DP571/DP572 Dolby E Professional Encoder/Decoder Quick Start Guide

Program Configuration

In the DP571 Encoder, the selection you make under the Program Configuration menu determines how the audio channels are grouped within the Dolby® E bitstream. Up to eight input channels may be grouped together in "programs," where each program contains its own metadata.

Examples:

5.1 + 2: one six-channel and one stereo program (two individual programs)

2×2: two stereo programs (two individual programs)

2 + 6×1: one stereo and six mono programs (seven individual programs)

4 + 2 + 2×1: one four-channel, one stereo, and two mono programs (four individual programs)

Channel Activity Indications

Color	Indication
Off	Channel is disabled.
Yellow	Channel is enabled; level <–60 dBFS.
Green	Signal present above –60 dBFS.
Red	Signal above –0.1 dBFS (clipping).
Flashing Yellow	Required input missing.

Function LED Indications

Function	Color	Indication
Video Ref	Green	Video reference is present and valid.
	Yellow	Vref does not match Dolby E frame rate.
	Red	Video reference is missing or invalid.
Fault	Off	Normal operation; system OK.
	Off	Hardware-related fault.
Error	Off	No operational errors detected.
	Red	Operational errors; output may be invalid.
PCM Dly In	Off	No PCM signal detected.
	Green	Valid PCM signal present at input.
	Yellow	Non-48 kHz signal present. (DP572)

Video Reference (DP571 and DP572)

The DP571 and DP572 both need a video reference: to align the individual frames of data in the Dolby E bitstream and to generate the output audio clock and align the metadata output, respectively. In the DP571, you must manually configure the Frame Rate menu to match the current video reference frame rate, whereas the DP572 auto-detects the frame rate (see Function LED Indications). To operate at 25 or 29.97 fps, a standard analog video reference is required. To operate using a tri-level video reference at 23.98, 24, or 30 fps, the DP571 and DP572 require the DP579 Tri-Level Sync Interface.

Metadata (DP571 and DP572)

DP571: The Dolby E output includes metadata, which may be set internally through the front-panel menus or taken from an external metadata stream connected to the rear panel.

DP572: When decoding Dolby E, the metadata included in the stream is sent to the rear-panel metadata port. When in **Bypass** or **Switched Out** modes, metadata may also be sent to this port (enabled via the **Bypass Metadata** menu) from an internal set of parameters configured in the **PCM Metadata** menus. This allows simple, local generation of metadata appropriate for the PCM audio signal. The metadata is also used to control the transmission Dolby Digital encoder and is often used to switch automatically between 5.1 and stereo programming or main and back-up feeds.

DP571 Operating Modes

Reversion Mode

These four selections determine what happens when external metadata is lost.

- **Stop Encoding:** Encoding stops, output mutes, error LED lights.
- **Last Used:** Encoding continues using the last valid external metadata values received.
- **Preset:** Missing metadata values are replaced using the internal metadata values as selected in **Metadata Params**.
- **Adaptive:** If metadata is completely lost, the encoder uses the Last Used method. If only some parameters are missing, the encoder uses the Preset method.

Metadata Source

These two options determine the source of the metadata.

- **Internal:** Uses internal metadata values as selected in Metadata Params.
- **External:** Metadata is supplied by the external source, and may not be modified locally.

Dolby Digital Metadata

A home decoder uses Dolby Digital metadata to optimize the audio program for the local listening environment. It controls replay level, dynamic range, and downmixing. Dolby Digital metadata is also used when monitoring in the station or during transmission to the home.

- **Enabled:** Default setting; includes Dolby Digital metadata.
- **Disabled:** The Dolby E stream does not include Dolby Digital metadata; useful only if the decoded bitstream will never be re-encoded as Dolby Digital audio.

Bit Depth

This setting refers to the number of bits used in the digital audio output to carry the Dolby E data stream. This should be configured to match the bit depth available on the recording device or within the facility. 20-bit allows for eight channels of audio and metadata, 16-bit for six channels of audio and metadata. This setting does not refer to the number of bits of resolution of the audio signals carried within the Dolby E stream.

DP572 Operating Modes

Program Play

- **Enabled:** Allows users to decode a Dolby E stream off a VTR in Program Play mode, up to ±10% varispeed. The source VTR must support varispeed without sample rate conversion.
- **Disabled:** Normal playback mode; Main Input is locked to video reference at 48 kHz. Latency is locked at one frame; if Dolby E audio is delayed by up to 10 msec with respect to video, the decode latency is reduced to correct for the delay to maintain one-frame system latency.

PCM Bypass

- **Enabled:** PCM audio on the Main Input passes through the unit and is sent to all outputs. Allows clean audio transitions when the Main Input signal switches from Dolby E to PCM.
- **Disabled:** Audio outputs are muted when non-Dolby E stream is present at the Main Input. This is the recommended setting for editing Dolby E audio on a VTR.

Bypass Latency

- **1 Frame:** Maintains a one-frame delay on a PCM signal present at the Main In connector to match the Dolby E decoding delay. Only valid if PCM Bypass mode is enabled.
- **Minimal:** The PCM Bypass delay is the minimum necessary (<8 ms) from Main In to PCM Out.

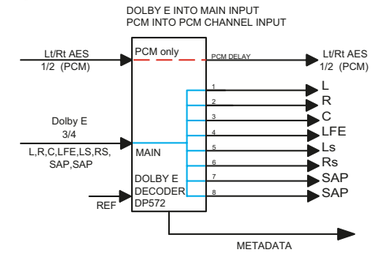
Input/Output Channel Assignments

The program number (1–8) identifies the channels associated with individual programs in this chart.

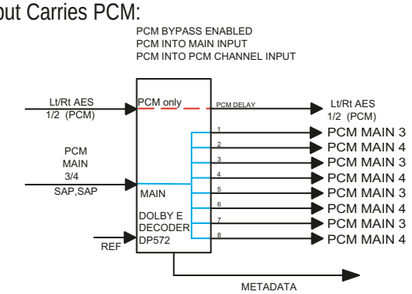
Program Config	Connector Channel Map 1/2	3/4	5/6	7/8
5.1 + 2	1L/1R	1C/1LFE	1Ls/1Rs	2L/2R
5.1 + 2×1	1L/1R	1C/1LFE	1Ls/1Rs	2C/3C
4 + 4	1L/1R	1C/1S	2C/2S	2L/2R
4 + 2×2	1L/1R	1C/1S	3L/3R	2L/2R
4 + 2 + 2×1	1L/1R	1C/1S	3C/4C	2L/2R
4 + 4×1	1L/1R	1C/1S	4C/5C	2C/3C
4×2	1L/1R	3L/3R	4L/4R	2L/2R
3×2 + 2×1	1L/1R	3L/3R	4C/5C	2L/2R
2×2 + 4×1	1L/1R	3C/4C	5C/6C	2L/2R
2 + 6×1	1L/1R	4C/5C	6C/7C	2C/3C
8×1	1C/2C	3C/4C	5C/6C	7C/8C
5.1	1L/1R	1C/1LFE	1Ls/1Rs	None
4 + 2	1L/1R	1C/1S	None	2L/2R
4 + 2×1	1L/1R	1C/1S	None	2C/3C
3×2	1L/1R	3L/3R	None	2L/2R
2×2 + 2×1	1L/1R	3C/4C	None	2L/2R
2 + 4×1	1L/1R	4C/5C	None	2C/3C
6×1	1C/2C	3C/4C	5C/6C	None
4	1L/1R	1C/1S	None	None
2 + 2	1L/1R	None	None	2L/2R
2 + 2×1	1L/1R	None	None	2C/3C
4×1	1C/2C	3C/4C	None	None
7.1	1L/1R	1C/1LFE	1Ls/1Rs	1Bsl/1Bsr
7.1 Screen	1L/1R	1C/1LFE	1Ls/1Rs	1Le/1Re
PCM Bypass	1L/1R	1L/1R	1L/1R	1L/1R

DP572 Decoding and PCM Bypass

Normal Dolby E Decoding:



Main Input Carries PCM:



DP572 Output Routing Modes

The DP572 Dolby E Decoder offers five routing modes to assist with integration into existing digital audio paths. All five modes can be selected from the **PCM Ch Config** menu; Voiceover and Switched Out modes can also be selected through the rear-panel Status Port.

Voiceover Mode: Mixes the PCM signal present at the PCM In connector with the audio in Program 1 of the Dolby E stream. The attenuation of the decoded Dolby E content can be adjusted using the **Voiceover Attn** menu, and the incoming PCM voiceover signal can be routed to either the Center or Left and Right channels by selecting either **Mono** or **Stereo** from the **Voiceover Ch** menu.

Switched Out Mode: Replaces Program 1 of the decoded Dolby E audio with the signal present at the PCM In connector. Audio present at the PCM Input connector is routed to output channels 1 and 2, while all other outputs relevant to Program 1 are muted.

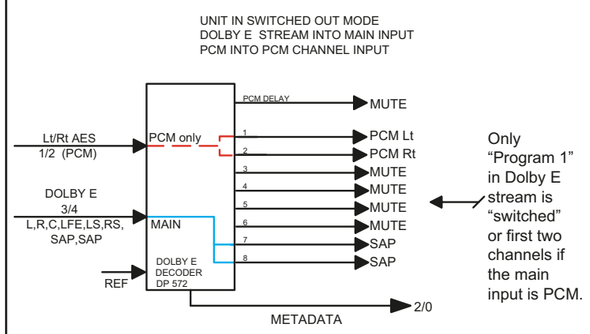
Auto Switched Out Mode: Provides an automatic, smooth transition between material decoded with Dolby E technology and a "Switched Out" condition when the Main Input to the DP572 switches from Dolby E to PCM.

Delay Out Mode: Allows a two-channel PCM signal present at the PCM In connector to stay in sync with the decoding latency of the Dolby E audio. In this mode, the PCM Delay Output connector is active. You can optionally place an internal sample rate converter in the path of the PCM Input signal.

External Ctrl: Instructs the DP572 to look for routing commands from the rear-panel Status Port.

Tip: The Switched Out mode menu controls the DP572 audio and metadata outputs if the Main Input signal disappears and the unit is set to Switched Out (or Auto Switched Out) mode. If set to Mute, both audio and metadata outputs are silent; if set to Active, Switched Out mode operates normally.

DP572 Switched Out Mode



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DP571
Unit Setup Menus

Program Config

- 5.1 + 2*
- 5.1 + 2×1*
- 4 + 4*
- 4 + 2×2*
- 4 + 2 + 2×1*
- 4 + 4×1*
- 4×2*
- 3×2 + 2×1*
- 2×2 + 4×1*
- 2 + 6×1*
- 8×1*
- 5.1
- 4 + 2
- 4 + 2×1
- 3×2
- 2×2 + 2×1
- 2 + 4×1
- 6×1
- 4
- 2 + 2
- 2 + 2×1
- 4×1
- 7.1*
- 7.1 Screen*

* = Not available in 16-bit mode

Operating Mode

- Time Code Input
  - LTC
  - VITC
- Reversion Mode
  - Last Used
  - Preset
  - Stop Encoding
  - Adaptive
- Metadata Source
  - Internal
  - External
- Dolby D Metadata
  - Enabled
  - Disabled
- 48 kHz Pull Down
  - 29.97 fps
  - 30 fps
  - 23.98 fps
  - 24 fps
  - 25 fps
- Frame Rate
  - 20 bit
  - 16 bit
- Bit Depth

Metadata Params

- Program 1–n
  - Program Desc
  - Dialogue Level — –31 dB to –1 dB
  - Channel Mode
    - 3/2
    - 2/0 Stereo
    - 2/1
    - 2/2
    - 1/0 Mono
    - 3/0
    - 3/1
  - LFE Channel — Enabled/Disabled
  - Bitstrm Mode
    - Main Complete
    - Main M&E
    - Assc Visual Imp
    - Assc Hear Imp
    - Assc Dialog
    - Assc Commentary
    - Assoc Emergency
    - Main SV Karoke
  - Line Mode Profile
    - Film Standard
    - Film Light
    - Music Standard
    - Music Light
    - Speech
    - None
  - RF Mode Profile
  - RF Ov Protect — Enabled/Disabled
  - Center Dwnmx
    - 0.707 (–3.0 dB)
    - 0.596 (–4.5 dB)
  - Srnd Dwnmx
    - 0.707 (–3.0 dB)
    - 0.500 (–6.0 dB)
  - Dolby Srnd
    - 0 (–999 dB)
    - 0.500 (–6.0 dB)
    - Dolby Srnd
    - Not Dolby Srnd
  - Audio Prod Info — Yes/No
  - Mixing Level — 80–111 dB
  - Room Type
    - Not Indicated
    - Large
    - Small
  - Copyright — Yes/No
  - Original Bitstream
    - Not Indicated
    - Lt/Rt
    - Lo/Ro
  - Preferred Downmix
  - Lt/Rt C Downmix
    - 1.414 (+3.0 dB)
    - 1.189 (+1.5 dB)
    - 1.000 (+0.0 dB)
  - Lt/Rt S Downmix
    - 0.841 (–1.5 dB)
    - 0.707 (–3.0 dB)
  - Lo/Ro C Downmix
    - 0.596 (–4.5 dB)
    - 0.500 (–6.0 dB)
  - Lo/Ro S Downmix
    - 0 (–999 dB)
    - Not Indicated
  - Dolby Srnd EX
    - Not Srnd EX
    - Dolby Srnd EX
  - A/D Conv Type
    - Standard
    - HDCD
  - DC Filter
  - Lowpass Filter
  - LFE Lowpass Filter
    - Srnd 3 dB Atten
    - Enabled/Disabled
  - Srnd Ph Shift
- Reversion Preset
  - Rev Prog Config

These modes are also used by the DP572 to select metadata parameters for PCM Bypass operation

User Presets

- Save Preset
- Recall Preset

This menu is identical for both the DP571 and DP572

System Settings

- Remote Baud Rate
  - 9.6 kbps
  - 19.2 kbps
  - 38.4 kbps
- Unit Address — 8280-FFFE
- Unit Name — My Dolby E

DP571/572 Front Panel Hardware Reset

Shift → Esc

Press and hold these three buttons

DP572
Unit Setup Menus

Operating Mode

- Program Play
- PCM Bypass
  - 48 kHz Pull Down
    - Enabled
    - Disabled
  - Bypass Metadata
    - 1 Frame
    - Minimal
- Bypass Latency
- Frm Rate Convert
  - Disabled
  - Fixed
  - Variable
- PCM Metadata
- Output Routing
  - Delay Out
  - Switch Out
    - Voiceover
    - Auto Switch Out
  - Ext Control
- Switch Out Mode
  - No Input=Active
  - No Input=Mute

PCM Ch Config

- Voiceover Ch
  - Mono
  - Stereo
- Voiceover Attn — 0 dB to –999 dB
- PCM Channel SRC
  - Normal
  - Bypass
- Program 1-n
- PCM Delay

Headphone Prog

Headphone Map

- 5.1-channel map — L/R=L/R, Ls/Rs, C/C, LFE/LFE
- 4-channel map
  - L/R=L/R, C/C, S/S
  - L/R=L/R
- 2-channel map
- 1-channel map — L/R= C/C

Default Metadata Settings for Programs

Parameter	5.1 Channels	Four Channels	Two Channels	One Channel
Dialogue Level	–27 dB	–27 dB	–27 dB	–27 dB
Channel Mode	3/2	3/1	2/0 Stereo	1/0 Mono
LFE Channel	Enabled	Disabled	Disabled	Disabled
Bitstream Mode	Main Complete	Main Complete	Main Complete	Main Complete
Line Mode Pro	Film: Standard	Film: Standard	Film: Standard	Film: Standard
RF Mode Pro	Film: Standard	Film: Standard	Film: Standard	Film: Standard
RF Ovrmd Protect	Disabled	Disabled	Disabled	Disabled
Center Downmix Level	–0.707 dB (-3 dB)	–0.707 dB (-3 dB)	N/A	N/A
Surround Downmix Level	–0.707 dB (-3 dB)	–0.707 dB (-3 dB)	N/A	N/A
Dolby Surround Mode	Not Dolby Surround	Not Dolby Surround	Not Dolby Surround	N/A
Audio Prod Info	No	No	No	No
Mixing Level	80 dB	80 dB	80 dB	80 dB
Room Type	Not Indicated	Not Indicated	Not Indicated	Not Indicated
Copyright	Yes	Yes	Yes	Yes
Original Bitstream	Yes	Yes	Yes	Yes
Preferred Stereo Downmix Mode	Lt/Rt	Lt/Rt	N/A	N/A
Lt/Rt Center Mix Level	–0.707 dB (-3 dB)	–0.707 dB (-3 dB)	N/A	N/A
Lt/Rt Surround Mix Level	–0.707 dB (-3 dB)	–0.707 dB (-3 dB)	N/A	N/A
Lo/Ro Center Mix Level	–0.707 dB (-3 dB)	–0.707 dB (-3 dB)	N/A	N/A
Lo/Ro Surround Mix Level	–0.707 dB (-3 dB)	–0.707 dB (-3 dB)	N/A	N/A
Dolby Surround EX Mode	Not Dolby EX	N/A	N/A	N/A
A/D Converter Type	Standard	Standard	Standard	Standard
DC Filter	Enabled	Enabled	Enabled	Enabled
Lowpass Filter	Enabled	Enabled	Enabled	Enabled
LFE Lowpass Filter	Enabled	Disabled	Disabled	Disabled
Srnd 3 dB Atten	Enabled	Enabled	Disabled	Disabled
Srnd Phase Shift	Enabled	Enabled	Disabled	Disabled

DP571 Status Screens

Main Status Screen	External Metadata Status	Videl Ref Status	Timecode Status	Presets Status	PCM Input Status	Metadata Status	Error Status	Firmware Version
Dolby E 5.1 + 2 20 bit	Ext Metadata In ENTER to View	Video Ref 29.97 fps	Timecode LTC 12:34:46:00 fps 00	User Preset 01—Preset Name	PCM Channel 48 kHz	Metadata Internal	Error Stats ENTER to View	Firmware Version 2.0.0.0

DP572 Status Screens

Main Status Screen	Dolby E Frame Rate	Metadata Status	Video Ref Status	Timecode Status	PCM Input Status	Error Status	Firmware Version
Dolby E S/O 5.1 + 2 20 bit	DE Frame Rate 29.97 fps	Metadata In ENTER to view	Video Ref 29.97 fps	Timecode In 12:34:46:00 fps 00	PCM Ch S/O 48 kHz	Error Stats ENTER to View	Firmware Version 2.1.0.0