

ABSTRACT

The development of technology at this time is very rapid, such as the example of wireless communication. Channel coding is very necessary in wireless communication systems, because channel models are needed to reduce errors and as error detection so that the system performance obtained reaches 5G technology standards. This test analyzes the results of Bit error Rate (BER) performance on the Wideband Temporal/Statistical Spatial Channel Model (SSCM) channel using polar and convolutional code channel coding. The frequency used is 26 GHz in the transmission system. The simulations carried out in this study used Binary Phase Shift Keying (BPSK) modulation and used NYUSIM and MATLAB software in the tests. This simulation test uses weather parameters obtained through the Meteorology, Climatology and Geophysics Agency (BMKG) in the city of Medan as input parameters to NYUSIM. Parameters used in the form of rainfall, air temperature, air humidity, air pressure. The results of the power delay profile are as many as 13 paths and the results of the 10^{-3} BER vulnerabilities resulting from a polar code are 3.23%. Based on the results obtained in this test, the polar code obtained a better BER performance than the BER performance obtained by the convolutional code, because the polar code produced a lower SNR value than the convolutional code.

Keywords : Polar Code, Convolutional Code, Wideband Temporal/Statistical Spatial Channel Model, Statistical Spatial Channel Model.