

Comparative Quality Processing Analysis of Request Signals in Secondary Radar Systems

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Abstract—The paper presents a comparative quality processing analysis of request signals of secondary radar systems with different sequences of decoding operations, pulse selection by duration and time-position when intrasystem, correlated and uncorrelated (chaotic), intentional and unintentional interference operates in the request channel. It is shown that the lowest intensity of a false alarm of the first kind at the output of the processing device is provided by the structure of processing request signals, in which first the decoding of the request signals is carried out, and then the selection of the received pulses by the duration is carried out and the last operation is the selection by the time position, as well as with a greater value of the code request signal.

Keywords—secondary surveillance radars (SSR), Identification Identify Friend or Foe (IFF), Chaotic impulse noise (CIN).

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