

V4 Presets and Usage

Introduction.

This document is intended as an introduction to the style of DSP Presets in 861v4, G68 & 568v2.5 - primarily for customers who are already familiar with earlier Meridian processors such as the 561 or earlier versions of 568 and 861.

861v4, 861v3.5, 568v2.5 and G68 share the same decoder modes and DSP presets. This is at the point in time where they incorporate THX Ultrall Cinema and Dolby PLIIx.

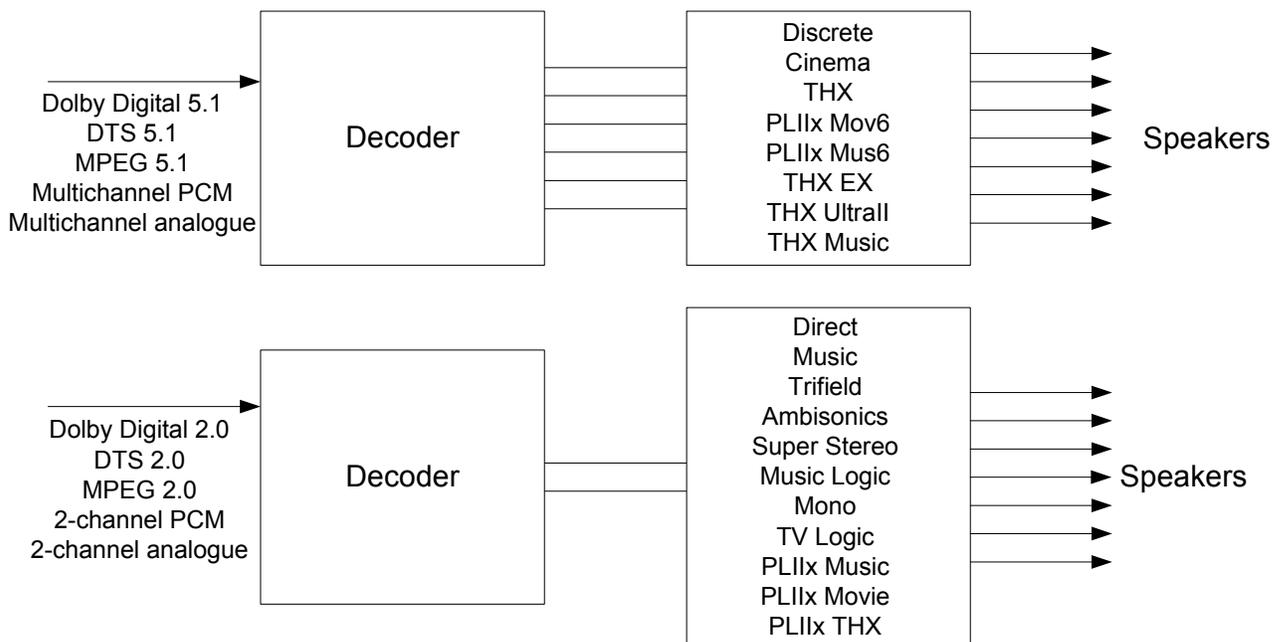
Basic Preset structure - why have we changed it?

In older products a Preset was linked directly to a type of audio stream. E.g. "Digital" was a Preset for Dolby Digital multichannel streams only, "Dig THX" added THX extensions to the basic Dolby Digital mode.

Adding extra processing modes, such as Dolby PLII and THX Surround EX, was beginning to make the range of options quite complicated - particularly in the GUI, where the user is presented with all of the possible options at once.

For these reasons the processing performed in Version4 is split into two parts, the decoder and the mode. The mode is what the user sees as a 'Preset', the decoder is automatic and does not require any settings or adjustment.

This presents a uniform set of options, based on how many channels of audio are actually on the source medium.



The decoder mechanism.

The processors automatically select the decoder based on whatever stream is coming in, be it Dolby Digital, DTS, MPEG or PCM. The stream display exists in the same form as previous processors. E.g.

"DVD AC3 3/2.1 48k"

In this case the decoder part of the product will pass 6 channels of decoded audio to the surround processing section. The user is then presented with a range of Preset options for 6-channel audio.

Similarly, if a DTS stream was presented on the input, the display shows:

"DVD DTS 3/2.1 48k"

But the user has the same choice of Presets as above.

If the processor is connected to an 800 or G98 (in a standard setup, where the player is decoding the audio stream) then the stream display will show something like:

"DVD PCM Movie6 48k"

The user is presented with the same set of 6-channel Presets, even though the decoding has been performed elsewhere.

If the decoder only detects two channels of audio then the range of Presets available will change to the two-channel set, which includes many familiar modes like "Trifield" and "TV Logic". Note that this also applies for encoded two-channel streams, where the stream display would show, for example:

"DVD AC3 2/0.0 48k"

Digital inputs - Smart Link.

861v3 and 800v3 introduced the Smart Link protocol, whereby the player indicates to the processor how many channels of audio are on the disc it is playing, and what the original format is. This allows the user to set different Presets based on the type of disc in the player, e.g. "Trifield" for CD's (2-channel music), "PLII Movie" for Dolby Digital 2.0 (2-channel movie), "Discrete" for DVD-A (6-channel music) and "THX" for Dolby Digital 5.1 (6-channel movie).

The processor can apply the same rules to formats it decodes itself, and use the same four default Presets that Smart Link uses. This removes the need for an "enhanced" source to accept a multichannel input, and presents a consistent range of options to the user.

So, all digital inputs have four default Preset settings, one each for:

- Music2
- Movie2
- Music6
- Movie6

Analogue inputs.

Analogue inputs have no way of distinguishing source material, so they default to assuming 'Music'. The default Preset for Multichannel analogue inputs is stored in the 'Music6' slot; 2-channel inputs use the 'Music2' slot.

Available presets.

Not all presets are available all the time, with the aim of improving the clarity of the user interface. This section describes those special cases.

Ambisonics (UHF & B format) and SuperStereo are only available if there are two or more surround speakers.

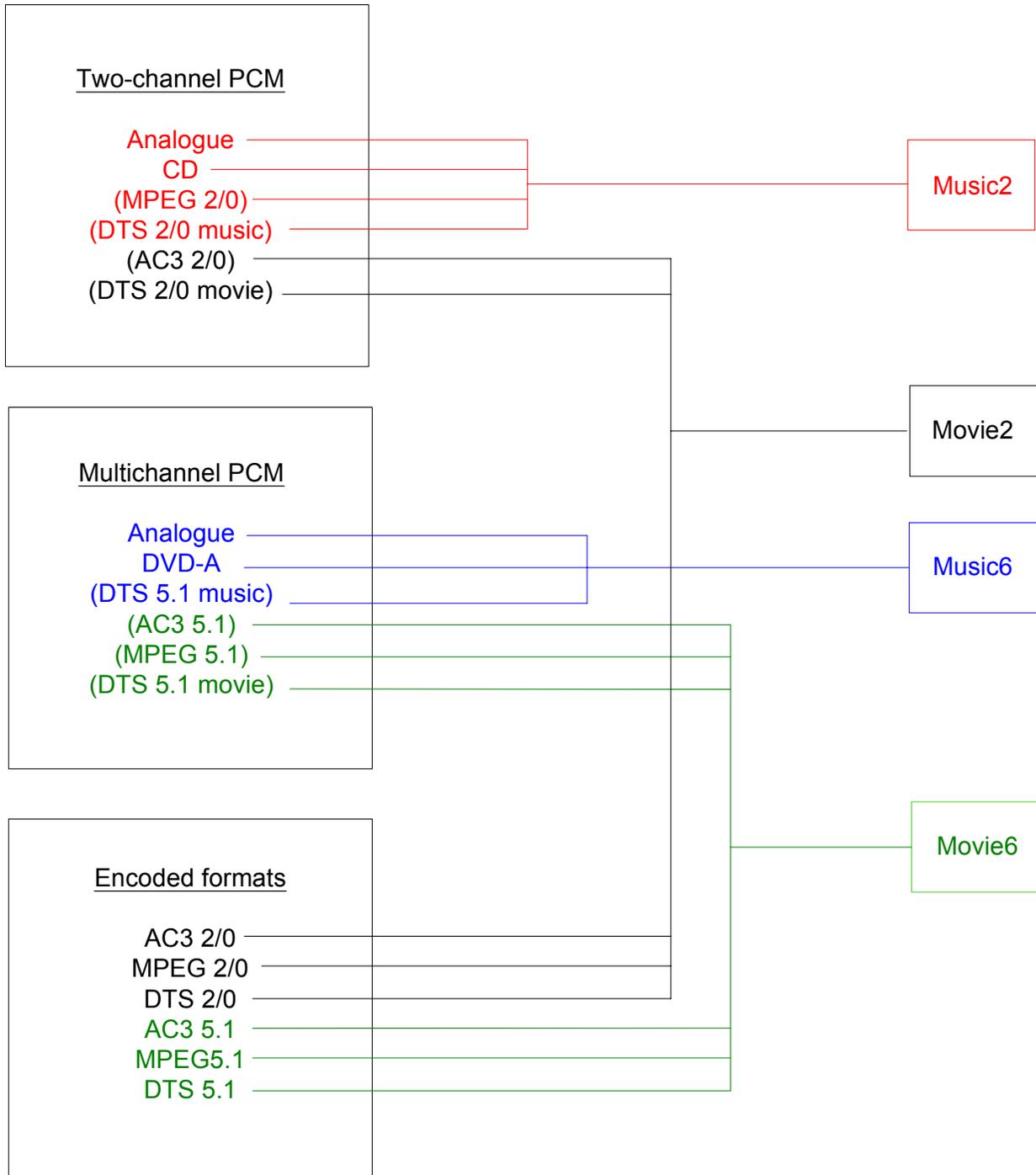
'PLIIX Music', 'PLIIX THX' and 'PLIIX Movie' revert to PLII variants if there aren't four surrounds.

Ambisonics (B format) is only available if the decoder says Music6. This is because Ambisonics would normally only arrive from a multichannel analogue input or a (decoded) DVDA, it can't be encoded with lossy compression like AC3 or DTS, so would not be a sensible Preset to use if the decoder said Movie6.

Multichannel presets that need four surrounds (THX UltraII Cinema, PLIIXMus6, PLIIXMov6, THX Surround EX) are not presented as options in the GUI or available from the front panel unless four surrounds are defined.

What types of streams are associated with which Preset category?

Streams in parentheses indicate streams that are decoded in a Meridian DVD player.



What happened to EX/EZ?

EX and EZ were multichannel Presets that generated an additional mono surround back signal from a two-surround signal. These have been replaced by Dolby PLIIx Mov6 and PLIIx Mus6, which generate four surround signals from a two-surround signal.

Can I achieve an equivalent of the old “DTS Music” preset?

Not directly, but you can set up a ‘phantom source’. If you define a source to have audio input ‘last valid’ then switching to it will just apply the new default presets to whatever physical source is currently selected. A phantom source like this, with the Movie6 Preset set to “Discrete” and the 2+2+2 menu set to “7.1” would achieve the equivalent functionality.

Can I upsample movies?

Only audio streams that arrive at the processors input as PCM or MHR can be upsampled. The common way to achieve this is to use a recent Meridian DVD player to decode the audio stream and output to the processor via a multichannel digital connection.

Can I still force the DTS decoder for sources that play DTS poorly?

Yes, this feature still exists and is configured in the GUI. The decoder will not play any audio unless it is DTS encoded.

Why aren't my side speakers playing multichannel audio?

The “Discrete” preset is designed for use with DVD-A multichannel audio streams. There is a parameter in the Preset called “2+2+2” which tells the processor what to do with the centre/LFE channel pair. This menu defaults to “5.1”, which means the processor passes the six channels straight through to the speakers (performing time alignment and bass management on the way). The menu should be set to “7.1” if you want the side speakers to play audio derived from the surround channels.

Why can't I add gain to the LFE channel?

THX require that the default gain applied to the LFE channel during their processing is 10dB, but that the user should see this as +0dB. As such the displayed setting of +0dB is actually applying gain of +10dB. Discrete is a Music Preset, not subject to THX approval, so the display in this case is allowed to show the true maximum value, +10dB.

What is Automatic THX-EX switching?

For systems with four surrounds a new setting has been added to THX, THX Music and THX Ultrall Cinema - automatic THX Surround EX switching. If an EX encoded stream is detected in any of these three modes the processor will automatically use THX Surround EX processing to generate the surround signals. This will not change the ‘Preset’ chosen, but will change the DSP processing selected. The front panel ‘Preset’ display will change to show:

“DVD THX Sur.EX 65”.

The user can defeat this automatic switching by setting the “Auto EX?” menu to “no”, in the GUI or from the front panel. User Presets can be created (based on THX, THX Music or THX Ultrall Cinema) with or without automatic EX switching.

Note that the EX flag is not transmitted via Smart Link, so this feature is not accessible when decoding in a Meridian DVD player. Play the Dolby Digital bitstream from the Aux output into a two-channel digital input to utilize this feature.