ABSTRACT

Antenna is a transition construction of transmission line that is used to match intrinsic impedance of propagation space with characteristic impedance of transmission line. Antenna is used as a receiver and transmitter in communication system. Nowadays, wide band antenna is needed because it is able to be used for many telecommunication technology implementations and it can reduce tower burden.

In this final project, the antenna that is designed and realized is unidirectional binomial bicula antenna 0.3 GHz – 3.0 GHz, VSWR ≤ 1.5 SMA 50 Ω terminal, England feed. This antenna uses twin-strip line construction with binomial matching method that is interpolated by dielectric substances and uses triangle 90^0 England feed. This antenna work at 0.3 GHz – 3.0 GHz range frequency that can be used for CDMA 450 MHz, CDMA 800 MHz, GSM 900 MHz, Wi-Fi 2,4 GHz, GPS, etc.

Based on the measurement that has been done, the result have specifications that are almost like the first designing specifications, that is got VSWR = 1.425, bandwidth = 1703.86 MHz at 1296.14 MHz – 3000 MHz, antenna impedance value almost like terminal coaxial impedance 50 Ohm, that is 49.57 ∠ -6º Ω at 2600 MHz, obtained gain are 9.705 dBi at 1800 MHz, and 9.097 dBi at 2400 MHz, radiation pattern is bidirectional, and polarization is ellipse.

Keywords : Bicula Antena, Binomial, Unidirectional, England Feed