

DP562 MULTICHANNEL DOLBY DIGITAL DECODER



The Dolby DP562 is a reference decoder enabling production, mastering, and broadcast facilities to monitor audio, video, and multimedia programs with multichannel sound. With features tailored to the needs of the professional user, the DP562 is an essential production tool for both Dolby Surround formats and those with Dolby Digital audio, such as DVD and DTV.

The DP562 decodes Dolby Digital program material with up to 5.1 channels. It also provides four-channel Dolby Surround Pro Logic decoding for matrix-encoded surround material. The Pro Logic decoder has been implemented digitally, making it possible to monitor Dolby Surround encoded PCM soundtracks in a studio setting without converting them to analog for surround decoding.

The 1-U high DP562 allows manual selection from four decoding modes: Dolby Digital, Dolby Pro Logic, Dolby Digital + Pro Logic, and PCM Pass-through. It can also be configured to switch automatically to the Dolby Digital mode when a Dolby Digital bitstream is detected; bitstream parameters are displayed on a two-line, 16-character LCD. Front-panel controls allow selection of the various compression modes for Dolby Digital's dynamic range control and dialogue level normalization features. A rear-panel interface provides remote control permitting integration of the DP562 into automated facilities. It can also be remotely controlled by a PC with application software.

The DP562 also makes it possible to monitor Dolby Digital's unique "downmixing" capabilities. For example, in the Dolby Digital + Pro Logic mode, a 5.1-channel Dolby Digital input signal is automatically mixed down to a two-channel (Lt/Rt) Dolby Surround encoded signal, then processed through the Pro Logic decoder. This permits producers to verify what a home listener would hear from material transmitted with 5.1 channels, but received by a two-channel Dolby Digital decoder connected to a playback system with Pro Logic decoding.

Other modes make it possible to monitor what multichannel program material will sound like when played on multichannel systems, mono or two-channel stereo systems, surround systems without a center channel, and systems with a center speaker but no surrounds.

To set up the correct monitoring environment, the DP562 offers full bandwidth and band-limited pink noise, individual channel level trims, and center and surround channel delays. The DP562 also has comprehensive bass redirection capabilities.

For encoding Dolby Digital material, the Dolby DP569 reference Dolby Digital multichannel encoder is an ideal companion to the DP562. A two-channel Dolby Digital encoder unit, the DP567, is also available for applications not requiring multichannel capability.



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ABOUT DOLBY DIGITAL

Dolby Digital is a perceptual audio coding algorithm that takes advantage of auditory masking and both intra- and inter-channel redundancy to enable the efficient storage and transmission of high-quality digital audio.

Dolby Digital allows the number of channels and bit rates to be tailored to particular applications, such as 5.1 channels at 384 to 448 kbps for consumer surround sound formats and two channels at 192 kbps for stereo programs. Additional features include the ability of consumer decoders to downmix multi-channel bitstreams for mono, stereo, and Dolby Surround playback, ensuring full compatibility under a wide variety of listening conditions.

Conceived as a multichannel coding system, Dolby Digital was first introduced in 1992 for cinema sound. Due to its combination of audio quality, bandwidth efficiency, and flexibility, it has since become available on laser disc, the worldwide standard for multichannel audio for DVD, and the audio standard for ATSC digital broadcast TV and SCTE digital cable TV. Dolby Digital is also increasingly popular for applications such as DVB and other satellite systems.

Dolby Digital

Data Rates and Channel Modes

Total Data Rate (kbps)	Channel Modes*
56, 64, 80	1/0
96	1/0, 2/0
112	1+1, 1/0, 2/0
128, 160	1+1, 1/0, 2/0, 3/0, 2/1
192	1+1, 1/0, 2/0, 3/0, 2/1, 3/1, 2/2
224, 256, 320, 384, 448, 512, 576, 640	1+1, 1/0, 2/0, 3/0, 2/1, 3/1, 2/2, 3/2

*Modes follow the convention X/Y, where X represents the number of front channels and Y represents the number of surround channels. 1+1 represents a dual mono mode. 2/0 represents either conventional stereo L/R or Dolby Surround encoded Lt/Rt.

Audio Sampling Rates

32, 44.1, or 48 k samples/second.
Output sample rate follows input.

Frequency Response

Digital outputs: 20 Hz–20 kHz ± 0.01 dB.
Analog outputs: 20 Hz–20 kHz ± 0.1 dB.

Distortion

Less than 0.005%, 20 Hz–20 kHz.

Dynamic Range

Greater than 100 dB.

Trim Level Adjust

+6 to –18 dB in 0.125 dB steps.

Crosstalk

Better than –100 dB @ 1 kHz.

Digital Audio Input

Dolby Digital (AC-3) in IEC 1937 format (formerly IEC 958 Annex B) as specified in ATSC A/52 Annex B. PCM in AES/EBU format. 3-pin female XLR connector.

Digital Audio Outputs

AES/EBU PCM. 5 Vpp, 110 Ω . Three 3-pin male XLR connectors.

Analog Audio Outputs

0 dBFS = +24 dBu, balanced floating, 25 Ω output impedance. 20-bit DAC. 3-pin male XLR connectors.

Headphone Output

+11.5 dBu maximum output into 600 Ω nominal. 1/4" standard audio headphone jack. Level adjustable over 60 dB range.

Serial I/O

RS-232, 9600 bps. 9-pin female D connector. The DP562 is configured as a DCE device.

Status/Remote Input

9-pin female D connector.

Front-Panel Displays

Two-line by 16-character alphanumeric LCD with back lighting.
Six-channel Activity/Signal Presence LEDs (L, C, R, LS, RS, SW).

Decoding Modes

Dolby Digital, Dolby Pro Logic, Dolby Digital + Dolby Pro Logic, and Pass-through.

Listening Modes

Full, 3 Stereo, Phantom, Stereo, Mono.

Compression Modes

None, Custom, Line, RF. Custom and Line modes have adjustable parameters.

Test Noise

Auto: Sequences wide-band or band-limited pink noise through enabled channels at two-second intervals.

Manual: Feeds continuous noise to selected channel when unit is in trim level mode.

Power Requirements

90–264 VAC, 50–60 Hz, auto sensing, 30 W maximum.

Dimensions and Weight

45 mm x 483 mm x 305 mm (1.75" x 19" x 12").
Net: 4.9 kg (10.5 lbs).

Operating Conditions

5–45° C, natural convection cooling.
0–90% relative humidity (non-condensing).

Regulatory Notices

North America: This unit complies with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. It is UL listed for the U.S. and Canada.

Europe: This product complies with the requirements of Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC and carries the CE marking accordingly.

Warranty

One-year limited, parts and labor.

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.

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