



Comparison of GSM Link Quality Performance: OpenBTS versus Test Equipment [

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Analítica

The implementation of wireless communication systems such as GSM on SDR (Software Defined Radio) platforms is increasingly common not only in order to reduce costs in the deployment of a network, but also to find and exploit vulnerabilities in the security of systems with this technology. The development of BTS (Base Transceiver Station) in GSM based on free software and SDR as OpenBTS has allowed different investigations such as IMSI catcher implementations and man-in-the-middle attacks by impersonating a real cell. This Research show and analyze the physical parameters for a channel in the GSM900 band with OpenBTS on a USRP N210 compared to a vector signal generator. There was defined 5 scenarios to evaluate the quality of the GSM burst with different configurations. The experiment analyzes the frequency error, phase error and power vs. time for the downlink channel. Results shown that it is possible to detect a fake cell implemented with OpenBTS by analyzing the behavior of its parameters in relation to the specialized equipment or the actual cell. The measured parameters are also a reference for the normal operation of OpenBTS over USRP N210. These parameters can be used for the detection of false BTS or identification of errors in the deployment of networks with this technology

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