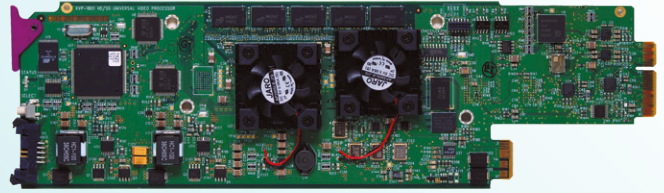


# XVP-1801-DC

## HD/SD

### Downconverter/ ARC and Frame Sync



Space-saving, modular platform for advanced signal processing.

The Densité® Series XVP-1801-DC from Grass Valley® offers high quality downconversion with aspect ratio conversion and frame synchronization. It offers many advanced features, including AFD support and background keying, with optional 16 channel embedded audio processing. The superior conversion quality of the XVP at both 50 and 59.94 Hz stems from multiple technologies, including advanced motion adaptive de-interlacing and anti-ringing.

To ensure that downconverted television is presented in the correct aspect ratio when aired, the XVP module supports AFD (Active Format Description) SMPTE ST 2016. This provides automatic aspect ratio control using embedded control commands, and this prevents on-air aspect ratio errors such as the postage stamp effect. The ARC function offers fixed presets as well as variable user configurable aspect ratios.

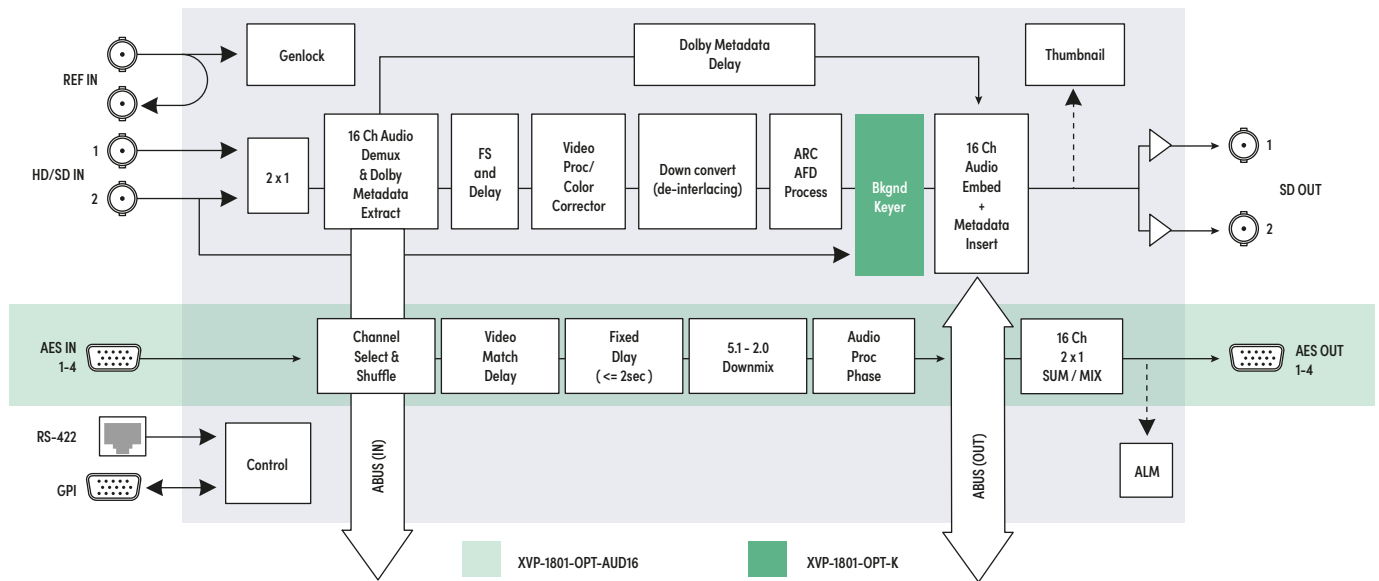
In addition to AFD, the XVP also supports VLI (Video Line Index) RP-186 and WSS, which allows the card to adjust its ARC automatically without any external intervention. The module re-inserts the correct AFD, VLI or WSS on the output, along with other HANC and VANC information. With the integration of a frame sync, incoming feed signals can be synched to house, and video/audio levels adjusted using a proc and color correction, when entering the facility. An RS-232/422 port is provided for automation control of ARC presets, and GPs are also available for user presets.

To further improve on-air presentation, the XVP offers a background keying capability which allows letterbox black bars, introduced by downconversion, to be filled with video or graphics.

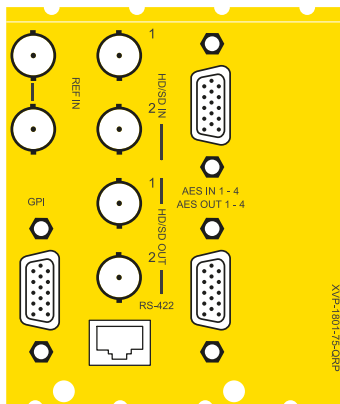
The XVP-1801-DC will pass and delay automatically all 16 channels (four groups) of embedded audio to keep lip sync. Full audio processing, shuffling, downmixing and four AES in and four AES out channels, are available as an option. A higher level of audio capabilities are provided by a range of audio processor companion cards. When connected to a DAP-1781, UAP-1783 or an AAP-1741, the XVP-1801 gains additional AES or analog audio channels while still maintaining lip sync. Depending on the audio processor selected, these boards also offer Dolby E or Dolby Digital (AC-3) for encoding or decoding, upmixing from 2.0 to 5.1, and full dynamic processing (limiter, compressor and expander).

## Key Features

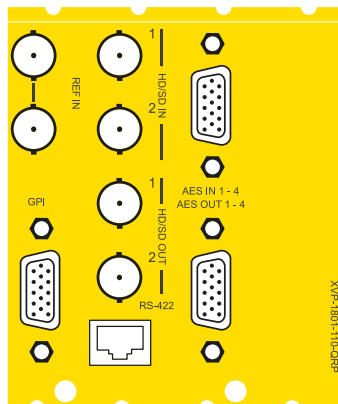
- Downconverter with frame sync
- Advanced adaptive video de-interlacing for higher image quality
- Automatic detection of film sequences
- Automatic ARC, using AFD (SMPTE ST 2016), VLI (RP-186) and WSS detection and correct re-insertion with the output
- Custom and fixed ARC presets
- Background keying capability during downconversion which allows letterbox black bars to be filled with video or graphics
- Built-in proc amp, color correction and legalizer
- Processes and converts ancillary data such as CC (608/708) and timecode
- Perfect audio/video synchronization plus additional audio fixed delay of up to 2 seconds
- Optional 16 channels of embedded full audio processing, shuffling and downmixing
- Optional 4 AES inputs and 4 AES outputs
- Dolby E compatible
- Audio metadata processing (SMPTE ST 2020-A)
- Compatible with Grass Valley audio processing cards, including the UAP-1783, AAP-1741 and DAP-1781
- Multiple presets for save and recall
- RS-422 protocol and GPI ports for automation or external device control
- Thumbnail and ALM streaming over IP
- Can be upgraded in the field to the full XVP-1801 up/down/crossconverter specification



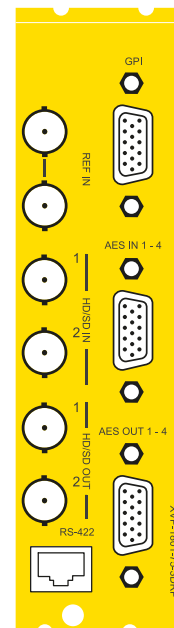
XVP-1801-DC Downconverter



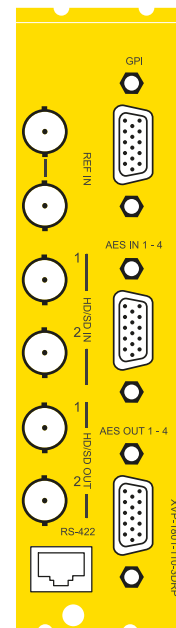
XVP-1801-75-QRP



XVP-1801-110-QRP



XVP-1801-75-3DRP



XVP-1801-110-3DRP

## Specifications

### Video Inputs (2)

#### Signal:

HD: SMPTE ST 292 (1.485, 1.485/1.001 Gb/s)

#### Supported formats:

HD: SMPTE ST 274: 1080i59.94/50

HD: SMPTE ST 296: 720p59.94/50

#### Embedded audio: SMPTE ST 299-272

#### Cable length:

340m (1,115 ft.) Belden 1694A at 270 Mb/s

150m (492 ft.) Belden 1694A at 1.485 Gb/s

#### Return loss: >15 dB up to 1.5 GHz

### Video Output

#### Signal: SMPTE ST 259-C (270 Mb/s)

#### Supported formats: SD: 480i59.94, 576i50

#### Embedded audio: SMPTE ST 299, SMPTE ST 272

#### Return loss: >15 dB up to 1.5 GHz

#### Jitter: <0.2 UI

### Reference Input

#### Signal:

SMPTE ST 170/SMPTE ST 318/ITU 624-4/BUT 470-6 blackburst

SMPTE ST 274/SMPTE ST 296 tri-level sync (black)

#### Return loss: >35 dB up to 5.75 MHz

### Video Processing Performance

#### Signal path: 10 bits

#### Latency:

1 frame in all modes

Up to 6 frames of additional delay can be added

### Audio Digital Inputs (4)

#### Sampling freq.: 32 to 96 kHz

#### Quantization: Up to 24 bits

### AES3

Level: 0.2 to 7 Vp-p

Impedance: 110Ω balanced

### AES3-id

Level: 0.2 to 2 Vp-p

Impedance: 75Ω

Return loss: 15 dB at 6 MHz

### Audio Digital Outputs (4)

Sampling freq.: 48 kHz

Quantization: 24 bits

### AES3

Level: 3 Vp-p

Impedance: 110Ω balanced

### AES-3id

Level: 1.0 Vp-p

Impedance: 75Ω

Return loss: 15 dB at 6 MHz

### Audio Processing Performance

Quantization: 24 bits

Sampling: 48 kHz

Number of channels: 16 (4 groups)

Freq. response: ±0.02 dB (20 Hz to 20 kHz)

SNR: 123 dB (A weighted)

THD+N: -138 dB (20 Hz to 20 kHz)

### Miscellaneous

Fixed delay: 0 to 2.0s

Step: 1 ms (coarse), 1 sample (fine)

### GPI (8)

Connector: 15-pin D-Sub, opto-isolated

#### GPI in:

Input selection: 1, 2

Presets: 1, 2, 3, 4

GPI out: Provides status of selected input: 1 or 2

### RS-422 (Automation)

Connector: RJ45

Signal: OXTEL Series automation protocol

### ABUS Connector

As per ABUS standard, Grass Valley

### Test Pattern Generator

#### Video:

Color bars – 100% white bar with 75% color

#### Audio:

Left channel pulsed 1 kHz tone

Right channel steady 1 kHz tone

### Electrical

Power: 17W

### XVP-1801-DC

		Output	
		525	625
SD	Input		
	525	X	
HD	625		X
	720p50		X
	720p59.94	X	
	1080i50		X
	1080i59.94	X	



## Ordering

Densité 2 frame	Densité 3 frame	Description	Options (software)	Description
XVP-1801-DC	XVP-1801-DC-3RU	HD/SD downconverter/frame sync/ARC	XVP-1801-OPT-AUD16	AES IO support and 16 channels on-board audio processing option
	XVP-1801-75-3DRP	Double rear connector panel, 75Ω	XVP-1801-OPT-K	Background key input option
	XVP-1801-110-3DRP	Double rear connector panel, 110Ω	XVP-1801-UG-DC2XVP	Upgrade from XVP-1801-DC to full XVP
XVP-1801-75-QRP		Quadruple rear connector panel, 75Ω	<b>Options (hardware)</b>	
XVP-1801-110-QRP		Quadruple rear connector panel, 110Ω	BOC-DE15-4BNC-1	75Ω digital audio breakout cable
			NSH15M	HD-15 to terminal block adapter
			<b>Remote control</b>	GV Orbit®, iControl™, iControl Solo

This product may be protected by one or more patents. For further information, please visit: [www.grassvalley.com/patents](http://www.grassvalley.com/patents)

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