

Asus Laptop Extras

Version 0.1

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This driver provides support for extra features of ACPI-compatible ASUS laptops. It may also support some MEDION, JVC or VICTOR laptops (such as MEDION 9675 or VICTOR XP7210 for example). It makes all the extra buttons generate input events (like keyboards).

On some models adds support for changing the display brightness and output, switching the LCD backlight on and off, and most importantly, allows you to blink those fancy LEDs intended for reporting mail and wireless status.

This driver supersedes the old `asus_acpi` driver.

Requirements

Kernel 2.6.X sources, configured for your computer, with ACPI support. You also need `CONFIG_INPUT` and `CONFIG_ACPI`.

Status

The features currently supported are the following (see below for detailed description):

- Fn key combinations
- Bluetooth enable and disable
- Wlan enable and disable
- GPS enable and disable
- Video output switching
- Ambient Light Sensor on and off
- LED control
- LED Display control
- LCD brightness control
- LCD on and off

A compatibility table by model and feature is maintained on the web site, <http://acpi4asus.sf.net/>.

Usage

Try "modprobe asus-laptop". Check your `dmesg` (simply type `dmesg`). You should see some lines like this :

```
Asus Laptop Extras version 0.42
• L2D model detected.
```

If it is not the output you have on your laptop, send it (and the laptop's DSDT) to me.

That's all, now, all the events generated by the hotkeys of your laptop should be reported via netlink events. You can check with "acpi_genl monitor" (part of the `acpica` project).

Hotkeys are also reported as input keys (like keyboards) you can check which key are supported using "xev" under X11.

You can get information on the version of your DSDT table by reading the `/sys/devices/platform/asus-laptop/infos` entry. If you have a question or a bug report to do, please include the output of this entry.

LEDs

You can modify LEDs by echoing values to `/sys/class/leds/asus/*/brightness`:

```
echo 1 > /sys/class/leds/asus::mail/brightness
```

will switch the mail LED on.

You can also know if they are on/off by reading their content and use kernel triggers like `disk-activity` or `heartbeat`.

Backlight

You can control lcd backlight power and brightness with `/sys/class/backlight/asus-laptop/`. Brightness Values are between

0 and 15.

Wireless devices

You can turn the internal Bluetooth adapter on/off with the bluetooth entry (only on models with Bluetooth). This usually controls the associated LED. Same for Wlan adapter.

Display switching

Note: the display switching code is currently considered EXPERIMENTAL.

Switching works for the following models:

- L3800C
- A2500H
- L5800C
- M5200N
- W1000N (albeit with some glitches)
- M6700R
- A6JC
- F3J

Switching doesn't work for the following:

- M3700N
- L2X00D (locks the laptop under certain conditions)

To switch the displays, echo values from 0 to 15 to `/sys/devices/platform/asus-laptop/display`. The significance of those values is as follows:

| Bin | Val | DVI | TV | CRT | LCD |
|------|-----|-----|----|-----|-----|
| 0000 | 0 | | | | |
| 0001 | 1 | | | | X |
| 0010 | 2 | | | X | |
| 0011 | 3 | | | X | X |
| 0100 | 4 | | X | | |
| 0101 | 5 | | X | | X |
| 0110 | 6 | | X | X | |
| 0111 | 7 | | X | X | X |
| 1000 | 8 | X | | | |
| 1001 | 9 | X | | | X |
| 1010 | 10 | X | | X | |
| 1011 | 11 | X | | X | X |
| 1100 | 12 | X | X | | |
| 1101 | 13 | X | X | | X |
| 1110 | 14 | X | X | X | |
| 1111 | 15 | X | X | X | X |

In most cases, the appropriate displays must be plugged in for the above combinations to work. TV-Out may need to be initialized at boot time.

Debugging:

1. Check whether the Fn+F8 key:
 - a. does not lock the laptop (try a boot with `noapic` / `nolapic` if it does)
 - b. generates events (`0x6n`, where `n` is the value corresponding to the configuration above)
 - c. actually works

Record the `disp` value at every configuration.

2. Echo values from 0 to 15 to `/sys/devices/platform/asus-laptop/display`. Record its value, note any change. If nothing changes, try a broader range, up to 65535.
3. Send ANY output (both positive and negative reports are needed, unless your machine is already listed above) to the `acpi4asus-user` mailing list.

Note: on some machines (e.g. L3C), after the module has been loaded, only `0x6n` events are generated and no actual switching occurs. In such a case, a line like:

```
echo $((10#$arg-60)) > /sys/devices/platform/asus-laptop/display
```

will usually do the trick (\$arg is the 0000006n-like event passed to acpid).

Note: there is currently no reliable way to read display status on xxN (Centrino) models.

LED display

Some models like the W1N have a LED display that can be used to display several items of information.

LED display works for the following models:

- W1000N
- W1J

To control the LED display, use the following:

```
echo 0x0T000DDD > /sys/devices/platform/asus-laptop/
```

where T control the 3 letters display, and DDD the 3 digits display, according to the tables below:

```
DDD (digits)
000 to 999 = display digits
AAA          = ---
BBB to FFF = turn-off
```

```
T (type)
0 = off
1 = dvd
2 = vcd
3 = mp3
4 = cd
5 = tv
6 = cpu
7 = vol
```

For example "echo 0x01000001 >/sys/devices/platform/asus-laptop/led" would display "DVD001".

Driver options

Options can be passed to the asus-laptop driver using the standard module argument syntax (<param>=<value> when passing the option to the module or asus-laptop.<param>=<value> on the kernel boot line when asus-laptop is statically linked into the kernel).

wapf: WAPF defines the behavior of the Fn+Fx wlan key

The significance of values is yet to be found, but most of the time:

- 0x0 should do nothing
- 0x1 should allow to control the device with Fn+Fx key.
- 0x4 should send an ACPI event (0x88) while pressing the Fn+Fx key
- 0x5 like 0x1 or 0x4

The default value is 0x1.

Unsupported models

These models will never be supported by this module, as they use a completely different mechanism to handle LEDs and extra stuff (meaning we have no clue how it works):

- ASUS A1300 (A1B), A1370D
- ASUS L7300G
- ASUS L8400

Patches, Errors, Questions

I appreciate any success or failure reports, especially if they add to or correct the compatibility table. Please include the following information in your report:

- Asus model name
- a copy of your ACPI tables, using the "acpidump" utility
- a copy of /sys/devices/platform/asus-laptop/infos
- which driver features work and which don't
- the observed behavior of non-working features

Any other comments or patches are also more than welcome.

acpi4asus-user@lists.sourceforge.net
<http://sourceforge.net/projects/acpi4asus>