HD-Audio Codec-Specific Mixer Controls

This file explains the codec-specific mixer controls.

Realtek codecs

Channel Mode

> This is an enum control to change the surround-channel setup, appears only when the surround channels are available. It gives the number of channels to be used, "2ch", "4ch", "6ch", and "8ch". According to the configuration, this also controls the jack-retasking of multi-I/O jacks.

Auto-Mute Mode

> This is an enum control to change the auto-mute behavior of the headphone and line-out jacks. If built-in speakers and headphone and/or line-out jacks are available on a machine, this controls appears. When there are only either headphones or line-out jacks, it gives "Disabled" and "Enabled" state. When enabled, the speaker is muted automatically when a jack is plugged.

> When both headphone and line-out jacks are present, it gives "Disabled", "Speaker Only" and "Line-Out+Speaker". When speaker-only is chosen, plugging into a headphone or a line-out jack mutes the speakers, but not line-outs. When line-out+speaker is selected, plugging to a headphone jack mutes both speakers and line-outs.

IDT/Sigmatel codecs

Analog Loopback
> This control enables/disables the analog-loopback circuit. This appears only when "loopback" is set to true in a codec hint (see HD-Audio.txt). Note that on some codecs the analog-loopback and the normal PCM playback are exclusive, i.e. when this is on, you won't hear any PCM stream.

Swap Center/LFE
> Swaps the center and LFE channel order. Normally, the left corresponds to the center and the right to the LFE. When this is ON, the left to the LFE and the right to the center.

Headphone as Line Out
> When this control is ON, treat the headphone jacks as line-out jacks. That is, the headphone won't auto-mute the other line-outs, and no HP-amp is set to the pins.

Mic Jack Mode, Line Jack Mode, etc
> These enum controls the direction and the bias of the input jack pins. Depending on the jack type, it can set as "Mic In" and "Line In", for determining the input bias, or it can be set to "Line Out" when the pin is a multi-I/O jack for surround channels.

VIA codecs

Smart 5.1
> An enum control to re-task the multi-I/O jacks for surround outputs. When it's ON, the corresponding input jacks (usually a line-in and a mic-in) are switched as the surround and the CLFE output jacks.

Independent HP
> When this enum control is enabled, the headphone output is routed from an individual stream (the third PCM such as hw:0,2) instead of the primary stream. In the case the headphone DAC is shared with a side or a CLFE-channel DAC, the DAC is switched to the headphone automatically.

Loopback Mixing
> An enum control to determine whether the analog-loopback route is enabled or not. When it's enabled, the analog-loopback is mixed to the front-channel. Also, the same route is used for the headphone and speaker outputs. As a side-effect, when this mode is set, the individual volume controls will be no longer available for headphones and speakers because there is only one DAC connected to a mixer widget.

Dynamic Power-Control
> This control determines whether the dynamic power-control per jack detection is enabled or not. When enabled, the widgets power state (D0/D3) are changed dynamically depending on the jack plugging state for saving power consumptions. However, if your system doesn't provide a proper jack-detection, this won't work; in such a case, turn this control OFF.

Jack Detect
> This control is provided only for VT1708 codec which gives no proper unsolicited event per jack plug. When this is on, the driver polls the jack detection so that the headphone auto-mute can work, while turning this off would reduce the power consumption.

Conexant codecs

Auto-Mute Mode
	See Realtek codecs.

Analog codecs

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