

ABSTRACT

In the era of technological developments such as today Indonesia requires sophisticated electronic devices that can help the Indonesian security defense system, which Indonesia has thousands of islands with a 2/3 share of a sea area. To enhance the defense capabilities in maintaining and overseeing the territory of Indonesia, Indonesia need the Electronic Support Measures (ESM). ESM is being developed by LIPI for later use in security systems Indonesia.

ESM in general is an electronic device that functions to receive an electromagnetic wave signal, then the signal is processed and analyzed in order to obtain the location, signal strength and other parameters. One important subsystem in the ESM is a subsystem of antenna as a signal receiver of electromagnetic waves. In the design of this ESM needed conical horn antenna working in the Ku-band (12GHz to 18GHz). Conical horn antenna is needed in ESM because the conical horn antennas have a relatively large gain so that the electromagnetic wave signal received power is more sensitive and accurate against to signal the enemy.

Conical horn antenna is designed in the Ku-band (12 GHz to 18 GHz) with dimensions of 116.66 mm cone diameter and 200 mm long cone. From the results of the realization of the antenna in this final show at a frequency of 12GHz shows impedance values and VSWR $51.81 + j0.488\Omega$ 1076, at a frequency of 15GHz shows the value $-j5.10\Omega$ 43.81 impedance and VSWR 1216, and at a frequency of 18GHz shows impedance value $-j142.92$ 97 Ω . With the value of the antenna gain of 12dB, has a radiation pattern unidireksional, has a circular shaped polarization.

Keyword - Conical Horn Antenna, Ku-Band, ESM.