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## **SYNTHESIS OF ASYMPTOTICALLY OPTIMIZING NOISE SIGNAL DETECTOR**

The structure of a special technical tool for detecting noise-like signals whose intensity varies according to the certain rule is substantiated. The tool consists of a radio envelope processing device. It is shown that the main one is signal processing in the post-detector paths. A joint algorithm for detecting and evaluating a parameter for changing the intensity of a noise signal under a priori uncertainty regarding the radiation power and a parameter for changing the intensity is synthesized. During the synthesis, the uncertainty with respect to the power of the noise signal at the input of the receiver

is first overcome, and then with respect to the parameter for changing the noise intensity. The synthesized post-detector algorithm for processing noise-like signals is optimal when the ratio of the noise signal power to the receiver internal noise power at the output of the linear system tends to infinity. The post-detector detection path consists of a quadratic detector, a centering device, correlation processing channels, a maximum selection device and a threshold device. The maximum amplitude signal at the output of the maximum selection device is compared with the detection threshold. When the threshold is exceeded, an alarm is generated, and an informative parameter for changing the noise intensity is estimated by the number of the correlation channel with the maximum amplitude. The parameters of digital post-detector signal processing are analyzed and a conclusion is made about the possibility of implementing a processing algorithm on microprocessor systems.

**Keywords:** noise power flux density, optimal signal reception, maximum likelihood receiver, correlation processing, digital signal processing.

## REFERENCES

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