Application Programmer's Guide

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Android Application Programmer's Guide for ISL29035 ALS/IR sensor

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1 Introduction

This document describes Application software development guide for "ISL29035 ALS sensor Driver" which is developed by VVDN for Intersil Corporation.

This Application Programmer's Guide is made for the reference of

- Product managers and QAD at VVDN & Intersil to understand the interface between android application and the sensor device driver.
- Engineering Team at VVDN for System Architecture, Design and development of android application software.
- System Integration and Verification teams at VVDN / Intersil for SW validation.

2 Scope of the document

This document describes the methods by which the android application can interact with the ISL29035 sensor device driver.

3 Android application interface to ISL29035 ALS Sensor Driver

The android application interacts with the ISL29035 device driver in the Linux/Android kernel using the ***sysfs*** files exported by the device driver.

The android application reads/writes a string from/to the **sysfs** file to interact with the ISL29035 ALS sensor. The following table lists the **sysfs** files exported by the ISL29035 driver and valid input/output values.

Path of **sysfs** files in Linux kernel depends upon the following parameters

1. I2C Bus number in the target board
2. I2C Slave address of ALS sensor device

Sysfs path: /sys/class/i2c-dev/i2c-<Bus_num>/device/<Bus_num>-<Slave addr>/

Example: The ISL29035 ALS sensor is connected to I2C bus number 4 with slave address 0x44h (1000100b) to the panda-board

Sysfs path: /sys/class/i2c-dev/i2c-4/device/4-0044/

SL	SYSFS FILE	R/W	DESCRIPTION	VALID R/W VALUES
1.	sensing_mode	R/W	ALS sensor mode control file used to set/get the modes of operation of sensor device	pwdn alsonce ironce alscontinuous ircontinuous
2.	sensing_range	R/W	Get / Set sensing range	1000 4000 16000 64000
3.	als_data	R	Get current ALS value	0 – 65535
4.	ir_data	R	Get current IR value	0 – 65535
5.	adc_res_bits	R/W	Set or get the ADC resolution bits	16/12/8/4
6.	intr_persistency	R/W	Get/Set the interrupt persistency	1/4/8/16
7.	intr_threshold_high	R/W	Get/Set high Interrupt threshold value	0 – 65535
8.	intr_threshold_low	R/W	Get/Set the Low threshold value	0 – 65535

1. Open the above **sysfs** files in the android application and read/write valid values as shown in above table for interaction with ISL29035 ALS sensor device driver.
2. Reading from a **sysfs** file returns number of bytes read in case of successful read else returns -1 on failure.
3. Writing to a **sysfs** file returns number of bytes written else returns -1 on failure.