

Tested for LIFI System using Integrated Street Lighters

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Abstract— The light emitting diodes li-fi technology transfer the data through wireless communication. As more and more people and their many access device wireless internet at a same time the li-fi is high potential data transfer to light emitting to send the data and receiving the data for image sensor and photo diodes. The li-fi technology is very high speed data transfer the li-fi system provides transmission data through illumination by sending data through a Led lights. Intends faster than human eye can be follow the li-fi technology is ideal for high density wireless coverage data in for relieving radio interface issue high data transfer and connect to the secure network.

Keywords— Light Emitting Diodes; Visible Light Communication; Light Fedietly.

1. Introduction

The li-fi technology is one of the Optical Wireless Communication (OWC).there are a bidirectional high speed and fully networked wireless communication similar to Wi-Fi the li-fi is 100 times faster than some. Wi-Fi, speed of 224 gigabit per second using visible light communication done LED vlc is indoor communication very high speed faster than light on and of switching. The radio wave spectrum fail to resolve issue of security scalability availability, the li-fi technology which is provide the network fifth generation mobile technology which is was started from 2010 and will be developed by 2020 their fifth generation network provide affordable transmission wireless connectivity very lofty speed with very high bandwidth of 1gbinorder top deal with the limited rf spectrum and communal anxiety optical wireless. The li-fi technology is one of the optical wireless communication LED vlc is indoor communication very high speed faster than light communication. Communication system is getting an important attention recently. Due to the widespread use of light emitting diodes streetlights, the fact that these device are the key element of the system context.

2. Li-Fi Physical Llayer Overview

The physical medium access control layers for li-fi system specified in IEEE 802.15.7 standard both the phy

and mac layers are defined to achieve the high data rates in audio and video transmission while the illumination function is not affected as specified.

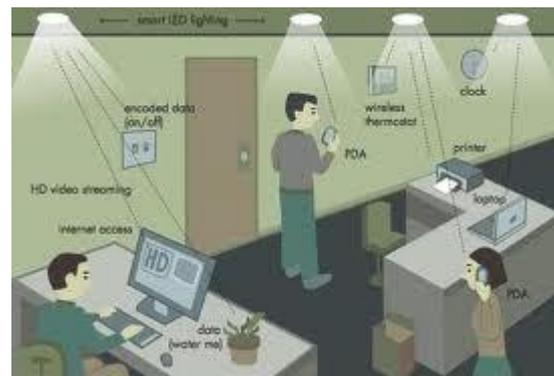


Fig.1 Li-Fi environment

In the stands there are control types of the varies mixture of digital intonation and coding schema the standard does not include specification for the buffers among blocks but they are necessary to build data conversion the serial and parallel data flow implementation is not described in the standard there by its possible in this paper.

3. Li-Fi Compare in Wi-Fi

The high level data transmitting in the system using The radio frequency spectrum is used in the system low level data transmitting in the system using that the system for a used in li-fi used for that the system using visible light communication system Sensors can be particularly useful in easy going identification and monitoring. Patients can uniform small sensor devices that monitor their physiological data such as heart rate or family stress. The communicate laptops, smart phones, and tablets will be transmitted through the light in a capacity of data transmission in the li-fi system the LED bulbs light emitting in the very high data transmitting the very limited the switch on and of for data.

4. Working of Li-Fi System

The data on the internet will be streamed to stamp driver when the LED is turned on the microchip converts the

digital data in form of light. A light sensitive device receive the the signals and converts its back into original data this method using light to transmit information.

Table 1: Compare li-fi and wi-fi

S.No	parameter	li-fi	Wi-Fi
1	speed	1gb/sec	150m/sec
2	Medium of data transfer	Use light as carrier	Use radio spectrum
3	cost	cheaper	expensive
4	Network topology	Point to point	Point to point
5	Operating frequency	100 THz	24 ghz
6	spectrum	VLC	RFD

Wirelessly is technical referred as visible light communication in the system for that light data transmitting the system the professor of the system of mobile communication using that the system the integrated in streetlights very high speed data transfer in visible light communication is high potential data transfer in the technology for visible light communication Li-fi technology provides transmission of data through illumination. An led light bulb that intensity faster than the human eye can follow Wi-Fi is great for general wireless coverage within buildings, where as li-fi ideal for high density wireless data coverage confined area and for relieving radio inter fervency li-fi provides better bandwidth competence accessibility and safety. Wi-Fi has already achieved blisteringly high speed data in the lab. By leveraging the low-cost nature of LEDs and lighting units there are many opportunities to exploit medium from public internet admission through street lanterns car commune through their headlights Has envisions a future of data.

5. Application of li-fi

The applications of this technology from public internet access through street lamps to auto piloted cars that communicate through the lights. Applications of li-fi can extend in area the Wi-Fi technology lacks medical technology power plants various other area. Li-Fi uses just the light it can be used safely in aircrafts and hospitals. The street lamps can be transfer datato li-fi lamps a result of it will be possible to access radio of bad sensitive area

surrounding the power plants Li-fi could offer safe connectivity for all areas of sensitive locations. The pleasure on a power plants own reserves could be less li-fi can also be used in petroleum chemical plants other transmission frequency not work using radio waves it can be easily used in the place. Bluetooth Wi-Fi are banned In traffic signals li-fi can be used communicate with the led lights of the cars.

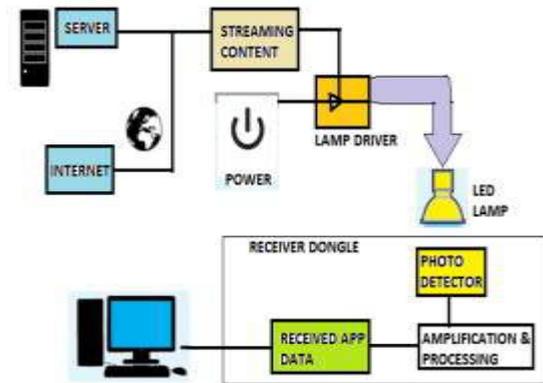


Fig. 2: Working of li-fi

6. Overview of li-fi

Light reaches nearly every where communication can also go along with light Easily Light Fidelity is a branch of optical wireless communication which is an emerging technology By the li-fi system using that the testbed for li-fi technology using that the integrated streetlights.

7. Existing work

The li-fi technology using in the radio frequency spectrum limited capacity of data transmitting the optical wireless communication is use technology light from light emitting diodes(LED) as a medium to delivery networked the many people access in the same time loaded in the networked in the radio frequency spectrum the availability and security, reliability, security. The security is very loss the data for unauthorized used data li-fi technology system using reliability. so that radio frequency spectrum used the li-fi in the very limited capacity of data transmission in the li-fi system. The LED bulbs light emitting in the switch on and off for data was through as a loss in the data there are many problem in the system using in the li-fi technology radio frequency networks is Limited by the concern from the general public on the exposure to the electromagnetic fields.

8. Proposed Work

The li-fi technology using in the visible light communication(VLC) using in the high level data

transfer in the networked there are using in the visible light communication high potential and very high speed data transfer there are 400 and 800 THz data was transmitting per seconds .the li-fi technology using in the visible light communication their instead of the radio frequency spectrum .many people access in the same time 1000 faster in radio frequency spectrum therefore improving in the security and reliability the light emitting(LED) is increasing the frequency that high level data transfer in the lifi technology using in the visible light communication very speed data transferring in the system the data transfer the streetlights for many people accessing vlc mostly used for indoor communication the important requirements is of light source with ability from led array which is detected by photo detector and then The visible light communication is the best solution for scenario for it which is visible light region of the electromagnetic spectrum is a use Modulate to electronic spectrum The lifi system is used for the li-fi system using the system using the integrated then the system very high data transfer in the system of that the streetlightsVlc sender Led bulb is used sender the sender. The transmit the high speed data using light visible communication 224 gigabits per second the speed of li-fi is a subset of wireless optical wireless communication this technology uses light emitting diodes LED to transmit data wirelessly LED light which helps in the transmission data more fast and flexible Lifi is light visible spectrum used in high speed of transmit data 1000 times larger than high speed instead the radio frequency spectrumWireless communication.

9. Result

The li-fi system using that a visible light communication is improving in the high data transfer in the technology is using a li-fi system the same time access in the number of devices the high potential data rate is using a streetlights in the system of the li-fi

technology is the low level of data transfer in the streetlights so best used for visible light communication.

10. Conclusion

A li-fi system prototype implementing was shown All the operating modes of physical layer according to the specifications of the IEEE 802.15.7 standard are implemented. This development is based on FPGAs. Besides the prototype includes a circuit, to capture the received signal which has been design The test bed is proposed for a scenario with streetlights, for which the results have been validated. The transmitter and the channel have been tested. The effect of the ambient light has been observed Future works are focused on improving the achieved rate using more sophisticated modulation scheme such as visible light communication as well as performing the same work with the receiver. The visible light communication for the system for a very high speed data transmission and high potential of the data transmitting in the system. when the li-fi is integrated in real scenario, amplifiers are needed for that the using in the system for lifi technology.

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