Color Sensor Module

Model: TCS3200 GY-31

Description:

GY-31 Color Sensor Module is made using IC TCS3200, a programmable color light to frequency converter. It has configurable silicon photodiodes and a current to frequency converter in a single monlithic CMOS Integrated Circuit. Its output is square wave having 50% duty cycle with frequency directly proportional to irradiance (light intensity). This module can be directly interfaced with Microcontrollers, Arduino Boards,Raspberry Pi etc.

Features:

- High Resolution Conversion of Light Intensity to Frequency
- Programmable Color and Full Scale Output Frequency
- Power Down Feature
- Stable Temperature Coefficient

Specifications:

- Using imported chip TCS3200
- The TCS3200 is TCS230 upgraded version better
- Power supply 3-5v
- Resistance to light interference
- White LED can be controlled on, off.
- Can detect non-luminous object color
- Best detection distance 1cm
- Color: Blue
- Dimensions: 3.3 x 3.3cm
- Weight: 7g

(1) Color Induction Principle:
Color of objects commonly seen, in fact, the surface is irradiated to it absorbed white (daylight) part of the colored components, while reflecting the other part of a colored light in the human eye response. White is a mixture of various frequencies together to form a visible, which contains a variety of white color shade (such as red R, yellow Y, green G, blue V, blue B, purple P). According to the German physicist Helmholtz (Helinholtz) theory shows that the three primary colors, each color is different proportions of the three primary colors (red, green, blue) mixture.

(2) The principle of TCS230 identification color:
Consists of three primary colors induction principle, if you know the composition of all sorts of color of color values, will be able to know the color of the test object. For TCS230, a color filter is elected, it only allows certain primary pass, stop by other color. For example: when choosing a red filter, the incident light can only red, blue and green are stop, so you can get the red ray of light intensity; By the same token, the choice of other filters, you can get the blue light intensity of light and green light. Through these three values, can be projected onto a TCS230 sensor on the color of the light.

Pin Out:

PIN	Name	Description
1	GND	Power Supply Ground
2	OUT	Output Frequency
3	S2	Photodiode Type Selection Input
4	S3	Photodiode Type Selection Input
5	VCC	Supply Voltage
6	VCC	Supply Voltage
7	S1	Output Frequency Scaling Selection Input
8	S0	Output Frequency Scaling Selection Input
9	LED	LED Control, 1 – LED ON & 0 – LED OFF
10	GND	Power Supply Ground

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