

## MM08E - Audio IP/ASI/DVB Encoder

Professional multi-format and multi-channel audio encoder for AoIP and DVB applications



### Transport stream outputs (DVB/MPEG-2 TS)

- 1-8x TS over UDP/IP with Program and Service Tables
- 2x TS over ASI interface according to ETSI EN 300 468 with Program and Service Tables

### IP Streaming outputs

- Rock solid network connection even in stress conditions according to standards RFC 3550, RFC, 3551, RFC 3640, RFC 2250
- Professional Audio over IP streaming
- Forward Error Correction: Pro MPEG FEC
- Dual Streaming on two physically separated ethernet ports
- Optional: **Stream4Sure**: 2wcom streaming technology with different codecs/qualities and seamless switching of up to 4 streams

### Audio encoding

High quality multi-format audio encoding:

- MPEG 1/2 Layer 1,2 and 3, G.711, G.722, MPEG 2/4 AAC-LC, HEv1, HEv2, AAC-LD, Linear PCM
- Optional: Enhanced aptX

### Ancillary Data

- Synchronized and embedded in Audio over IP stream (RTP/UDP)
- As private stream with its own PID
- As ancillary data in audio elementary stream

### Control

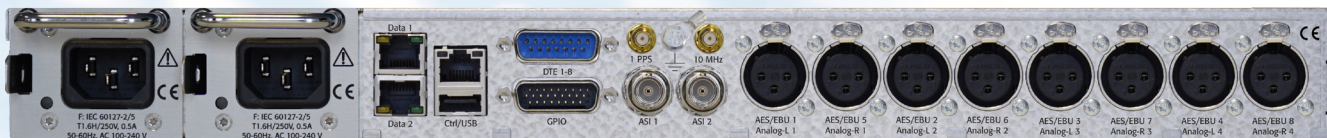
- Remote control with various possibilities – HTTP, Telnet, NMS, SNMP
- Revised configuration via web user interface for easier setup
- SNMP v2c, relays, inputs

### Special

- Livewire support with routing protocol (LWRP), advertisement, GPIO
- Energy efficient 24/7 broadcast quality
- RDS decoding (built in RDS/UECP decoder)
- Embedded Auxiliary data (RBDS/RDS or PAD) and GPIO forwarding
- On request: Perfect network synchronization for SFN applications

### High sophisticated monitoring and alarm concept

- IP and MPEG parameters via SNMP v2c and relay
- Headphone output
- SNMP, Alarm, source switch & event logging



Rear view MM08E - DVB Audio IP Encoder

# MM08E - DVB Audio IP Encoder – Technical Details

## Audio encoder

### Codecs

Standard	MPEG 1/2 Layer 2, 3 MPEG 2/4 AAC LC/LD, HEv1&v2 Linear PCM
Optional:	E-aptX ask for other codecs
Sample Rates	32 kHz, 44.1 kHz, 48 kHz

## Contact closure

Inputs	16x 26 pole sub-D male
Outputs	3+1 floating relays 3 Relays SPST (Form A) 1 Relay SPDT (Form C) (for DC: max. 30 V, 0.5 A) 26 pole sub-D male

## Interfaces

### Audio

Digital (in)	8x Stereo AES/EBU, 110 Ω balanced integrated XLR
Analogue (in)	4x Stereo L/R, <20 Ω balanced integrated XLR
Livewire Headphone (out)	4x AES67 via RTP/UDP L/R, <10 Ω, 6.3 mm
Gain	-32...+6 dB
Dynamic range	16 Bit, >89 dB 24 Bit >130 dB
Frequency response	0.1 dB; 20 Hz .. 20 kHz
Total harmonic distortion (THD)	Digital: < 0.00002 % Analogue: < 0.002 %
Signal to noise ratio - SNR (CCIR weighted, QPEAK)	Digital: > 120 dB Analogue: > 83 dB

### Ethernet

Data	Audio, serial data and GPIO transmission, Controlling and Setup functions
Connector	3x RJ45 (2x data, 1x ctrl)
Type	Auto Switching 10/100/1000 BASE-T
Protocol	RTP/RTCP/UDP, IGMP, ICMP, DHCP, HTTP, SNMPv2c, NTP, TCP

### ASI

Data	MPEG2 TS
Connector	2x BNC 270 Mbps

### Serial

Interface	9x RS-232C (1 front, 8 rear) Sub D-15
Data	Private data, MPEG ancillary data, UECP/RDS (acc. to TR 101 154)e
Transmission rate	1200 to 115200 baud, asynchronous
USB	1x USB 2.0 Interface for service, configuration and firmware

### Time Synchronization (on request)

1PPS, 10 MHz	SMA connector
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## Control & monitor

User interface	Integrated WebGUI, LCDisplay
Protocols	HTTP, SNMPv2c, UDP, RTCP, FTP, ICMP, IGMP, NTP
USB	USB 2.0 Interface for service, configuration and firmware updates

### Front panel

LCDisplay	Graphical, 264x64 pixel
Jog wheel	Impulse, Enter button
4 Duo LEDs	Power, Input, Output, Warning
RS-232C (Front)	1x serial interface for setup data and setup function

## General data

Power consumption	40 VA
Case dimensions	19", 1 HU, depth: 310 mm, width: 424 mm, front panel: 484 mm
Weight	<5 kg
Housing	steel plate (aluminum-zinc coated)
Operating temp. range	0...+45°C
Storage temp. range	-40...+70°C

### Power supply

2 hot swap power supplies required from this selection:	
Red. 230 VAC (hot swap)	90...260 VAC, 47...63 Hz aut. switchover
Red. 48 VDC (hot swap)	40...60 VDC Neutrik powerCON, aut. switchover
Languages	English

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These data are subject to  
modifications and amendments.  
Errors excepted

