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Increasing the effectiveness of noise reduction means in power supply systems with high-frequency transistor converters.

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The monograph is devoted to increasing the efficiency of electromagnetic compatibility ensuring means in power supply systems with high-frequency transistor converters through research, development and implementation of new circuit and design methods for their construction.

The monograph considers modern high-frequency transistor converters as generators of electromagnetic interference in the frequency range from hundreds of kilohertz to tens and hundreds of megahertz and conducts a critical analysis of means for reducing the mentioned interference to levels which meet domestic and international standards in the field of electromagnetic compatibility.

Methods of increasing the efficiency of traditional means using power line filters are proposed and a filter-free method of reducing interference is considered. A separate section presents research aimed at protecting transistor voltage converters from the negative effects of high-voltage short-term voltage surges in a power supply network.

The paper presents results of electronic modelling and experimental studies, which confirmed the adequacy of the created models and the effectiveness of the proposed methods for interference reducing.