ABSTRACT

The antenna is thing to match characteristic impedance of channel to intrinsic impedance of radio. Antenna used to be transmitter and receiver. For this final project, we design antenna with small dimension and broadband channel. The advantages of this antenna are decrease load of tower and economical in feeder.

This antenna, two singular binomial double band [(2.0 ± 1.5) GHz, coax 50 Ω], work at 2 GHz that can be used for microwave, WiFi, etc. The design start with find how many level that can used (N=8), then find impedance of antenna, and matching at Binomial λ/4 channel for broadband. Conversion from twisted pair to stripped pair, dielectric, and matching impedance within load and source, so that use fold transformator with toroid.

The measurement of antenna: indoor measurement (VSWR, bandwidth, and impedance), outdoor measurement (radiation pattern, polarization, and gain). The result of measurements have closed to the specification. For VSWR ≤1.5, bandwidth: (1326.66MHz-2632.66MHz), impedance: (48.34+j9.4) Ω at frequency 2 GHz, and gain: (9.34 dBi) in the middle frequency with unidirectional radiation pattern and ellipse polarization that closed to linier.

Key : Two Singular Antenna, Binomial λ/4 Transformator, Fold Toroid.