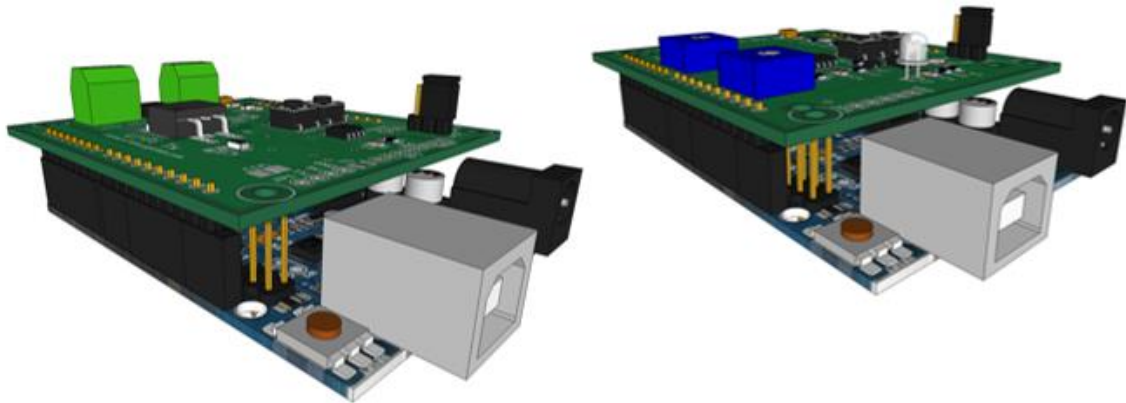


LiFi Module Compatible for Arduino



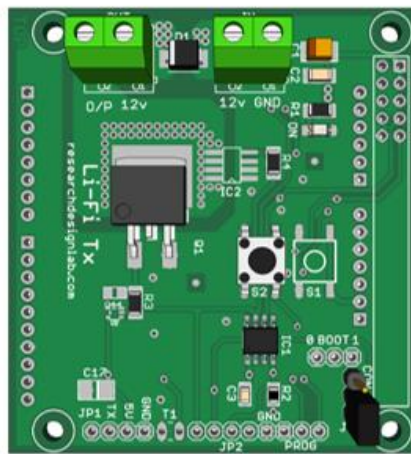
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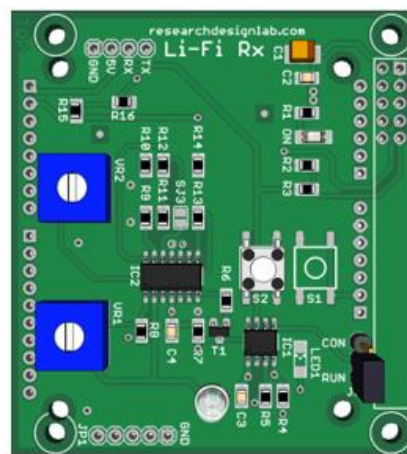
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1. INTRODUCTION

Arduino Li-Fi Shield is a plug-and-play evaluation board for developing a wide array of visible light communication applications in consumer, wearable, industrial, medical and Internet of Things (IoT). Arduino Li-Fi Shield transfers data from one source to another through visible light without the flickering effect. Technically, 1's (LED on) and 0's (LED off) are modulated and then transmitted at very high speed.



Li-Fi Tx



Li-Fi Rx

2. FEATURES

- Supports baud rates up to 38400
- Support serial (UART) communication
- Supported distance from the ceiling 6 to 15 feet max
- Plug-and-Play with simple configuration
- Ceiling / wall mounting LED light can be used for the communication

3. SPECIFICATIONS

Specifications	
Supply Voltage	5V,2A
Supported MAX Load (LED)	15W
Baud Rate	34500
Max communication Distance *	15 feet
Communication	One way.
Communication Type	Serial UART
Communication Light Spectrum	Visible light 400 to 700nm
Dimension(L * W)	58MM * 49MM

* Supported distance from the ceiling 6 to 15 feet max

4. ADVANTAGES

- **Security** - Area of interest can be securely focused with higher data rates.
- **Li-Fi Device can be used EMI sensitive environments**
- **Augmented reality** - In museums and galleries Li-Fi enabled lighting can provide localized information within that light.
- **Localized advertising** - Shop display lighting can be used to transmit advertising information on the goods being viewed.
- **Underwater communication** – Data can be transmitted under the water with the help of light.
- **Safety environments** - In explosion hazard environments, where the use of electrical equipment, including mobile phones, is generally greatly restricted.
- **Intelligent transportation systems** - AGV (auto guided vehicle).
- **Connectivity** - Sensor area network can be created.
- **Sensitive data** - Better deployment of secure networked medical instruments, patient records, etc.
- **Indoor navigation** – Li-Fi enabled lamps can be fixed in indoor places for data transmission.
- **Dense urban environments** - Dense urban environments by their nature tend to have complete artificial lighting coverage. This lighting infrastructure can provide always available high data rate access for users as they move through that environment

5. APPLICATIONS

- Indoor wireless open optical communication.
- Indoor navigation.
- Under water visible light communication.
- Smart indoor blind assistive application.
- Vehicle to vehicle communication.
- Monitor as transmitter for Data Communication.
- Preventing Phishing Attacks using One Time Password and User Machine Identification.
- Super market navigation system and discount information based on location.
- Smart LIFI based Car Parking system.
- Smart Location Aware of Services.
- Visible light positioning for asset tracking.
- POSITIONING TECHNIQUES FOR ACCURATE LOCALIZATION mobile robot navigation.
- Integrated, underwater optical /acoustic communications system.
- Visible Light Communication Based Traffic Information Broadcasting Systems.
- Li-Fi wireless optical communication.

Package Contains:

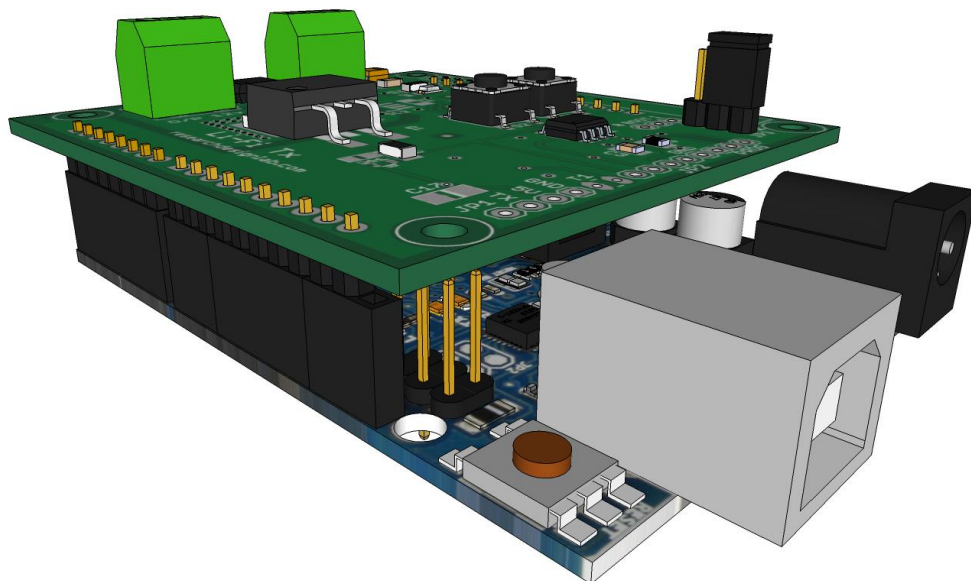
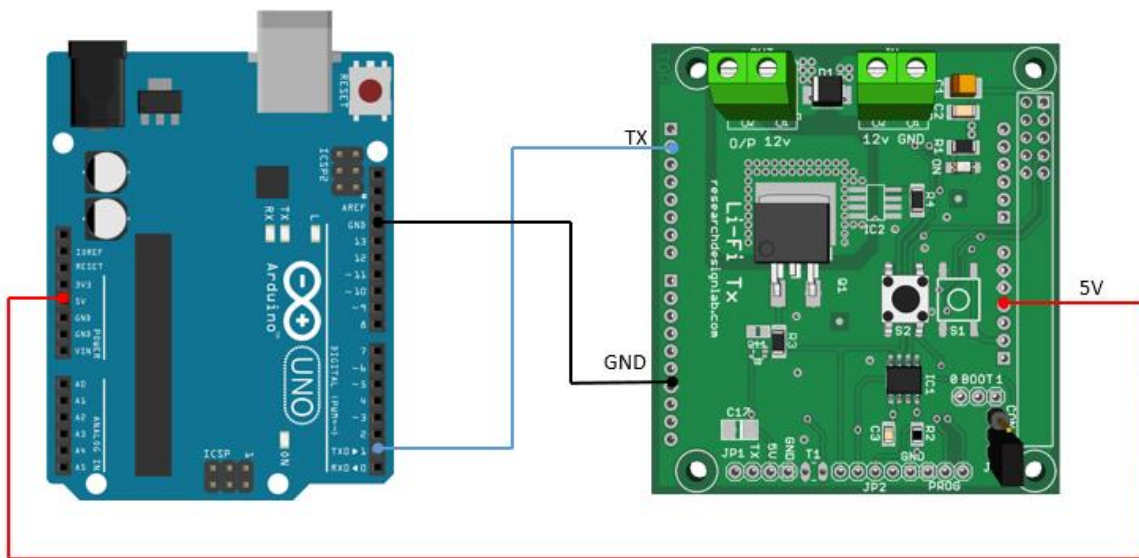
Li-Fi (Visible Light Communication) Compatible for Arduino + LED Light

Note1: The Arduino in the above picture is just for reference, it does not include in the package.

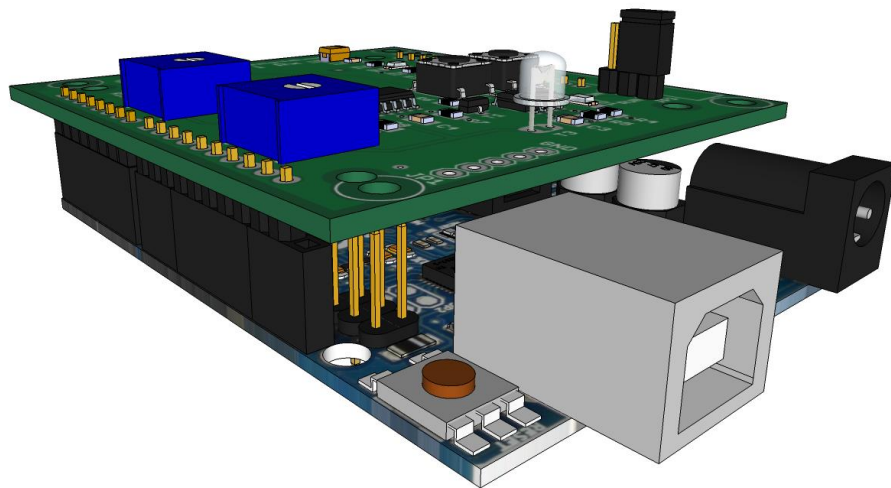
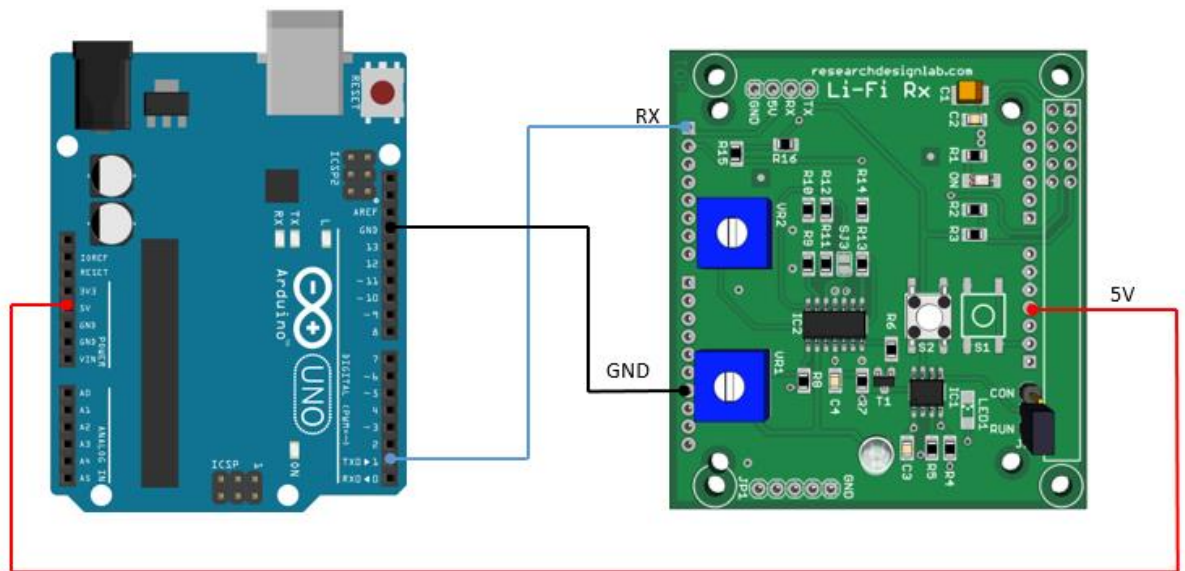
6. APPLICATION BLOCK DIAGRAM

6.1 Internal Block connections-Arduino

Li-Fi Tx



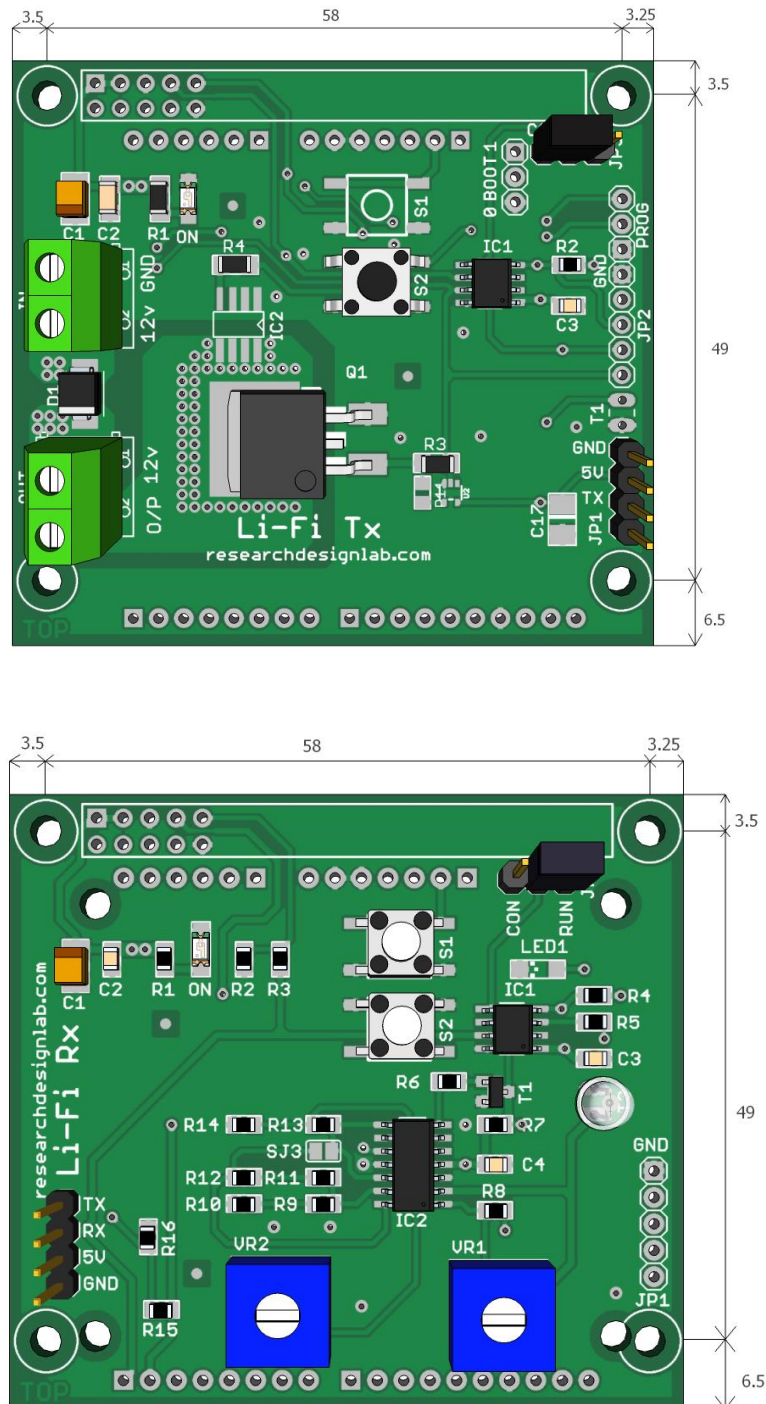
Li-Fi Rx





6.1.1 Arduino Code

```
void setup()
{
  // Open serial communications and wait for port to open:
  Serial.begin(38400);
  while (!Serial) {
    ; // wait for serial port to connect. Needed for Leonardo only
  }
}
void loop() // run over and over
{
  if (Serial.available())
    Serial.write(Serial.read());
}
```

8. RELATED PRODUCTS

LiFi Nano V2



ORDER CODE: RDL749

LiFi Visible Light Communication



ORDER CODE: RDL/LIFI/13/001/V1.0

LiFi Visible Light Communication
Compatible for Raspberry Pi



ORDER CODE: RDL655

LiFi TX Visible Light Communication



ORDER CODE: RDL/LIFI-T/13/001/V1.0