

Notes on Power-Saving Mode

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AC97 and HD-audio drivers have the automatic power-saving mode. This feature is enabled via Kconfig `CONFIG_SND_AC97_POWER_SAVE` and `CONFIG_SND_HDA_POWER_SAVE` options, respectively.

With the automatic power-saving, the driver turns off the codec power appropriately when no operation is required. When no applications use the device and/or no analog loopback is set, the power disablement is done fully or partially. It'll save a certain power consumption, thus good for laptops (even for desktops).

The time-out for automatic power-off can be specified via `power_save` module option of `snd-ac97-codec` and `snd-hda-intel` modules. Specify the time-out value in seconds. 0 means to disable the automatic power-saving. The default value of timeout is given via `CONFIG_SND_AC97_POWER_SAVE_DEFAULT` and `CONFIG_SND_HDA_POWER_SAVE_DEFAULT` Kconfig options. Setting this to 1 (the minimum value) isn't recommended because many applications try to reopen the device frequently. 10 would be a good choice for normal operations.

The `power_save` option is exported as writable. This means you can adjust the value via `sysfs` on the fly. For example, to turn on the automatic power-save mode with 10 seconds, write to `/sys/modules/snd_ac97_codec/parameters/power_save` (usually as root):

```
# echo 10 > /sys/modules/snd_ac97_codec/parameters/power_save
```

Note that you might hear click noise/pop when changing the power state. Also, it often takes certain time to wake up from the power-down to the active state. These are often hardly to fix, so don't report extra bug reports unless you have a fix patch ;-)

For HD-audio interface, there is another module option, `power_save_controller`. This enables/disables the power-save mode of the controller side. Setting this on may reduce a bit more power consumption, but might result in longer wake-up time and click noise. Try to turn it off when you experience such a thing too often.