

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON **"Visible Light Communication Based Information** **Broadcasting System"**

Submitted in partial fulfilment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

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CERTIFICATE

Certified that the project work entitled "VISIBLE LIGHT COMMUNICATION BASED INFORMATION BROADCASTING SYSTEM" is a bona fide work carried out by

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in partial fulfillment for the award of BACHELOR OF ENGINEERING in ELECTRONICS & COMMUNICATION ENGINEERING of the VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI during the year 2016–2017. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.




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ABSTRACT

Optical wireless communication through visible light has been appreciably explored with the development of white light emitting diodes (LEDs) in the market. Visible light is used as the medium for data transmission between the transmitter and receiver. Visible Light Communication (VLC) has few advantages over other standard wireless transmissions. The frequency spectrum bandwidth of visible light ranges from 430 THz to 750 THz which is much larger than the radio frequency bandwidth, which ranges from 3 KHz to 300 GHz. With a larger bandwidth it is feasible to accommodate more users and potentially achieve higher transfer rates because each user can be given a larger portion of the bandwidth to transfer information.

The proposed work demonstrates a wireless system via Visible Light Communication (VLC) technology. It provides transmission baud rate of 9600 without data loss at a distance of about 10 cm for broadcast communication system. This system is proposed to demonstrate how VLC can be used in super market/shopping malls (indoor environment) as they contain LED lights in every section. Using these LEDs, our proposed system can provide advertisements regarding offers or new arrivals in the mall through an android application to the customers. The prototype is proposed to demonstrate the working of VLC system by means of an indoor application.