



# Dolby DP591 Audio Encoder

**The Dolby DP591 Audio Encoder is a key element of Dolby’s industry leading object-based audio authoring toolkit that assists broadcasters, live audio mixers and engineers in the adoption and delivery of immersive audio for live events.**

Dolby’s object-based audio (OBA) authoring toolkit for broadcast applications consists of the DP590 Broadcast Audio Object-Authoring tool (DP590); the DP591 Audio Encoder (DP591) and the DP580 Professional Reference Decoder (DP580). This toolkit provides the ability to do immersive audio authoring, encoding, and monitoring.

The DP591 is a real-time rack-mountable encoder that supports the delivery of live Dolby Atmos content over existing contribution and transmission links. The DP591 will allow an audio engineer to:

- Encode PCM audio stems and metadata to the Dolby ED2 contribution format, or Dolby Digital Plus with Atmos
- Transcode the Dolby E / Dolby ED2 streams to Dolby Digital Plus/Dolby Digital Plus with Atmos
- Decode Dolby ED2 content to its original PCM channels

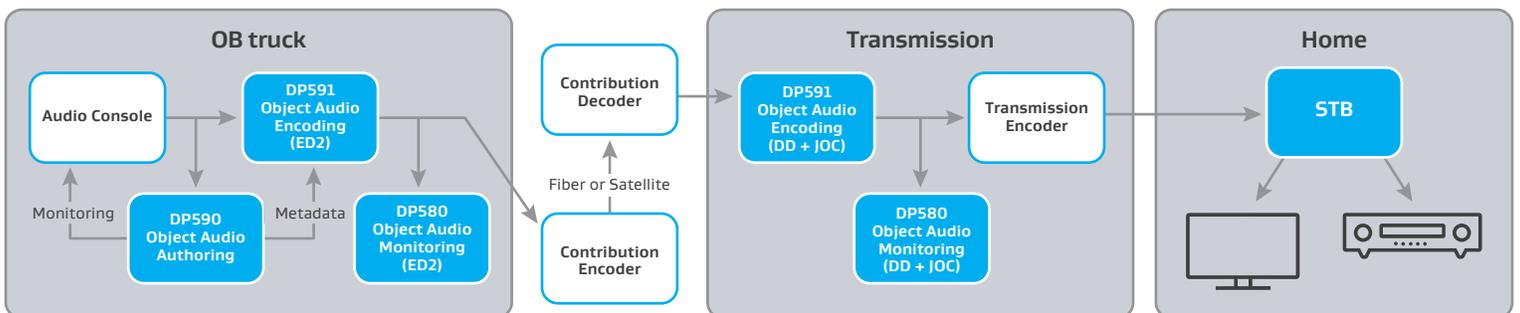
The DP591 can encode for either contribution links or final transmission links. For contribution links, the DP591 supports Dolby ED2. Dolby ED2, which builds on the capabilities of Dolby E, allows the contribution link to carry the increased number of channels required for immersive audio over existing AES3 infrastructures. The core coding is the same—delivering high-quality mezzanine compression, but now it includes the additional metadata required for combining the audio elements needed to create immersive audio experiences.

For transmission links, the DP591 supports the delivery of Dolby Atmos using Dolby Digital Plus with Dolby Atmos, which is an extension to the existing Dolby Digital Plus delivery format that supports the delivery of object based audio. This is delivered to the Dolby Atmos decoder in the home device to recreate the immersive sound as intended by the audio engineers creating the immersive audio mix.

In the outside broadcast truck, The DP591 ingests PCM and metadata over IP and encodes the PCM channels and metadata to Dolby ED2. In the head-end, the DP591 will transcode one Dolby E program or one Dolby ED2 presentation to Dolby Digital Plus or Dolby Digital Plus with Dolby Atmos, respectively. The DP591 is also capable to encode Dolby Digital Plus with Dolby Atmos from PCM directly and decode Dolby ED2 to PCM without metadata

The DP591 acts as a real time audio encoder and transcoder as show in the following diagram:

## Simplified Live Production Workflow





# Dolby DP591 Audio Encoder

## TECHNICAL BENEFITS

- Supports real-time encoding of PCM audio stems and the associated metadata for delivery over existing contribution and transmission links.
- Transcodes Dolby E and Dolby ED2 streams to Dolby Digital Plus or Dolby Digital Plus with Dolby Atmos to support transmission encoding.
- Decodes Dolby ED2 content to its original PCM channels to support remote monitoring.
- Provides proven design and reliability for installation in existing OB trucks.
- Interfaces with the DP590 to support the delivery of encoded Dolby Atmos content designed by the sound mixer.

## BUSINESS BENEFITS

- Eliminates the need for broadcasters to make a major investment in new production facilities and OB Trucks to deliver great immersive audio experiences to the home and on mobile
- Allows broadcasters to deliver immersive audio for live events that leverages the growing number of Dolby Atmos enabled playback devices
- Delivers enhanced object-based audio using existing contribution and distribution links.

## DP591 SPECIFICATIONS

### Front panel



### Rear panel



## Input / Output

### SDI Input

- Two auto detecting BNC female connectors, 75Ω, unbalanced
- Supports SD-SDI (SMPTE 259M-1998), 1.5 GB/s HD-SDI (SMPTE 292M-1998), 3.0 GB/s HD-SDI (SMPTE 424M-2008)

### AES Input or MADI input

One BNC female connector, unbalanced, 75Ω,

- AES: signal levels per AES-3id-1995 (SMPTE 276M)
- MADI: signal levels per AES-10id-2055

### VREF input

One BNC female connector, unbalanced, 75Ω, support for video reference signal

### SDI Out

- Two auto detecting BNC female connectors, 75Ω, unbalanced
- Supports SD-SDI (SMPTE 259M-1998), 1.5 GB/s HD-SDI (SMPTE 292M-1998), 3.0 GB/s HD-SDI (SMPTE 424M-2008)

### AES Outputs

Four BNC female connectors, unbalanced, 75Ω, signal levels per AES-3id-1995 (SMPTE 276M)

### MADI Output

One BNC female connector, unbalanced, 75Ω, signal levels per AES-10id-2005

### Headphone Output

6.35 mm (1/4-inch) standard stereo headphone jack for confidence monitoring



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## Media Ethernet Port

RJ45 connector for 1000Base-T Ethernet; not used

## Control Ethernet Port

RJ45 connector for 1000Base-T Ethernet; provides status and control through a web-based user interface

## Audio processing

### Input:

PCM at 48 kHz, Dolby E and Dolby ED2 compressed audio

### Output:

PCM at 48 kHz, Dolby Digital Plus, or Dolby Digital Plus with Atmos compressed audio

## System management:

SNMP 1.2 support

## Power Specifications

- Power supply Dual, hot-swappable from rear
- Input voltage range 100–240 VAC
- Input frequency range 50–60 Hz, autosensing
- Power consumption 350 W

## Physical

- Dimensions 1-U rackmount: 44 × 483 × 394 mm (1.75 × 19 × 15.50 inches)
- Weight Net: 6.5 kg (14.5 lb.)

## Environmental

- Cooling Front to rear airflow  
Temperature-controlled fans
- Operating Temperature 0°C–40°C (32°F–104°F),
- Storage Temperature 0°C–40°C (32°F–104°F),
- Operating Humidity 20%–80% relative humidity (noncondensing)

## Regulatory Notices

### North America:

UL, FCC, and CE compliant

### Europe:

Complies with the European Union Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHs), as amended by Commission Decisions 2005/618/EC, 2005/717/EC, 2005/747/EC (RoHs Directive), and WEEE

