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Audio transmission system using white LEDs(Conference Paper)

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The article presents the results of a research of the operation of a new electronic circuit for transmitting sound signals using light emitting diodes (LED) lighting devices. It also analyzes the available data transmission schemes using Visible Light Communication (VLC) technology, which allows a light source, in addition to lighting, to transmit information using the same light signal. The advantages and disadvantages of the available schemes are shown. There is an experiment to study the quality of sound transmission. As a result, optimization of electronic circuits was carried out and recommendations were made on the use of VLC technology in LED lighting systems in administrative and residential buildings. The article describes a new scheme for the transmission of audio signals. The frequency characteristics of the developed circuit are shown. Experiments on the transmission of audio signals, which showed that when using conventional LED lighting devices, can be transmitted in the daytime with exposure to sunlight no more than 20%. Such systems are convenient in rooms without natural light (basements, tunnels, mines, etc.). This direction is relevant in connection with the prospect of its development and the transition to new technologies for organizing a data network. © 2019 IEEE.