

ABSTRACT

During military operations in the army, soldiers require the use of technology to facilitate in finding the direction of enemy locations. In this case, one of the technology required is an antenna which is able to discover the enemy's hiding locations by detecting the direction of radio waves emitted by the enemy's radio communication between their lies. To detect the direction of the emitted radio waves, a directional finder antenna is used. This antenna aims to find the enemy's location so that the army can quickly carry out military operations, where as in general the enemy communicates with their allies through low-frequency radio.

On the directional finder antenna, the radiation pattern result greatly affect the electromagnetic wave detection process of the transmitter, because the maximum directional result is required to detect the intended angle. In order to produce the maximum directionality to detect the intended angel, a disk antenna is needed otherwise known as parabolic antenna which consists of a reflector and passive elements. This thesis used a passive element which is a dipole antenna (patch circular). The reflector functions as an amplifier for directing the antenna's radiation pattern.

Disk antenna, which has been made appropriate with the simulation modelling, is able to work at a frequency of 70 – 1380 MHz. VSWR obtained were 1,278 at a frequency of 70 MHz, 2,083 at a frequency of 1300 MHz. The radiation pattern of the antenna is unidirectional and is elliptically polarised. The maximum gain achieved by a manufactured antenna is 8,614 dBi. The operation of this antenna will be placed on top of military vehicles (cars) running, where adjustments to the angle can be made according to the correct direction for the desired directional finder.

Keywords : Disk Antenna, Directional Finder, Reflector