

HDbridge3000 Chassis

HD Digital Encoder/Modulator



The HDbridge3000 provides a highly flexible solution for delivery of nearly any video/audio content all within a compact 3RU footprint. HD video can be simultaneously output over IP and RF*.

The modular design of the chassis provides 12 media slots giving the flexibility to mix-and-match unencrypted HDMI, HD-SDI, Component/VGA 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 on site time.

Feature Summary:

- Compact 3RU form-factor
- 12 media module slots for delivery of any type of content regardless of source inputs
- Simultaneous video output in RF over coax and IP over Ethernet (not available from Composite or H.264 cards)
- Zero downtime with fully redundant and hot-swappable media modules, fans, and power supplies
- Mix and match media cards
- Emergency Alert System support (EAS)
- Configured and maintained using ZeeVee's user-friendly Maestro management program
- Distribute video over RF (QAM or DVB-T/C) to an unlimited number of TVs
- Playback custom content using the ZvShow channel (not available with IP or Composite cards)

Module Features:

HDb3000 - 3KHVE2R (HDMI RF) & 3KHVE2I - (HDMI RF/IP out)

- 2 channels of unencrypted HDMI encoding/modulation (QAM or DVB-T/C), delivers up to 24 channels per chassis
- 2 channels of IP stream generation (3KHVE2I only)
- Includes ZvShow bonus channel with over 2GB of internal storage (RF out only)
- 2 channels of independent delayed matched analog audio

HDb3000 - 3KSVE6R (Composite)

- 6 channels of SD encoding/modulation (QAM or DVB-T/C), delivers up to 72 channels of SD per chassis
- Advanced 3D filtering

HDb3000 - 3KAVE2R7 (720p Component and VGA RF out) & 3KAVE2RH (1080p Component and VGA RF out) 3KAVE2IH (1080p Component and VGA RF/IP out)

- 2 channels of Component (YPbPr) / VGA encoding/modulation (QAM or DVB-T/C), delivers up to 24 channels of HD per chassis
- 2 channels of IP stream generation (3KAVE2IH only)

- Includes ZvShow bonus channel with over 2GB of internal storage (RF out only)
- 2 channels of independent delay matched audio

HDb3000 - 3KSDI2R (HD-SDI RF out) & 3KSDI2Ri (HD-SDI RF/IP out)

- 2 channels of HD-SDI encoding/modulation (QAM or DVB-T/C), delivers up to 24 channels of HD per chassis
- Up to 1080p resolution of HD
- Includes ZvShow bonus channel with over 2GB of internal storage (RF out only)
- Rebuffered, retimed loop output from each input for external chaining of video sources

HDb3000 - 3KHVM4I (HDMI IP out)

- 4 Channel High Definition Video Encoder with IP output
- 4 ports unencrypted HDMI input with Digital Audio
- H.264/MPEG4 AVC
- Supports 480p, 720p and 1080p resolutions
- Delivers up to 48 channels of HD per chassis

* SD/Composite video is not supported as IP out. H.264 is not supported as RF out.

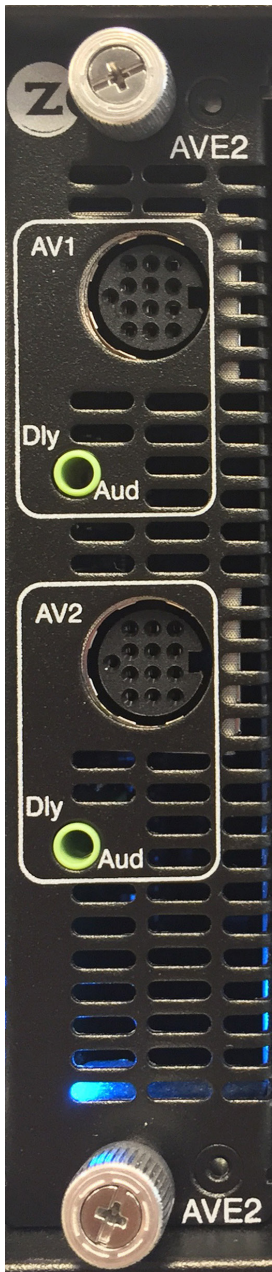
Chassis Specifications*

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) or DVB-T, DVB-C (ITU-T J83 Annex A) (varies by region)
Cable Standard	QAM Standard, HRC, or IRC / DVB-T & DVB-C User defined (varies by region)
CCIR Frequency Range	Frequency agile QAM RF CATV from 54-864MHz, (Channels 2-135) Frequency must be within 400Mhz band within the chassis Frequency frequency-agile CCIR Channels 21-79, 57 MHz - 900 MHz Frequency must be with in 400Mhz band within the chassis
Quality	2kHz resolution, +/- 30 PPM accuracy, +/- 35 PPM stability
Output Level Adjust	34-13 dBmV in 1 dBmV steps
MER	> 39 dB, typical
Control Setup	
User Interface	ZeeVee Maestro

Media Module Specifications*

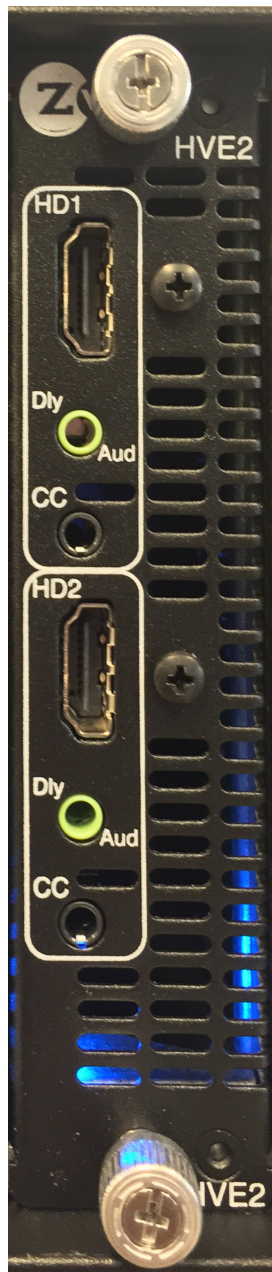
HDMI, 3KHVE2R (RF out) and 3KHVE2i (RF and IP out)	
Dimensions (W x H x D)	0.85" x 5.0" x 11.0" (21 mm x 127 mm x 279 mm)
Video Interface	2 x HDMI v1.3 Type-A, 19-pin, female
ZvShow - Extra Digital Channel	2 GB video loop in MPEG2 Program Stream format
Digital Audio	PCM format or Dolby® Digital audio 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
Delay Matched Audio Output	2 ports of analog delay-matched audio
Modulation Types	Module generates 2 RF channels (MPEG2, UDP unicast or multicast streams - IP output)
COMPONENT (YPbPr)/ VGA (1080i), 3KAVE2RH (RF out) and 3KAVE2IH (RF and IP out)	
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	2 GB video loop in MPEG2 Program Stream 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
Delay Matched Audio Output	2 ports of analog delay-matched audio

Modulation Types	Module generates 2 RF channels (MPEG2, UDP unicast or multicast streams - IP output)
COMPONENT (YPbPr)/VGA (720p), 3KAVE2R7 (RF output)	
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	2 GB video loop in MPEG2 Program Stream 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
Delay Matched Audio Output	2 ports of analog delay-matched audio
Modulation Types	Module generates 2 RF channels
COMPOSITE, 3KSVE6R (RF output)	
Dimensions (W x H x D)	0.85" x 5.0" x 11.0" (21 mm x 127 mm x 279 mm)
Video Interface	6 x Composite, 3.5 mm (Requires CAVC6 3.5mm to composite break out cable)
ZvShow - Extra Digital Channel	N/A
Analog Audio	Each 3.5 mm A/V jack supports L/R stereo line-level audio
Average Encoding Data Rate	2-12 Mb/s per channel
Encoding Latency	Programmable, 200 ms - 400 ms
Delay Matched Audio Output	N/A
Modulation Types	Module generates 2 RF channels
HDSI, 3KSDI2R (RF output) and 3KSDI2Ri (RF and IP output)	
Dimensions (W x H x D)	11" x 5" x 0.85" (279.4 mm x 127 mm x 25.6 mm)
Video Interface	Two ports of (HD/3G) Serial Digital Interface video (BNC, 75 ohm)
ZvShow - Extra Digital Channel	2 GB video loop in MPEG2 Program Stream format
Analog Audio	N/A
Average Encoding Data Rate	18 Mb/s per channel
Encoding Latency	Programmable 200 msec to 400 msec
Delay Matched Audio Output	N/A
Modulation Types	Module generates 2 RF channels (MPEG2, UDP unicast or multicast streams - IP output)
H.264 3KHVM4I (IP output)	
Dimensions (W x H x D)	11" x 5" x 0.85" (279.4 mm x 127 mm x 25.6 mm)
Video Interface	4 x HDMI v1.3 Type-A, 19-pin female
Encoder Video Profile	H.264/MPEG-4 AVC
Encoder Audio Profile	MPEG1 Layer 2 (MP2), PCM
Analog Audio Input	Each 3.5mm jack supports L/R stereo line-level audio
Color Profile	4:2:0
Average Encoding Data Rate	6 Mbs per channel
GOP Size	30
Video, Audio PID	Fixed 256/257
Encoding Latency	400 msec
Modulation Types	IP output only (UDP unicast or multicast streams)



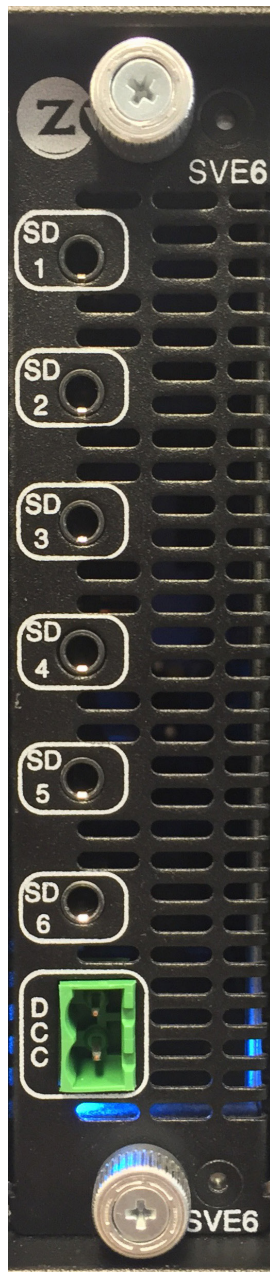
Component or VGA Media Module 1080i/p

This media module outputs 2 HD signals in QAM or DVB-T/C over RF networks.



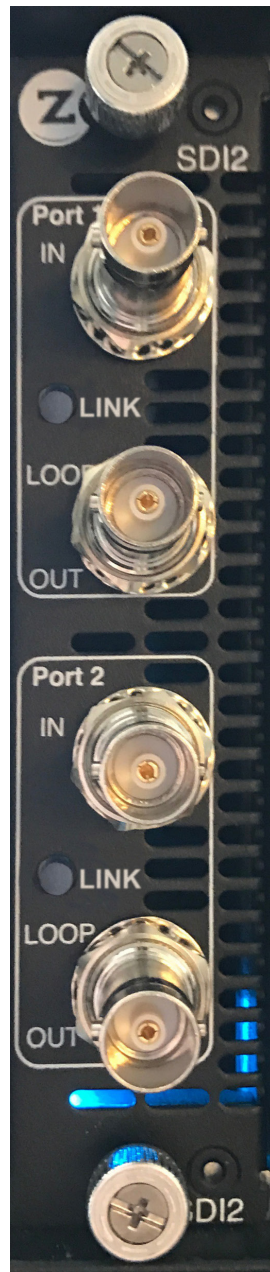
Unencrypted HDMI Media Module, 1080i/p

This media module outputs 2 HD signals in QAM or DVB-T/C over RF networks.



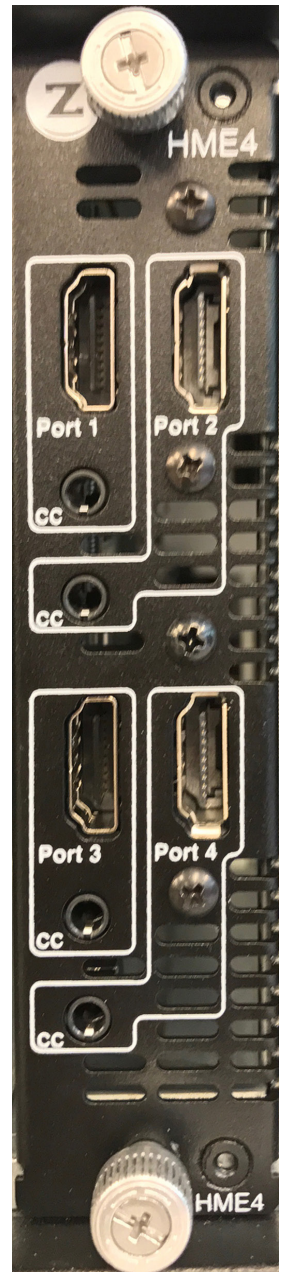
Composite Media Module

This media module outputs 6 SD signals in QAM or DVB-T/C over RF networks.



HD-SDI Media Module

This media module outputs 2 HD signals in QAM or DVB-T/C over RF networks.



H.264 Media Module

This media module outputs 4 HD IP streams using MPEG4 compression.

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

