Kernel driver sht3x

Supported chips:

- Sensirion SHT3x-DIS

  Prefix: 'sht3x'

  Addresses scanned: none

  Datasheet: https://www.sensirion.com/file/datasheet_sht3x_digital

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Description

This driver implements support for the Sensirion SHT3x-DIS chip, a humidity and temperature sensor. Temperature is measured in degrees celsius, relative humidity is expressed as a percentage. In the sysfs interface, all values are scaled by 1000, i.e. the value for 31.5 degrees celsius is 31500.

The device communicates with the I2C protocol. Sensors can have the I2C addresses 0x44 or 0x45, depending on the wiring. See Documentation/i2c/instantiating-devices.rst for methods to instantiate the device.

There are two options configurable by means of sht3x_platform_data:

1. blocking (pull the I2C clock line down while performing the measurement) or non-blocking mode. Blocking mode will guarantee the fastest result but the I2C bus will be busy during that time. By default, non-blocking mode is used. Make sure clock-stretching works properly on your device if you want to use blocking mode.
2. high or low accuracy. High accuracy is used by default and using it is strongly recommended.

The sht3x sensor supports a single shot mode as well as 5 periodic measure modes, which can be controlled with the update_interval sysfs interface. The allowed update_interval in milliseconds are as follows:

0		single shot mode
2000	0.5 Hz	periodic measurement
1000	1 Hz	periodic measurement
500	2 Hz	periodic measurement
250	4 Hz	periodic measurement
100	10 Hz	periodic measurement

In the periodic measure mode, the sensor automatically triggers a measurement with the configured update interval on the chip. When a temperature or humidity reading exceeds the configured limits, the alert attribute is set to 1 and the alert pin on the sensor is set to high. When the temperature and humidity readings move back between the hysteresis values, the alert bit is set to 0 and the alert pin on the sensor is set to low.

sysfs-Interface

temp1_input:	temperature input
humidity1_input:	humidity input
temp1_max:	temperature max value
temp1_max_hyst:	temperature hysteresis value for max limit
humidity1_max:	humidity max value
humidity1_max_hyst:	humidity hysteresis value for max limit
temp1_min:	temperature min value
temp1_min_hyst:	temperature hysteresis value for min limit
humidity1_min:	humidity min value
humidity1_min_hyst:	humidity hysteresis value for min limit
temp1_alarm:	alarm flag is set to 1 if the temperature is outside the configured limits. Alarm only works in periodic measure mode
humidity1_alarm:	alarm flag is set to 1 if the humidity is outside the configured limits. Alarm only works in periodic measure mode

heater_enable:	heater enable, heating element removes excess humidity from sensor: • 0: turned off • 1: turned on
update_interval:	update interval, 0 for single shot, interval in msec for periodic measurement. If the interval is not supported by the sensor, the next faster interval is chosen