



ISL29125 Device Driver Integration Guide

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ISL29125 RGB Sensor Driver Integration Guide

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1 Introduction

This document describes the device driver integration of “ISL29125 RGB sensor driver” with Linux kernel for pandaboard which is developed by VVDN for Intersil Corporation.

This Document is made for the reference of

- Product managers and QAD at VVDN & Intersil to understand the device driver integration.
- Engineering Team at VVDN for integrating and testing the device driver for pandaboard.

2 Extract the Driver package

Extract the Linux kernel driver tar file (VVDN_ISLU_SNSR_DRIVER_1.1.2.1.tar.bz2) for isl29125 sensor

```
# tar -xvf VVDN_ISLU_SNSR_DRIVER_1.1.2.1.tar.bz2
```

The extracted directory will contain the following files

1. isl29125.c
2. isl29125.h

3 Copying driver files

1. Copy the isl29125.c to kernel/driver/input/misc/ directory in the Linux kernel for pandaboard

```
# cp isl29125.c kernel/drivers/input/misc/
```

2. Copy the isl29125.h to standard header file path kernel/include/linux/ in the Linux kernel for pandaboard

```
# cp isl29125.h kernel/include/linux/
```

4 Adding the driver to kernel build system

4.1 Adding entry in Kconfig

1. Change directory to kernel/driver/input/misc inside the Linux kernel source code for pandaboard.

```
# cd kernel/driver/input/misc
```

2. Open the Kconfig in the current directory with any editor of choice
3. Go to the end of file and add the following configuration just before the #endif

```
config INPUT_ISL29125
    bool "isl29125 I2C driver for ALS RGB sensor"
    default y
```

```
depends on I2C=y
```

```
help
```

```
This is a device driver for Intersil Corporation's isl29125  
RGB sensor.
```

4. Save and exit.

Note: This step will add our sensor entry in the kernel's configuration menu. Please deselect this entry using kernel's menuconfig system if its compilation with pandaboard is not required.

4.2 Adding entry in Makefile

1. Change directory to kernel/driver/input/misc inside the Linux kernel source code for pandaboard.

```
# cd kernel/driver/input/misc
```
2. Open the Makefile in the current directory with any editor of choice.
3. Go to the end of file and add the following.

```
obj-$(CONFIG_INPUT_ISL29125) += isl29125.o
```

Note: After this step the isl29125 sensor driver is integrated with kernel build system.

4.3 Add driver and device information in board file

1. Change directory to kernel/arch/arm/mach-omap2 inside the Linux kernel source code for pandaboard.

```
# cd kernel/arch/arm/mach-omap2
```
2. Edit the file board-omap4panda.c under current directory with editor of choice. Do Steps 3 to 5 to edit the file.
3. Include the sensor driver header file at the beginning of file along with other include files

```
#include <linux/isl29125.h>
```

4. Add this global structure declaration to the file

```
struct isl29125_platform_data isl29125_data = {  
    .gpio_irq = -1 /* GPIO pin number to be assigned as interrupt  
                    For interrupt mode only, otherwise leave as -1 */  
};
```

```
static struct i2c_board_info __initdata isl29125_info[] = {  
    {  
        I2C_BOARD_INFO("isl29125", ISL29125_I2C_ADDR),  
        .platform_data = &isl29125_data,  
    },  
};
```

5. Inside function "omap4_panda_i2c_init" add the following code to register isl29125 device with i2c core.

```
omap_register_i2c_bus(4, 400, isl29125_info, ARRAY_SIZE(isl29125_info));
```

6. Save and exit

Now the sensor driver is integrated with Linux kernel for pandaboard.