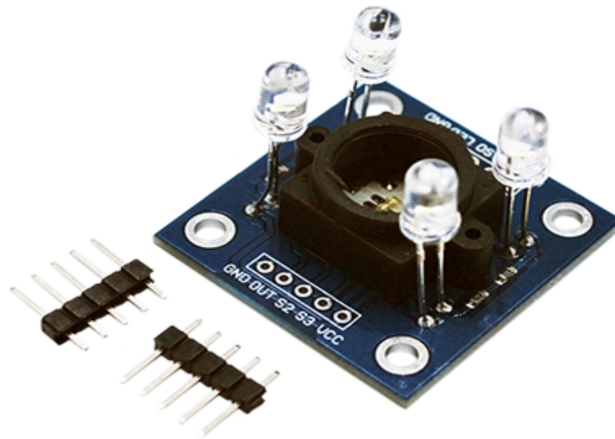# GY-31 COLOR module

SENSOR: TCS3200

COLOR LIGHT-TO-FREQUENCY CONVERTER

Technical Manual Rev 1r0

The GY-31 TCS3200 Color Sensor Module a programmable Color full-scale light-to-frequency converter, communicates precisely with a microcontroller, gizDuino and Arduino Compatible.

FEATURES/SPECIFICATION:

- High-Resolution Conversion of Light Intensity-to-Frequency
- Programmable Color and Full- Scale Output
- Communicates directly with a microcontroller
- Power Down Feature
- Nonlinearity Error Typically 0.2% at 50kHz
- Stable 200 ppm/°C Temperature Coefficient
- Compatible in all gizDuino boards

GENERAL SPECIFICATION:

Operating Voltage Range: 2.7 to 5.5 V DC
Supply Current: 5V LED (approx. 25mA)
Interfaces: Output Frequency
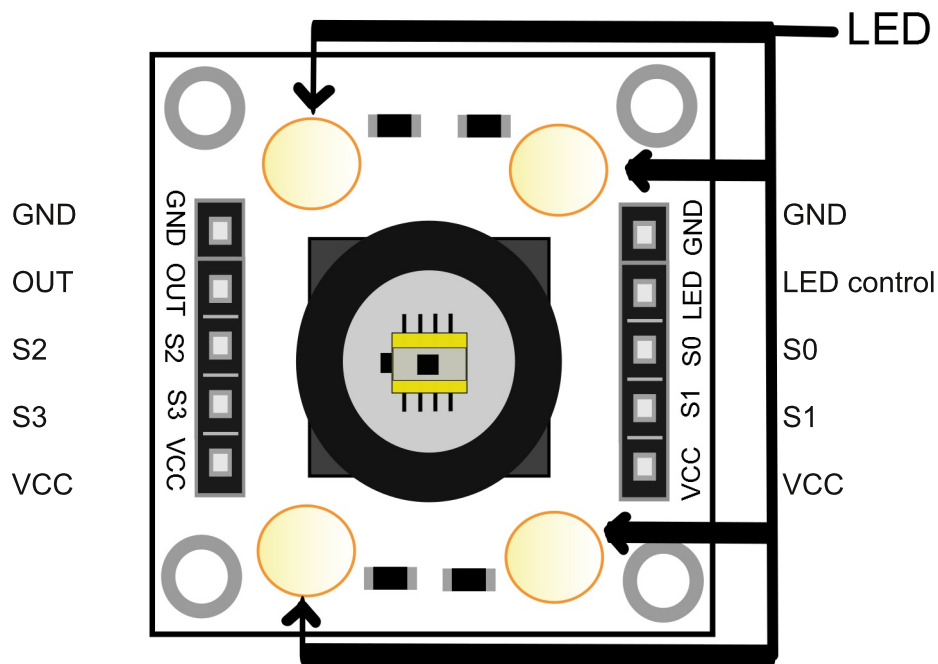Operating Temperatures: -40°~ 85°
PCB Dimensions: 33.2mm×33.2mm×25mm

GY31 Color Sensor Module TCS3200

Figure 1. Major Parts presentation of GY-31 Color Sensor

Table 1. Pins Descriptions and Functions

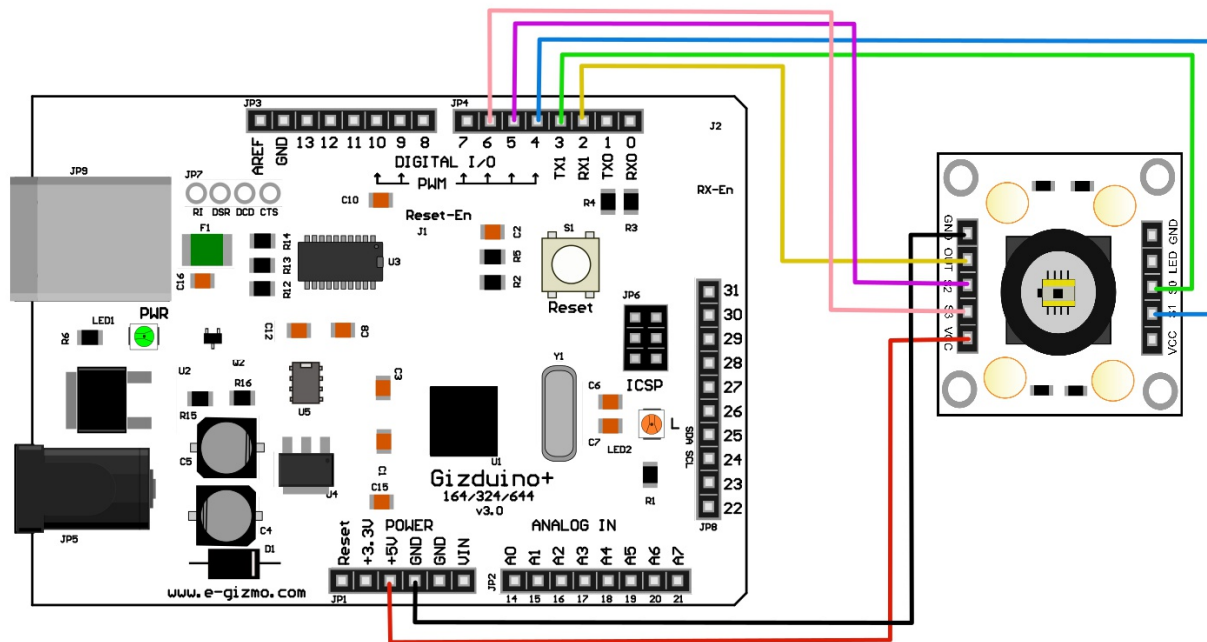| Pin Name	Description
GND	Ground
OUT	Output frequency
S0	Output frequency scaling selection input
S1	Oustput frequency scaling selection input
S2	Photodiode type selection inputs
S3	Photodiode type selection inputs
VCC	Power supply 2.7-5V
LED	LED control (1:on, 0:off)

Figure 2. GY-31 Color Sensor Connected to a microcontroller.

To connect the GY-31 Sensor to the microcontroller:

- connect the red wire to 5V and VCC from the microcontroller and the sensor respectively
- connect the black wire to both the GND of the microcontroller and sensor
- connect the yellow wire to Pin 2 and OUT of the microcontroller and sensor respectively
- connect the green wire to Pin 3 and S0 of the microcontroller and sensor respectively
- connect the blue wire to Pin 4 and S1 of the microcontroller and sensor respectively
- connect the purple wire to Pin 5 and S2 of the microcontroller and sensor respectively
- connect the pink wire to Pin 6 and S3 of the microcontroller and sensor respectively