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DFR0182 Wirless GamePad V2.0

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DFR0304 BLE Wireless Gamepad V2

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Controller

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DFR0428 3.5 inches TFT Touchscreen
for Raspberry Pi

DFR0494 Raspberry Pi UPS HAT

DFR0514 DFR0603 IIC 16X2 RGB
LCD KeyPad HAT V1.0DFR0524 5.5 HDMI OLED-Display
with Capacitive Touchscreen V2.0DFR0550 5" TFT-Display with
Touchscreen

Introduction

Specification

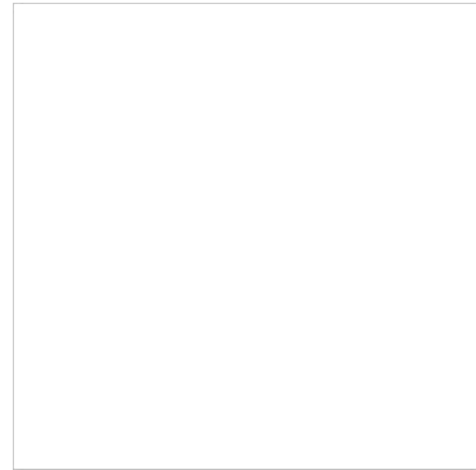
Board Overview

Tutorial

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SKU:SEN0390



Introduction

This new ambient light sensor is packaged in a transparent hemisphere case that offers better light gathering power. The sensor supports 0-200klx detection range and I2C communication. The on-chip photodiode's spectral response is optimized to mimic the human eye's perception of ambient light and incorporates IR and UV blocking capability. The adaptive gain block automatically selects the correct lux range to optimize the counts/lux. It is ideal for applications such as smartphones, vehicle smart light, intelligent incubator, etc.

Luminance data reference

- Evening: 0.001-0.02lx;
- Moonlit night: 0.02-0.3lx;
- Cloudy indoor: 5-50lx;
- Cloudy outdoor: 50-500lx;
- Sunny indoor: 100-1000lx;
- Under summer noon light: about 10*6 lx;
- Illumination when reading books: 50-60lx;
- Home video standard illumination: 1400lx



NOTE:

1. This sensor can obtain the intensity of ambient light.
2. The detected data will be transmitted by IIC. Its IIC address cannot be revised.
3. Write the necessary configuration into the config register(address: 0x04) to set differernt parameter accuracies.
4. The light intensity data can be read from the data register(address: 0x00~0x03).
5. This sensor is sealed by software IIC, and can not be used with other equipment or sensors using hardware IIC.

Specification

DFR0591 raspberry pi e-ink display module V1.0

DFR0592 DC Motor Driver HAT

DFR0604 I O Expansion HAT for Pi zero V1.0

DFR0566 IO Expansion HAT for Raspberry Pi

DFR0528 UPS HAT for Raspberry Pi Zero

DFR0331 Romeo for Edison Controller

DFR0453 DFRobot CurieNano - A mini Genuino Arduino 101 Board

TEL0110 CurieCore intel® Curie Neuron Module

DFR0478 FireBeetle ESP32 IOT Microcontroller(V3.0) Supports Wi-Fi & Bluetooth

DFR0483 FireBeetle Covers-Gravity I O Expansion Shield

FireBeetle Covers-24×8 LED Matrix

TEL0121 FireBeetle Covers-LoRa Radio 433MHz

TEL0122 FireBeetle Covers-LoRa Radio 915MHz

TEL0125 FireBeetle Covers LoRa Radio 868MHz

DFR0489 FireBeetle ESP8266 IOT Microcontroller

DFR0492 FireBeetle Board-328P with BLE4.1

DFR0498 FireBeetle Covers-Camera&Audio Media Board

DFR0507 FireBeetle Covers-OLED12864 Display

DFR0508 FireBeetle Covers-DC Motor & Stepper Driver

DFR0511 FireBeetle Covers-ePaper Black&White Display Module

DFR0531 FireBeetle Covers-ePaper Black&White&Red Display Module

DFR0536 Micro bit Gamepad Expansion Board

DFR0548 Micro bit Driver Expansion Board

ROB0148 micro: Maqueen for micro:bit

ROB0150 Micro bit Circular RGB LED Expansion Board

- Supply Voltage: 2.7-6V
- Operating Current: 0.7mA
- Detection Range: 0-200klx
- Accuracy: 0.054lx
- Communication: IIC
- Operating Temperature Range: -40°C~+85°C
- Dimension: inner diameter 22mm, outer diameter 26mm, shell diameter 28.5mm, semisphere height 18mm

Board Overview

Pinout

Num	Label	Description
1	VCC	+
2	SCL	IIC Clock Input Pin
3	SDA	IIC Data Input Pin
4	GND	-
5	EN	Sensor Chip-select Enable/Disable port, H to enable, L to disable sensor

Tutorial

Requirements

- Hardware
 - [DFRduino UNO R3](#) (or similar) x 1
 - Ambient Light Sensor(0-200klx) x1
- Software
 - [Arduino IDE](#)
 - Download and install the [Ambient Light Sensor Library](#). ([About how to install the library?](#))

Connection Diagram

Connection Diagram

Sample Code

```
/*!
 * @file getLightIntensity.ino
 * @brief Set sensor mode and read light values
 * @n Experimental phenomenon: the light value is r
 * @copyright Copyright (c) 2010 DFRobot Co.Ltd (
 * @licence The MIT License (MIT)
 * @author [Fary](fary_young@outlook.com)
 * @version V1.0
 * @date 2020-12-03
 * @https://github.com/DFRobot/DFRobot_B_LUX_V30B
 */
#include <DFRobot_B_LUX_V30B.h>
DFRobot_B_LUX_V30B myLux(13); //The sensor chip i
/*
 * MANUAL
 * eAutomatic:The default automatic configurati
 * eManual :Manual configuration. This pattern
```

- MBT0005 micro IO-BOX
- SEN0159 CO2 Sensor
- DFR0049 DFRobot Gas Sensor
- TOY0058 Barometric Pressure Sensor
- SEN0220 Infrared CO2 Sensor 0-50000ppm
- SEN0219 Gravity Analog Infrared CO2 Sensor For Arduino
- SEN0226 Gravity I2C BMP280 Barometer Sensor
- SEN0231 Gravity HCHO Sensor
- SEN0251 Gravity BMP280 Barometric Pressure Sensors
- SEN0132 Carbon Monoxide Gas Sensor MQ7
- SEN0032 Triple Axis Accelerometer Breakout - ADXL345
- DFR0143 Triple Axis Accelerometer MMA7361
- Triple Axis Accelerometer FXLN83XX Series
- SEN0072 CMPS09 - Tilt Compensated Magnetic Compass
- SEN0073 9 Degrees of Freedom - Razor IMU
- DFR0188 Flymaple V1.1
- SEN0224 Gravity I2C Triple Axis Accelerometer - LIS2DH
- SEN0140 10 DOF Mems IMU Sensor V2.0
- SEN0250 Gravity BMI160 6-Axis Inertial Motion Sensor
- SEN0253 Gravity BNO055 + BMP280 intelligent 10DOF AHRS
- SEN0001 URM37 V5.0 Ultrasonic Sensor
- SEN0002 URM04 V2.0
- SEN0004 SRF01 Ultrasonic sensor
- SEN0005 SRF02 Ultrasonic sensor
- SEN0006 SRF05 Ultrasonic sensor
- SEN0007 SRF08 Ultrasonic Sensor
- SEN0008 SRF10 Ultrasonic sensor
- SEN0149 URM06-RS485 Ultrasonic

```
* CDR
*   eCDR_0:Don't divide the CDR
*   eCDR_1: Eight divided the CDR
* TIM
*   eTime800ms:The collection time is 800ms
*   eTime400ms:The collection time is 400ms
*   eTime200ms:The collection time is 200ms
*   eTime100mse:The collection time is 100ms
*   Time50ms:The collection time is 50ms
*   eTime25ms:The collection time is 25ms
*   eTime12_5ms:The collection time is 12.5ms
*   eTime6_25ms:The collection time is 6.25ms
* Manual mode combination
*   (The collected value cannot exceed the maximum value)
*   eManual+eCDR_0+eTime800ms      mode=64   The maximum value is 64
*   eManual+eCDR_0+eTime400ms      mode=65   The maximum value is 65
*   eManual+eCDR_0+eTime200ms      mode=66   The maximum value is 66
*   eManual+eCDR_0+eTime100ms      mode=67   The maximum value is 67
*   eManual+eCDR_0+eTime50ms       mode=68   The maximum value is 68
*   eManual+eCDR_0+eTime25ms       mode=69   The maximum value is 69
*   eManual+eCDR_0+eTime12.50ms    mode=70   The maximum value is 70
*   eManual+eCDR_0+eTime6.25ms     mode=71   The maximum value is 71
*
*   eManual+eCDR_1+eTime800ms      mode=72   The maximum value is 72
*   eManual+eCDR_1+eTime400ms      mode=73   The maximum value is 73
*   eManual+eCDR_1+eTime200ms      mode=74   The maximum value is 74
*   eManual+eCDR_1+eTime100ms      mode=75   The maximum value is 75
*   eManual+eCDR_1+eTime50ms       mode=76   The maximum value is 76
*   eManual+eCDR_1+eTime25ms       mode=77   The maximum value is 77
*   eManual+eCDR_1+eTime12.50ms    mode=78   The maximum value is 78
*   eManual+eCDR_1+eTime6.25ms     mode=79   The maximum value is 79
*/

void setup() {
  Serial.begin(9600);
  myLux.begin();
  /*
   * The setMode and readMode functions can be omitted
   * When using the setMode function, its return value is the mode value
   * while(!myLux.setMode(myLux.eManual,myLux.eCDR_0,myLux.eTime800ms))
   * Serial.print("mode: ");
   * Serial.println(myLux.readMode());
   */
}

void loop() {
  Serial.print("value: ");
  Serial.print(myLux.lightStrengthLux());
  Serial.println(" (lux).");
  delay(1000);
}
```

Expected Results

Check the detected light value on the serial monitor.

Result

FAQ

For any questions, advice or cool ideas to share, please visit the [DFRobot Forum](#).

More Documents

 Get [Ambient Light Sensor\(0-200klx\)](#) from DFRobot Store or [DFRobot Distributor](#).

[Turn to the Top](#)

