Kernel driver nzxt-smart2

Supported devices:

- NZXT RGB & Fan controller
- NZXT Smart Device v2

Description

This driver implements monitoring and control of fans plugged into the device. Besides typical speed monitoring and PWM duty cycle control, voltage and current is reported for every fan.

The device also has two connectors for RGB LEDs; support for them isn't implemented (mainly because there is no standardized sysfs interface).

Also, the device has a noise sensor, but the sensor seems to be completely useless (and very imprecise), so support for it isn't implemented too.

Usage Notes

The device should be autodetected, and the driver should load automatically.

If fans are plugged in/unplugged while the system is powered on, the driver must be reloaded to detect configuration changes; otherwise, new fans can't be controlled (*pwm** changes will be ignored). It is necessary because the device has a dedicated "detect fans" command, and currently, it is executed only during initialization. Speed, voltage, current monitoring will work even without reload. As an alternative to reloading the module, a userspace tool (like liquidctl) can be used to run "detect fans" command through hidraw interface.

The driver coexists with userspace tools that access the device through hidraw interface with no known issues.

Sysfs entries

fan[1-3]_input	Fan speed monitoring (in rpm).
curr[1-3]_input	Current supplied to the fan (in milliamperes).
in[0-2]_input	Voltage supplied to the fan (in millivolts).
pwm[1-3]	Controls fan speed: PWM duty cycle for PWM-controlled fans, voltage for other fans. Voltage can be changed in 9-12 V range, but the value of the sysfs attribute is always in 0-255 range (1 = 9V, 255 = 12V). Setting the attribute to 0 turns off the fan completely.
pwm[1-3]_enable	1 if the fan can be controlled by writing to the corresponding pwm* attribute, 0 otherwise. The device can control only the fans it detected itself, so the attribute is read-only.
pwm[1-3]_mode	Read-only, 1 for PWM-controlled fans, 0 for other fans (or if no fan connected).
update_interval	The interval at which all inputs are updated (in milliseconds). The default is 1000ms. Minimum is 250ms.