

Laser Emitter Module

Introduction

Laser is widely used in medical treatment, military, and other fields due to its good directivity and energy concentration.

The laser-transmit module in this kit is as shown below:



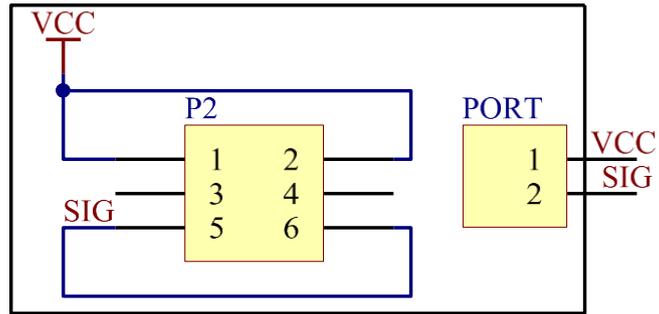
Components

- 1 * Raspberry Pi
- 1 * Network cable (or USB wireless network adapter)
- 1 * Laser-transmitter module
- 1 * 2-Pin anti-reverse jumper wire

Experimental Principle

A laser is a device that emits light through a process of optical amplification based on the stimulated emission of electromagnetic radiation. The term "laser" originated as an acronym for "light amplification by stimulated emission of radiation". Lasers differ from other sources of light because they emit light coherently. Spatial coherence allows a laser to be focused to a tight spot, enabling applications like laser cutting and lithography. Spatial coherence also allows a laser beam to stay narrow over long distances (collimation), enabling applications such as laser pointers. Lasers can also have high temporal coherence which allows them to have a very narrow spectrum, i.e., they only emit a single color of light. Temporal coherence can be used to produce pulses of light—as short as a femtosecond.

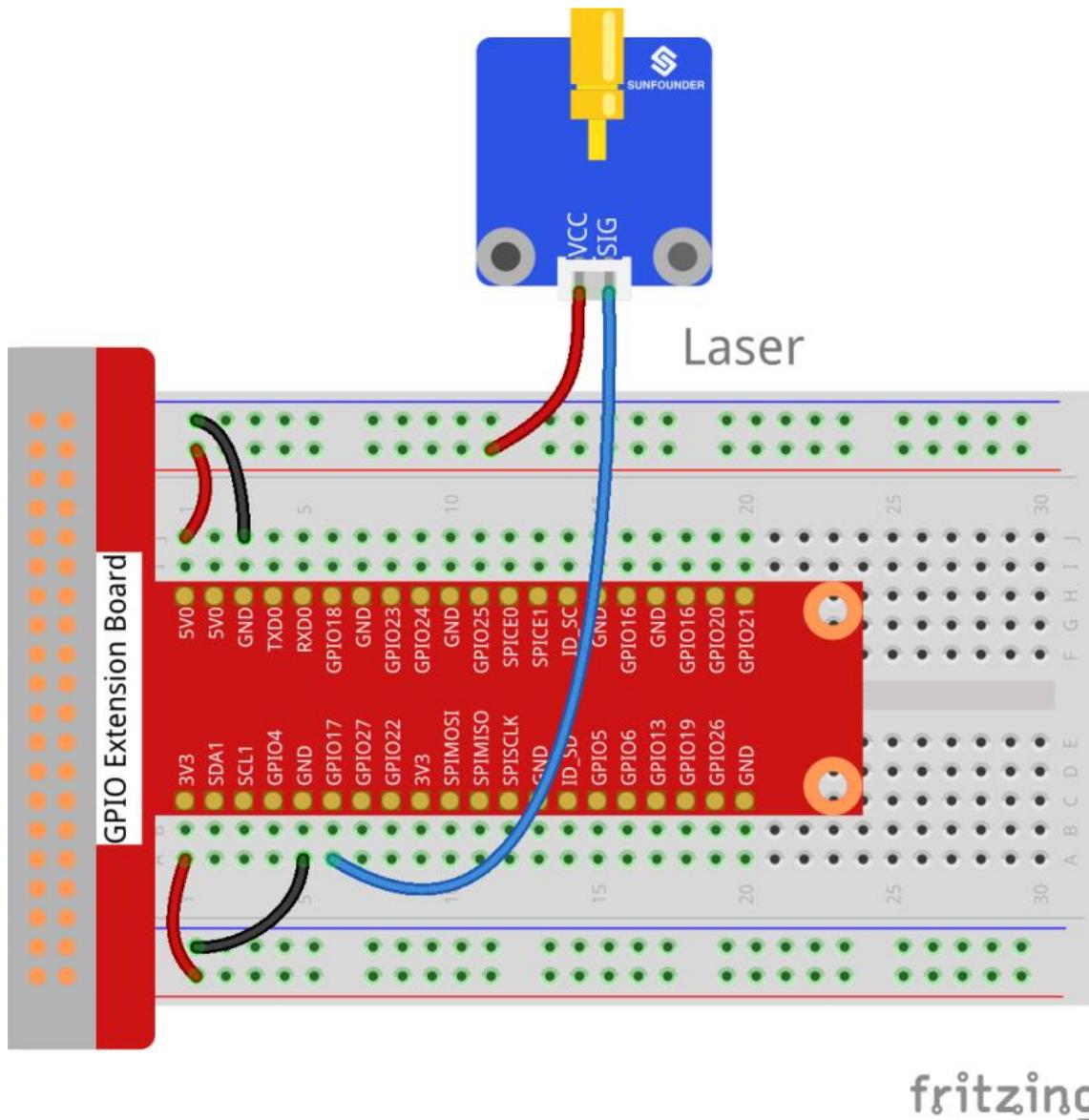
The schematic diagram of the module is as shown below:



Experimental Procedures

Step 1: Connect the circuit

Raspberry Pi	T-Cobbler	Laser-transmitter module
5V	5V0	VCC
GPIO0	GPIO17	SIG



For C user:

Step 2: Edit and save the code if necessary (See path: SunFounder_SensorKit_for_RPi2/C/05_laser/laser.c)

Step 3: Compile the code

```
gcc laser.c -lwiringPi
```

Step 4: Run the program

```
sudo ./a.out
```

For Python user:

Step2: Edit and save the code if necessary (See path: SunFounder_SensorKit_for_RPi2/Python/ 05_laser.py)

Step 3: Run the program

```
sudo python 05_laser.py
```

Please do not look directly at the laser head. You can point laser beam to the table and see the light spot flashing on the table.

