

DVX1 Digital Video Over Analog

DVE1 Encoder / DVD1 Decoder DVA Set

Compact, Rugged DVA System Provides High Level Security and Range Enhancement for Existing Analog Video Systems!



Design Features

- 2.4 Cubic Inch Package (1.85" x 3.50" x 0.375")
- Weighs 2.1 oz. (Packaged, Available as PCB)
- Robust AES 256-bit Encryption
- Increases Range of Analog Video Systems
- Reduces Occupied Bandwidth (More Systems per Band Allocation)
- Utilizes Existing NTSC/PAL Analog FM Video System
- Configurable Video/Audio/Data Settings & Rates
- IPC Class 3 Assembly (Medical/Aerospace)

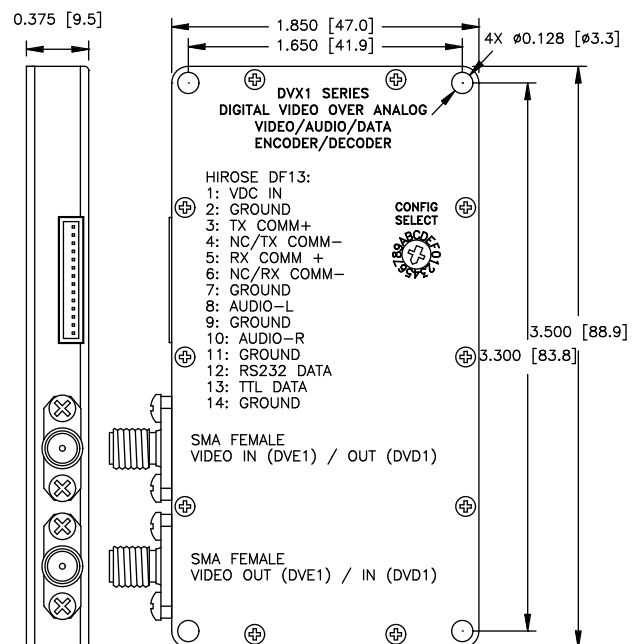
DVE1 and DVD1 Series

AMP's DVE1 Encoder / DVD1 Decoder Digital Video over Analog (DVA) system enhances existing analog FM video systems by providing payload encryption, increasing link range, reducing occupied bandwidth, improving picture quality, and extending the flexibility of traditional analog video systems.

The DVE1 Encoder, installed between the camera and FM transmitter, digitizes and compresses the video and audio inputs, folds in optional auxiliary data, and then encrypts, error-corrects, filters, amplitude-scales, and optionally de-emphasizes the digital stream to counteract the transmitter's pre-emphasis. The DVD1 Decoder, installed between the FM receiver and monitor, reverses this process and provides composite analog video, up to stereo audio channels, and auxiliary data outputs. No modifications to the NTSC or PAL analog FM video system are required.

Video, audio, and data port settings and rates are user-configurable. A 16-position rotary switch accessible through the chassis lid provides real-time remote control and programming (position 0) and utilization of 15 programmable pre-set configurations (positions 1-F).

AMP's DVA system may be ordered with rugged aluminum chassis and connectors for addition to existing FM systems, as stand-alone PCBs allowing custom installations, and as integrated assemblies in our E-series analog FM radios for the ultimate in analog performance.



** NOTES:

- 1) Available as OEM PCB. Consult factory for details.



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System Characteristics

Video Input / Output:	Single Channel, Composite NTSC or PAL (Selectable) - Noninverted
Audio Input / Output (Specify):	None or Stereo - Single Ended
Data Input / Output:	Single Channel
Bandwidth Scaling:	100%, 75%, or 50% (Programmable), Approximately 14 MHz to 7 MHz Occupied Bandwidth
Forward Error Correction (FEC):	Reed Solomon
FEC Rate:	2/3
Encryption:	AES 256-bit (Programmable)

Video Characteristics

Input / Output Levels:	1.0 Vpk-pk Nominal, 1.5 Vpk-pk Maximum
Input / Output Impedances:	75 Ω Nominal, Unbalanced
Frequency Response:	10 Hz to 4.5 MHz NTSC or 5.5 MHz PAL (Programmable), ± 1.5 dB
Pre/De-Emphasis:	525-Line NTSC, 625-Line PAL or None (Programmable), per CCIR-405
Video Compression Algorithm:	JPEG2000 Standard
Video Frame Rate:	30 Fps (NTSC) or 25 Fps (PAL)

Audio Characteristics (Optional)

Encoder Input Levels:	-55 dBV Mic or -10 dBV Line (Nominal, Programmable)
Decoder Output Level:	-10 dBV Line Nominal
Input / Output Impedances:	>4 k Ω Encoder Input, 100 Ω Decoder Output, Nominal, Unbalanced
Frequency Response:	60 Hz to 12.5 kHz, ± 1.5 dB
Audio Sampling:	25 kHz, 16-bit
Audio Compression Algorithm:	AMP Proprietary

Data Characteristics

Signaling Type (Specify):	RS232/3.3V TTL, RS485, or RS422
Data Rates:	1200 baud to 115.2 kbaud (Programmable)
Input / Output Impedance:	5 k Ω to Gnd Input, 300 Ω Output, Unbalanced
Port Settings:	Selectable Baud / 8 / 1 / None / None (Baud/Data Bits/Stop Bits/Parity/Handshake)

Communication Characteristics

Interface Type:	Two-Way UART
Signalling Type (Specify):	RS232, RS485, RS422, or 3.3V TTL
Interface Parameters:	9600/8/1/None/None (Baud/Data Bits/Stop Bits/Parity/Handshake)
Connection:	RS232 RX/TX-Comm Ports

Power Requirements

Input Voltage:	+9 to +16 Vdc, Reverse Polarity Protected
Current Draw:	Encoder: 160 mA @ 12 Vdc Typical Decoder: 160 mA @ 12 Vdc Typical

Mechanical

Material (Specify):	CNC Machined T6061-T6 Aluminum Chassis or OEM PCBs
Chassis Finish (Specify):	Nickel Plated or Gold Iridite
Dimensions:	1.85" W x 3.50" L x 0.375" H
Weight:	2.1 oz. Typical
Connectors:	Video Input/Output: SMA Female DC Supply, Audio/Data, Comms: Hirose DF13-14P-1.25DS, Mate Supplied

Environmental

Temperature (Operating):	-20°C to +60°C
Acceleration:	100 g, 3 Axes
Altitude:	Unlimited
Humidity:	Up to 95% @ Any Temperature Forming Frost or Condensation

* Note – Encoders/Decoders available as unpackaged PCBs for reduced size and weight. When supplied this way, connectors are DF13-4P-1.25DSA for video in/out and DF13-14P-1.25DSA for DC, Audio, Data, and Comms. Contact factory for dimensions and weight of unpackaged PCBs.