Kernel driver da9055

Supported chips:

- Dialog Semiconductors DA9055 PMIC

  Prefix: 'da9055'

  Datasheet: Datasheet is not publicly available.

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Description

The DA9055 provides an Analogue to Digital Converter (ADC) with 10 bits resolution and track and hold circuitry combined with an analogue input multiplexer. The analogue input multiplexer will allow conversion of up to 5 different inputs. The track and hold circuit ensures stable input voltages at the input of the ADC during the conversion.

The ADC is used to measure the following inputs:

- Channel 0: VDDOUT - measurement of the system voltage
- Channel 1: ADC_IN1 - high impedance input (0 - 2.5V)
- Channel 2: ADC_IN2 - high impedance input (0 - 2.5V)
- Channel 3: ADC_IN3 - high impedance input (0 - 2.5V)
- Channel 4: Internal Tjunc. - sense (internal temp. sensor)

By using sysfs attributes we can measure the system voltage VDDOUT, chip junction temperature and auxiliary channels voltages.

Voltage Monitoring

Voltages are sampled in a AUTO mode it can be manually sampled too and results are stored in a 10 bit ADC.

The system voltage is calculated as:

    Milli volt = ((ADC value * 1000) / 85) + 2500

The voltages on ADC channels 1, 2 and 3 are calculated as:

    Milli volt = (ADC value * 1000) / 102

Temperature Monitoring

Temperatures are sampled by a 10 bit ADC. Junction temperatures are monitored by the ADC channels.

The junction temperature is calculated:

    Degrees celsius = -0.4084 * (ADC_RES - T_OFFSET) + 307.6332

The junction temperature attribute is supported by the driver.