ABSTRACT

The antenna is a device that functions as a transformer between the radio transmission lines with free space, or vice versa. Function of antenna are as sender and receiver of electromagnetic waves in communication systems. In microwave communications currently require broadband antennas for more save the tower. Research making broadband antenna is to prove the hypothesis that an antenna is impedance matching between free space and transmission line.

In this final task has realized a broadband antenna that is hexacula antenna, omnidirectional radiation pattern with 0.3-3.0 GHz operating frequency, using chebyshev transformator, and the rationing technique using a monoconic. In this final task, omnidirectional hexacula antenna has been simulated using Matlab software.

Based on the measurement and test antenna that implemented has bandwidth of 823.8 MHz-2957.7MHz within VSWR $\leq$ 1.5, omnidirectional radiation pattern, ellipse polarization and Gain of 7.297 dBi at frequency 1650 MHz and 7.423 dBi at frequency 1771MHz. While the antenna simulation using Matlab, which obtained of Gain is 7.59254 dBi at frequency 1650MHz.

Keywords: Matlab, hexacula antenna, chebyshev, omnidirectional, monoconic.