



Health Care



Assisted Living



MDUs

# HDb2540 / HDb2520-NA

## HD Digital Encoder / Modulator

Headend Ready for High Density Distribution of HD Video and Digital Signage

### Superior Video Quality

- Full MPEG2 implementation
- I, P, and B Frames
- Low latency
- Full motion estimation with a wide search range

### High Reliability

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

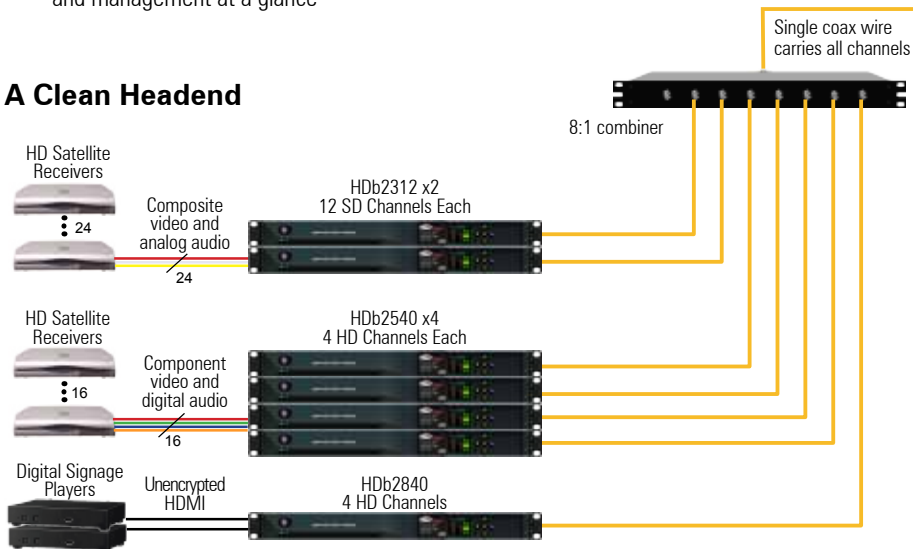
### Ease of Management

- Powerful, highly intuitive web interface
- On-site or remote management
- Web accessible instrumentation and management
- Single session configures and manages all connected units
- Front Panel Display for on-site status and management at a glance

### Extensible Architecture

- Easy downloadable firmware updates
- Future enhancements provided regularly
- Emergency Alert System (EAS)
- Bonus information channel for use with small video loops

### A Clean Headend



**HD**bridge2000  
SERIES

**Easy Setup**  
**Simple Installation**  
**Quick Rollout**  
**It's Done.**



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# HDb2540 / HDb2520

## HD Digital Encoder / Modulator

HDbridge2000  
SERIES



Rear Detail



Front Detail



### ZvSync

ZvSync is a digital cable tuner with HDMI, composite, and analog RF outputs. Available in both DVB-T and QAM.

It's small, affordable, and can be used for:

- Projectors
- TVs Without Tuners
- Monitors



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GENERAL	
<b>Model Names</b>	HDbridge Series 2000, HDb2540   HDb2520
<b>Part Numbers</b>	HDb2540-NA   HDb2520-NA
<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 <sup>o</sup> to +113 F <sup>o</sup> (0 C <sup>o</sup> to +45 C <sup>o</sup> ) / 10% to 80%, non-condensing
<b>Vibration</b>	NSTA 1A in carton
<b>MTBF</b>	62,000 hours
<b>Compliance</b>	FCC Class A, IEC60065, EN61000 (see manual 70-00031-00), CE, RoHS, RCM C-Tick
<b>Enclosure Type</b>	Metal
<b>Mounting</b>	Rack ears shipped attached, 1RU high
<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>	6.25 lbs. (2.84 kg)
<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>Shipping Weight</b>	7.88 lbs. (3.58 kg) 3.58 kg (7.88 lbs.)
<b>Warranty</b>	5 years
VIDEO INPUT	
<b>Component Video x4 or x2</b>	DIN connector HDbridge end, RCA connectors for HD source up to 720p
<b>Computer VGA (Analog) x4 or x2</b>	HD-15 connector, 75 Ohm RGB 0 to 0.7V, Separate H and V sync
<b>VGA Resolutions Supported</b>	640x480, 720x480, 800x600, 1024x768, 1152x864, 1176x664, 1280x720, 1280x768, 1280x800, 1280x960, 1280x1024, 1360x768, 1440x900 at 60 70, 72, 75, 85 Hz. VGA resolutions are broadcast centered in the best vertical fit into 1920x1080p30 or 1280x720p60
<b>Closed Caption</b>	EIA/CEA-608 captions accepted over composite video input
<b>Extra Digital Channel</b>	MPEG2 Program stream file, up to 200 MB
AUDIO INPUT	
<b>Stereo Analog and Digital Audio x4 or x2</b>	Line level input per channel DIN connector HDbridge end, RCA connector or digital SPDIF audio input. 3.5 mm pigtail connector with VGA
VIDEO ENCODER	
<b>Encoder Video Profile</b>	MPEG2 HD: ISO13818-2 Main Profile @ High Level
<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>	16
<b>Video, Audio PID</b>	Programmable starting value
<b>Program Information</b>	Programmable program name, EIT
AUDIO ENCODER	
<b>Encoder Audio Profile</b>	ATSC A/52, Dolby® Digital (AC-3)
MODULATOR / UPCONVERTER	
<b>Modulation Types</b>	QAM 256 and 64 (ITU-T J83 Annex B) Interleaving modes: (64,2) only
<b>Cable Standard</b>	HRC, IRC or STD
<b>Frequency Range</b>	Up to 4 paired, frequency-agile QAM RF CATV Channels 2-135 <ul style="list-style-type: none"> <li>• 2 kHz resolution</li> <li>• +/- 30 ppm accuracy</li> <li>• +/- 35 ppm stability</li> </ul>
<b>Output Power</b>	+45 dBmV typical
<b>Output Level Adjust</b>	25 - 45 dBmV in 1dBmV steps
<b>MER</b>	> 38 dB typical
<b>I/Q Amplitude Imbalance</b>	< 1% typical
<b>Spectral Tilt</b>	< / = 1 dB over 6 MHz typical
CONTROL SET-UP	
<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