWDM  
Full line-rate support

### Media Processing Engine Module

Support HDTV and SDTV streams  
MPEG de-multiplexing  
MPEG re-multiplexing  
Digital program insertion: 24 SD / 6 HD streams  
Trans-rating: 24 SD / 6 HD streams  
Grooming: 128 streams  
Unicast to multicast conversion  
PAT and PMT extraction and regeneration  
PID filtering and re-mapping

### QAM Module

Number of channels	16 channels
QAM constellations	64 & 256 QAM
Connector	F-type, 75 $\Omega$
Frequency range	50 to 860 MHz
Frequency step size	12.5 kHz
Channel width	6 to 8 MHz (tunable)
Channel output power	49 to 58 dBmV
Output step size	0.1 dB
Output stability	$\pm$ 0.3 dB
Return Loss	> 15 dB
Data Rates (Annex B)	64 QAM: 27 Mb/s 256 QAM: 38 Mb/s
Data Rates (Annex A)	64 QAM: 36 Mb/s 256 QAM: 56 Mb/s
Modulation Error Rate	40 dB

### DVB-ASI Input Module

8 DVB-ASI input ports  
BNC connectors  
Auto detection, 188 / 204 byte packets  
1 to 270 Mbps rate support  
SPTS or MPTS (according to ISO/IEC 13818)

### DVB-ASI Output Module

8 DVB-ASI output ports  
BNC connectors  
Auto detection, 188 / 204 byte packets  
1 to 270 Mbps rate support  
SPTS or MPTS (according to ISO/IEC 13818)

### Management

RS232 Serial port (DB9)  
10/100BaseT management port  
Web-based GUI interface  
Command Line Interface (CLI)  
SNMP  
Standard IETF MIBs  
Casa Systems Enterprise MIBs  
Event logging through Syslog and local log  
Performance monitoring  
Alarm monitoring  
Statistics collection

### Standard Compliance

DVB-ASI  
RIPv1, RIPv2, OSPF, IGMPv2  
SNMPv1, SNMPv3  
SCTE 30 2001 (DVS-380) and SCTE 35 2001 (DVS-253)

### Mechanical

Form Factor	1RU
Height	1.75 in. /44.45 mm
Width	19 in. /482.6 mm
Depth	23.5 in. / 597 mm
Weight	30 lbs / 13.62 kg
Mounting 1	19 inch, 1 rack unit high
Front Panel LED	Power, alarm, & I/O status

### Environmental

Operating temperature	0° to 50° C
Storage temperature	-40° to 70° C
Operating humidity	5% to 95%
Power supply	
AC operating range	90 to 264V
DC (optional)	-36 to -60 v
Power consumption	< 250 W

### Regulatory Compliance

Safety: UL/IEC/CSA 60950-1  
EMC: FCC Part 15 Class A and CISPR Class A  
Immunity: EN61000-4