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FEATURES OF ELECTROMAGNETIC COMPATIBILITY OF SEMICONDUCTOR CONVERTERS IN STRUCTURES WITH WIRELESS CHANNELS

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Abstract

The features of the problem of electromagnetic compatibility of semiconductor converters, caused by the disturbance situation in the process of operating systems with a wireless channel, are determined. The simulation of the process of transmitting information in modern and future channels of the GSM, Wi-Fi, WiMAX technologies under the influence of interference with various probabilistic characteristics has been carried out. Simulation models of the Matlab application program are given, taking into account the features of communication channels, modulations and law of distribution of interference. It is shown that the reliability of the transmission significantly depends on the features of the law of distribution of interference. Recommendations for improving the structure of systems with the transfer of information on promising technologies are proposed. References 5, figure 5.

Key words: wireless transmission, electromagnetic compatibility, audiosystem, simulation, semiconductor converters.

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References

1. Denbnovetsky S.V., Melnyk I.V., Pisarenko L.D. Coding of signals in electronic systems. Part 1. Parameters of signals and channels of communication and methods of their evaluation. Kyiv: Kafedra, 2016. 524 p. (Ukr)
2. Dovzhenko O.O., Schweichenko V.B., Charadha O. Modeling of electromagnetic processes of transforming devices causing electromagnetic interference. *Elektronika i sviaz*. 2011. No 3. Pp. 210-215. (Rus)
3. Dyakonov V. Matlab and Simulink for radioengineering. Moskva: DMK-Press, 2011. 976 p. (Rus)
4. Zenkov A. 10 Virtual Assistants: Overview. URL: <https://rb.ru/list/from-siri-to-ozlo> . Date of Access 14.01.2018.
5. CISPR 22 Edition 6.0 2008-09 IEC STANDARDS. Information technology equipment-Radio disturbance characteristics-Limits and methods of measurement.

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