

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, IP and 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 150 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

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 120Mbps ¹
MPEG-4 AVC – I mode up to 150Mbps ¹

Video Processing

CABAC, CAVLC, MBAFF, PAFF
Resize & Noise Reduction filters,
Psychovisual Enhancements
Input format detection
Auto input format configuration mode
Seamless Channel Insertion (SCI)

Ancillary data

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)

INPUTS / OUTPUTS INTERFACES

Video Input

SD-SDI , HD-SDI, 3G-SDI

Audio Input:

Embedded in SDI (up to 16 mono channels
per video Input)
AES-EBU input up to 16 mono channels with
optional AES board
Analog input up to 8 audio unbalanced
(-10 dBV to +20 dBV/600 ohms) with optional
CM5000-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
L-Band RF output (950-2150MHz) ²
IF Band RF output (55-180 MHz) ²

DVB-S

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

DVB-S2

QPSK, 8PSK, 16APSK, 32APSK
CCM, ACM ³, VCM ³, Short/Long Frames,
Roll-off 0.05, 0.10, 0.15, 0.20, 0.25, 0.35
Pilots ON, OFF, Symbol rate up 68 Mbps

DVB-S DSNG

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

RF Outputs

Step size 1 Hz, Accuracy 0.2 Hz
Main signal +5 / -20 dBm ± 1 dB
Monitoring -20dBm, step 0.1 dB
Ref External 10 MHz, input/output

OUTPUT TRANSPORT LAYER

MPEG-2 TS over UDP/ Unicast / Multicast
MPEG-2 TS over DVB-ASI (EN 50083-9)
ASI and IP streaming simultaneously

CONFIGURATION AND MANAGEMENT

HTML Web Graphic User Interface
Confidence Audio/video monitoring
Front panel with LCD Menus
17-keys keyboard for input & navigation
SNMP (MIB v2c)
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.
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)

¹ Depends on Software packages

² With Modulator option

³ Contact Factory for availability

CM5000 ORDERING REFERENCES

Software options:

CM5000-LIC-HD
CM5000-LIC-422-8
CM5000-LIC-1080p
CM5000-LIC-MPEG2
CM5000-LIC-1632APSK
CM5000-LIC-AUD4
CM5000-LIC-AUD8
CM5000-LIC-FEC
CM5000-LIC-BISS
CM5000-LIC-AAC
CM5000-LIC-AACHEV2
CM5000-LIC-DLBE-ALL
CM5000-LIC-DLB-DD+
CM5000-LIC-DVBSUB
CM5000-LIC-ZIXI

High Definition support
MPEG-4 4:2:2 8-bit support for CM5000-1-X-8
1080p50/60 support for CM5000
MPEG-2 support for CM5000-X-X-b
16 /32 APSKmodulation for CM5000-1-X-8/10-MOD
8 audio mono channels support
16 audio mono channels support
Pro MPEG FEC support for CM5000-X-X-b
Basic Interoperable Scrambling System support
MPEG-2/MPEG-4 AAC-LC Audio encoding
HEV1-AAC, HEV2-AAC Audio encoding
Dolby Digital E to DD/DD+ or AAC
Dolby Digital / Dolby Digital Plus encode
DVB subtitles 1 to 4 PID remux from IP into TS
Zixi FeederTM integrated support

Hardware options:

CM5000-ANL / External Analog inputs audio board + audio cable support up to 8 audio mono channels

CM5000-AES / External Digital AES/EBU inputs audio board +audio cable - Support up to 16 audio mono channels

	Standard Definition	High Definition	MPEG-2 4:2:0 & 4:2:2	MPEG-4 4:2:0 8-bit	MPEG-4 4:2:2 8-bit	MPEG-4 4:2:2 10-bit	Max Bitrate (Mbps)	Audio mono channels	External AES Inputs	External Analog Inputs	DVB-S/S2 modulator (IF-band)	DVB-S/S2 modulator (L-band)	FEC	BISS
Single Channel														
CM5000-1-SD-b	✓		Opt	✓	Opt		20	4	Opt	Opt			Opt	Opt
CM5000-1-HD-b	✓	✓	Opt	✓	Opt		20	4	Opt	Opt			Opt	Opt
CM5000-1-SD-8	✓		✓	✓	Opt		40	8	Opt	Opt			✓	✓
CM5000-1-HD-8	✓	✓	✓	✓	Opt		40	8	Opt	Opt			✓	✓
CM5000-1-HD-8-EVO	✓	✓	✓	✓	Opt	Opt	40	8	Opt	Opt			✓	✓
CM5000-1-HD-10-AES	✓	✓	✓	✓	✓	✓	110	16	✓	Opt			✓	✓
Single Channel with Built-in modulator														
CM5000-1-SD-8-MLB	✓		✓	✓	Opt		40	8	Opt	Opt		✓	✓	✓
CM5000-1-HD-8-MLB	✓	✓	✓	✓	Opt		40	8	Opt	Opt		✓	✓	✓
CM5000-1-HD-8-MLB-EVO	✓	✓	✓	Opt	Opt	Opt	40	8	Opt	Opt		✓	✓	✓
CM5000-1-HD-10-MLB-AES	✓	✓	✓	✓	✓	✓	110	16	✓	Opt		✓	✓	✓
CM5000-1-SD-8-MIF	✓		✓	✓	Opt		40	8	Opt	Opt	✓		✓	✓
CM5000-1-HD-8-MIF	✓	✓	✓	✓	Opt		40	8	Opt	Opt	✓		✓	✓
CM5000-1-HD-10-MIF-AES	✓	✓	✓	✓	✓	✓	110	16	✓	Opt	✓		✓	✓
Dual Channels														
CM5000-2-SD-b	✓		Opt	✓	Opt		20	8	Opt	Opt			✓	✓
CM5000-2-HD-b	✓	✓	Opt	✓	Opt		20	8	Opt	Opt			✓	✓
CM5000-2-SD-8	✓		✓	✓	Opt		40	16	Opt	Opt			✓	✓
CM5000-2-HD-8	✓	✓	✓	✓	Opt		40	16	Opt	Opt			✓	✓
CM5000-2-HD-8-EVO	✓	✓	✓	✓	Opt	Opt	40	16	Opt	Opt			✓	✓
CM5000-2-HD-10	✓	✓	✓	✓	✓	✓	110	32	Opt	Opt			✓	✓