NAME
acpi_panasonic - ACPI hotkey driver for Panasonic laptops

SYNOPSIS
To compile this driver into the kernel, place the following line in your kernel configuration file:

device acpi_panasonic

Alternatively, to load the driver as a module at boot time, place the following line in loader.conf(5):

acpi_panasonic_load="YES"

DESCRIPTION
The **acpi_panasonic** driver enables such hotkey facilities of various Panasonic laptops as changing LCD brightness, controlling mixer volumes, entering sleep or suspended state and so on. On the following models it is reported to work: Let's note (or Toughbook, outside Japan) CF-R1N, CF-R2A and CF-R3. It may also work on other models as well.

The driver consists of three functionalities. The first is to detect hotkey events and take corresponding actions, which include changing LCD luminance and speaker mute state. The second role is to notify occurrences of the event by way of devctl(4) and eventually to devd(8). The third and last is to provide a way to adjust LCD brightness and sound mute state via sysctl(8).

Hotkeys
There are 9 hotkeys available on the supported hardware:

Fn+F1	Make LCD backlight darker.
Fn+F2	Make LCD backlight brighter.
Fn+F3	Switch video output between LCD and CRT. Not supported by the **acpi_panasonic** driver.
Fn+F4	Toggle muting the speaker.
Fn+F5	Turn the mixer volume down.
Fn+F6	Turn the mixer volume up.
Fn+F7	Enter suspend-to-RAM state.
Fn+F9	Show battery status.
Fn+F10	Enter suspend-to-disk state.

Actions are automatically taken within the driver for **Fn+F1**, **Fn+F2** and **Fn+F4**. For the other events such as mixer control and showing battery status, devd(8) should take the role as described below.

devd(8) Events

When notified to devd(8), the hotkey event provides the following information:

system	"ACPI"
subsystem	"Panasonic"
type	The source of the event in ACPI namespace. The value depends on the model but typically "_SB_.HKEY".
notify	Event code (see below).

Event codes to be generated are assigned as follows:

0x81-0x86, 0x89

> **Fn**+**F<n>** pressed. 0x81 corresponds to **Fn**+**F1**, 0x82 corresponds to **Fn**+**F2**, and so on.

0x01-0x07, 0x09, 0x1a

> **Fn**+**F<n>** released. 0x01 corresponds to **Fn**+**F1**, 0x02 corresponds to **Fn**+**F2**, and so on.

SYSCTL VARIABLES

The following MIBs are available:

hw.acpi.panasonic.lcd_brightness_max

> The maximum level of brightness. This read-only value is automatically set according to hardware model.

hw.acpi.panasonic.lcd_brightness_min

> The minimum level of brightness. This read-only value is automatically set according to hardware model.

hw.acpi.panasonic.lcd_brightness

> Current brightness level of the LCD (read-write). The value ranges from *hw.acpi.panasonic.lcd_brightness_min* to *hw.acpi.panasonic.lcd_brightness_max*.

hw.acpi.panasonic.sound_mute

> A read-write boolean flag to control whether to mute the speaker. The value 1 means to mute and 0 not.

SEE ALSO

acpi(4), devd.conf(5), devd(8), sysctl(8)

HISTORY

The **acpi_panasonic** driver first appeared in FreeBSD 5.3.

AUTHORS

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