High-Density Video Distribution

The HDbridge3000 provides a highly flexible solution for delivery of cable, satellite, and IPTV video content all within a compact 3RU footprint. HD and SD video can be simultaneously output in both RF and IP formats.

The flexible, modular design of the chassis provides 12 media slots with the flexibility to mix-and-match HDMI, component, and composite cards, making it ideal for professional-grade video distribution. Adjustable rack ears can be moved to either the front or rear of the unit, allowing front-facing or rear-facing media modules and power supplies. What’s more, if an existing media module is replaced with the same type of module, it is automatically programmed by the control module to use the same settings as the previous module, saving valuable time, and eliminating expensive truck rolls.

Feature Summary

• Compact 3RU form-factor
• 12 media module slots for delivery any type of content regardless of source inputs
• Simultaneous video output in both RF over coax and IP over CATx
• Up to 24 channels of HD content or 72 channels of SD content
• Zero downtime with fully redundant and hot-swappable media modules, fans, and power supplies
• No active components on the backplane means higher reliability
• Configured and maintained using ZeeVee’s Maestro management platform
• Distribute video over RF to an unlimited number of displays leveraging the QAM tuner in the TV
• LCD panel on control module displays on-site status and configuration information
• ZvEAS connects to national EAS and allows for local emergency message information
• Playback custom content using the ZvShow channel
• Ease of management with Maestro management platform

Media Module Specifications (continued)*

YPbPr (720p)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>3KAVE2R7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W x H x D)</td>
<td>0.85&quot; x 5.0&quot; x 11.0&quot; (21 mm x 127 mm x 279 mm)</td>
</tr>
<tr>
<td>Video Interface</td>
<td>2 x 13-pin, DIN</td>
</tr>
<tr>
<td>ZvShow - Extra Digital Channel</td>
<td>4 GB video loop in MPEG2 PS format</td>
</tr>
<tr>
<td>Digital Audio</td>
<td>S/PDIF input, supports PCM or Dolby® Digital audio</td>
</tr>
<tr>
<td>Analog Audio</td>
<td>L/R stereo line-level input</td>
</tr>
<tr>
<td>Average Encoding Data Rate</td>
<td>18 Mb/s per channel</td>
</tr>
<tr>
<td>Encoding Latency</td>
<td>Programmable, 200 ms - 400 ms</td>
</tr>
<tr>
<td>Delayed Match Audio Output</td>
<td>2 ports of delay-matched audio</td>
</tr>
<tr>
<td>Modulation Types</td>
<td>Module generates up to 2 RF channels</td>
</tr>
</tbody>
</table>

Composite

<table>
<thead>
<tr>
<th>Part Number</th>
<th>3KSVE6R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W x H x D)</td>
<td>0.85&quot; x 5.0&quot; x 11.0&quot; (21 mm x 127 mm x 279 mm)</td>
</tr>
<tr>
<td>Video Interface</td>
<td>6 x Composite, 3.5 mm</td>
</tr>
<tr>
<td>ZvShow - Extra Digital Channel</td>
<td>N/A</td>
</tr>
<tr>
<td>Digital Audio</td>
<td>N/A</td>
</tr>
<tr>
<td>Analog Audio</td>
<td>Each 3.5 mm AV jack supports L/R stereo line-level audio</td>
</tr>
<tr>
<td>Average Encoding Data Rate</td>
<td>18 Mb/s per channel</td>
</tr>
<tr>
<td>Encoding Latency</td>
<td>Programmable, 200 ms - 400 ms</td>
</tr>
<tr>
<td>Delayed Match Audio Output</td>
<td>N/A</td>
</tr>
<tr>
<td>Modulation Types</td>
<td>Module generates up to 2 RF channels</td>
</tr>
</tbody>
</table>

*For additional specifications please refer to the HDbridge3000 product page on zeevee.com.
Module Features

Hdb3000 - 3KHE2R (HDMI)
- 2 channels of HDMI encoding and modulation (QAM), delivers up to 24 channels per chassis
- 2 channels of IP stream generation*
- Includes ZvShow bonus channel with over 4GB of internal storage
- 2 channels of independent delayed matched audio

Hdb3000 - 3KAVE2R7 (720p YPbPr) & 3KAVE2RH (1080p YPbPr)
- 2 channels of component encoding and modulation (QAM), delivers up to 24 channels per chassis
- 2 channels of IP stream generation*
- Includes ZvShow bonus channel with over 4GB of internal storage
- 2 channels of independent delayed matched audio
- Closed captioned capability
- Content controls

Media Module Specifications*

HDMI
- Part Number 3KHVE2R
- Dimensions (W x H x D) 0.85” x 5.0” x 11.0” (21 mm x 127 mm x 279 mm)
- Video Interface 2 x HDMI v1.3 Type-A, 19-pin, female
- ZvShow - Extra Digital Channel 4 GB video loop in MPEG2 PS format
- Digital Audio S/PDIF input, supports PCM or Dolby® Digital audio as part of HDMI 1.3 ports
- Analog Audio 2 x 3.5 mm female jacks
- Average Encoding Data Rate 18 Mb/s per channel
- Encoding Latency Programmable, 200 ms - 400 ms
- Delayed Match Audio Output 2 ports of delay-matched audio
- Modulation Types Module generates up to 2 RF channels

YPbPr (1080i)
- Part Number 3KAVE2RH
- Dimensions (W x H x D) 0.85” x 5.0” x 11.0” (21 mm x 127 mm x 279 mm)
- Video Interface 2 x 13-pin, DIN
- ZvShow - Extra Digital Channel 4 GB video loop in MPEG2 PS format
- Digital Audio S/PDIF input, supports PCM or Dolby® Digital audio
- Analog Audio L/R stereo line-level input
- Average Encoding Data Rate 18 Mb/s per channel
- Encoding Latency Programmable, 200 ms - 400 ms
- Delayed Match Audio Output 2 ports of delay-matched audio
- Modulation Types Module generates up to 2 RF channels

Chassis Specifications (continued)*

Modulator
- Quality 2kHz resolution, +/- 30 PPM accuracy, +/- 35 PPM stability
- Output Level Adjust 25 - 50 dBmV in 1 dBmV steps
- MER > 39 dB, typical

Control Setup
- User Interface ZeeVee Maestro
- Network Interface 10/100/1000 Mb Ethernet via RJ45 connection

Chassis Specifications*

General
- Model Name / Part Number HDB3KR-NA
- Power 100 ~ 240 V AC 50/60 Hz, 300 W capacity, IEC 60320-C14 jack
- Cooling Four (4) hot swappable, N+1 redundant, high-capacity cooling fans, front inlet, rear exhaust
- Operating Temperature +32 °F to +113 °F (0 °C to +45 °C)
- Mounting Standard 19-inch equipment rack mounting
- Height: 3 standard rack units
- Front or rear mountable rack ears
- Dimensions (W x H x D) 17.4” x 5.1” x 14.75” (441 mm x 129 mm x 374 mm)
- Shipping Weight 29.5 lbs (13.4 kg), includes packaging
- Warranty 5 Years

Modulator
- Modulation Types QAM 256 and 64 (ITU-T J83 Annex B) Interleaving modes: (64,2) only
- Cable Plan Standard Standard, HRC, or IRC
- Frequency Range Frequency agile QAM RF CATV from 54-864MHz (Channels 2-135)
## Chassis Specifications (continued)*

### Modulator
- **Quality**: 2kHz resolution, +/- 30 PPM accuracy, +/- 35 PPM stability
- **Output Level Adjust**: 25 - 50 dBmV in 1 dBmV steps
- **MER**: > 39 dB, typical

### Control Setup
- **User Interface**: ZeeVee Maestro
- **Network Interface**: 10/100/1000 Mb Ethernet via RJ45 connection

## Media Module Specifications*

### Module Features
- **HDb3000 - 3KHVE2R (HDMI)**
  - 2 channels of HDMI encoding and modulation (QAM), delivers up to 24 channels per chassis
  - 2 channels of IP stream generation*
  - Includes ZvShow bonus channel with over 4GB of internal storage
  - 2 channels of independent delayed matched audio

- **HDb3000 - 3KAVE2R7 (720p YPbPr) & 3KAVE2RH (1080p YPbPr)**
  - 2 channels of component encoding and modulation (QAM) delivers up to 24 channels per chassis
  - 2 channels of IP stream generation*
  - Includes ZvShow bonus channel with over 4GB of internal storage
  - 2 channels of independent delayed matched audio
  - Closed captioned capability
  - Content controls

### Chassis Specifications*

#### HDb3000 - 3KAVE2R7 (720p YPbPr) & 3KAVE2RH (1080p YPbPr)
- **HDB3KR-NA**
  - **Model Name / Part Number**: HDB3KR-NA
  - **Power**: 100 ~ 240 V AC 50/60 Hz, 300 W capacity, IEC 60320-C14 jack
  - **Cooling**: Four (4) hot swappable, N+1 redundant, high-capacity cooling fans, front inlet, rear exhaust
  - **Operating Temperature**: +32 °F to +113 °F (0 °C to +45 °C)
  - **Mounting**: Standard 19-inch equipment rack mounting
  - **Dimensions (W x H x D)**: 17.4” x 5.1” x 14.75” (441 mm x 129 mm x 374 mm)
  - **Shipping Weight**: 29.5 lbs (13.4 kg), includes packaging
  - **Warranty**: 5 Years

#### Cassidy Specifications

- **Model Name / Part Number**: HDB3KR-NA
- **Power**: 100 ~ 240 V AC 50/60 Hz, 300 W capacity, IEC 60320-C14 jack
- **Cooling**: Four (4) hot swappable, N+1 redundant, high-capacity cooling fans, front inlet, rear exhaust
- **Operating Temperature**: +32 °F to +113 °F (0 °C to +45 °C)
- **Mounting**: Standard 19-inch equipment rack mounting
- **Dimensions (W x H x D)**: 17.4” x 5.1” x 14.75” (441 mm x 129 mm x 374 mm)
- **Shipping Weight**: 29.5 lbs (13.4 kg), includes packaging
- **Warranty**: 5 Years

### Control Setup
- **User Interface**: ZeeVee Maestro
- **Network Interface**: 10/100/1000 Mb Ethernet via RJ45 connection

### Media Module Specifications*

#### HDMI
- **Part Number**: 3KHVE2R
- **Dimensions (W x H x D)**: 0.85” x 5.0” x 11.0” (21 mm x 127 mm x 279 mm)
- **Video Interface**: 2 x HDMI v1.3 Type-A, 19-pin, female
- **ZvShow - Extra Digital Channel**: 4 GB video loop in MPEG2 PS format
- **Digital Audio**: PCM format or Dolby® Digital audio as part of HDMI 1.3 ports
- **Analog Audio**: 2 x 3.5 mm female jacks
- **Average Encoding Data Rate**: 18 Mb/s per channel
- **Encoding Latency**: Programmable, 200 ms - 400 ms
- **Delayed Match Audio Output**: 2 ports of delay-matched audio
- **Modulation Types**: Module generates up to 2 RF channels

#### YPbPr (1080i)
- **Part Number**: 3KAVE2RH
- **Dimensions (W x H x D)**: 0.85” x 5.0” x 11.0” (21 mm x 127 mm x 279 mm)
- **Video Interface**: 2 x 13-pin, DIN
- **ZvShow - Extra Digital Channel**: 4 GB video loop in MPEG2 PS format
- **Digital Audio**: S/PDIF input, supports PCM or Dolby® Digital audio
- **Analog Audio**: L/R stereo line-level input
- **Average Encoding Data Rate**: 18 Mb/s per channel
- **Encoding Latency**: Programmable, 200 ms - 400 ms
- **Delayed Match Audio Output**: 2 ports of delay-matched audio
- **Modulation Types**: Module generates up to 2 RF channels

---

High-Density Video Distribution

The HDbridge3000 provides a highly flexible solution for delivery of cable, satellite, and IPTV video content all within a compact 3RU footprint. HD and SD video can be simultaneously output in both RF and IP formats.

The flexible, modular design of the chassis provides 12 media slots with the flexibility to mix-and-match HDMI, component, and composite cards, making it ideal for professional-grade video distribution. Adjustable rack ears can be moved to either the front or rear of the unit, allowing front-facing or rear-facing media modules and power supplies. What’s more, if an existing media module is replaced with the same type of module, it is automatically programmed by the control module to use the same settings as the previous module, saving valuable time, and eliminating expensive truck rolls.

Feature Summary

- Compact 3RU form-factor
- 12 media module slots for delivery any type of content regardless of source inputs
- Simultaneous video output in both RF over coax and IP over CATx
- Up to 24 channels of HD content or 72 channels of SD content
- Zero downtime with fully redundant and hot-swappable media modules, fans, and power supplies
- No active components on the backplane means higher reliability
- Configured and maintained using ZeeVee’s Maestro management platform
- Distribute video over RF to an unlimited number of displays leveraging the QAM tuner in the TV
- LCD panel on control module displays on-site status and configuration information
- ZvEAS connects to national EAS and allows for local emergency message information
- Playback custom content using the ZvShow channel
- Ease of management with Maestro management platform

*For additional specifications please refer to the HDbridge3000 product page on zeevee.com.*

---

**Media Module Specifications (continued)**

<table>
<thead>
<tr>
<th>YPbPr (720p)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>3KAVE2R7</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>0.85” x 5.0” x 11.0” (21 mm x 127 mm x 279 mm)</td>
</tr>
<tr>
<td>Video Interface</td>
<td>2 x 13-pin, DIN</td>
</tr>
<tr>
<td>ZvShow - Extra Digital Channel</td>
<td>4 GB video loop in MPEG2 PS format</td>
</tr>
<tr>
<td>Digital Audio</td>
<td>S/PDIF input, supports PCM or Dolby® Digital audio</td>
</tr>
<tr>
<td>Analog Audio</td>
<td>L/R stereo line-level input</td>
</tr>
<tr>
<td>Average Encoding Data Rate</td>
<td>18 Mb/s per channel</td>
</tr>
<tr>
<td>Encoding Latency</td>
<td>Programmable, 200 ms - 400 ms</td>
</tr>
<tr>
<td>Delayed Match Audio Output</td>
<td>2 ports of delay-matched audio</td>
</tr>
<tr>
<td>Modulation Types</td>
<td>Module generates up to 2 RF channels</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
</tr>
<tr>
<td>Video Interface</td>
</tr>
<tr>
<td>ZvShow - Extra Digital Channel</td>
</tr>
<tr>
<td>Digital Audio</td>
</tr>
<tr>
<td>Analog Audio</td>
</tr>
<tr>
<td>Average Encoding Data Rate</td>
</tr>
<tr>
<td>Encoding Latency</td>
</tr>
<tr>
<td>Delayed Match Audio Output</td>
</tr>
<tr>
<td>Modulation Types</td>
</tr>
</tbody>
</table>

*For additional specifications please refer to the HDbridge3000 product page on zeevee.com.*