**EMX-5000**
Integrated ISDB-T/Tb Headend

**Full functions of ISDB-T/Tb headend system integrated in only 1U unit**

EMX-5000 is a totally new solution for ISDB-T/Tb. This highly-integrated headend system has various functions required in ISDB-T/Tb broadcasting systems. Up to four channels H.264 hardware encoders, ten input multiplexer and ISDB-T/Tb re-multiplexer are all integrated into only 1U chassis. Introducing solely one unit to your existing system brings you the capabilities of ISDB-T/Tb multi-service composed of HD, SD and 1seg. EMX-5000 also has PSI generation and insertion functions required in the ISDB-T/Tb standard. It is possible to make settings and changes easily by using the Web GUI. In addition, four TS inputs are equipped in EMX-5000. It is possible to multiplex the external TS signals incoming from Data-cast server, external encoders, and so on.

**The quickest means to jump into the new era of digital broadcast**

EMX-5000 has analog V/A inputs and various conversion functions (analog to digital conversion, up conversion, down conversion, etc.). It is possible to achieve digital broadcasting easily by inputting analog signal from your existing analog television master system. Furthermore, EMX-5000’s distribution function of input signals enables two or more simultaneous broadcasting services from one input. EMX-5000 is the best solution to enable the full service of ISDB-T/Tb broadcasting with a minimum investment.

**PRODUCT OVERVIEW**

- **Multi-independent H.264 encoder modules**
  - (with eight channels of embedded audio)
  - Two encoder modules are mounted on the main board
    - HD/SD single channel encoder module x 1
    - SD/1seg dual channel encoder module x 1
  - One encoder module can be added (optional)
    - HD/SD single channel encoder module x 1

- **Multi-layered multiplexer and ISDB-T/Tb re-multiplexer**
  - Ten inputs multiplexer
  - Multi-layered multiplex
  - Multiplexing of four external TS inputs
  - PID filters and remap functions
  - BTS (DVB-ASI) output by re-multiplexing MPEG-TS
  - Supporting cascade connections

- **Multi input format**
  - HD/SD-SDI with embedded audio
  - Analog video : NTSC M/U, PAL N/M
  - Analog audio : Stereo (L/R), Monaural

- **Signal conversion**
  - A/D converter, Up converter, Down converter
  - Inter-conversion between Interlace and Progressive

- **Static logo insertion**
  - Insertion of static logo data (ARGB file) on a screen per each channel

- **Built-in Web server**
  - Easy operation by using Web browser
  - Bilingual Web GUI (English and Spanish)
  - Remote control and maintenance via Ethernet

- **PSI generator and inserter**
  - PSI generated and insertion using built-in Web editor or TS packet file

- **Alarm interface**
  - Ethernet (RJ-45, SNMP) and DIO (D-sub 9pin)

- **Device management**
  - Updating software and firmware via Ethernet
  - Downloading error / operation log via Ethernet

- **Redundant power supply**
  - Hot swapping with redundant power supply units
  - 100V - 240VAC ±10%
  - 50 / 60Hz ±5%

- **Low Power Consumption**
  - Less than 65 VA
**EMX-5000 Integrated ISDB-T/Tb Headend**

**Specifications**

### PHYSICAL / POWER / ENVIRONMENTAL CONDITIONS

<table>
<thead>
<tr>
<th>PHYSICAL / POWER / ENVIRONMENTAL CONDITIONS</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W x H x D)</td>
<td>482.6mm x 43mm x 430mm</td>
</tr>
<tr>
<td>Weight</td>
<td>&lt; 7kg</td>
</tr>
<tr>
<td>Input Voltage Range</td>
<td>100V ~ 240VAC ±10%</td>
</tr>
<tr>
<td>Line Frequency</td>
<td>50 / 60Hz ±5%</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>&lt; 65VA</td>
</tr>
<tr>
<td>Cooling</td>
<td>2 fans &quot;air flow : front to side&quot;</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>+10° to +40°C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>-20° to +60°C</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>&lt; 95% &quot;non-condensing&quot;</td>
</tr>
</tbody>
</table>

### INTERFACE

**Input**

- **SD-SDI**: Video: SMPTE 259M, Audio: SMPTE 272M
- **Analog Video**: NTSC / PAL Composite Video Signal
- **Analog Audio**: Stereo (L/R), Monaural
- **DVB-ASI**: MPEG2-TS (188byte or 204byte)
- **Reference signal**: 10MHz : frequency reference signal, 1pps : time reference signal

**Output**

- **DVB-ASI**: MPEG2-TS (204byte)
- **MONITOR**: MPEG2-TS (188byte or 204byte)
- **ALARM**: Relay contact alarm output
- **A-CTRL**: Audio mode control (Stereo / Mono / Mute)
- **Console**: RS 232C
- **Ethernet**: 100BASE-TX

### ENCODING

<table>
<thead>
<tr>
<th>HD/SD-SDI</th>
<th>SD-SDI</th>
<th>SDI 3-1</th>
<th>SDI 3-2</th>
<th>V-IN1</th>
<th>V-IN2</th>
<th>1SEG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video</td>
<td>Audio</td>
<td>Video</td>
<td>Audio</td>
<td>Video</td>
<td>Audio</td>
<td>Audio</td>
</tr>
<tr>
<td>Compression Format</td>
<td>H.264/MPEG-4 AVC (MP@L4.0 and HP@L4.0)</td>
<td>H.264/MPEG-4 AVC (BP@L1.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modes</td>
<td>1920 x <a href="mailto:1080@29.97i">1080@29.97i</a>, 25i</td>
<td>720 x <a href="mailto:480@29.97i">480@29.97i</a></td>
<td>720 x 576@25i</td>
<td>720 x 576@25i</td>
<td>320 x <a href="mailto:180@29.97p">180@29.97p</a>, 25p</td>
<td></td>
</tr>
<tr>
<td>Aspect Ratios</td>
<td>16:9</td>
<td>16:9 / 4:3</td>
<td>16:9 / 4:3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encoding Bit-Rate</td>
<td>5.0 to 20.0Mbps (CBR)</td>
<td>2.0 to 14.0Mbps (CBR)</td>
<td>128 to 768kbps (CBR)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**AUDIO**

- **Compression Format**: MPEG-4 AAC-LC (LATM), MPEG-4 HE-AACv1 (LATM), MPEG-4 HE-AACv2 (LATM)
- **Modes**: Stereo : 1S, 2S, 3S, 4S, Mono : 1M, 2M, 3M, 4M
- **Sampling Frequency**: 48 KHz
- **Encoding Bit-Rate**: Stereo/Mono Mode : 96 to 384kbps, 5.1ch Mode : 256 to 384kbps

### INPUT MATRIX

<table>
<thead>
<tr>
<th>ENC 1</th>
<th>ENC 2 (Option)</th>
<th>ENC 3-1</th>
<th>ENC 3-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD Mode</td>
<td>SD Mode</td>
<td>HD Mode</td>
<td>SD Mode</td>
</tr>
<tr>
<td>SDI 1 (HD/SD)</td>
<td>○</td>
<td>○</td>
<td>X</td>
</tr>
<tr>
<td>SDI 2 (HD/SD)</td>
<td>X</td>
<td>X</td>
<td>○</td>
</tr>
<tr>
<td>SDI 3-1 (SD)</td>
<td>○</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>SDI 3-2 (SD)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>V-IN1 (Composite)</td>
<td>○</td>
<td>○</td>
<td>X</td>
</tr>
<tr>
<td>V-IN2 (Composite)</td>
<td>○</td>
<td>○</td>
<td>X</td>
</tr>
</tbody>
</table>

1) *2) When using this function, you need to purchase a separately sold cable dedicated for this purpose.

**CONTACT**

Community Solutions Company
72-34, Horikawa-cho, Saiwai-ku, Kawasaki 212-8585, Japan
tel: +81-44-331-0716 fax: +81-44-548-9560 Email: gbx@po.toshiba.co.jp

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