

Kyrion

CM5000



Complete Modular Encoder for Contribution over Satellite and IP networks

The Kyrion™ CM5000 is a new modular hardware encoder dedicated to contribution over satellite and IP / ASI networks. It can be mounted as a single or dual channel encoder, or single channel encoder and DVB-S/S2 modulator. Optional audio boards for analog or digital inputs can be added on two extension slots.

The Kyrion CM5000 delivers all MPEG-2 and MPEG-4 AVC video compression flavors: from SD to HD and 1080p50/60, and from 4:2:0 8-bit up to 4:2:2 10-bit with unrivaled video quality and reliability.

The CM5000 front panel and web interfaces meet all operational expectations with quick access to configuration menus and immediate settings ensuring a fast transmission start.

Based on ATEME's unique FPGA design, the Kyrion CM5000 is fully upgradeable and future proof, allowing broadcasters, satellite up-links, service operators, and DSNG professionals to benefit from the state-of-art in video compression technology.

KEY FEATURES

- SD/HD MPEG-4 AVC 4:2:0 8-bit / 4:2:2 8/10-bit support
- SD/HD MPEG-2 4:2:0 / 4:2:2 8-bit
- Confidence input monitoring
- Very low latency mode
- AVC – I frame only mode up to 110 Mbps
- FEC Pro MPEG and BISS - 0/1/E support

BENEFITS

- Higher Video Quality with 10-bit Encoding
- Fit for multiple Encode – Decode concatenations in 4:2:2
- Easy operation with intuitive interfaces
- Reduced booting time for instant set up
- Streamlined Encoder– Modulator configuration
- Software upgradeability

ateme

Keep content looking great wherever it's played

VIDEO SPECIFICATIONS

Video Compression

MPEG-4 AVC/H.264 (4:2:0/4:2:2 8-bit, 4:2:0/4:2:2 10-bit)
 MPEG-2 (4:2:0/4:2:2 8-bit)
 SD: 0.5 to 30Mbps, HD: 1 to 80Mbps
 MPEG-4 AVC – I frame only mode up to 110Mbps

Resolutions & Frame rates

1080i @ 25, 29.97, 30 Hz /1080p@ 23.97, 24, 25, 50, 59.94 Hz
 720p @ 50, 59.94, 60 Hz
 576i @ 25 Hz /480i @ 29.97, 30 Hz

Video Processing

CABAC, CAVLC, MBAFF, PAFF
 Resize & Noise Reduction filters, Psychovisual Enhancements
 Fixed GOP, Adaptive GOP, Open GOP, Close GOP
 Input format detection and auto configuration mode
 Automatic I frame insertion and Scene cut detection
 Multi-pass look-ahead CBR and Capped VBR, Logo insertion

Ancillary data & Signaling & Digital Program Insertion (DPI)

AFD, WSS, WST, VPS, VPI, VITC, ATC, CC, DPI, DVB
 TELETEXT, Vchip, SMPTE2031, OP47,
 SCTE35 insertion via SCTE104 triggers or GPIO*

AUDIO SPECIFICATIONS

Audio Compression

MPEG-1 Layer II
 Dolby Digital E, DD, DD+, AC3, AC3+, PCM pass-through
 MPEG-2/MPEG-4 AAC-LC, HEV1-AAC, HEV2-AAC (optional)
 Dolby Digital E decode /Dolby Digital (AC3) Encode (optional)
 Dolby Digital Plus (AC3+) Encode (optional)

OUTPUT TRANSPORT LAYER SPECIFICATIONS

MPEG-2 TS over UDP/ Unicast / Multicast streaming
 MPEG-2 TS over DVB-ASI (EN 50083-9)
 ASI and IP streaming simultaneously
 Conformance Standards: MPEG-2 TS / DVB / ATSC/ ISDB-Tb

INPUTS / OUTPUTS INTERFACES

Video Input

SD-SDI (SMPTE 259M-C)
 HD-SDI (SMPTE292M),
 3G-SDI (SMPTE-424M)

Audio Input:

Embedded in SDI (up to 8 pairs per video Input)
 AES-EBU input up to 8 pairs with optional AES board
 Analog input up to 4 Audio balanced (-10 dBV to +20 dBV/600 ohms) with optional ANL board

Output Interfaces

1 GbE port for out-of-band for management
 2 GbE ports for service streaming
 2 DVB-ASI outputs per Video Channel (75 Ohm BNC connector)
 L-Band RF output (950-2150MHz)*
 IF Band RF output (55-180 MHz)*

DVB-S (EN 300421)

Constellation QPSK, Code rate 1/2, 2/3, 3/4, 5/6, 7/8, Roll-off 0.35

DVB-S2 (EN 302307)

Constellation QPSK, 8PSK, 16APSK, 32APSK
 CCM, ACM**, VCM**, Short Frames, Long Frames, Roll-off 0.20, 0.25, 0.35
 Pilots ON, OFF, Symbol rate up to 45 Mbps

DVB-S (DSNG EN 300174)*

Constellation 8PSK, FEC 8PSK 3/5, 2/3, 3/4, 5/6, 8/9, 9/10

RF Outputs

Range from 950MHz to 2150MHz (Extended L-Band) or IF (55-180 MHz)*

Step size 1 Hz, Accuracy 0.2 Hz

Output level:

Main signal +5 / -20 dBm ± 1 dB, Monitoring -20dBm
 Stability ± 0.1 dB / 10°C, Return loss > 12 dB
 Attenuation range 0 to 22 dB, Attenuation step 0.1 dB
 Shoulder rejection < -45dB At f/fn = 2, Spurious < -50 dBc
 Ref External 10 MHz, input/output

CONFIGURATION AND MANAGEMENT

HTML Web Graphic User Interface
 Front panel with LCD Menus, 17 Keys for input & navigation
 SNMP (MIB v2c) with remote SNMP supervisor
 Presets import and export from USB slot

PHYSICAL & ENVIRONMENTAL

Dimensions 19" 1-RU (482 x 44 x 519 mm/19"x1.73"x 20.4")
 Min Weight 6,4 kg/14.1 lbs. – Max Weight 7,3 Kg /17 lbs.
 Power On/Off Switch on Front Panel
 Extraction Handles - User Serviceable Air Filters
 Cooling air flow from front to back
 Redundant Power supply 100-240 VAC, 50/60 Hz
 Typical consumption 90 W Single Channel
 Operating temperature 5 to 45 °C / +41 ° to +113°F
 Storage temperature -20 to 70 °C / +32° to +158 °F
 Operating humidity 5 to 90% (non condensing)

CM5000 Ordering References

	SD	HD	MPEG-2	MPEG-4	4:2:0 8-bit	4:2:2 10-bit	Max Rate (Mbps)	Audio Pairs per Video Channel	External AES Inputs	External Analog Inputs (if board)	DVB-S2 modulator (if board)	FEC	Bits
Single Channel													
CM5000-1-SD-8	✓	✓	✓	✓	✓	✓	40	4	Opt	Opt		✓	✓
CM5000-1-HD-8	✓	✓	✓	✓	✓	✓	40	4	Opt	Opt		✓	✓
CM5000-1-HD-10-AES	✓	✓	✓	✓	✓	✓	110	8	✓	Opt		✓	✓
Single Channel with Built-in modulator													
CM5000-1-SD-8-MLB	✓	✓	✓	✓	✓	✓	40	4	Opt	Opt	✓	✓	✓
CM5000-1-HD-8-MLB	✓	✓	✓	✓	✓	✓	40	4	Opt	Opt		✓	✓
CM5000-1-HD-10-MLB-AES	✓	✓	✓	✓	✓	✓	110	8	✓	Opt		✓	✓
CM5000-1-SD-8-MIF	✓	✓	✓	✓	✓	✓	40	4	Opt	Opt	✓	✓	✓
CM5000-1-HD-8-MIF	✓	✓	✓	✓	✓	✓	40	4	Opt	Opt	✓	✓	✓
CM5000-1-HD-10-MIF-AES	✓	✓	✓	✓	✓	✓	110	8	✓	Opt	✓	✓	✓
Dual Channels													
CM5000-2-SD-8	✓	✓	✓	✓	✓	✓	40	4	Opt	Opt		✓	✓
CM5000-2-HD-8	✓	✓	✓	✓	✓	✓	40	4	Opt	Opt		✓	✓
CM5000-2-HD-10	✓	✓	✓	✓	✓	✓	110	8	Opt	Opt		✓	✓

Hardware options:

CM5000-ANL External Analog inputs audio board + audio cable Support up to 4 audio stereo pairs
 CM5000-AES External Digital AES/EBU inputs audio board + audio cable - Support up to 8 audio stereo pairs

Software options:

CM5000-LIC-422-8 MPEG- 4 4:2:2 8-bit support for CM5000-1-X-8
 CM5000-LIC-HBR High Bitrate support up to 110 Mbps.
 CM5000-LIC-1080p 1080p50/60 support for CM5000
 CM5000-LIC-1632APSK Advanced modulation for CM5000-1-X-8/10-MOD
 CM5000-LIC-AUD4 4 audio stereo pairs support
 CM5000-LIC-AUD8 8 audio stereo pairs support
 CM5000-LIC-AAC MPEG-2/MPEG-4 AAC-LC Audio encoding
 CM5000-LIC-AACHEV2 HEV1-AAC, HEV2-AAC Audio encoding
 CM5000-LIC-DLBE-ALL Dolby Digital E Transcoding to DD/DD+ or AAC
 CM5000-LIC-DLB-DD+ Dolby Digital (AC3) / Dolby Digital Plus (AC3+) Encode
 CM5000-LIC-DVBSUB DVB subtitles 1 to 4 PID remux from IP input into output MPEG-2 TS

* With Modulator option

**Contact Factory for availability