Kernel driver lm75

Supported chips:

- National Semiconductor LM75

  Prefix: 'lm75'

  Addresses scanned: I2C 0x48 - 0x4f

  Datasheet: Publicly available at the National Semiconductor website

    http://www.national.com/

- National Semiconductor LM75A

  Prefix: 'lm75a'

  Addresses scanned: I2C 0x48 - 0x4f

  Datasheet: Publicly available at the National Semiconductor website

    http://www.national.com/

- Dallas Semiconductor (now Maxim) DS75, DS1775, DS7505

  Prefixes: 'ds75', 'ds1775', 'ds7505'

  Addresses scanned: none

  Datasheet: Publicly available at the Maxim website

    https://www.maximintegrated.com/

- Maxim MAX6625, MAX6626, MAX31725, MAX31726

  Prefixes: 'max6625', 'max6626', 'max31725', 'max31726'

  Addresses scanned: none

  Datasheet: Publicly available at the Maxim website

    http://www.maxim-ic.com/

- Microchip (TelCom) TCN75

  Prefix: 'tcn75'

  Addresses scanned: none

  Datasheet: Publicly available at the Microchip website

    http://www.microchip.com/

- Microchip MCP9800, MCP9801, MCP9802, MCP9803

  Prefix: 'mcp980x'

  Addresses scanned: none

  Datasheet: Publicly available at the Microchip website

    http://www.microchip.com/

- Analog Devices ADT75

  Prefix: 'adt75'

  Addresses scanned: none

  Datasheet: Publicly available at the Analog Devices website

    https://www.analog.com/adt75

- ST Microelectronics STDS75

  Prefix: 'stds75'

  Addresses scanned: none

Datasheet: Publicly available at the ST website

http://www.st.com/internet/analog/product/121769.jsp

- ST Microelectronics STLM75

  Prefix: 'stlm75'

  Addresses scanned: none

  Datasheet: Publicly available at the ST website

  https://www.st.com/resource/en/datasheet/stlm75.pdf

- Texas Instruments TMP100, TMP101, TMP105, TMP112, TMP75, TMP75B, TMP75C, TMP175, TMP275, TMP1075

  Prefixes: 'tmp100', 'tmp101', 'tmp105', 'tmp112', 'tmp175', 'tmp75', 'tmp75b', 'tmp75c', 'tmp275', 'tmp1075'

  Addresses scanned: none

  Datasheet: Publicly available at the Texas Instruments website

  https://www.ti.com/product/tmp100

  https://www.ti.com/product/tmp101

  https://www.ti.com/product/tmp105

  https://www.ti.com/product/tmp112

  https://www.ti.com/product/tmp75

  https://www.ti.com/product/tmp75b

  https://www.ti.com/product/tmp75c

  https://www.ti.com/product/tmp175

  https://www.ti.com/product/tmp275

  https://www.ti.com/product/TMP1075

- NXP LM75B, PCT2075

  Prefix: 'lm75b', 'pct2075'

  Addresses scanned: none

  Datasheet: Publicly available at the NXP website

  https://www.nxp.com/documents/data_sheet/LM75B.pdf

  https://www.nxp.com/docs/en/data-sheet/PCT2075.pdf

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Description

The LM75 implements one temperature sensor. Limits can be set through the Overtemperature Shutdown register and Hysteresis register. Each value can be set and read to half-degree accuracy. An alarm is issued (usually to a connected LM78) when the temperature gets higher then the Overtemperature Shutdown value; it stays on until the temperature falls below the Hysteresis value. All temperatures are in degrees Celsius, and are guaranteed within a range of -55 to +125 degrees.

The driver caches the values for a period varying between 1 second for the slowest chips and 125 ms for the fastest chips; reading it more often will do no harm, but will return 'old' values.

The original LM75 was typically used in combination with LM78-like chips on PC motherboards, to measure the temperature of the processor(s). Clones are now used in various embedded designs.

The LM75 is essentially an industry standard; there may be other LM75 clones not listed here, with or without various enhancements, that are supported. The clones are not detected by the driver, unless they reproduce the exact register tricks of the original LM75, and must therefore be instantiated explicitly. Higher resolution up to 16-bit is supported by this driver, other specific enhancements are not.

The LM77 is not supported, contrary to what we pretended for a long time. Both chips are simply not compatible, value encoding differs.