**FACTSHEET**

**IDB-1394 Single-Chip Controllers**

**IDB-1394 COMPLIANT** Single-chip controllers MB88388A (imaging) and MB88389 (audio)

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**Description**

The MB88388A is the industry’s first device to support vehicle navigation imaging using the IDB-1394 standard. The controller implements the Fujitsu proprietary SmartCODEC, a video codec specified under the IDB-1394 international standard for in-vehicle video transmission. SmartCODEC can compress and de-compress high-resolution video without perceptible latencies in 2-3ms. By combining the MB88388A with the MB88389 IC for IDB-1394 compliant audio, it is possible to realise a high-quality, cost-effective, rear-seat entertainment system.

**Features**

- S400 1394b PHY x 2 port with link layer
- BT.601 video I/F: BT656/digital RGB
- FS audio I/F or IEC6058 (S/PDIF)
- 16-bit MPU/DMA I/F or SPI/FC host I/F
- SmartCODEC: 1/3 compression engine
- DTCP cipher/decipher, AES accelerator
- IEC61383 AV protocol function
- Asynchronous and isochronous FIFOs
- 3.3V (I/O) and 1.8V (internal)
- LQFP-216 package (MB88388A), LQFP-100 package (MB88389)

**Applications**

- In-car entertainment system
- Passenger display systems
- Vehicle camera data network for passive and active safety
- Vehicle camera for parking aid or reverse view

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MB88388A — the first device to support vehicle navigation using IDB-1394.
High-quality, cost-effective, rear-seat entertainment systems can be developed by combining the MB88388A with the MB88389.

<table>
<thead>
<tr>
<th>Product</th>
<th>MB88388A</th>
<th>MB88389</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Layer</td>
<td>Complies with IEEE-1394b-2002, max speed 400Mbps, 2 beta port</td>
<td>Complies with IEEE-1394b-2002</td>
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<tr>
<td>Link Layer</td>
<td>Simultaneous encryption and decryption of two streams</td>
<td>Simultaneous encryption and decryption of two streams</td>
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<tr>
<td>DTCP Functionality</td>
<td>IEC61883-Part 8 (BT.601)(^2)</td>
<td>IEC61883-Part 6 (Audio)(^3)</td>
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<tr>
<td>Transport Protocol Support</td>
<td>IEC61883-Part 6 (Audio)(^3)</td>
<td>IEC61883-Part 6 (Audio)(^3)</td>
</tr>
<tr>
<td>Video Interface</td>
<td>1 x BT656 or Digital RGB I/O (selectable)</td>
<td>None</td>
</tr>
<tr>
<td>Audio Interface</td>
<td>2 x I²S(^4) 8-channel I/O</td>
<td>2 x I²S 8-channel or IEC60958(^5) I/O</td>
</tr>
<tr>
<td>SmartCODEC</td>
<td>Included</td>
<td>Not included</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>3.3V ±0.3V (I/O), 1.8V±0.15V (internal)</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>24mm x 24mm</td>
<td>LQFP 100 pins, 0.5mm pitch, 14mm x 14mm</td>
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</table>

Notes:
1. IEEE-1394b-2002: An extension to the older IEEE1394a-2000 high-speed serial-bus standard used for PCs and audio-visual equipment. Expansions to this standard are currently underway, to enable faster transmission speeds and transmission across longer distances. This standard has been adopted for IDB-1394.
2. IEC61883-Part 8 (BT.601): IEC61883 is a transmission protocol established by the International Electrotechnical Commission, for digital interfaces of audio and visual equipment. BT.601 Transport Over IEEE-1394 is in the process of being ratified as Part 8.
5. IEC60958: A standard established by the International Electrotechnical Commission for digitally transmitting audio signals.