PC TO PC DATA TRANSFER USING LI-FI TECHNOLOGY

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ABSTRACT

Overdependence on local area network (Wi-Fi) for information transmission necessitated the requirement for associate degree alternate and a lot of reliable means that of communication, hence, lightweight Fidelity (Li-Fi). It involves the utilization of sunshine Emitting Diode to transmit information by blinking (i.e. change them On and Off) at a speed not noticeable to the attention.

The planned system utilizes associate degree embedded system with dual-core Advanced Virtual architecture (AVR) micro controller (ATmega16L) interfaced to input/output circuits comprising of the sunshine Emitting Diode (LED), LM358N Operational electronic equipment and a photodiode. Also, by developing a user (Receiver PC) interface victimization Embedded C programming, the sample information (text, voice and image) transferred was monitored and therefore the speed, efficiency, security and capability of the system was examined and discovered to be prime notch. this might create the system an essential means that of communication within the nearest future.

Keywords: Lifi, light, Communication, Led, Futute, Speed.

I.   INTRODUCTION

As the demand for wireless electronic communication is increasing chop-chop, new technologies square measure inward that uses the various frequencies in spectrum because the carrier for sending knowledge wirelessly. Wi-Fi is one such technique that uses radio waves to speak wirelessly inside a district. As radio waves have some drawbacks, it's replaced by actinic radiation and thus the emerged technology is termed LiFi technology. LiFi technology uses actinic radiation frequency (430THz- 770THz) that is relatively more than that of nonparticulate radiation frequency (3kHz 300GHz). crystal rectifier is employed as a supply of VLC (380nm 740nm) to transmit data. crystal rectifier that is employed because the supply for text knowledge transmission has high brightness, low cost, small size, low power consumption, long life and low heat radiation and thus it's used as a substitute for established radio waves. High aflicker crystal rectifier is employed to transmit knowledge, whereby the modification in current intensity is detected by image sleuthing electrical device and isn't visible to human eyes. once the crystal rectifier is Off, knowledge zero is transmitted and equally once it's on knowledge one is transmitted.

II.   LITERATURE SURVEY

Visible light communications: challenges and Possibilities

Solid-state lighting could be a chop-chop developing field. White-light and different visible LEDs have become a lot of economical, have high dependability and might be incorporated into several lighting applications. Recent examples embrace automotive head-lights supported white LEDs, Associate in light-emitting diode illumination as an subject field feature.

High rate multiple input multiple output (MIMO) optical wireless communications victimization white crystal rectifier lighting

Solid-state lighting may be a speedily growing space of analysis and applications, because of the responsibleness and foretold high potency of those devices. The white crystal rectifier sources that area unit generally used for general illumination can even be used for information transmission, and visual light-weight Communications (VLC) may be a speedily growing space of analysis. one in every of the key challenges is that the restricted modulation information mea- sure of sources, generally many rate. However, as a {space} or coverage space would generally be light by AN array of LEDs there's the potential for parallel information transmission, and victimization optical MIMO techniques is doubtless enticing for achieving high information rates. during this paper we tend to investigate non-imaging and imaging MIMO approaches: a non-imaging optical MIMO system

doesn't perform properly the least bit receiver positions because of symmetry, however AN imaging based mostly system will operate underneath all predictable circumstances. Simulations show such systems will operate at many hundred Mbit/s, and up to Gbit/s in several circumstances.

III.   EXISTING SYSTEM

In these days world communication between the devices   is way common. These devices square measure victimization radio waves for brief vary wireless transmissions. Wi-fi and Bluetooth square measure presently the 2 distinguished short vary wireless technologies. The radio radiation spectrum has sure key limitations which incorporates information measure consumption, efficiency, availableness and security

IV.   PROPOSED SYSTEM

Li-fi may be a new technique of information ,audio and video transmission. LIFI information is transmitted by modulating the intensity of the sunshine, that is then received by a photograph detector. VLC(Visible light-weight Communication) technology consists of a lightweight supply as a transmitter and ikon detector as receiver. In transmitter the electrical signals area unit reborn into optic signals and transmitted through crystal rectifier. The receiver contains ikon detector. The ikon detector converts the optic signal into electrical signal. This technique is formed subtle by mistreatment over one crystal rectifier at a given time. By this manner additional info is passed and thence a quicker digital communication is feasible.

A. **Hardware Requirements**

- Micro Controller
- Li-Fi Module
- Pc
- Lcd
- Voice Ic
- Speaker

B. **Software Requirements**

- Arduino Ide
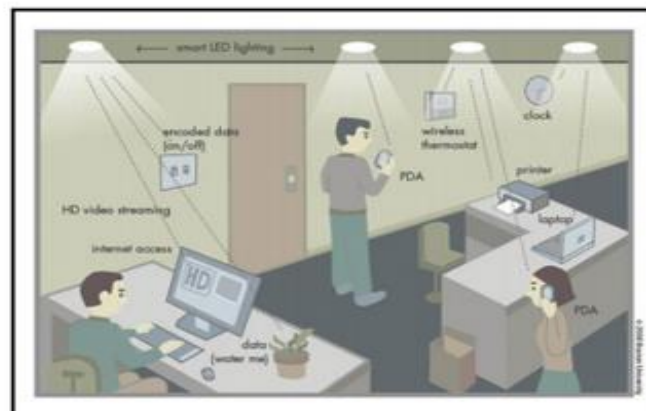- Embedded C

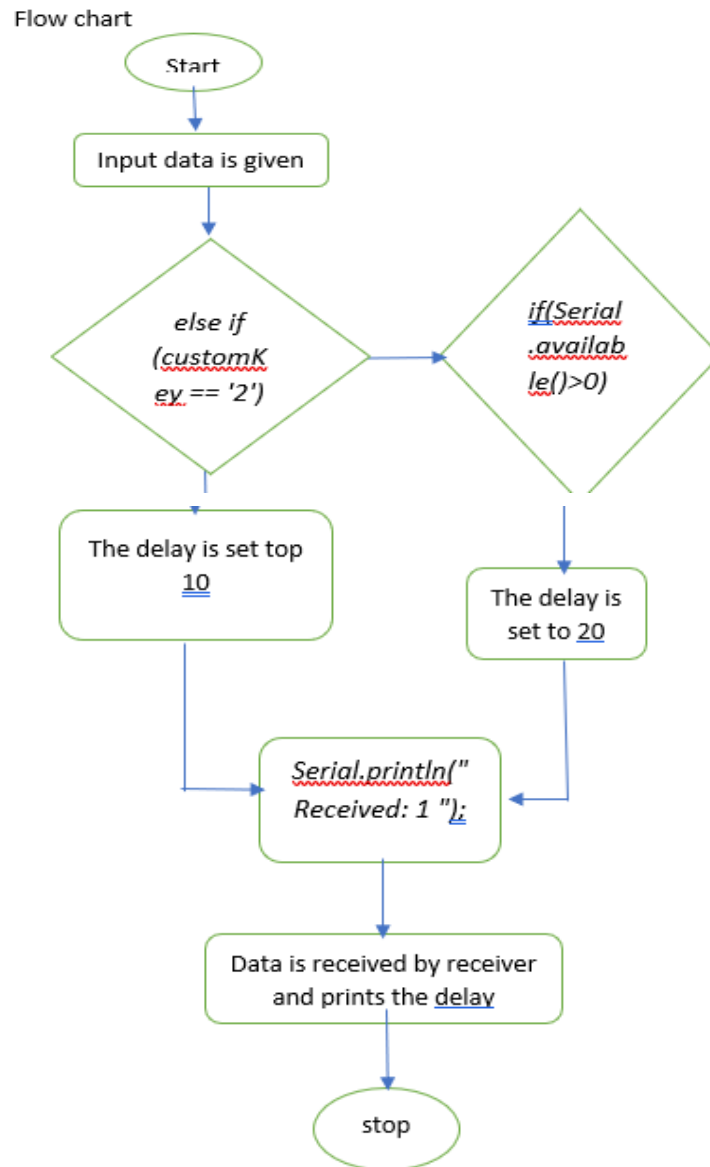**Figure 1.** Arduino Uno

Figure 2. Future Of Li-fi

Figure 3. Flow Chart

A. **ALGORITHM**

STEP 1 : start

STEP 2: the connections are given to the modules

STEP 3 : the transmitter module is plugged to pc 1

STEP 4: from transmitter pc the input data is given using syntax if(Serial.available()>0)

STEP 5: the data is transmitted data send(customKey1.c_str());

STEP 7: transmitter transmits the data if (customKey == '1') and the delay is set

STEP 8 : else if (customKey == '2') and the delay is set

STEP 9: the receiver module is connected to the pc 2

STEP 10 : the receiver module receives data from the transmitter

STEP 11: the delay is displayed

STEP 12: if the data is received successfully then it prints received using syntax Serial.println("Received: 1 ");

STEP 13: stop

STEP 14 : end

V.   RESULT AND DISCUSSION

Hence the long run applications of the Li-Fi are often expected and extended to completely different platforms and varied walks of human life.

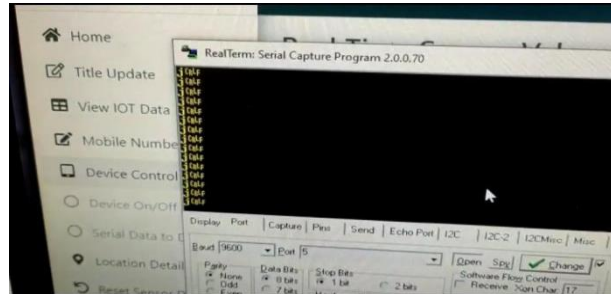Hence PC-PC data transfer is completed exploitation LI-FI technology.

Figure 4. Example Output

VI.   CONCLUSION

There square measure a superfluity of potentialities to be gouged upon during this field of technology. If this technology becomes with reason marketed then each bulb are often used analogous to a Wi-Fi hotspot to transmit knowledge wirelessly. By virtue of this we are able to ameliorate to a greener, cleaner, safer and a resplendent future. The thought of Li-Fi is attracting tons of eye-balls as a result of it offers a real and really economical various to radio primarily based wireless. it's a bright probability to exchange the normal Wi-Fi as a result of as AN ever increasing population is exploitation wireless net, the airwaves have become more and more clogged, creating it a lot of and harder to induce a reliable, high-speed signal. this idea guarantees to unravel problems like the shortage of radio-frequency information measure and boot out the disadvantages of Wi-Fi. Li-Fi is that the future and on growing technology acting as competent for varied alternative developing and already fictional technologies.

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