



V6304, V6304/DM

Dolby E Encoder

FEATURES

- Multi-channel Encoding
- Dolby E OEM module
- Metadata input
- Bi-level, Tri-level or SDI reference
- Compensating Video Frame Delay
- Configuration from Front Panel or Remote
- Automatic Standard Detection
- Integrated Audio De-multiplexer (DM version)
- Integrated Multiplexer (DM version)

ENCODING MULTI-CHANNEL AUDIO INTO THE DOLBY E COMPRESSED FORMAT.



The V6304 and V6304/DM are single width modules for encoding multi-channel, multiple dual channel, and multiple mono digital audio signals into the Dolby E compressed format. The V6304 has 8 PCM audio inputs as 4 AES signals while the V6304/DM also has an audio de-multiplexer so that the audio inputs may be extracted from an SDI video signal in addition to the external AES. The output from the V6304 is a single AES carrying the compressed Dolby E signal. The V6304/DM is also capable of multiplexing the Dolby E AES onto the SDI video signal. The Dolby E encoding process can be configured from either the front panel, over the remote control system, or from external Metadata through a 3 pin connector on the rear module.

Dolby E encoding requires a video reference to set the method and timing of the compression process. Most encoding systems use an analogue reference, but the V6304 and V6304/DM can also use an SDI video signal. Many installations, particularly those working with multiple standards, will find this feature very useful. The analogue references may be either conventional bi-level black and burst (or PAL/NTSC), or HD tri-level syncs. Two BNCs are used for the analogue references; one is always an input while the other is either a passive loop-through or a second input, as set by a switch on the rear panel. Having the second reference input available is again useful for multi-standard environments where 50Hz or 59.94Hz references are separately available. On-board jumpers are used to individually set the termination of the references to be either Hi-Z or 75Ω.

The Dolby E encoding process includes Sample Rate Conversion (SRC) on all its audio inputs which is always enabled when the V6304 is encoding Dolby E audio. This means that the AES inputs may be completely asynchronous to each other or relative to the video. Input sample rates from 32kHz to 96kHz are supported. The SRCs can be disabled to bypass the Dolby E encoding if, for example, it is required to pass through unaltered an AES channel carrying non-audio data.

A requirement of the Dolby E encoding process is a compensating delay of any associated video of one frame at the video standard being used. The V6304/DM automatically provides this delay and can also provide extra video delay up to a maximum of five frames.

The V6304 and V6304/DM cannot generate the consumer orientated Dolby Digital compressed data also known as AC3. However Dolby E data streams can carry AC3 signals within a wrapper, provided the AC3 input has suitable metadata associated with it.

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Technical Specification

AES Inputs (4)

Sampling	32 to 96kHz (channel independent)
Formats	AES-3
Processing	24-bit
Impedance options	110 ohm balanced D type AES-3 (1992) 75 ohm unbalanced BNC AES-3id (1995)
Cable equalisation	Up to 250m

Metadata Input

Format	RS422/485 (Asynchronous)
Levels	As per RS422/485
Baud Rate	115.2 kb/s

Analogue References (2 or 1 + Loop)

Signal	HD tri-level, composite bi-level or PAL/NTSC colour black
Connector	BNC
Impedance	75 ohm (or Hi-Z when looped)
Return loss	>35dB to 5.5MHz
Looped output	Same as reference input

Dolby E Output (1)

Sampling	48kHz
Formats	Dolby laboratories Coding Standard for Dolby E transported on AES carrier to SMPTE337M-2000
Impedance options	110 ohm balanced D type 75 ohm unbalanced BNC
Cable equalisation	Up to 250m

Serial Input (1) & Output (1)

Note:

The **V6304** uses the SDI input as a reference only. The SDI output is a re-clocked output from the input. The **V6304/DM** uses the SDI input and output for demultiplexing and multiplexing of the digital audio data on the SDI signal.

Standards	SMPTE 292M, SMPTE259M-C
Formats	SMPTE 274M, SMPTE 260M
Line/field rates	1080i @ 50Hz 1080i @ 59.94Hz 720p @ 50Hz 720p @ 59.94Hz 525i @ 59.94Hz 625i @ 50Hz
Connector	BNC

Impedance	75 ohm
Return loss	>15dB, 5MHz - 1.5GHz
Cable equalisation	Automatic 0-200m
(Input)	Automatic 0-75m

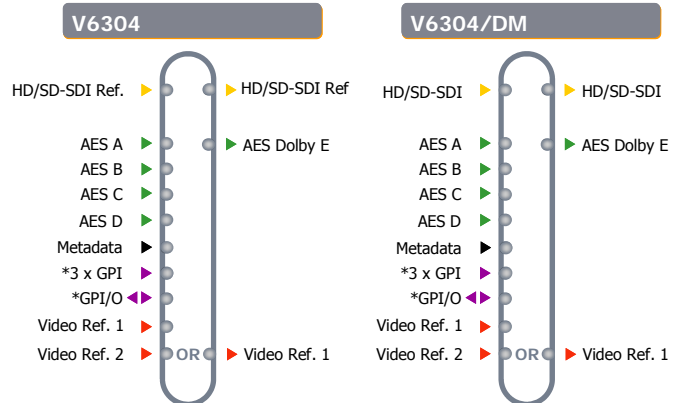
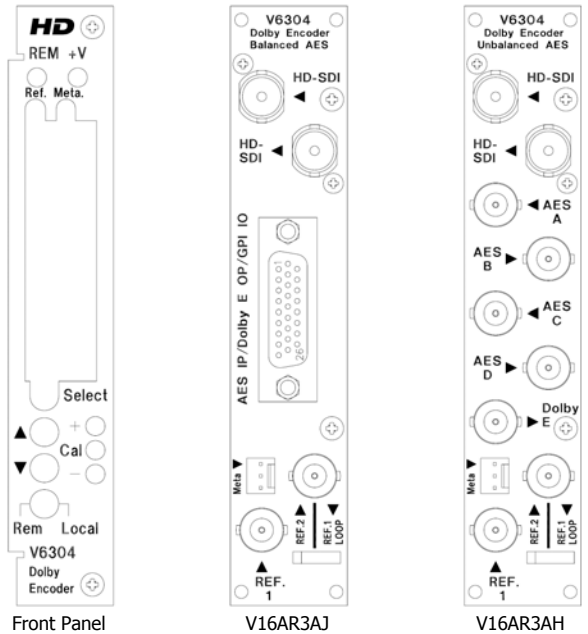
Cable drive	>250m @ 270Mb/s (Belden 8281)
(Output)	>100m @ 1.485Gb/s (Belden 1694)
Data rates	270Mb/s, 1.485Gb/s

Ordering Information

V6304	Dolby E Encoder
V6304/DM	Dolby E Encoder with HD/SD-SDI embedded audio demux/mux

All Pro-Bel's quoted prices for interface modules include the supply of one suitable rear module. Please specify type required when placing order.

V16AR3AJ	3RU - Balanced AES I/O D type rear module.
V16AR3AH	3RU - Unbalanced AES I/O BNC rear module.



* Note: GPIs + GPI/O omitted on BNC rear

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