



## DP571 Dolby E Encoder



The Dolby DP571 encodes multichannel audio into the Dolby E format for contribution and distribution through the conventional two-channel infrastructures of DTV and HDTV facilities.

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

The DP571 performs Dolby E audio coding, developed specifically for the production, contribution, and distribution of multichannel audio. This is distinct from audio encoded with Dolby Digital, which is used for final transmission of multichannel programs directly to the home viewer.

### Dolby E Advantages

With Dolby E, coded audio frames match (that is, are aligned with) 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 edits directly on the coded bitstream without decoding and reencoding. The Dolby E algorithm has been specifically designed to withstand the multiple encode/decode generations typically required during the production, contribution, and distribution phases of DTV. Dolby E audio also carries Dolby Digital metadata for final delivery to the home viewer's Dolby Digital decoder. The DP571

can generate this metadata locally, or it can accept external metadata (as from a DP570 Multichannel Audio Tool) via a rear-panel port.

The DP571 encodes up to eight audio channels plus metadata into a single two-channel AES bitstream (20 bits at 48 kHz). An alternate mode of operation allows for encoding of six audio channels plus metadata (16 bits at 48 kHz).

### Dolby E Configurations

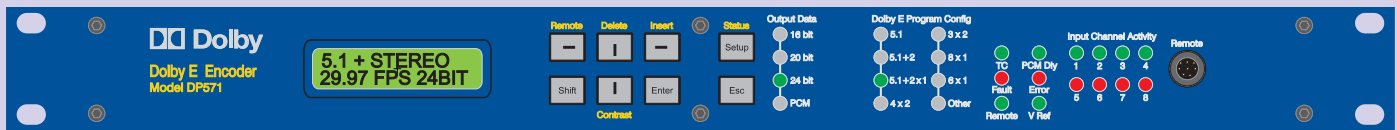
The audio channels within a Dolby E stream can be grouped together to carry separate audio programs. For example, with multichannel programming, a "5.1 + 2" configuration is typically used, with six of the eight channels carrying a 5.1 channel program and the other two an Lt/Rt (matrix surround-encoded) or stereo program. Alternate configurations include a 5.1 program plus two mono tracks (5.1 + 1 + 1), four stereo programs (4 × 2), and eight mono channels (8 × 1). Front-panel LEDs confirm the configuration chosen.

The DP571 accepts SMPTE timecode, standard video black reference signals, and tri-level sync (via the Dolby DP579 Dolby E Tri-Level Sync Interface).

For decoding material in the Dolby E format, the DP572 Dolby E Decoder is the ideal companion unit.

# DP571 Dolby E Encoder

## DP571 Front Panel



### Display and Controls

Two-line by 16-character LCD with control keys for status indication and setup

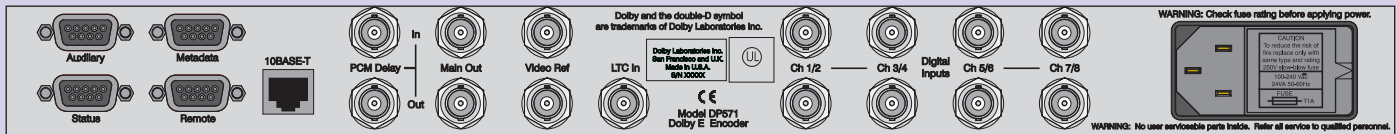
### Status LEDs

Indicate input channel activity, video reference, Dolby E program configuration, fault, error, timecode, and output data (bit depth)

### RS-232 Serial Port

8-pin female mini-DIN connector; for software upgrades

## DP571 Rear Panel



### Digital Audio Inputs

Four BNC female with loop-through, unbalanced, 75 $\Omega$ , signal levels per AES-31D-1995 (SMPTE 276M) specifications, external 75 $\Omega$  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; 23.98, 24, 30 fps when using a DP579 Dolby E Tri-Level Sync Interface; signal levels per SMPTE 154, external 75 $\Omega$  termination required

### Main Output

Two BNC female, unbalanced, 75 $\Omega$ , signal levels per AES-31D-1995 (SMPTE 276M); data sample width: 20 bits (up to eight audio channels) and 16 bits (six channels)

### PCM Delay I/O

Two BNC female, unbalanced, 75 $\Omega$ , signal levels per AES-31D-1995 (SMPTE 276M)

### Linear Timecode Input

BNC female, unbalanced, per SMPTE 12M

### Serial Remote Control Input

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

### Status Port

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

### Auxiliary Port

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

### Metadata Port

9-pin female D-connector; compatible with the metadata output of the DP570 Multichannel Audio Tool

## Audio Coding Algorithm

Dolby E

## Dolby E Program Configurations

User-selectable

5.1 3 x 2 5.1 + 1 + 1 6 x 1  
5.1 + 2 8 x 1 4 x 2 Others selectable

## Audio Sampling Rate

48 kHz

## Video Frame Rates

29.97 fps (NTSC)

25 fps (PAL)

23.98, 24, 30 fps (requires DP579 Dolby E Tri-Level Sync Interface)

## Frequency Response

20 Hz to 20 kHz,  $\pm 0.25$  dB

## Distortion

<0.01% at 1 kHz

<0.02%, 20 Hz to 20 kHz

## Dynamic Range

>110 dB

## Delay

Encoding: Fixed, one video frame

PCM delay channel: Fixed, one video frame

## Power Requirements

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

## Dimensions and Weight

1-U rackmount: 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 (noncondensing)

Nonoperating: –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 the 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. Specifications subject to change without notice.

## Disclaimer of Warranties

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