

# Kernel driver ltc2978

Supported chips:

- Linear Technology LTC2972  
Prefix: 'ltc2972'  
Addresses scanned: -  
Datasheet: <https://www.analog.com/en/products/ltc2972.html>
- Linear Technology LTC2974  
Prefix: 'ltc2974'  
Addresses scanned: -  
Datasheet: <https://www.analog.com/en/products/ltc2974>
- Linear Technology LTC2975  
Prefix: 'ltc2975'  
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Datasheet: <https://www.analog.com/en/products/ltc2975>
- Linear Technology LTC2977  
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Datasheet: <https://www.analog.com/en/products/ltc2977>
- Linear Technology LTC2978, LTC2978A  
Prefix: 'ltc2978'  
Addresses scanned: -  
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<https://www.analog.com/en/products/ltc2978a>
- Linear Technology LTC2979  
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- Linear Technology LTC2980  
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Datasheet: <https://www.analog.com/en/products/ltc2980>
- Linear Technology LTC3880  
Prefix: 'ltc3880'  
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Datasheet: <https://www.analog.com/en/products/ltc3880>
- Linear Technology LTC3882  
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Datasheet: <https://www.analog.com/en/products/ltc3882>
- Linear Technology LTC3883  
Prefix: 'ltc3883'  
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Datasheet: <https://www.analog.com/en/products/ltc3883>
- Linear Technology LTC3884

Prefix: 'ltc3884'

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Datasheet: <https://www.analog.com/en/products/ltc3884>

- Linear Technology LTC3886

Prefix: 'ltc3886'

Addresses scanned: -

Datasheet: <https://www.analog.com/en/products/ltc3886>

- Linear Technology LTC3887

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Addresses scanned: -

Datasheet: <https://www.analog.com/en/products/ltc3887>

- Linear Technology LTC3889

Prefix: 'ltc3889'

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Datasheet: <https://www.analog.com/en/products/ltc3889>

- Linear Technology LTC7880

Prefix: 'ltc7880'

Addresses scanned: -

Datasheet: <https://www.analog.com/en/products/ltc7880>

- Linear Technology LTM2987

Prefix: 'ltm2987'

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Datasheet: <https://www.analog.com/en/products/ltm2987>

- Linear Technology LTM4644

Prefix: 'ltm4644'

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Datasheet: <https://www.analog.com/en/products/ltm4644>

- Linear Technology LTM4675

Prefix: 'ltm4675'

Addresses scanned: -

Datasheet: <https://www.analog.com/en/products/ltm4675>

- Linear Technology LTM4676

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- Linear Technology LTM4677

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- Linear Technology LTM4678

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Datasheet: <https://www.analog.com/en/products/ltm4678>

- Analog Devices LTM4680

Prefix: 'ltm4680'

Addresses scanned: -

Datasheet: <https://www.analog.com/ltm4680>

- Analog Devices LTM4686

Prefix: 'ltm4686'

Addresses scanned: -

Datasheet: <https://www.analog.com/ltm4686>

- Analog Devices LTM4700

Prefix: 'ltm4700'

Addresses scanned: -

Datasheet: <https://www.analog.com/ltm4700>

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## Description

- LTC2974 and LTC2975 are quad digital power supply managers.
- LTC2978 is an octal power supply monitor.
- LTC2977 is a pin compatible replacement for LTC2978.
- LTC2980 is a 16-channel Power System Manager, consisting of two LTC2977 in a single die. The chip is instantiated and reported as two separate chips on two different I2C bus addresses.
- LTC3880, LTC3882, LTC3886, and LTC3887 are dual output poly-phase step-down DC/DC controllers.
- LTC3883 is a single phase step-down DC/DC controller.
- LTM2987 is a 16-channel Power System Manager with two LTC2977 plus additional components on a single die. The chip is instantiated and reported as two separate chips on two different I2C bus addresses.
- LTM4675 is a dual 9A or single 18A  $\frac{1}{4}$ Module regulator
- LTM4676 is a dual 13A or single 26A uModule regulator.
- LTM4686 is a dual 10A or single 20A uModule regulator.

## Usage Notes

This driver does not probe for PMBus devices. You will have to instantiate devices explicitly.

Example: the following commands will load the driver for an LTC2978 at address 0x60 on I2C bus #1:

```
# modprobe ltc2978
# echo ltc2978 0x60 > /sys/bus/i2c/devices/i2c-1/new_device
```

## Sysfs attributes

in1_label	"vin"
in1_input	Measured input voltage.
in1_min	Minimum input voltage.
in1_max	Maximum input voltage. LTC2974, LTC2975, LTC2977, LTC2980, LTC2978, LTC2979 and LTM2987 only.
in1_crit	Critical minimum input voltage. LTC2972, LTC2974, LTC2975, LTC2977, LTC2980, LTC2978, LTC2979 and LTM2987 only.
in1_crit	Critical maximum input voltage.
in1_min_alarm	Input voltage low alarm
in1_max_alarm	Input voltage high alarm LTC2972, LTC2974, LTC2975, LTC2977, LTC2980, LTC2978, LTC2979 and LTM2987 only.
in1_crit_alarm	Input voltage critical low alarm LTC2972, LTC2974, LTC2975, LTC2977, LTC2980, LTC2978, LTC2979 and LTM2987 only.
in1_crit_alarm	Input voltage critical high alarm
in1_lowest	Lowest input voltage. LTC2972, LTC2974, LTC2975, LTC2977, LTC2980, LTC2978, and LTM2987 only.

in1_highest	Highest input voltage.
in1_reset_history	Reset input voltage history.
in[N]_label	"vout[1-8]". <ul style="list-style-type: none"> <li>• LTC2972: N=2-3</li> <li>• LTC2974, LTC2975: N=2-5</li> <li>• LTC2977, LTC2979, LTC2980, LTM2987: N=2-9</li> <li>• LTC2978: N=2-9</li> <li>• LTC3880, LTC3882, LTC3884, LTC23886 LTC3887, LTC3889, LTC7880, LTM4644, LTM4675, LTM4676, LTM4677, LTM4678, LTM4680, LTM4700: N=2-3</li> <li>• LTC3883: N=2</li> </ul>
in[N]_input	Measured output voltage.
in[N]_min	Minimum output voltage.
in[N]_max	Maximum output voltage.
in[N]_lcrit	Critical minimum output voltage.
in[N]_crit	Critical maximum output voltage.
in[N]_min_alarm	Output voltage low alarm
in[N]_max_alarm	Output voltage high alarm
in[N]_lcrit_alarm	Output voltage critical low alarm
in[N]_crit_alarm	Output voltage critical high alarm
in[N]_lowest	Lowest output voltage. LTC2972, LTC2974, LTC2975, and LTC2978 only.
in[N]_highest	Highest output voltage.
in[N]_reset_history	Reset output voltage history.
temp[N]_input	Measured temperature. <ul style="list-style-type: none"> <li>• On LTC2972, temp[1-2] report external temperatures, and temp 3 reports the chip temperature.</li> <li>• On LTC2974 and LTC2975, temp[1-4] report external temperatures, and temp5 reports the chip temperature.</li> <li>• On LTC2977, LTC2979, LTC2980, LTC2978, and LTM2987, only one temperature measurement is supported and reports the chip temperature.</li> <li>• On LTC3880, LTC3882, LTC3886, LTC3887, LTC3889, LTM4664, LTM4675, LTM4676, LTM4677, LTM4678, LTM4680, and LTM4700, temp1 and temp2 report external temperatures, and temp3 reports the chip temperature.</li> <li>• On LTC3883, temp1 reports an external temperature, and temp2 reports the chip temperature.</li> </ul>
temp[N]_min	Minimum temperature. LTC2972, LTC2974, LTC2977, LTM2980, LTC2978, LTC2979, and LTM2987 only.
temp[N]_max	Maximum temperature.
temp[N]_lcrit	Critical low temperature.
temp[N]_crit	Critical high temperature.
temp[N]_min_alarm	Temperature low alarm. LTC2972, LTC2974, LTC2975, LTC2977, LTM2980, LTC2978, LTC2979, and LTM2987 only.
temp[N]_max_alarm	Temperature high alarm.
temp[N]_lcrit_alarm	Temperature critical low alarm.
temp[N]_crit_alarm	Temperature critical high alarm.
temp[N]_lowest	Lowest measured temperature. <ul style="list-style-type: none"> <li>• LTC2972, LTC2974, LTC2975, LTC2977, LTM2980, LTC2978, LTC2979, and LTM2987 only.</li> <li>• Not supported for chip temperature sensor on LTC2974 and LTC2975.</li> </ul>
temp[N]_highest	Highest measured temperature. Not supported for chip temperature sensor on LTC2974 and LTC2975.
temp[N]_reset_history	Reset temperature history. Not supported for chip temperature sensor on LTC2974 and LTC2975.
power1_label	"pin". LTC3883 and LTC3886 only.
power1_input	Measured input power.

power[N]_label	<p>"pout[1-4]".</p> <ul style="list-style-type: none"> <li>• LTC2972: N=1-2</li> <li>• LTC2974, LTC2975: N=1-4</li> <li>• LTC2977, LTC2979, LTC2980, LTM2987: Not supported</li> <li>• LTC2978: Not supported</li> <li>• LTC3880, LTC3882, LTC3884, LTC3886, LTC3887, LTC3889, LTM4664, LTM4675, LTM4676, LTM4677, LTM4678, LTM4680, LTM4700: N=1-2</li> <li>• LTC3883: N=2</li> </ul>
power[N]_input	Measured output power.
curr1_label	<p>"iin".</p> <p>LTC3880, LTC3883, LTC3884, LTC3886, LTC3887, LTC3889, LTM4644, LTM4675, LTM4676, LTM4677, LTM4678, LTM4680, and LTM4700 only.</p>
curr1_input	Measured input current.
curr1_max	Maximum input current.
curr1_max_alarm	Input current high alarm.
curr1_highest	<p>Highest input current.</p> <p>LTC3883 and LTC3886 only.</p>
curr1_reset_history	<p>Reset input current history.</p> <p>LTC3883 and LTC3886 only.</p>
curr[N]_label	<p>"iout[1-4]".</p> <ul style="list-style-type: none"> <li>• LTC2972: N=1-2</li> <li>• LTC2974, LTC2975: N=1-4</li> <li>• LTC2977, LTC2979, LTC2980, LTM2987: not supported</li> <li>• LTC2978: not supported</li> <li>• LTC3880, LTC3882, LTC3884, LTC3886, LTC3887, LTC3889, LTM4664, LTM4675, LTM4676, LTM4677, LTM4678, LTM4680, LTM4700: N=2-3</li> <li>• LTC3883: N=2</li> </ul>
curr[N]_input	Measured output current.
curr[N]_max	Maximum output current.
curr[N]_crit	Critical high output current.
curr[N]_lcrit	<p>Critical low output current.</p> <p>LTC2972, LTC2974 and LTC2975 only.</p>
curr[N]_max_alarm	Output current high alarm.
curr[N]_crit_alarm	Output current critical high alarm.
curr[N]_lcrit_alarm	<p>Output current critical low alarm.</p> <p>LTC2972, LTC2974 and LTC2975 only.</p>
curr[N]_lowest	<p>Lowest output current.</p> <p>LTC2972, LTC2974 and LTC2975 only.</p>
curr[N]_highest	Highest output current.
curr[N]_reset_history	Reset output current history.