ABSTRACT

The Unidirectional Binomial Horizontal Based on Single Wire Antenna is an antenna having unidirectional radiation pattern by using binomial ration (1:3:3:1). This antenna has four branches, which comparison of each current is 1:3:3:1. Each of branches was based on a single wire that had been transformed into copper plate (PCB) to make realization easier. The dimension of single wire is determined by using binomial λ/4 transformer commensurable technique with two commensurable levels. This antenna design is using the ferrite ring balloon to make the transition between antenna and coaxial impedance smooth.

In this final project, it had been realized Unidirectional Binomial Horizontal Based on Single Wire Antenna which have first specification, bandwidth 1000 MHz at range 2000 ± 500 MHz with VSWR ≤ 1.5, which could be used for DCS-1800, CDMA 1900, UMTS 2100, W-LAN and other application. The expected gain is ≥ 6,2 dBi; with unidirectional radiation pattern and horizontal-linier polarization.

From the measurement result that had been done, it is obtained 89.33% bandwidth at 1115-2915 MHz frequency with VSWR ≤ 1.5. While, gain is equal to 7.722 dBi at center frequency (2015 MHz).