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DP524 Two-Channel Digital Audio Decoder



The Dolby DP524 is a two-channel decoder supporting Dolby AC-2, Dolby Digital, and MPEG-1 Layer II for T1, ISDN, and Dolby Fax applications.

Providing unmatched flexibility and interconnectivity, the Dolby® DP524 is ideal for decoding and monitoring in telecommunications applications requiring high audio quality at efficient data rates. Uses include studio interconnection via T1 and ISDN for remote recording and postproduction applications, Dolby Fax, and other satellite systems applications.

The DP524 supports Dolby AC-2, Dolby Digital (AC-3)*, and MPEG-1 Layer II at data rates from 40 to 448 kbps. Dolby Fax and ISDN applications require the use of Dolby AC-2 at 256 kbps and a 48 kHz sampling rate. Dolby Digital (AC-3)* supports mono, dual-mono, and stereo formats, at 32, 44.1, or 48 kHz sampling rates; MPEG-1 Layer II supports single-channel, dual-mono (stereo), and joint-stereo formats at 32, 44.1, or 48 kHz sampling rates.

The DP524 accepts an encoded RS-449 serial data stream with timing information and automatically selects the appropriate decoding algorithm to recover the original audio and any auxiliary data. Synchronization is derived from either a user-provided external clock or the unit's own internal clock. Both AES/EBU and S/PDIF digital outputs are provided, plus analog outputs with 20-bit D/A converters.

For telecommunications encoding applications, our complementary Dolby DP503 unit supports the same algorithms and data rates.

* Not suitable for new broadcast facilities requiring the latest version of the Dolby Digital (AC-3) codec.

Dolby DP524 Two-Channel Digital Audio Decoder

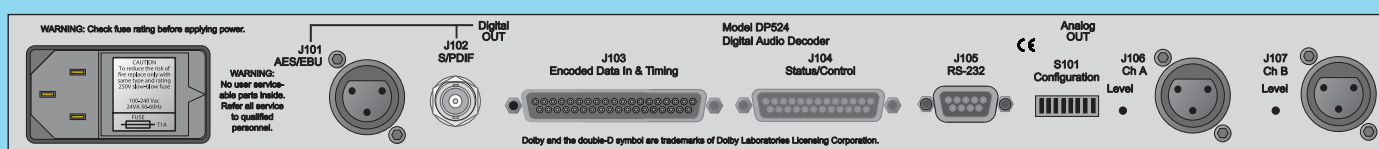
DP524 Front Panel



LED Status Indicators

Signal presence (channels A and B), 48, 44.1, and 32 kHz (sample rates), mute, fault, and test

DP524 Rear Panel



Encoded Data Input and Timing

RS-449, 37-pin male D-connector

Digital Audio Outputs

AES/EBU: 3-pin male XLR, balanced, $110\Omega \pm 5\%$; 5 Vp-p nominal
S/PDIF: female BNC, unbalanced, $75\Omega \pm 5\%$; 0.5 Vp-p nominal per IEC60958

Analog Audio Outputs

3-pin male XLR, active balanced floating output, 22Ω , adjustable up to +24 dBu for digital full scale in balanced mode, +18 dB unbalanced ($0 \text{ dBu} = 0.775 V_{\text{RMS}}$)

Auxiliary Data Outputs

One RS-232, 9-pin male D-connector for aux data and remote control/software upload

Status/Control

25-pin female D-connector; TTL level outputs/inputs

Rear Panel DIP Switch

Select operational modes: test-tone generator, aux data rate/download data rate, algorithm software download

Audio Coding Algorithm

Dolby AC-2, Dolby Digital (AC-3), and MPEG-1 Layer II

Audio Sampling Rates

32, 44.1, 48 kHz, selectable
Dolby AC-2: 48 kHz only

Frequency Response

Lower limit: 20 Hz
Upper limit varies with data rate

Distortion[†]

Dolby Digital: $<0.01\%$ at 1 kHz; $<0.02\%$, 20 Hz to upper response limit
Dolby AC-2, MPEG-1 Layer II: $<0.1\%$ at 1 kHz; $<0.2\%$, 20 Hz to upper response limit

Dynamic Range

$>110 \text{ dB}$

Level Stability

Better than 0.2 dB

Dolby Surround Compatibility

Compatible with two-channel Dolby AC-2 and Dolby Digital algorithms; compatible with MPEG-1 Layer II in stereo mode

Time Delay—Encode/Decode

Dolby AC-2 (48 kHz sample rate)

Data Rate (kbps)	Delay (ms)
128/256	42
192/384	12

Dolby Digital (all data rates)

Sample Rate (kHz)	Delay (ms)
32	210
44.1	152
48	140

MPEG-1 Layer II (all data rates)

Sample Rate (kHz)	Delay (ms)
32	161
44.1	117
48	107

Test-Tone Generator

Digital equivalent of 1 kHz nominal sine wave at -18 dB , referenced to digital full scale

Power Requirements

90–264 VAC, 50–60 Hz, auto-sensing, 16 W maximum; this unit is designed to operate from a centrally switched power source

Dimensions and Weight

1-U rackmount: $44 \times 483 \times 267 \text{ mm}$
($1.75 \times 19 \times 10.5 \text{ inches}$)
Net: 3.9 kg (8.5 lb)

Environmental Requirements

Operating: 0° to 50°C (32° to 122°F), natural convection cooling
Nonoperating (storage): -40° to $+85^\circ\text{C}$ (-40° to 185°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 and carries the CE marking accordingly.

Warranty

One-year limited, parts and labor; see disclaimer. Specifications subject to change without notice.
[†] Measured using an Audio Precision System One

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, or of noninfringement of third-party rights (including, but not limited to, copyright and patent rights).

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 or accused infringing devices, 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), cost of defense, 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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