

ABSTRAC

The main problem of telecommunication is the phenomenon of telecommunication to give information from one point to another. One kind of device that can support it is transmission line. Chebyshev transformer is a quarter wave transformer unit with a line have characteristic impedance which is placed between the line characteristic impedance and load impedance. Chebyshev transformer is a matching impedance that can provide relatively large bandwidth.

At this final project, will try to realize a matching impedance line by using chebyshev transformer method to optimize bandwidth. This used for matching impedance realization is a microstrip transmission line. The specification of this realization is characteristic impedance 50 Ohm, $VSWR \leq 1.5$, and which can operate at a frequency of 3400 MHz to 3600 MHz.

This microstrip line was tested with a Network Analyzer. The measurement results for insertion loss ranges from -0.520 dB to -0.611 dB, return loss measurement between 18.009 dB to -23.291 dB, the maximum SWR is 1.564, and the impedance of each port range between $33.854 - j5.383$ Ohm to $59.2 + j22.162$ Ohm.

Keywords : Chebyshev Transformer, Matching Impedance, Microstrip Transmission Line.