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# AM335x EVM On-Board Components Drivers Guide

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## AM335x EVM On-Board Components Drivers Guide

Linux PSP

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## Introduction

This wiki page provides the information on On-Board Component Driver details of AM335x EVM.

## Accelerometer

LIS331DLH from ST Microelectronics is present on the AM335x daughter card, placed exactly at the center of the board for giving proper acceleration values. LIS331DLH is placed under lis3lv02d family. This driver provides input events as well as sysfs attributes.

### Position

3D position that accelerometer reports in the format of (x, y, z)

```
$ cat /sys/devices/platform/lis3lv02d/position
```

Reported values are scaled to mg values (1/1000 of earth gravity). In the driver 1024 LSBs corresponds 1g -> 1LSB is 1000/1024 mg

### Rate

Reports the sampling rate of the accelerometer device in HZ.

```
$ cat /sys/devices/platform/lis3lv02d/rate
```

This parameter can be configurable by the user to different rates, LIS331DLH supports 50, 100, 400 and 1000

```
$ echo 100 > /sys/devices/platform/lis3lv02d/rate
```

### Range

LIS331DLH has dynamically user selectable full scales of +/-2, +/-4 and +/-8g

```
$ cat /sys/devices/platform/lis3lv02d/range
```

```
$ echo 2 > /sys/devices/platform/lis3lv02d/range
```

## Kernel Configuration

Accelerometer driver is enabled by default in `am335x_evm_defconfig`. To enable/disable Accelerometer driver support, start the *Linux Kernel Configuration* tool:

```
$ make menuconfig ARCH=arm
```

Select *Device Drivers* from the main menu.

```
...
...
Power management options --->
[*] Networking support --->
Device Drivers --->
File systems --->
Kernel hacking --->
...
...
```

Select *Misc devices* from the Device Drivers menu.

```
...
...
<*> Memory Technology Device (MTD) support --->
Device Tree and Open Firmware support --->
< > Parallel port support --->
[*] Block devices --->
[*] Misc devices --->
< > ATA/ATAPI/MFM/RLL support (DEPRECATED) --->
SCSI device support --->
...
...
```

Select *STMicroelectronics LIS3LV02Dx three-axis digital accelerometer (I2C)* from the menu.

```
...
...
< > Intel Wireless MultiCom Top Driver
Texas Instruments shared transport line discipline --->
< > STMicroelectronics LIS3LV02Dx three-axis digital accelerometer (SPI)
<*> STMicroelectronics LIS3LV02Dx three-axis digital accelerometer (I2C)
...
...
```

## Temperature Sensor

TMP275, digital temperature sensor is used as a temperature sensor for reporting the current temperature of the Board.

### Temp1\_input

Sysfs attribute specifies the current temperature.

```
$ cat /sys/bus/i2c/drivers/lm75/2-0048/temp1_input
```

Reported values are Degree Centigrade \* 1000

### Temp1\_max

Sysfs attribute specifies the maximum temperature of the Board.

```
$ cat /sys/bus/i2c/drivers/lm75/2-0048/temp1_max
```

### Temp1\_max\_hyst

Sysfs attribute specifies the maximum temperature hystercics of the Board.

```
$ cat /sys/bus/i2c/drivers/lm75/2-0048/temp1_max_hyst
```

## Kernel Configuration

Temperature Sensor driver is enabled by default in `am335x_evm_defconfig`. To enable/disable Temperature Sensor driver support, start the *Linux Kernel Configuration* tool:

```
$ make menuconfig ARCH=arm
```

Select *Device Drivers* from the main menu.

```
...
...
Power management options --->
[*] Networking support --->
Device Drivers --->
File systems --->
Kernel hacking --->
...
...
```

Select *Hardware Monitoring support* from the Device Drivers menu.

```
...
...
```

```
< > Dallas's 1-wire support --->
< > Power supply class support --->
<*> Hardware Monitoring support --->
< > Generic Thermal sysfs driver --->
...
...
```

Select *National Semiconductor LM75 and compatibles* from the menu.

```
...
...
< > National Semiconductor LM70 / Texas Instruments TMP121
< > National Semiconductor LM73
<*> National Semiconductor LM75 and compatibles
< > National Semiconductor LM77
< > National Semiconductor LM78 and compatibles
...
...
```

## Ambient Light Sensor

TAOS - TSL2550, Ambient Light sensor is used as a Light sensor for reporting the current luminous intensity.

### Lux1\_input

Sysfs attribute specifies the current luminous intensity.

```
$ cat /sys/bus/i2c/drivers/tsl2550/2-0039/lux1_input
```

## Kernel Configuration

Ambient Light Sensor driver is enabled by default in `am335x_evm_defconfig`. To enable/disable Ambient Light Sensor driver support, start the *Linux Kernel Configuration* tool:

```
$ make menuconfig ARCH=arm
```

Select *Device Drivers* from the main menu.

```
...
...
Power management options --->
[*] Networking support --->
Device Drivers --->
File systems --->
Kernel hacking --->
...
...
```

Select *Misc devices* from the Device Drivers menu.

```
...
...
<*> Memory Technology Device (MTD) support --->
Device Tree and Open Firmware support --->
< > Parallel port support --->
[*] Block devices --->
[*] Misc devices --->
< > ATA/ATAPI/MFM/RLL support (DEPRECATED) --->
SCSI device support --->
...
...
```

Select *Taos TSL2550 ambient light sensor* from the menu.

```
...
...
< > Intersil ISL29003 ambient light sensor
< > Intersil ISL29020 ambient light sensor
<*> Taos TSL2550 ambient light sensor
< > ROHM BH1780GLI ambient light sensor
...
...
```

...



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