

## ISDB-Tb Multi format Encoding



### *H.264 HD/SD/One-Seg Encoder*

The ATEME Kyrion® AM2101 is the Third Generation High Definition (HD) MPEG-4/H.264 encoder targeting a broad range of DTV applications. Its large operating scale - from 0.5 to 30 Mbps, with advanced Main and High Profile encoding, allow bouquet aggregators, broadcasters, and video service operators to reach their audiences with a revolutionized picture quality.

Applying state-of-the-art compression technology, the AM2101 is featuring the Ultra Efficiency mode enabling perfect HD below 5Mbps for IPTV and high density Terrestrial Distribution

AM2101 can come as a One-Seg encoder thanks to its unique FPGA design delivering unmatched mobile viewing experience.

AM2101 is coming with advanced audio feature with up to 8 pair stereo and option to encode Dolby AC3/AC3+ or decode Dolby digital E and encode to Dolby AC3/AC3+. Kyrion® AM2101 is a fully programmable hardware design offering a complete set of MPEG-4/H.264 tools including full support for interlaced video (MBAFF).

#### KEY FEATURES

- SD or HD H.264 High Profile Encoder
- One Seg encoding capable
- Native HE-AAC V2 audio encoding
- ISDB-Tb certified
- SD/HD Automatic switching
- SNMP control support

#### BENEFITS

- Easy migration from SD to HD
- Up to 8 Audio pairs with advanced Dolby audio processing featuring Dolby E to AC3/AC3+
- High quality HD encoding at sub 5 Mbps for IPTV with the Ultra Efficiency mode
- Integrated with DataMiner NMS solution for redundancy

## VIDEO SPECIFICATIONS

### Video Compression

- Main stream SD/HD MPEG-4 AVC/H.264 - Main and High Profile up to Level 4.  
Options and License:  
- One-Seg encoding mode: 320x180, 320x240  
- Ultra Efficiency Mode: Advanced encoding mode allowing highest Video Quality, perfect in Ultra low Bit rate encoding.  
- HD 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 30Mbps  
One-Seg: 128Kbps to 1MBps

### 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  
320x180, 320x240

### 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 signaling

- Closed captioning compliant with ARIB B-24, ARIB-B37  
Vchip parental control  
VITC Time code  
Wide Screen Signaling (WSS)  
Active Format Description (AFD)

### Digital Program Insertion (DPI)\*

- SCTE35 insertion via SCTE104 triggers or GPIO

### Standard:

**MPEG-2 TS /ISDB-Tb/ SBTVD (ABNT-NBR 15602)**

## 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) 24/32/48/64 Kbps  
Dolby Digital E, AC.3/EAC.3 pass-through.  
Dolby Digital Options\*:  
- Dolby AC.3/EAC.3 Encode  
- Dolby E decode to AAC LC, AAC HEV1 or Dolby 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  
Up to 4 multi network streams  
MPEG-2 Transport Stream over DVB-ASI  
ASI and IP streaming simultaneously  
Option: FEC Pro MPEG CoP3r2 (SMPTE2022)

## 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)  
Audio Options:  
- AES-EBU input up to 8 stereo pairs.  
- Analog input up to 16 Audio balanced (-10 dBV to +20 dBV/600 ohms)

### Synchronisation

- BlackBurst input  
- GOP generator input (STC over ASI)

### 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 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