

DP571

DOLBY E ENCODER

The DP571 Dolby E Encoder is designed to ease the transition by DTV broadcasters and program producers from two-channel to multichannel audio. It enables the distribution of up to eight channels of high-quality audio plus Dolby Digital metadata via a single AES3 pair, or on two audio tracks of a digital video tape, digital audio tape, or video server.

The DP571 features Dolby E audio coding, which was developed specifically for the production and distribution of discrete multichannel audio. This is unlike audio encoded with Dolby Digital, which is ideal for transmitting multichannel audio to the home viewer.

With Dolby E, audio frames match video frames, ensuring that audio-follow-video edits are free of mutes, glitches, or other aberrations. This makes it possible to switch, route, and perform assemble edits directly on the digital bitstream without decoding and re-encoding. Dolby E audio also carries Dolby Digital metadata generated by the DP571, or further up the production line by the program's producers, for final delivery to the home viewer's Dolby Digital decoder.

The DP571 encodes up to eight audio channels plus metadata into a two-channel bitstream with a standard data rate of 1.92 Mbps (20-bit audio at 48 kHz). With multichannel programming, a "5.1+2" configuration is typically used, with six of the eight channels carrying a 5.1 mix and the other two an Lt/Rt (matrix surround-encoded) or stereo two-channel mix. Alternate configurations include a 5.1 mix plus two mono tracks (5.1+1+1), three stereo mixes (3x2), six mono channels (6x1), and so on. Front-panel LEDs confirm the configuration chosen.

In addition to inputs for audio and metadata, the DP571 provides inputs for SMPTE timecode, and for the standard video black reference signal necessary to keep audio and video frame rates locked. Remote-control connectors, an alphanumeric display, channel-activity LEDs, and menu navigation buttons facilitate operation. A multiplexer combines metadata with the encoded audio signals, and a one-frame utility PCM audio delay circuit keeps linear PCM audio in sync with encoded audio.



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DP571 Specifications

Audio Coding Algorithm

Dolby E

Dolby E Program Configurations

User-selectable

5.1 3x2 5.1+1+1 6x1

5.1+2 8x1 4x2 Others selectable

Audio Sampling Rate

48 kHz

Video Frame Rate

29.97 fps (NTSC)

25 fps (PAL)

24 fps (requires DP579 Dolby E Tri-Level Sync Interface)

Frequency Response

20 Hz–20 kHz \pm 0.25 dB

Distortion

<0.01 % at 1 kHz

<0.02 % 20 Hz–20 kHz

Dynamic Range

>110 dB

Delay

Encoding: Fixed, one video frame

PCM Delay Channel: Fixed, one video frame

Digital Audio Inputs

1/2, 3/4, 5/6, 7/8: BNC female with loop-through, unbalanced; signal levels per AES-3ID-1995/SMPTE 276M specifications, external 75 Ω termination required

Reference Video Input

BNC female with loop-through, unbalanced NTSC program or black for 29.97 fps, PAL program or black for 25 fps; Dolby Black for 24 fps; signal levels per SMPTE 154, external 75 Ω termination required

Dolby E Outputs

Two BNC female, unbalanced; signal levels per AES-3ID-1995/SMPTE 276M; data sample width: 20 and 16 bits (six channels)

PCM Delay I/O

Two BNC female, unbalanced; signal levels per AES-3ID-1995/SMPTE 276M

Linear Time Code Input

BNC female, unbalanced, per SMPTE 12M

Serial Remote Control Input

Front: RS-232, 8-pin female mini-DIN connector.

Rear: 9-pin female D-connector, per SMPTE 207M (RS-485); system firmware can be updated via remote control input

Status Port

Rear: 9-pin female D-connector, 0–5 V TTL levels

Auxiliary Port

Rear: 9-pin female D-connector, RS-232, full duplex

Metadata Port

Rear: 9-pin female D-connector, 115 kps, pinout per SMPTE 207M (RS-485)

Front-Panel Controls and Indicators

Two-line by 16-character LCD with control keys, LED indicators for output data width, Dolby E program configuration, and status

Power Requirements

90–264 VAC, 50–60 Hz, auto-sensing, 15 W maximum; this unit is designed to operate from a centrally switched power source

Dimensions and Weight

1-U rack-mount: 44 x 483 x 324 mm

(1.75 x 19 x 12.75 inches)

Net: 2.7 kg (5.9 lb)

Environmental Conditions

Operating: 0° to 50° C (32° to 122° F), natural convection cooling; 0–98% relative humidity (non-condensing);

Non-operating: –20° to +70° C (–4° to +158° F)

Regulatory Notices

North America: This unit complies with the limits for a Class A digital device pursuant to Part 15 of the FCC rules. The unit also complies with Industry Canada ICES-003 Class A requirements, and is UL Listed for both US and Canada.

Europe: This unit complies with the requirements of Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC.

Warranty

One-year limited, parts and labor; see disclaimer below

Specifications subject to change without notice.

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TECHNOLOGIES SUPPORTED

DD Dolby E

DISCLAIMER OF WARRANTIES:

Equipment manufactured by Dolby Laboratories is warranted against defects in materials and workmanship for a period of one year from the date of purchase. There are no other express or implied warranties and no warranty of merchantability or fitness for a particular purpose.

LIMITATION OF LIABILITY:

It is understood and agreed that Dolby Laboratories' liability whether in contract, in tort, under any warranty, in negligence, or otherwise shall not exceed the cost of repair or replacement of the defective components and under no circumstances shall Dolby Laboratories be liable for incidental, special, direct, indirect, or consequential damages (including but not limited to damage to software or recorded audio or visual material), or loss of use, revenue, or profit even if Dolby Laboratories or its agents have been advised, orally or in writing, of the possibility of such damages.



DP571 Rear Panel View