

ABSTRACT

Graduate work contains: 80 pages, 52 figures, 0 table, 26 links.

The purpose of this work is to create hardware and software based on SDR technology for monitoring radio sources.

This technology allows you to replace the huge variety of existing and developed designs of radios and transceivers, both serial and, above all, amateur, built on a complex superheterodyne scheme, a limited number of available hardware units running under the control of the developed software community. This will simplify and reduce the cost of design, significantly improve performance, support any type of modulation, the emergence of a large number of service functions, as well as speed up development. SDR technology can be used in radio frequency recognition (RFID) systems that operate at different frequencies and use different protocols. It is also possible to use technology in the field of amateur radio.

Keywords: Radio monitoring system, direction finding, radiation analyzer, Software-configured radio, SDR, RTL2832U, BladeRFx40, SDRSharp, SDR Console, GNURadio, receiver, transceiver.