# Kernel driver abituguru

Supported chips:

- Abit uGuru revision 1 & 2 (Hardware Monitor part only)

  Prefix: 'abituguru'

  Addresses scanned: ISA 0x0E0

  Datasheet: Not available, this driver is based on reverse engineering. A "Datasheet" has been written based on the reverse engineering it should be available in the same dir as this file under the name abituguru-datasheet.

  Note:

  The uGuru is a microcontroller with onboard firmware which programs it to behave as a hwmon IC. There are many different revisions of the firmware and thus effectively many different revisions of the uGuru. Below is an incomplete list with which revisions are used for which Motherboards:

  - uGuru 1.00 ~ 1.24 (AI7, KV8-MAX3, AN7) [1]
  - uGuru 2.0.0.0 ~ 2.0.4.2 (KV8-PRO)
  - uGuru 2.1.0.0 ~ 2.1.2.8 (AS8, AV8, AA8, AG8, AA8XE, AX8)
  - uGuru 2.2.0.0 ~ 2.2.0.6 (AA8 Fatal1ty)
  - uGuru 2.3.0.0 ~ 2.3.0.9 (AN8)
  - uGuru 3.0.0.0 ~ 3.0.x.x (AW8, AL8, AT8, NI8 SLI, AT8 32X, AN8 32X, AW9D-MAX) [2]

[1] For revisions 2 and 3 uGuru's the driver can autodetect the sensortype (Volt or Temp) for bank1 sensors, for revision 1 uGuru's this does not always work. For these uGuru's the autodetection can be overridden with the bank1_types module param. For all 3 known revision 1 motherboards the correct use of this param is: bank1_types=1,1,0,0,0,0,0,2,0,0,0,0,2,0,0,1 You may also need to specify the fan_sensors option for these boards fan_sensors=5

[2] There is a separate abituguru3 driver for these motherboards, the abituguru (without the 3 !) driver will not work on these motherboards (and visa versa)!

Authors:

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- (Initial reverse engineering done by Olle Sandberg <ollebull@gmail.com>)

## Module Parameters

- force: bool

  Force detection. Note this parameter only causes the detection to be skipped, and thus the insmod to succeed. If the uGuru can't be read the actual hwmon driver will not load and thus no hwmon device will get registered.

- bank1_types: int[]

  Bank1 sensortype autodetection override:

  - -1 autodetect (default)
  - 0 volt sensor
  - 1 temp sensor
  - 2 not connected

- fan_sensors: int

  Tell the driver how many fan speed sensors there are on your motherboard. Default: 0 (autodetect).

- pwms: int

  Tell the driver how many fan speed controls (fan pwms) your motherboard has. Default: 0 (autodetect).

- verbose: int

  How verbose should the driver be? (0-3):

  - 0 normal output
  - 1 + verbose error reporting
  - 2 + sensors type probing info (default)
  - 3 + retryable error reporting

  Default: 2 (the driver is still in the testing phase)

Notice: if you need any of the first three options above please insmod the driver with verbose set to 3 and mail me <j.w.r.degoede@hhs.nl> the output of: dmesg | grep abituguru

## Description

This driver supports the hardware monitoring features of the first and second revision of the Abit uGuru chip found on Abit uGuru featuring motherboards (most modern Abit motherboards).

The first and second revision of the uGuru chip in reality is a Winbond W83L950D in disguise (despite Abit claiming it is "a new microprocessor designed by the ABIT Engineers"). Unfortunately this doesn't help since the W83L950D is a generic microcontroller with a custom Abit application running on it.

Despite Abit not releasing any information regarding the uGuru, Olle Sandberg <ollebull@gmail.com> has managed to reverse engineer the sensor part of the uGuru. Without his work this driver would not have been possible.

## Known Issues

The voltage and frequency control parts of the Abit uGuru are not supported.

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\hwmon\(linux-master)(Documentation)(hwmon)abituguru.rst, line 110)**

Unknown directive type "toctree".

```
.. toctree::
   :maxdepth: 1

   abituguru-datasheet.rst
```