

# HDb2900 Series

Dual Channel HD-SDI Encoder/Modulator



For organizations looking to encode and modulate unencrypted HDMI sources cost-effectively, the HDBridge 2900 Series is a great option. This four channel encoder/modulator allows you to deliver HD video up to 1080p/i resolution to an unlimited number of displays over almost any distance.

The HDBridge 2900 series converts high definition AV sources into an RF signal received a television's QAM (NA model) or DVB-T/C (EU model) digital tuner over coax cable. With its high 45 dBmV RF output, you can send your content to an unlimited number of displays over nearly any distance.

Multiple units can be combined to create a headend that supports over 100 channels on the RF network. This unit is designed primarily for high channel density environments where rapid deployment, advanced management, and compatibility are critical.

## MODELS:

### HDb2920-NA

2 HD-SDI video inputs with embedded digital audio inputs up to 1080i/1080p

## Superior Video Quality

- Full MPEG-2 implementation
- I, P, and B Frames
- Low latency
- Full motion estimation with a wide search range

## Extensible Architecture

- Easy downloadable firmware updates
- Future enhancements provided regularly
- Emergency Alert System (EAS)

## High Reliability

- Low-stress power system
- Full system instrumentation and monitoring
- Official international regulatory approval
- Forced air cooling for effective thermal control

## Ease of Management

- Powerful, highly intuitive web interface
- On-site or remote management
- Configure/manage multiple units from
- Front Panel Display for local management

## HDb2900 Series Web-based Administration Interface

System	Slot	AV Port	Enabled	RF #	Channel #	Name	Long Name	Rating
4.support.4	1	zvshow	Enabled	38	38.1	S2840-1	2840-1	TV-G
	2		Enabled	38	38.2	2840-sh	2840-show	TV-G
	3		Enabled	39	39.1	2840-2	2840-2	TV-G
	4		Enabled	40	40.1	2840-3	2840-3	TV-G
			Enabled	41	41.1	BBCAHD	Planet Earth	TV-G

General		
<b>Power:</b> 100-240 VAC 50/60 Hz, 60W max. 30W Typical IEC 60320-C14	<b>Cooling:</b> Dual internal cooling fans, Front inlet, Rear exhaust	<b>Temperature/Humidity:</b> Operating +32 F° to +113 F° [0 C° to +45 C°] / 10% to 80%, non-condens- ing
	<b>MBTF:</b> 62,000 hours	<b>Enclosure Type:</b> Metal
<b>Compliance:</b> FCC Class A, IEC60065, EN61000 (see manual 70-00031-00), CE, RoHS, RCM C-Tick	<b>Enclosure Dimensions:</b> 1.72 in. [H] x 17.33 in. [W] (without rack mount ears) x 9.9 in. [D] 43.6 mm [H] x 440.2 mm [W] x 251.5 mm [D]	<b>System Weight:</b> 6.5 lbs. (2.95 kg)
		<b>Shipping Weight:</b> 8.13 lbs. (3.69 kg)
<b>Mounting:</b> Rack ears shipped attached, 1RU high	<b>Carton Dimensions (individual):</b> 4.25 in. [H] 30.875 in. W 12.125 in [D] 108 mm [H] 785 [mm] W 308 [mm] [D]	<b>Warranty:</b> 5 Years
		<b>Vibration:</b> NSTA 1A in carton
Input		
<b>Serial Digital Interface:</b> Two ports of (HD/3G) Serial Digital Interface video (BNC, 75 ohm)	<b>Supported Resolutions:</b> 480i [SDI, HD-SDI, 3G-SDI] B27; 720p @ 59.94/60 Hz [HD-SDI, 3G-SDI]; 1080i @ 59.94/60 Hz [HD-SDI, 3G-SDI]; 1080p @ 23.98/24/29.97/30 Hz [3G-SDI], Em- bedded AC3 or PCM audio supported [59.94/60 down-sampled for standard broadcast]	<b>Electrical Formats:</b> SDI [SMPTE 259M], HD-SDI [SMPTE 292M], 3G-SDI [SMPTE 424M]
<b>Digital Audio and Stereo Analog:</b> Digital as element of SDI port or 3.5 mm stereo female, line level input per channel		<b>Extra Digital Channel:</b> MPEG2 Program stream file, up to 200 MB
		<b>Encoder Audio Profile:</b> ATSC A/52, Dolby® Digital (AC-3)
Video Encoder		
<b>Encoder Video Profile:</b> MPEG2 HD: ISO13818-2 MainProfile@HighLevel	<b>Traffic Shaping:</b> Variable Bit Rate	<b>Video Encoding Data Rates:</b> Variable, 10 Mbs - 24 Mbs per channel
<b>Average Encoding Data Rate:</b> 18 Mbs per channel	<b>Encoding Latency:</b> Programmable 200 msec to 400 msec	<b>Color Profile:</b> 4:2:0
<b>GOP Size:</b> 15	<b>Video, Audio PID:</b> Programmable starting value	<b>Program Information:</b> Programmable program name, EIT
Modulator/Upverter		
<b>Modulation Types:</b> QAM 256 and 64 (ITU-T J83 Annex B) Interleav- ing modes: {64,2} only	<b>Cable Standard:</b> HRC, IRC or STD	<b>Frequency Range:</b> 2 independent, frequency agile CATV Channels placeable on Channels 2-135 • 2kHz resolution • +/- 30 ppm accuracy • +/- 35 ppm stability
<b>Output Power:</b> +45 dBmV typical	<b>Output Level Adjust:</b> 25 - 45 dBmV in 1dBmV steps	
<b>I/Q Amplitude Imbalance:</b> < 1% typical	<b>Spectral Tilt:</b> </= 1 dB over 6 MHz typical	<b>MER :</b> > 38 dB typical
Control Setup		
<b>Network Interface</b>	10/100 Mb Ethernet via RJ45 connection IP address via DHCP or set by user HTML/Javascript served web interface for easy configuration Telnet connection for CLI scripting Easy firmware updates All settings saved in NV storage	
<b>Front Panel Color Display</b>	Quickly obtain status at a glance, basic configurations, software revisions and updates	

ZeeVee, Inc., headquartered in Littleton, Mass., and founded in 2007, is a leading global developer of digital technology and products for distributing audio-video content from any source or multiple sources to any number of displays. Manufactured in the U.S. and used primarily in commercial and corporate applications, ZeeVee products are employed worldwide by major organizations in education, government, hospitality, retail, sports, entertainment, broadcasting, healthcare, housing, energy and other industries. For more information visit [www.zeevee.com](http://www.zeevee.com)