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# DEVELOPING AN ALGORITHM FOR AUTOMATIC TUNING OF THE SPECTRAL ANALYZER CENTRAL FREQUENCY

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## Abstract

*The article considers the problem of the radio signal frequency precise determination. We present a review of the most well-known approaches to the carrier automatic determination such as: autocorrelative approach, approaches based on fast and discrete Fourier transformations, frequency-measuring according to the number of signal transitions through zero level, and phase-locked loop systems. We have compared the computational complexity, speed and precision of the algorithms and examined their applicability within the scope of the set task. The article suggests an algorithm for the spectral analyzer central frequency automatic tuning which represents a combination of the modified methods. We have conducted a simulation and made comparative analysis of the results obtained.*

## Keywords

*Radio signal, signal frequency, digital signal processing, algorithms for frequency measuring, spectral analyzer, Fourier transformation, auto correlation, phase locked loop*

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