**Dolby E Metadata and DP571 Setup**

- The originating encoder in the Dolby chain must be set to "internal" metadata source or controlled by an external device (DP570, PC software etc).

- Metadata from an external source cannot be edited in a DP571 if incoming metadata is incorrect it must be rebuilt from scratch (this is only applicable to live programmes).

- A Dolby E stream uses 75ohm unbalanced connections - if the loop through connectors on a DP571are not feeding another device they should be terminated.

- The most important DP571 setup parameters to check are:

    - Program Config (should be 5.1 + 2 for most programmes).
    - The Frame Rate (The factory default is 29.97fps, UK default is 25fps).
    - The Bit Depth (should be 20 bits) the Dolby E Metadata Source (internal or external)
    - Dolby D metadata is enabled.

- The “Bit Depth” setting does not refer to the number of bits used by the audio signals but rather the number of bits available in the AES-3 channel used to transmit the Dolby E signal. Six channels of audio can be transmitted down a 16bit link while 8 channels can be transmitted down a 20 bit link.

- The gain of a Dolby E stream must not be changed as it will corrupt

- A Dolby E stream suffers one frame of delay on each encode and decode. The standard delivery requirement is to align the stream to be “sync encoded” at each point in the chain. (Live programmes only)

- For tape delivery the stream must be laid so that the encoded audio is in sync with the video and any stereo audio. The “Audio Advance” function or a video frame delay will be used to correct lip sync errors. The PCM stereo audio will also be delayed to compensate.

- For live or as live programmes the stream must be timed so that the encoded audio is in sync with the video and any stereo audio. It is the responsibility of the area receiving the stream to compensate for the decoding delay

- The DP571 has a “reversion mode” which tells the unit what Dolby E and Dolby Digital metadata parameters to use in the event of a metadata failure. This should be set to “last used”. This setting guards against temporary metadata failure disrupting Dolby Digital encoding.

- In the “Metadata Params” menu there are eight programs for which metadata can be changed. The number of active programs depends on the “Program Config” setting. If Program Config is set to the default 5.1+2 value then Program 1 will contain the metadata for the 5.1 stream. Program 2 will set the metadata for the additional stereo pair. If the Program Config is set to 8X1 then Program 1 will set the metadata for channel 1, Program 2 for channel 2, Program 3 for channel 3 etc. It is worth noting that all eight programs remain viewable even if the selected channel configuration does not make use of them.

The DP571 gives some indication of error conditions the following table explains the meaning of the front panel error indication lights.

| Light | Indication | |
|---|---|---|
| TC | Green:<br>Yellow:<br>Off: | Valid timecode signal<br>Frame rate does not match video reference<br>No TC signal detected |
| Fault | Red:<br>Off: | Hardware-related fault condition<br>No fault condition |
| Remote | Not used | |
| PCM Dly | Green:<br>Yellow:<br>Off: | Valid PCM signal<br>non 48kHz signal<br>no PCM signal |
| Error | Red:<br>Off: | Input not valid for current settings<br>No error condition |
| V Ref | Green:<br>Yellow:<br>Flashing Red: | Lock with a valid analogue composite video signal<br>Video ref doesn't match the selected frame rate in the DP571<br>The internal clock is not locked to the incoming reference |

**Factory Reset Changes**

The two key parameters to be changed after factory reset are Dolby Srnd EX parameter and the Srnd 3dB Attn.

Lo/Ro stands for Left only / Right Only. This down mix is the best suited for reproduction form stereo speakers or headphones. It is created by mixing the Ls and Rs channels into the front L and R channels. The Centre is split between the L and R channels. The levels the other channels are mixed in at are set by the metadata. LFE is ignored. The Lo/Ro mix preserves left/right separation and allows a mono compatible down mix

**Lt/Rt stands for Left total / Right Total. Ls, Rs and Centre are folded down into the left / right pair using parameters set by the metadata. LFE is ignored. In an Lt/Rt mix the surrounds are summed and added to the left channel they are also added to the right channel out of phase which allows a Pro Logic decoder to reconstruct the surrounds. This is a stereo compatible Dolby down mix and is not the ideal down mix for stereo reproduction

<u>Reset unit prior to first use</u>
The Dolby E encoder model DP571 can be reset to factory defaults by power cycling it while holding down the enter key until "factory defaults" appears on the LCD. Press the setup key when prompted to confirm.

Pressing the Shift, → and Esc keys simultaneously will perform a soft reset.

**Dolby E DP571Settings**

| | | |
|---|---|---|
| Programme Config | 5.1 + 2 | |
| Frame Rate | 25 | |
| Bit depth | 20 | |
| Programme Description | Preferred – programme title and episode no | |

| | | |
|---|---|---|
| Reversion Mode | Last used (for live programmes) | |
| Metadata Source 1st Unit in chain | Internal (for live programmes) | |
| Metadata Source subsequent units | External (for live programmes) | |
| Dolby D Metadata | Enabled | |
| Dialogue Level (Dialnorm) | -22 to -27 permitted<br>-31 allowed for “total” music performance | |
| Channel Mode | 3/2 | Indicates channels are in use |
| LFE Channel | On | Enables or disables the LFE |
| Bit-stream Mode | Complete Main (CM) | Describes the audio service carried in the bit stream – information only |
| Line Mode Compression | Film Standard | Designates preset compression configuration for line mode decoding. Most high-end decoders allow the compression to be defeated. |
| RF Mode Compression | Film Standard | Designates preset compression configuration for RF mode decoding, cannot be defeated. |
| RF Over modulation Protection | Disabled | Protects against over modulation by adding pre-emphasis when a Dolby Digital stream is RF modulated. |
| Centre Down mix Level | 0.707 (-3.0dB) Recommended | The level of the centre channel in the L and R if the listener has no centre speaker. |
| Surround Down mix Level | 0.707 (-3.0dB) Recommended | The level of the surrounds in the L and R if the listener has no rear speakers. If the surround content is very important use a higher level. The surround content may interfere with the main mix |
| Dolby Surround Mode | Disabled | Indicates whether a two channel encoded bit stream contains a Dolby Surround Lt/Rt program and requires Pro Logic decoding |
| Audio Production Information | No | Indicates whether the mixing level and room type parameters are set – not required. |
| Mix Level | 80dB | Indicates the approx mixing level in the control room – information only. |
| Room type | Small | Indicates the control room type – information only. |
| Copyright Bit | Yes | Indicates the material is copyright protected – information only, not copy protection |
| Original Bit-stream | On | Indicates whether the encoded Dolby Digital stream is the master – information only |

| | | |
|---|---|---|
| Preferred Stereo Down mix | Lo/Ro | Designates preference for Lt/Rt (pro logic – stereo compatible) or Lo/Ro (stereo) down mix |
| Lt/Rt Centre Down mix Level | 0.707 (-3.0dB) Rec | Level of centre channel in Lt/Rt down mix |
| Lt/Rt Surround Down mix Level | 0.707 (-3.0dB) Rec | Level of Surrounds in Lt/Rt down mix |
| Lo/Ro Centre Down mix Level | 0.707 (-3.0dB) Rec | Level of Centre channel in Lo/Ro down mix |
| Lo/Ro Surround Down mix Level | 0.707 (-3.0dB) Rec | Level of Surrounds in Lo/Ro down mix |
| Dolby Surround EX Mode | Not Surround EX | Identifies the stream as being coded for 6.1 Dolby EX. N.B. the default is not indicated which must be changed. |
| A/D Converter Type | Standard | Information only |
| DC Filter | Enabled | Applies a 3Hz DC blocking filter before encoding. |
| Low pass Filter | Enabled | Pre encoder anti-aliasing filter. |
| LFE Low pass Filter | Enabled | Applies a 120 Hz $8^{th}$ order low pass filter to the LFE channel before encoding |
| Surround 3 dB Attenuation | User choice | Used to preserve compatibility with older film formats – not used by the BBC |
| Surround Phase Shift: | Lo/Ro | Disable |

Unit settings will not be affected by a soft reset. It is suggested that a full reset is completed prior to setting up the encoder using this guide