Li-Fi
Underwater Communication

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Abstract

There are places where wireless systems cannot be used, so we are going to use technology that can be used in these places, such as a hospital. It is not possible to use Wi-Fi due to the RF effect on medical devices and it cannot be used under water because it absorbs quickly. So, our direction is to use technology that can be used in these places, which is Li-Fi, which is faster than other systems because it depends on the speed of light in transmitting data

Introduction

The Li-Fi is a wireless optical networking technology. Specifically, it is a form of visible light communications (VLC) system that makes use of light-emitting diodes (LED) for data transmission. Li-Fi has a special distinction from other VLC systems. Like Wi-Fi, Li-Fi is the only form of VLC that allows the bidirectional transmission of light. However, instead of the radio spectrum, it makes use of the visible light spectrum through LED lightbulbs outfitted with a special chip. We use it to receive and transmit data by light. It faster 100 times than Wi-Fi technology and the Li-Fi is more secure than Wi-Fi. The purpose of Li-Fi technology is to provide a high-speed data communication using visible light spectrum.
And we can use it in places where we can not use Wi-Fi, such as hospitals because RF affects medical devices and also under water because Rf absorbs quickly in water but when using light or laser we will be able to easily connect underwater so we implemented data transmission and audio transmission in order to achieve underwater communications by using Li-Fi.

Components

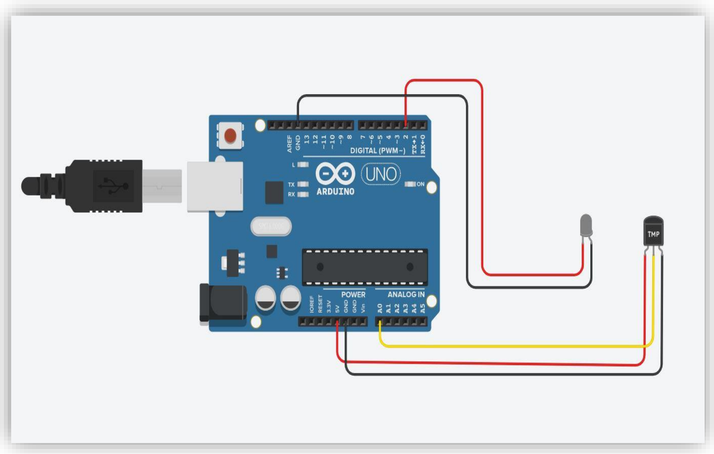
To implement the underwater communications, we use the components hardware for the data transmission we use LM35 and Arduino Uno and Mini LASER and Solar cell Panel and 2*16 lcd display and Pot 10k ohm

For Audio transmission we use Laser and 9 Volt Battery and 220 Ohm Resistor and Solar Panel and Mobile and Speaker

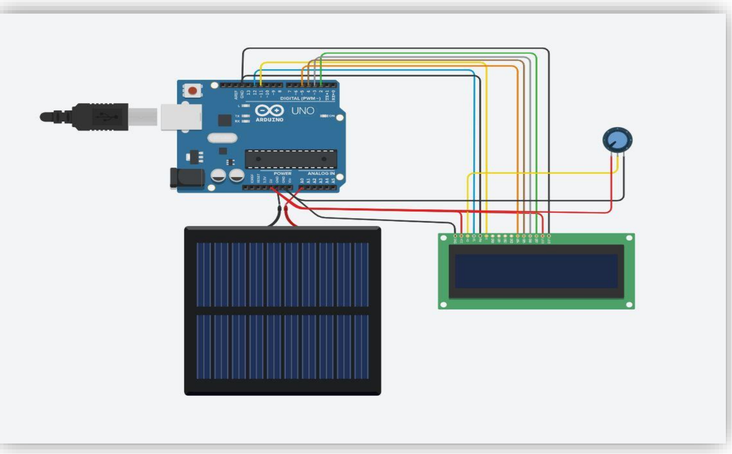
Output

Data Transmission

Transmitter Circuit

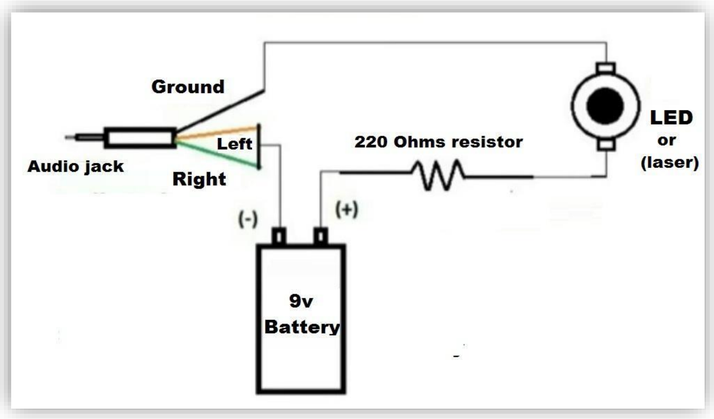


Receiver Circuit

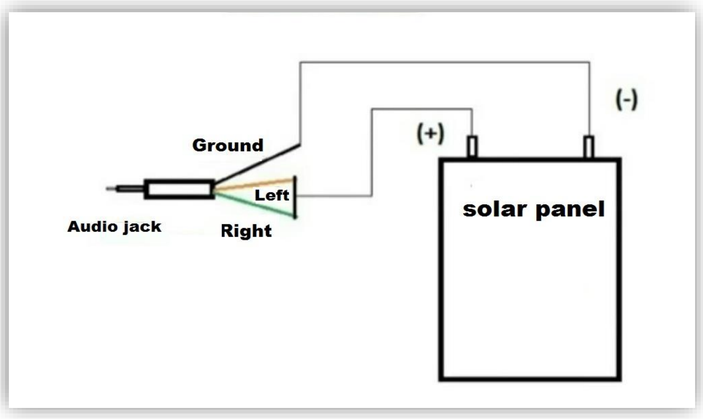


Audio Transmission

Transmitter Circuit



Receiver Circuit



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Conclusion

Li-Fi is used in a place where a high data rate is required at a moderate distance. This system is more cost-effective than any other system and may replace the existing underwater communication techniques. This technology is used to transmit the audio and data signal in underwater communications between two submarines.