Abstract

Paper includes 100 pages, 23 images, 2 tables, 49 sources of used literature.

The purpose of the work is to analyze the principles of constructing a cognitive radio based on software-defined radio systems for their further application in telecommunication systems of 4 and 5 generations.

Today the fourth generation telecommunication systems are becoming widespread, and soon seek to introduce the fifth-generation mobile communications standard. For such systems, it is advisable to use a system of so-called cognitive radio. This is a telecommunication radio system that can receive information about its own operation and based on these data to correct its work.

Software-defined radio (SDR) is a reconfigurable radio platform consisting of a transceiver that converts a radio frequency signal into a modulation band and a digital processor. SDR systems have many advantages, which include the ability to program configuration and management, improve system characteristics, reduce its size, and minimize project design risks and time from conceptual design to the release of a finished product to the market.

Key words: 4G, 5G, software defined radio (SDR), cognitive radio.