

Kernel driver ucd9000

Supported chips:

- TI UCD90120, UCD90124, UCD90160, UCD90320, UCD9090, and UCD90910

Prefixes: 'ucd90120', 'ucd90124', 'ucd90160', 'ucd90320', 'ucd9090',
'ucd90910'

Addresses scanned: -

Datasheets:

- <http://focus.ti.com/lit/ds/symlink/ucd90120.pdf>
- <http://focus.ti.com/lit/ds/symlink/ucd90124.pdf>
- <http://focus.ti.com/lit/ds/symlink/ucd90160.pdf>
- <http://focus.ti.com/lit/ds/symlink/ucd90320.pdf>
- <http://focus.ti.com/lit/ds/symlink/ucd9090.pdf>
- <http://focus.ti.com/lit/ds/symlink/ucd90910.pdf>

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Description

From datasheets:

The UCD90120 Power Supply Sequencer and System Health Monitor monitors and sequences up to 12 independent voltage rails. The device integrates a 12-bit ADC with a 2.5V internal reference for monitoring up to 13 power supply voltage, current, or temperature inputs.

The UCD90124 is a 12-rail PMBus/I2C addressable power-supply sequencer and system-health monitor. The device integrates a 12-bit ADC for monitoring up to 13 power-supply voltage, current, or temperature inputs. Twenty-six GPIO pins can be used for power supply enables, power-on reset signals, external interrupts, cascading, or other system functions. Twelve of these pins offer PWM functionality. Using these pins, the UCD90124 offers support for fan control, margining, and general-purpose PWM functions.

The UCD90160 is a 16-rail PMBus/I2C addressable power-supply sequencer and monitor. The device integrates a 12-bit ADC for monitoring up to 16 power-supply voltage inputs. Twenty-six GPIO pins can be used for power supply enables, power-on reset signals, external interrupts, cascading, or other system functions. Twelve of these pins offer PWM functionality. Using these pins, the UCD90160 offers support for margining, and general-purpose PWM functions.

The UCD90320 is a 32-rail PMBus/I2C addressable power-supply sequencer and monitor. The 24 integrated ADC channels (AMONx) monitor the power supply voltage, current, and temperature. Of the 84 GPIO pins, 8 can be used as digital monitors (DMONx), 32 to enable the power supply (ENx), 24 for margining (MARx), 16 for logical GPO, and 32 GPIOs for cascading, and system function.

The UCD9090 is a 10-rail PMBus/I2C addressable power-supply sequencer and monitor. The device integrates a 12-bit ADC for monitoring up to 10 power-supply voltage inputs. Twenty-three GPIO pins can be used for power supply enables, power-on reset signals, external interrupts, cascading, or other system functions. Ten of these pins offer PWM functionality. Using these pins, the UCD9090 offers support for margining, and general-purpose PWM functions.

The UCD90910 is a ten-rail I2C / PMBus addressable power-supply sequencer and system-health monitor. The device integrates a 12-bit ADC for monitoring up to 13 power-supply voltage, current, or temperature inputs.

This driver is a client driver to the core PMBus driver. Please see Documentation/hwmon/pmbus.rst for details on PMBus client drivers.

Usage Notes

This driver does not auto-detect devices. You will have to instantiate the devices explicitly. Please see Documentation/i2c/instantiating-devices.rst for details.

Platform data support

The driver supports standard PMBus driver platform data. Please see Documentation/hwmon/pmbus.rst for details.

Sysfs entries

The following attributes are supported. Limits are read-write; all other attributes are read-only.

in[1-12]_label	"vout[1-12]"
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in[1-12]_input	Measured voltage. From READ_VOUT register.
in[1-12]_min	Minimum Voltage. From VOUT_UV_WARN_LIMIT register.
in[1-12]_max	Maximum voltage. From VOUT_OV_WARN_LIMIT register.
in[1-12]_lcrit	Critical minimum Voltage. VOUT_UV_FAULT_LIMIT register.
in[1-12]_crit	Critical maximum voltage. From VOUT_OV_FAULT_LIMIT register.
in[1-12]_min_alarm	Voltage low alarm. From VOLTAGE_UV_WARNING status.
in[1-12]_max_alarm	Voltage high alarm. From VOLTAGE_OV_WARNING status.
in[1-12]_lcrit_alarm	Voltage critical low alarm. From VOLTAGE_UV_FAULT status.
in[1-12]_crit_alarm	Voltage critical high alarm. From VOLTAGE_OV_FAULT status.
curr[1-12]_label	"iout[1-12]".
curr[1-12]_input	Measured current. From READ_IOUT register.
curr[1-12]_max	Maximum current. From IOUT_OC_WARN_LIMIT register.
curr[1-12]_lcrit	Critical minimum output current. From IOUT_UC_FAULT_LIMIT register.
curr[1-12]_crit	Critical maximum current. From IOUT_OC_FAULT_LIMIT register.
curr[1-12]_max_alarm	Current high alarm. From IOUT_OC_WARNING status.
curr[1-12]_crit_alarm	Current critical high alarm. From IOUT_OC_FAULT status. For each attribute index, either voltage or current is reported, but not both. If voltage or current is reported depends on the chip configuration.
temp[1-2]_input	Measured temperatures. From READ_TEMPERATURE_1 and READ_TEMPERATURE_2 registers.
temp[1-2]_max	Maximum temperature. From OT_WARN_LIMIT register.
temp[1-2]_crit	Critical high temperature. From OT_FAULT_LIMIT register.
temp[1-2]_max_alarm	Temperature high alarm.
temp[1-2]_crit_alarm	Temperature critical high alarm.
fan[1-4]_input	Fan RPM.
fan[1-4]_alarm	Fan alarm.
fan[1-4]_fault	Fan fault. Fan attributes are only available on chips supporting fan control (UCD90124, UCD90910). Attribute files are created only for enabled fans. Note that even though UCD90910 supports up to 10 fans, only up to four fans are currently supported.