

## H.264 Rack Mount Shelf and Blades

### Enterprise IP Video Platform

VBrick extends the capabilities of H.264 technology by providing a high-density rack mount shelf unit in a compact design. The rack mount shelf is a redundant system where power supply or fan failure does not affect system operation. Other features include a variety of blade options, flexibility for different I/O and video resolutions, and easy accessibility.



### Applications

**Training and Education** Broadcast your classes and training within a campus or to distant learners while recording the classes for on-demand playback.

**Television Distribution** Deliver selected television channels, including news and financial programming, to virtually unlimited numbers of desktops and displays across your existing LAN, WAN or IP network. No need for extra cabling or a dedicated network.

**Surveillance and Monitoring** Monitor roadways, seaports, factory floors and security borders; establish battlefield situation awareness.

### Features and Benefits

**Capture High Definition Video** Appliances encode 720p and 1080p high definition resolutions for incredible quality video at bandwidths of 1 Mb/sec and up (requires HD version). For lower bandwidth applications, video can still be delivered in standard definition with resolutions up to D1.

**Transport Video Over a Wide Variety of Network Transport Protocols** Video streams from the H.264 encoding appliance are compatible with Adobe Flash Player, Microsoft Windows Media Player, Apple QuickTime and other players. Network friendly operation allows VBrick H.264 streams to tunnel through firewalls and traverse any network, including the Internet, WAN links, corporate LANs with or without multicast support.

**Encode at Multiple Bitrates and Resolutions Simultaneously** With Multiple Bit Rate (MBR) encoding stream simultaneously over the Internet, WAN links, and the LAN with quality optimized for each network.

**Archive Video** By connecting external storage to the appliance USB port or using optional internal storage, video can be archived as well as streamed. Capture high quality video directly at the appliance without being subject to network drops or outages. Record high quality video locally at the appliance while streaming at a lower rate over low bandwidth connections. With integrated solid state storage (available on industrial models), record video under challenging environmental conditions.

**Multicast, Unicast, and Serve from the Same Device** Reach an unlimited number of users on your LAN with multicast. Push video over point to point unicast connections to reach remote locations and CDNs. Serve hundreds of players that request video directly from the appliance. Support all these streaming methods simultaneously from a single appliance.

**Manage the Appliance Easily and Securely** With a rich set of management protocols and options to lock down the device, the H.264 encoding appliance integrates into any IT infrastructure. Use the integrated management web pages, front panel, or command line interface over Telnet, SSH, or serial port to configure the appliance. Manage programmatically and integrate into other systems such as room control and touch panel devices over SOAP/XML web services, HTTP, HTTPS, Telnet, SSH, serial connections, or SNMP.

### Product at a Glance

- Leverage a complete, compact, easy-to-access H.264 rack mount for high-density encoding of SD and HD over multiple network types
- Benefit from complete system redundancy and no downtime with hot-swappable modules and load sharing
- Work in conjunction with various video players including Adobe Flash, Windows Media and QuickTime.
- Integrates with VEMS Mystro and VEMS media management system and is a key component of the VEVA

### MODELS

- BPS 8113 H** Standard Definition Blade
- BPS 8113 HS** Standard Definition Blade with Solid State Storage
- BPS 8123 H** Standard Definition Blade with Enhanced I/O
- BPS 8123 HS** Standard Definition Blade with MBR
- XPS 8103 H** Standard Definition Blade
- XPS 8103 HS** Standard Definition Blade with Solid State Storage and MBR
- HPS 8103 H-HD** High Definition Blade
- HPS 8103 HS-HD** High Definition Blade with Solid State Storage

### PLAYER SUPPORT

- Adobe Flash Player (including applicable Android® and Blackberry® Mobile devices)
- Windows Media® Player (via VBrick player plug-in)
- QuickTime Player (Windows and Mac)





## H.264 Rack Mount Shelf and Blades

### Specifications

#### RACK MOUNT SHELF

- Height: 14", 8 rack units
- Depth: 11", Allows for two rack mount shelves mounted back-to-back
- Weight: 46.7 pounds fully loaded
- Maximum Channel Density: 22 channels in 8U of rack space with back to back shelf mounting
- Operating Temperature Range: 0 to 40C
- Storage Temperature Range: -20 to 70C
- Regulatory Compliance UL: FCC Part 15 Class A, CE, RoHS (5 of 6)
- Cooling Capacity: 50W per blade with one failed fan
- Hot Swap:
  - Power Supplies
  - Fan Tray
  - Encoder Blades
  - Air Filter Media
- AC Power: 485 watts per power supply, max draw 8 Amps at 115VAC
- Grounding:
  - ESD wrist strap included with ground connection to chassis for user blade insertion/removal
  - Chassis ground connection lug
- LEDs:
  - Power Supply Failure LED (for each supply and for enclosure)
  - Fan Status LED
  - Fan Tray Hot Swap LED
- Audible Alarm on Power Supply Failure

#### BPS and XPS Class Blades

- H.264 Encoding
- Input format: NTSC, PAL
- 4:3 Aspect Ratio Resolutions: D1 (720x480, 720x576), SIF (NTSC), QSIF (NTSC), CIF (PAL), QCIF (PAL), 400x304, 384x288 (PAL), 640x480, 320x240, 128x96, 192x144
- 16:9 Aspect Ratio Resolutions: 656x368, 512x288 (PAL), 256x144
- Video Frame Rates: 0.5, 1, 2, 3, 5, 6, 7.5, 10, 15, 30 fps (NTSC) 0.5, 1, 2.5, 5, 12.5, 25 (PAL)
- Closed Captioning
- Constant Bit Rate / Constant Frame Rate
- User-defined key frame interval
- Rates: 32Kbps – 20Mbps
- Inputs: Composite, S-Video. SDI, component video, and HDMI available on Enhanced I/O models.
- Rate control
- Deblocking filter
- Baseline profile
- MBR (XPS class blades only)

#### HPS Class Blades

- H.264 Encoding (to 720p for HD, 480p/576p for HD-Ready)
- High Definition Input Formats: 480i, 480p, 576i, 576p, 720p, 1080i, 1080p
- 16:9 Aspect Ratio Resolutions: All standard definition resolutions listed above, plus 480i/p (720x480), 576i/p (720x576), 720p (1280 x 720), 1080p (1920x1080)
- Video Frame Rates: 0.5, 1, 2, 3, 5, 6, 7.5, 10, 15, 30 fps (NTSC), 60fps (720p and below) 0.5, 1, 2.5, 5, 12.5, 25 fps (PAL), 50fps (720p and below)
- Constant Bit Rate / Constant Frame Rate

- Closed Captioning (HD-SDI only)
- User-Defined Key Frame Interval
- Rates: 32Kbps – 20Mbps
- Inputs: 3D-SDI, HD-SDI, HDMI™, Component, Composite, and S-Video
- Rate Control
- Deblocking Filter
- Baseline Profile

#### All H.264 Blades

- 1x8 character LCD display with Alarm Indication
- Audio Encoder
  - AAC-LC and AAC-HE Encoding
  - Sample Frequency 8 Khz to 48 Khz
  - Rates: 8 Kbps to 256 Kbps
  - Audio Modes: Stereo, Mono
  - Inputs: Unbalanced, balanced, and microphone via minijack. Audio inputs can also come through the HDMI and SDI inputs (HDMI and SDI inputs available on High Definition models)
- MBR Encoding (XPS and HPS class only)
  - Up to 3 simultaneous rates
- KLV Metadata
  - ESD in line 21 passed through as CC
  - ESD in line 21 converted to LDS and multiplexed into transport stream
  - LDS received over the serial port, IP, or SDI and multiplexed into transport stream
  - CoT over serial port or IP converted to LDS and multiplexed into transport stream
- Push
  - RTMP to Flash Media Server
  - Multiple concurrent unicast and multicast destinations
  - Automatic Unicast/RTSP Announce
- Server
  - Live multicast server
  - Live streaming server - up to 200 concurrent live streams
- Ethernet Network
  - 10/100/1000 Mbps Ethernet via RJ-45, Static, or DHCP
  - Auto sense Full / Half duplex
- Traffic Shaping
  - RTP Metering
  - CBR Transport Stream
  - VBR Transport Stream with configurable latency
- Protocols
  - Unicast / Multicast, DiffServ (QoS), UDP / IPv4 and IPv6 / RTSP / RTCP / RTP / HTTP / RTSP Interleave / IGMP / MPEG2 Transport Stream / Automatic Unicast (RTSP ANNOUNCE) / HTTPS management / SSH / RTMP
- Maintenance/Control Port
  - Serial port for local maintenance or data transport
- Storage
  - 1 USB port for external storage
  - 16G internal solid state storage on HS blades
  - Archiver: record encoded stream to internal or external storage

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