

## Multi Format 4:2:2 10-bit AVC Encoder



### *H.264 HD/SD Encoder for Contribution over Satellite and IP networks*

As the world's first H.264 4:2:2 10-bit Encoder supporting from Main to High 4:2:2 profile, CM4101 is designed for contribution and distribution markets where premium quality and performance are more important than ever.

The CM4101, used in combination with ATEME IRD DR8400, is ATEME's cutting edge solution to Primary contribution, bringing Video Quality with 10-bit accuracy and controlled low latency.

CM4101 allows upgradeability from 4:2:0 SD up to 4:2:0/4:2:2 SD/HD with a simple license, a future proof solution to protect your investment.

By offering the first H264 4:2:2 10-bit complete solution, ATEME takes another technology step improving Video Quality over 8-bit, securing your Video Quality, end to end, completing the Video Quality chain from Primary Contribution point to Distribution point.

#### KEY FEATURES

- 4:2:2 / 4:2:0 8-bit / 10-bit SD/HD support
- Very Low Latency Mode
- FEC Pro MPEG and BISS - 0/1/E support
- MPEG-2 SD and HD support\*
- Easy front panel setup

#### BENEFITS

- True H.264 4:2:2 10-bit Solution, with CM4101 in combination with the DR8400, no downscale format in the Contribution chain
- 10-bit accuracy allowing high video quality from source to distribution with the best bandwidth efficiently
- CM4101 soft upgradeability, opening a safe path of evolution from 4:2:0 SD to 4:2:2 SD/HD 10-bit

## VIDEO SPECIFICATIONS

### Video Compression

SD/HD MPEG-4 AVC/H.264 10-bit or 8-bit – Main, High and High 4:2:2 Profile up to Level 4.1

SD/HD MPEG-2 422P@ML /HL

Options:

- HD license.
- 4:2:2 8b license.
- 4:2:2 10b license.

### Video formats

HD: 1080i, 720p and 1080psf

SD: 576i and 480i

Input format detection

### Encoding bit rate

SD: 0.5 to 30 Mbps, HD: 1 to 62.5Mbps

### Resolutions

1080i x 1920, 1536, 1440, 1280 and 960 pixels

720p x 1280, 1024, 960 and 640 pixels

576i x 720, 576, 544, 480 and 352 pixels

480i x 720, 640, 576, 544, 480 and 352 pixels

### Frame rates

1080i @ 25, 29.97, 30 Hz

1080p @ 23.97, 24, 25 Hz

720p @ 50, 59.94 and 60 Hz

576i @ 25 Hz, 480i @ 29.97 and 30 Hz

### Video Processing

Fixed or adaptive configuration

Automatic I frame insertion

Automatic scene cut detection

Multi-pass look-ahead CBR and Capped VBR

Linear and nonlinear spatial filtering\*

Inverse telecine (3:2 pull-down)

Logo insertion

### Ancillary data and signalling

Closed captioning compliant with EIA-608, EIA-708, SMPTE 334 and standard ATSC.

DVB Teletext/CEEFAX

Vchip parental control

VITC Time code

Wide Screen Signalling (WSS)

Active Format Description (AFD)

### Digital Program Insertion (DPI)\*

SCTE35 insertion via SCTE104 triggers or GPIO

### Standard: MPEG-2 TS / DVB / ATSC/ ISDB

## AUDIO SPECIFICATIONS

### Number of Channels

Native Encoding up to 8 stereo pairs, 5.1 audio service supports.

### Compression formats

MPEG-1 Layer II

MPEG-2/MPEG-4 AAC-LC

HEV1-AAC, HEV2-AAC (optional)

Dolby Digital E, AC.3/EAC.3 pass-through.

Dolby Digital Options\*:

Dolby Digital E decode to AAC LC, AAC HEV1

or Dolby Digital AC.3/EAC.3 Encode

Sampling frequency: 32, 44.1, 48 KHz

## OUTPUT TRANSPORT LAYER SPECIFICATIONS

MPEG-2 Transport Stream over UDP/IP or

RTP/UDP/IP

RTP/RTSP over UDP

Unicast / multicast streaming

MPEG-2 Transport Stream over DVB-ASI

ASI and IP streaming simultaneously

Options:

- FEC Pro MPEG CoP3r2 (SMPTE2022)

- BISS 0/1/E Encryption.

## INPUTS / OUTPUTS INTERFACES

### Video Input

HD-SDI (SMPTE292M)

SD-SDI (SMPTE 259M-C)

### Audio Input:

Embedded in SD-SDI (up to 8 stereo channel pairs SDI input)

AES-EBU input up to 8 stereo pairs or Analog input up to 8 Audio balanced (-10 dBV to +20 dBV/600 ohms)

### Output Interfaces

- 3 Gigabit Ethernet ports (100/1000 BaseT connectors): 2 ports for service streaming, 1 port out-of-band for management.

- 3 DVB-ASI outputs (75 Ohm BNC connector).

### Discreet I/O\*

Alarms and synchronization triggered on GPIO DB-9 connector.

## CONFIGURATION AND MANAGEMENT

DataMiner Networks Management System

SNMP (MIB v2c) with remote SNMP supervisor

Embedded web-server configuration

Front panel with LCD/keypad

## PHYSICAL

Dimensions 19" 1-RU (482x44,5x 508 mm/19"x1.75"x 20")

Weight 7.5 kg/16.5 lbs

## ENVIRONMENTAL

Cooling air flow from front to back

Operating temperature 5 to 40 °C / +41 ° to +104 °F

Storage temperature -20 to 70 °C / +32° to +158 °F

Operating humidity 5 to 90% (non condensing)

Input voltage range 100-240 VAC, 50/60 Hz

Typical consumption 80 W

## CERTIFICATIONS

ROHS

CE and FCC class B Certifications, ECM Compliancy:

- EN 55022: 2006,

- EN 55024: 1998 / A1 : 2001 / A2 : 2003,

- FCC PART 15 Class B: 2006,

- EN 61000-3-2: 2000 / A2 : 2005,

- EN 61000-3-3: 1995 / A1 : 2001 / A2 : 2005,

Safety:

- EN/UL/CA 60950-1

\*Contact Factory for availability