

ABSTRACT

The number of applications contained in UHF band (300 – 3000 MHz), including GSM, CDMA, TV, WiFi, and WiMAX, is the background of this wideband antenna made. The idea is to save the use of antenna, feeder, and tower, so that an antenna can be used for multi purposes. So the objective of this final task is to design and realize Tschhebyscheff Pancacula antenna at 300 – 3000 MHz with $VSWR \leq 1.5$ that can handle all those needs.

After being tested at Microwave lab. and at IT Telkom's field, this Tschhebyscheff *pancacula* antenna had obtained operating frequency from 598,91 to 2964,96 MHz in $VSWR \leq 1,5$ (550 to 3000 MHz in $VSWR \leq 2$). Antenna's radiation pattern is unidirectional, ellipse polarization, and has gain $7,9 \pm 0,3$ dBi while average impedance is $49,3 + j8,4 \Omega$ at 300 to 3000 MHz.

This measurement result has met initial specification, except for operating frequency and polarization. In order to make the operating frequency can meet the specification, I suggest to reduce the capacitive coupling's gap between strip and monotriangle, meanwhile to have linear polarization I suggest to make exactly same the size of dielectric with the strip's length and width.

Keywords : coupling, feeder, monotriangle, strip, tower, Tschhebyscheff, unidirectional, VSWR