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# Underwater Craft Articulation System Using Visible Light Elucidation Technique

N.Ramani[1] and D.Sathish Kumar[2]

[1]*UG Scholar, Department of Electronics and Communication Engineering, IFET College of Engineering, Villupuram, Tamilnadu, India.*
[2]*Assistant Professor, Department of Electronics and Communication Engineering, IFET College of Engineering, Villupuram, Tamilnadu, India.*

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ABSTRACT

This project presents the effect of data modulation on the emitted light quality of phosphor converted white LEDs. The results showed that provided the expected average current driving the LEDs remains unchanged then the emitted light quality will stay the same. DC-balanced modulating signal, with a non-varying average value, any fluctuations in the instantaneous driving current due to data modulation do not have any significant impact on the measured light quality metrics. Visible light communication applications therefore, a DC-balanced signaling becomes a prerequisite if the expected quality of light emitted by the LEDs is to be preserved. The experimental prototype consists includes transmitter and receiver unit from which the data transmission can be made by means of a visible light which is a wireless data transmission and the data can be monitored by means of PC.

Keywords: Visible light communication, Signaling and LED.

## 1. INTRODUCTION

The load demand is increasing day by day and we are able to generate power to the requirement and we are able to transmit power to the load centers with maximum efficiency and minimum losses. The major problem a consumer facing now a days is power interruption. Due to this power interruption lot of damage is caused in terms of money and sometimes to life. Due to this power interruption lot of time is wasted. But the major problem of power interruption is in distribution system and more over 70% faults are single phase faults, in this case power is available in other two phases. But all the domestic loads are connected to single phase supply and if the fault occurs, even then power is available in other phases we cannot utilize that power. If we want to utilize that power manual operation is required which results in fire accidents and also not reliable. For this we need automatic switching from one phase to other automatically which is made possible by this "Digital Phase Selector".

## 2. EXISTING SYSTEM

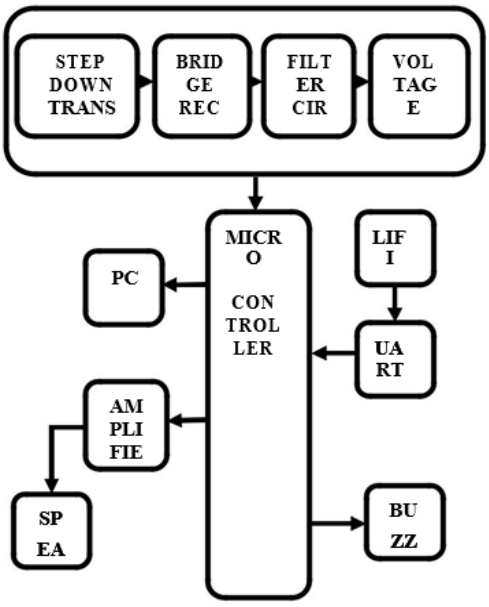
In the existing system, there are many mode of communications are available. All the communication has its own advantages and disadvantages. To implement all type of communication we will need high cost implementation and maintenance. And also it is not easy to find the error. If a node fails then the communication will loss.

## 3. OVERVIEW

IR Remote control is a combination of infrared transmitter and infrared receiver contains 4 relays which can be controlled wirelessly. This makes the unit very easy to operate and integrate with existing systems. The remote control operate the corresponding relay on the receiver board, i.e. Light 1 operates relay 1, Light 2 operates relay 2, etc. Relay contact can control any equipment in momentary mode (On till key pressed) or Latch Mode (Toggle on each key press). Each relay has indicator LED showing current status. The transmitter uses a modulated 40 kHz carrier to transmit data about which button is pressed. This method is used in all IR remote controls as it offers a high degree of noise immunity against interfering light sources. At the receiver end the IR receiver module extracts the data signal from the carrier. This active HIGH output is used to operate a relay via ULN2803 which is an octal transistor array. Special Feauture - Memory backup - Memory backup Saves Last Conditon of Rlys if Power has gone with FAN Speed also Custom Build Remote Control with Sleek match

## 4. BLOCK DIAGRAM

***Receiver Section***




## 5. SENSOR

Use an IR LED and phototransistor pair to create a light beam switch. Point the components at each other to turn the switch on, and then break the beam to turn the switch off. Use to

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detect when of your machine passes by a particular point. Or, bounce the light from the diode off a part to reflect back onto the detector. If the part is there, light will reach the detector and the signal can be passed to your Stamp. An IR LED/detector pair is exactly how your TV remote works. You can control your TV from across the room because the diode is pulsed briefly at a much higher current which gives off much more light.

## 6. IR SENSORS OPERATION

The cheapest way to remotely control a device within a visible range is via Infra-Red light. Almost all audio and video equipment can be controlled this way nowadays. Due to this wide spread use the required components are quite cheap, thus making it ideal IR control projects. This part of my knowledge base will explain the theory of operation of IR remote control, and some of the protocols that are in use in consumer electronics.

## 7. CONCLUSION

The main objective of this project is used to transfer the data without any frequency wave by using an LED light so, that the transferred data is in accurate with high speed transmission. There will be no hacking of data. It is highly using in military for high security purpose. If there is any loss of data or an obstacle detected, while transferring a data it will be detected and monitored through the base station.

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