

A System for Visual Display of Changes in the Physiological State of Patients with Chronic Disorders Using Data Transmission via Optical Wireless Communication

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Abstract. Continuous monitoring of patient's state in intensive care units is crucial for displaying critical conditions and identifying signs of clear consciousness. Traditional monitoring on a bedside monitor represents digital value on the screen and has several shortcomings. The observer's perception of digital information is limited by visual acuity and affects the speed of decision-making. The radio frequency range is increasingly overloaded with the development of Internet of Things devices. It leads to numerous errors in the transmitted data. The developed system is aimed at the comprehensive elimination of the shortcomings through available means. An understandable visualization system is preferred for prompt recognition of changes in the patient's state, increasing the speed of perception of the observer, and receiving information in the form of a data set. A data transmission system via optical wireless communication is relevant for duplicative channel for displaying and eliminating the shortcomings of systems operating in the radio frequency range. The system being developed is universal and can be used in a wide range of professional fields. In particular, if the use of the radio frequency range is limited and the stability of the data transmission channel to electromagnetic interference is essential.

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