ABSTRACT

SN.JT 0630-DTU-0709 is a prototype name code of the final project titled "Design and Realization of a Unidirectional Triangle Bicula Antenna for 300 MHZ – 3000 MHZ, SWR ≤ 1,5, 50 Ω Terminal, Monopol Feed." It is an ultra wide band antenna of 0,3 GHz – 3,0 GHz, based on the first adviser's hypothesis. The hypothesis is that an antenna is a matching device between propagation space and radio transmission line.

The electric specification as basic of this research and development are working frequency of 300 MHz up to 3000 MHz, unidirectional pattern, linear polarization, 50 Ω terminal, VSWR ≤ 1,5, gain ≥ 2,14 dBi.

This antenna was constructed with a single strip conductor over a ground plane, and several kind of insulation in between. This construction was built as a twin triangular transformer of 100 Ω to 377 Ω each. Beside of an SMA terminal, all of these materials were developed of industrial waste material, recycled and measured. The measured performances are 650 MHz- 3000 MHz in VSWR≤ 1,5 on 50 Ω terminal but 500 MHz - 3000 MHz in VSWR ≤ 2,0, unidirectional pattern, small elliptical polarization, gain ≈ 7,581 dBi in 1650 MHz.

The conclusions are the hypothesis has been proved. Only the lowest frequency and polarization are off the specification. To decrease the 650 MHz to 300 MHz should be done by attach the monotriangular to the spacer material and separate the strip conductor from the monotriangular feed. But, the elliptical polarization measured in IT Telkom's garden with Yagi may be linier if it is measured in anechoic chamber with pencil beam antenna. So, please our institution support and aid the student's creation in development of an anechoic chamber with pencil beam antenna.

Key words: triangular transformer, monotriangular feed.