

Dolby® DP600 Program Optimizer

The Dolby DP600 Program Optimizer provides a unique set of audio tools for file-based broadcast environments and workflows.

The Dolby® DP600 Program Optimizer is an innovative audio platform that provides a file-based workflow solution for loudness correction, audio conversion, and upmixing. It is specifically designed for use in cable, satellite, IPTV, terrestrial TV, radio, and postproduction facilities. The DP600 includes the world's first intelligent audio analysis and automated loudness normalization engine, along with the ability to encode, decode, convert, or transcode between the following Dolby formats: Dolby Digital, Dolby Digital Plus, and Dolby E bitstreams; as well as PCM, MPEG-1 LII, AAC, and HE AAC v2. It also features a newly designed algorithm for upmixing legacy two-channel audio for 5.1-channel delivery. To ease the transition into a file-based workflow, the DP600 also supports many of the most common broadcast media file and audio formats in use today.

Dolby DP600 Program Optimizer

Automated Loudness and Metadata Correction

Content producers and broadcasters can reduce loudness complaints by using the DP600 to provide viewers with a consistent audio experience across programs, channels, and networks. Expanding upon the unique Dialogue Intelligence™ technology developed for the Dolby LM100 Broadcast Loudness Meter, the DP600 normalizes the loudness of audio programs while preserving their original dynamic range.* The DP600 analyzes the loudness of file-based audio bitstreams coded in Dolby Digital, Dolby Digital Plus, Dolby E, and HE AAC with Dolby metadata, and validates and corrects the dialnorm audio metadata parameter without the need for decoding and reencoding the original audio bitstream. The DP600 also provides intelligent speech-based loudness normalization for both PCM audio and MPEG-1 LII audio.

Audio Encoding/Decoding and Cross-Conversion

The DP600-C version of the Program Optimizer provides faster-than-real-time file-based encoding, decoding, and conversion between all of Dolby's audio formats (Dolby Digital, Dolby Digital Plus, and Dolby E), and PCM, MPEG-1 LII, AAC, and HE AAC v2, while preserving the audio metadata.

In addition, it offers a unique, high-quality, single-step Dolby Digital to Dolby Digital Plus transcoder that preserves the metadata and minimizes tandem coding losses. This allows the audio from existing media archives to be converted to next-generation broadcast formats. The DP600 also supports Dolby Pro Logic® II encoding for two-channel matrix-encoded content derived from multichannel source files.

Upmixing Functionality

Customers interested in enhancing two-channel audio for use in 5.1-channel applications can purchase an optional software upgrade that adds an intelligent file-based upmixing capability to the DP600. This unique process is based on a newly developed Dolby algorithm that creates a wider, natural sounding sweet spot. It also ensures that subsequent downmixing is free from artifacts typically found with other solutions. The upmixing process can be adaptively integrated into the same DP600 workflow profiles utilized for file-based loudness correction, encoding, decoding, conversion, and transcoding.

Workflow Flexibility and Ease of Use

The Dolby DP600 platform supports several types of applications, including archiving, automated quality control, content conversion, and media asset management, and offers considerable potential for integration with third-party systems through an open Web services-based API. In recognition that not all users require a high level of integration, the DP600 also features a hot folder ingest process that is simple to set up and use. In this mode, users can select a specific profile, and all media files moved to the hot folder will be automatically processed based on the profile and delivered to a user-defined folder upon completion.

Ready for the Future

The Dolby DP600 Program Optimizer is designed with future extensibility in mind, maintaining support for the latest broadcast and audio file formats and the most up-to-date Dolby innovations.

* In very rare cases involving extreme loudness corrections that require gain, soft limiting will occur only during program peak levels that would exceed clipping after applying this type of loudness correction.

Cable Applications

- Automated video on demand (VOD) file analysis and loudness correction
- Automated VOD file transcoding and conversion
- Automated digital program insertion file analysis and loudness correction
- Automated broadcast media file audio transcoding and conversion
- Automated broadcast media file QC and loudness correction

Satellite Applications

- Pay-per-view (PPV) file analysis and loudness correction
- PPV file audio transcoding and conversion
- Automated broadcast media file audio transcoding and conversion
- Automated broadcast media file QC and loudness correction

IPTV Applications

- Automated VOD file analysis and loudness correction
- Automated VOD file transcoding and conversion
- Automated broadcast media file audio transcoding and conversion
- Automated broadcast media file QC and loudness correction

Terrestrial Broadcast Applications (Networks/Affiliates/Independent Stations)

- Broadcast media file QC and loudness correction
- Broadcast media file (GXF, MXF, others) transcoding and conversion

Postproduction Applications

- Automated loudness analysis, setting, and correction of dialnorm metadata of programming destined for broadcast
- Automated normalization of content without metadata—to meet your customer's delivery specifications
- Faster-than-real-time automated transcoding and conversion of broadcast media files



Main Status Display

Touch-screen, 6.4-inch diagonal VGA (640 x 480 dpi)

System Status LEDs

Power, alarm, temperature, drive activity

USB 2.0 Port

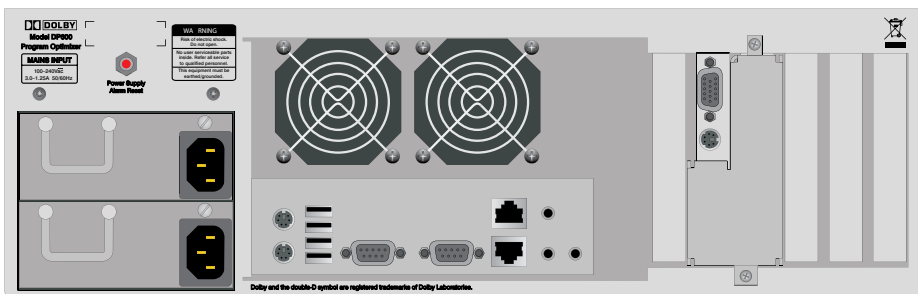
Type A; for licensing software and updates

DVD Drive (Behind Main Status Panel)

For software upgrades and updates

Removable Panel

For access to hard drives



Power Supplies

Dual-redundant power supplies

PS/2 Ports

Two, for keyboard and mouse

USB 2.0 Ports

Four Type A

15-Pin SVGA Port

For a local video monitor

Ethernet Ports

Two 10/100/1000Base-T with auto-detection

Media File Formats Supported

GXF (SMPTE 360M), including single programs spanned over up to five files; MXF Operational Patterns per SMPTE 390M (OP-Atom); SMPTE 378M (OP-1a); SMPTE 391M (OP-1b with internal essence file formats only); MXF Container (essence) support per SMPTE 379M (GC); SMPTE 381M (GC-MPEG); SMPTE 383M (GC-DV minus support for audio essence interleaved in DV); SMPTE 382M (GSC-AESBWF); SMPTE 386M (IMX with D-10 audio); MPEG-2 program stream; MPEG-2 single program transport stream; MP4 file format

Media Server Platforms Supported

Omneon® MediaDeck™, Spectrum™

Linear Audio Types Supported

WAV, including multiple mono, broadcast, and multichannel WAV files with or without a Dolby audio metadata WAV chunk, as interleaved or discrete

AIFF, including multichannel as interleaved or discrete files

16-, 20-, and 24-bit PCM (within any of the listed media file formats above)

Coded Audio Types Supported

Dolby Digital (AC-3), Dolby Digital Plus (E-AC-3), Dolby E, HE AAC with Dolby metadata, AAC, MPEG-1 LII

Additional Processing Engines Supported

Dolby Pro Logic II encoding
Proprietary two-channel to 5.1-channel upmixing

Loudness Estimation/Correction Algorithm(s)

Dialogue Intelligence, patented
Proprietary coded audio loudness correction algorithm, patent pending
ITU-R BS.1770-1 audio loudness measurement including measurement of true-peak level as per ITU-R BS.1770-2
EBU R128 audio loudness measurement

System Components

Two Dual-Core Xeon® CPUs, 2 GB system memory

Operating System

Linux®

File System Protocols

FTP, SMB/CIFS, and SFTP

Third-Party API

Provided as a Web service utilizing Simple Object Access Protocol (SOAP) over HTTP

Power Requirements

100–240 VAC, 50–60 Hz, 300 W; incorporates dual-redundant power supplies

Dimensions and Weight

3-U rackmount: 638.5 x 483 x 133 mm
Net: 18 kg (39.7 lb)

Environmental Conditions

Operating: 0°C–40°C (32°F–104°F), fan cooling, 20%–80% relative humidity (noncondensing)

Regulatory Notices

UL, FCC, CE, and RoHS compliant

The DP600-C provides file-based encoding, decoding, and conversion between the following audio formats:

In/Out	Dolby Digital	Dolby Digital Plus	HE AAC with Dolby Metadata*	Dolby E	PCM	MPEG-1 LII
Dolby Digital		✓	✓	✓	✓	✓
Dolby Digital Plus	✓		✓	✓	✓	✓
HE AAC with Dolby Metadata	✓	✓		✓	✓	✓
Dolby E	✓	✓	✓		✓	✓
PCM**	✓	✓	✓	✓		✓
MPEG-1 LII	✓	✓	✓	✓	✓	

*Includes support for AAC and HE AAC v2

**PCM input to one to eight channels via WAV and AIFF

Visit www.dolby.com/warranty for the latest product warranty information.

To purchase a Dolby product, go to the Find a Dealer section of www.dolby.com/broadcast.

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S11/24151/24345



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