Implementation of VLC transmitter using MCU for promotion lighting ID services

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Abstract— **In this paper, we propose a MCU-based signal generating method and a physical layer frame format for promotion lighting ID services using visible light communication (VLC) technology.   The proposed method and format for VLC services are possible to be simply implemented by updating the firmware of existing MCU which is in the LED lighting for dimming function. We get the potential of performing visible light communication using MCU through the experiments.**

Keyword— **Dimming, LED, Lighting ID, MCU, VLC**

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Tae-Gyu Kang, Ph.D. has been LED Communication Research Section Director at ETRI for 23 years (or since 1989) with responsibility CCS No. 7 Intelligent Network, responsibility Voice over Internet Protocol, system lighting and responsibility LED Fusion technology Visible Light Communications. Visible Light Communication is a technology that LED illumination switches on and off repeatedly according to wireless communication media and its modulation schemes. System Lighting is a lighting that has system capabilities with wireless connection ZigBee, wired connection DALI, multi-sensor, active cooling, and processing/driving. He has been contributed international and domestic standard specification of Visible Light Communication as chairman of IEEE 802.15.7 VLC regulation subcommittee, chairman of TTA visible light communication service Working Group, and editor of TTA VLC roadmap. He is interested in fusion technologies: Visible Light Communication, Intelligent Information Technology LED illumination, system lighting, and networking protocols between LED lamps.