

ABSTRACT

Soldiers performing dismounted operations in the field use radios that have antennas with a distinct visible signature and can become easy targets. These antennas also tend to snag on other equipment or vegetation creating a hazard and a distraction to any ongoing operation. Therefore it has become necessary to develop an antenna that can conform to soldiers.

With these considerations, the research tries to design a flexible antenna attached to a soldier's uniform so as to further facilitate the activities of soldiers during combat operations. This flexible antenna will be made from materials that are all around, such as plastic material called polycarbonate as a substrate and aluminium as a patch conductive. For fabrication antenna using sputtering method, helped by Puslit Telkoma PPET-LIPI and BKME-LIPI.

In this research are discussed thoroughly on the design, simulation, and realization of a flexible antenna microstrip printed monopole, which works at a frequency of 2.35 GHz as the applications military communication radio with the results of VSWR 1.569 at frequency 2.35 GHz and bandwidth antenna 50 MHz at VSWR < 1.6. Gain of antenna 6.39 dBi. Radiation pattern antenna is omnidirectional. Polarization antenna is elliptical, with axial ratio 4.29. Antenna dimensions obtained through theoretical calculations then simulated using Ansoft HFSS 10 software. The best simulation's results then done by the process of realization.

Keywords : Flexible Antenna, Polycarbonate, Aluminium, Sputtering, Printed Monopole, Microstrip