MAP200E
MPEG/DAB AUDIO ENCODER
Operates according to the international standards: ISO/IEC 11172-3 (MPEG-1), ISO/IEC 13818-3 (MPEG-2), ETS 300 401 (DAB) and STI (ETS 300 797).

MAP200E is a general purpose MPEG-1 and MPEG-2 Layer II audio encoder. It is especially well suited for DAB applications, but can also be used for MUSICAM and other professional telecommunication applications.

BASIC FEATURES
- Audio encoding according to MPEG-1 and MPEG-2 Layer II standard, optimised for DAB applications.
- Dynamic seamless reconfiguration of encoder settings.
- Supports STI output with CRC.
- WG1/WG2 and dual X.21 (V.11) output interfaces.
- PAD is supported according to the IRT recommendation. PAD allocation can be dynamic or static.
- Digital audio input (AES/EBU or S/PDIF).
- Analogue audio input with 20-bit A/D conversion.
- Software controlled audio input level and input impedance (analogue inputs only).
- Silence detection on audio inputs.
- Automatic detection of external reference frequency (X.21).
- Sample rate conversion to any possible frequency from 16 kHz to 96 kHz with 24-bits resolution.
- Selectable de-emphasis of incoming audio according to the J.17 or 50/15μs standards.
- Remote control and monitoring via RS-232 or CAN bus interface.
- Alarm relay output with user programmable alarm sources.
- Bar graph display and headphone output for easy monitoring of audio levels.
- Flash memory technology for easy upgrade of software and firmware.
- All DAB bit rates and audio modes are supported.
TECHNICAL SPECIFICATIONS MAP200E

DIGITAL INPUT
Input type AES/EBU or S/PDIF
Input impedance 120 Ω ±5 % (AES/EBU, professional standard).
Connector XLR female

ANALOGUE INPUT
Input type Balanced
Headroom to digital clipping for 0 dBu input (no emphasis):
18 dB, software adjustable ±12 dB in 1 dB steps.
Emphasis options: Emphasis can be removed digitally.
Input impedance SW selectable between 600 Ω or a high impedance (> 10 kΩ)
Frequency response ± 0.1 dB, 20 Hz – 20 kHz (when using no emphasis and 48 kHz sample frequency).
CMRR > 80 dB
Max. input voltage on any terminal: ±15 V (terminals are diode clamped to ±15 V).
Connectors XLR female

PAD DATA INPUT
Input/Output type RS232
Input impedance No termination resistor is provided.
Connector Sub miniature D-type, female, 9-pin.

REMOTE CONTROL
Input/Output type RS232 and CAN bus
Input impedance No termination resistor is provided.
Connector 2 Sub miniature D-type, female, 9-pin.
The CAN bus interface is compatible with the Factum DAC100 audio controller system.

DIGITAL TO ANALOGUE CONVERSION
The digital-to-analogue conversion is used for the monitor output only.
D/A conversion principle Digital interpolation filter followed by a 128x 3rd order delta
sigma digital-to-analogue conversion.
Sampling frequency 48 kHz
Resolution 24 bit
Distortion < 0.05% at 1 kHz, measured at maximum digital input level
and maximum output level into a 33 Ω load.
S/N Ratio > 80 dB (measured with an audio bandpass filter).

OSCILLATOR FEATURES
The bit rate and sample frequency clock can be generated internally or inserted to the
unit from an external clock reference source.
Accuracy Better than ±15 ppm when using internal reference (free running). Equal to external source accuracy when using an
external reference.
External reference options The on board PLL can lock up to the following sources:
Via the X.21 port: All supported bit rates can be used (RS422 format)
Via the WG1/WG2 port: 6144 kHz (RS422 format)
PLL lock range At least ±60 ppm

SUPPORTED BITRATES AND SAMPLE FREQUENCIES
The MAP200E supports the sampling frequencies 24 and 48 kHz. The combination of
sampling frequency, bit rate and mode supported by MAP200E is listed in the table below:

<table>
<thead>
<tr>
<th>Bitrate [kps]</th>
<th>Layer II [kHz]</th>
<th>24</th>
<th>48</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>YES</td>
<td>S. ch. mode only</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>128</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>256</td>
<td>YES**</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>512</td>
<td>YES**</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>1024</td>
<td>YES**</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>2048</td>
<td>YES**</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>4096</td>
<td>All except s. ch.</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>8192</td>
<td>All except s. ch.</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>16384</td>
<td>All except s. ch.</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>32768</td>
<td>All except s. ch.</td>
<td>YES</td>
<td></td>
</tr>
</tbody>
</table>

*YES* means that all modes are possible.
**144 kbps is only supported in STI or WG1/WG2

STANDARDS: SUPPORT & EXCLUSIONS

MPEG-1 (ISO/IEC 11172-3)
Bits rates and sample frequencies supported according to the
table above. Only layer II is supported.

MPEG-2 (ISO/IEC 13818-3)
Bits rates and sample frequencies supported according to the
table above. Only layer II is supported.

DAB (ETS 300 401)
PAD is supported according to the IRT protocol
recommendation. Scale factor CRC is supported.

STI (ETS 300 797)
WG1/WG2 and X.21 (V.11) interfaces are supported

ENVIRONMENT & MECHANICAL DATA

Temperature range +5 to +50 °C
Housing 19” instrument cabinet, 1 height unit.
Dimensions 483 x 269 x 44 mm (W x D x H)
Weight Approx. 3 kg.

POWER SUPPLY
Mains voltage 100-240 VAC (IEC 320 mains connector)
Frequency 48-64 Hz
Power consumption Approx. 25 W

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Note: The information on this sheet is subject to change without notice.