



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 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	Green	Video reference is present and valid.
Ref	Yellow	Vref does not match Dolby E frame rate.
	Red	Video reference is missing or invalid.
	Flashing Red	Internal clock is not referenced to incoming video.
Fault	Off	Normal operation; system OK.
	Off	Hardware-related fault.
Error	Off	No operational errors detected.
	Red	Operational errors; output may be invalid.
PCM	Off	No PCM signal detected.
Dly In	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

Output Clock

The AES output of the DP571 can be selectively locked to either the video reference or the main AES input. **Video Ref Input** must be selected for normal operation. The **Main AES Input** mode can be used only if the main AES input has been locked to video elsewhere. In either mode a valid video reference is required for operation.

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.

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

Output Clock

The AES output of the DP572 can be selectively locked to either the video reference or the main AES input. **Video Ref Input** must be selected for normal operation. The **Main AES Input** mode can be used only if the main AES input has been locked to video elsewhere. In either mode a valid video reference is required for operation.

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 ms 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.

Frame Rate Conversion

- **Fixed:** When playing back a 24 fps tape at 25 fps, some VTRs (Sony HDCam) maintain the usual 48 kHz sample rate by dropping samples “intelligently” so as to not affect the Dolby E data. This is called the “fixed rate” conversion method.
- **Variable:** Other VTRs simply play the audio faster, which results in a sample rate of approximately 50 kHz, and is referred to as the “variable rate” conversion method.

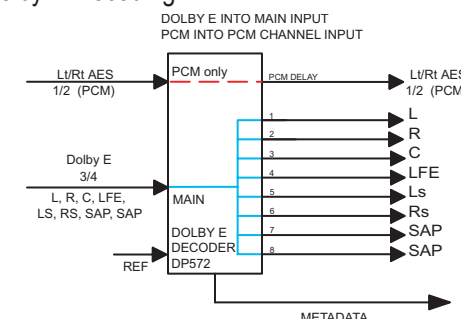
Input/Output Channel Assignments

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

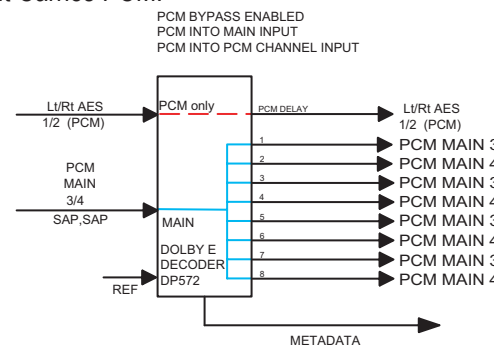
Program Config	Connector Channel Map			
	1/2	3/4	5/6	7/8
5.1 + 2	1L/1R	1C/1LFE	1Ls/1Rs	2L/2R
5.1 + 2×1	1L/1R	1C/1LFE	1Ls/1Rs	2C/3C
4 + 4	1L/1R	1C/1S	2C/2S	2L/2R
4 + 2×2	1L/1R	1C/1S	3L/3R	2L/2R
4 + 2 + 2×1	1L/1R	1C/1S	3C/4C	2L/2R
4 + 4×1	1L/1R	1C/1S	4C/5C	2C/3C
4×2	1L/1R	3L/3R	4L/4R	2L/2R
3×2 + 2×1	1L/1R	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	1Bs/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: This mode replaces Program 1 of the decoded Dolby E audio with the signal present at the PCM In connector when invoked.

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. There are two user selectable modes that determine how the unit operates when Auto Switched Out mode is selected and the Main Input goes dark:

- **No Input = Active:** The audio present at the PCM input will be routed to output channels 1 and 2 while all other outputs will be muted. This is the default setting.

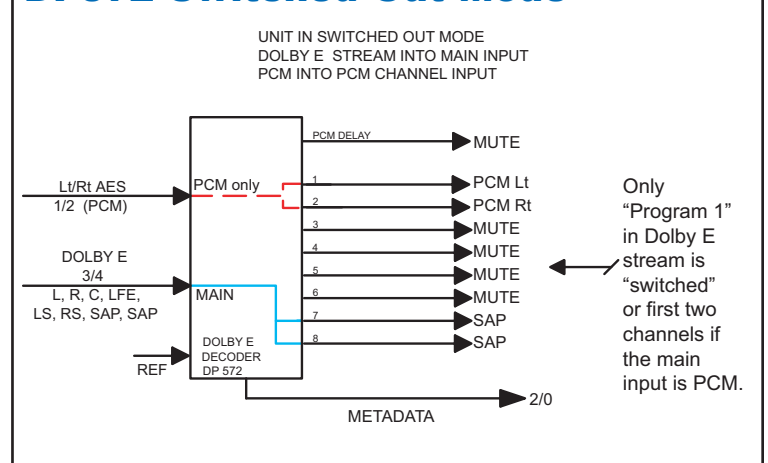
- **No Input = Mute:** The unit will mute all outputs.

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.

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.

DP572 Switched Out Mode

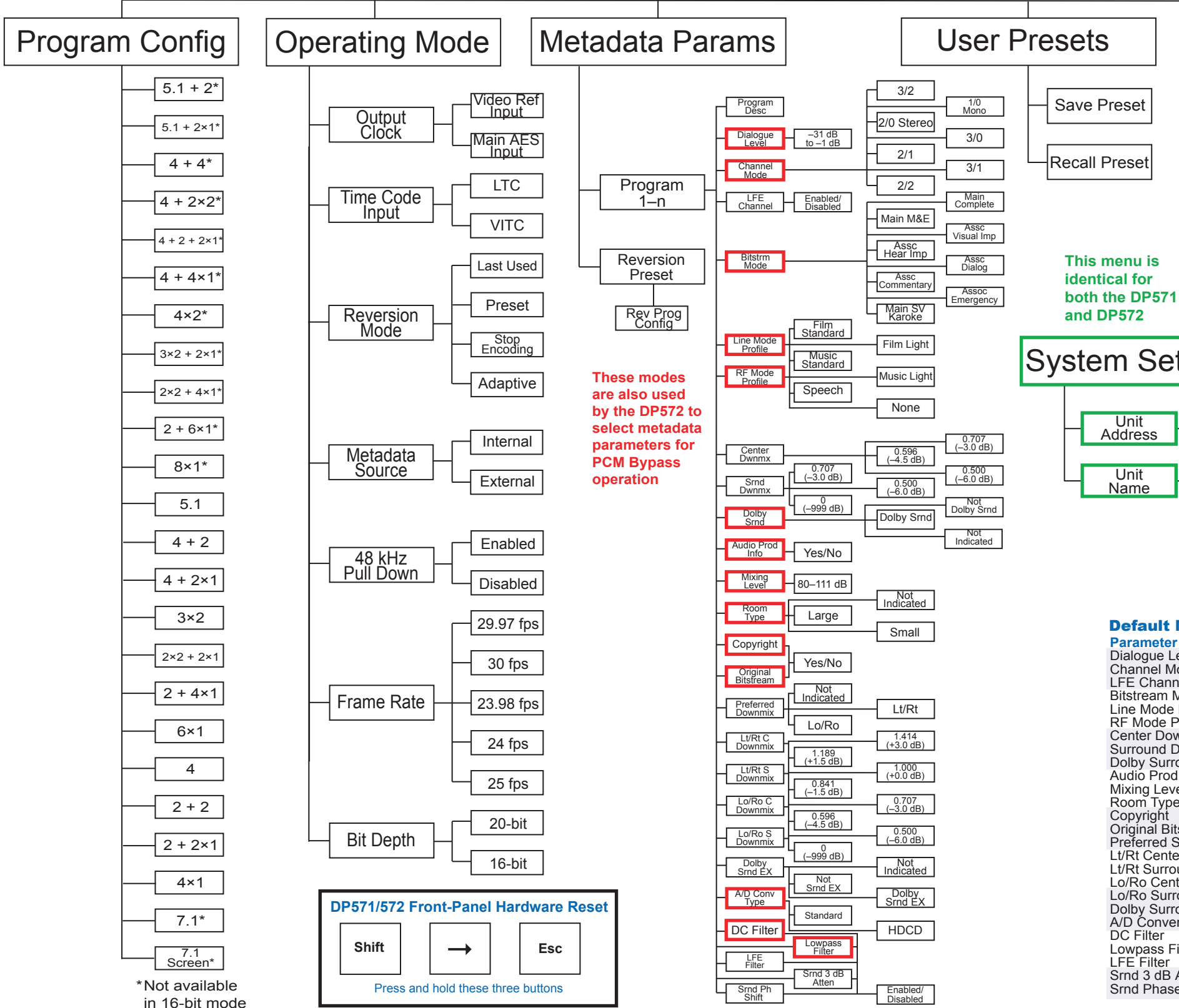


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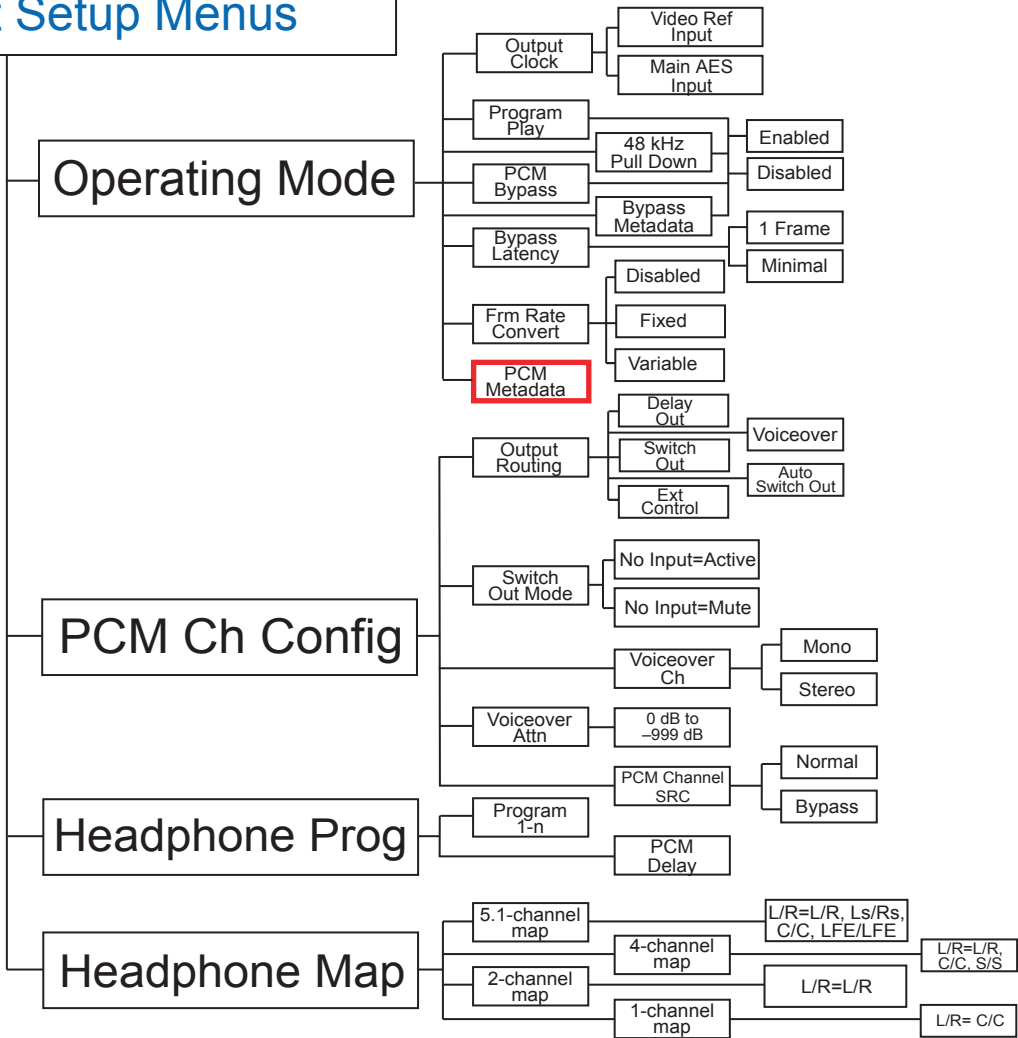
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DP571 Unit Setup Menus



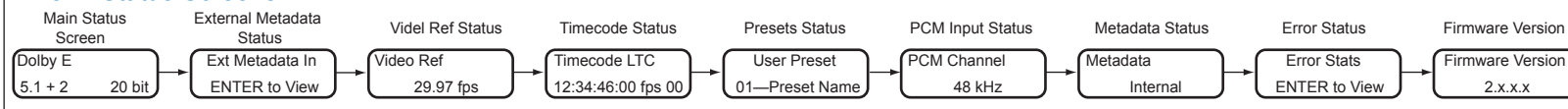
DP572 Unit Setup Menus



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
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 Filter	Enabled	Disabled	Disabled	Disabled
Smd 3 dB Atten	Enabled	Enabled	Disabled	Disabled
Smd Phase Shift	Enabled	Enabled	Disabled	Disabled

DP571 Status Screens



DP572 Status Screens

