

## Acousto-optic spectral-time analyzer

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***The article emphasizes the high scientific and practical importance of the problem of rapid detection and measurement of radio signal parameters in a wide frequency band. The features of Bragg diffraction are estimated in the context of the synthesis of a small-scale high-speed radio frequency meter. The scheme of a radio frequency meter based on Bragg diffraction is discussed. Scheme-mathematical modeling of the proposed device functioning algorithm is carried out. The possibility of realizing multichannel reception of radio pulses by selecting the angles of incidence of optical beams into the aperture of a photoelastic cell is proved, which makes it possible to use a wide band of operating frequencies of an acousto-optic modulator in full. The formulated statements are tested by numerical experiments. The results of circuit-mathematical modeling and calculations are being studied in natural. Some results of natural experiments are presented in the form of a table and oscillograms, which are discussed in the context of small-scale frequency analysis in a given range.***

**Keywords:** radiopulse, Bragg diffraction, radio frequency meter, circuit-mathematical modeling, multichannel reception, acousto-optic modulator.

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