

ABSTRACT

Generally, the feeding method of a microstrip antenna can be classified as microstrip feeding, probe feeding, and EMC feeding. The microstrip feeding is easily fabricated by connecting the microstrip to the edge of the patch directly, but the impedance matching is not convenient and unwanted radiation can occur from feed line. Feeding with coaxial probe has the advantage of ease in impedance matching and low spurious radiation, but this feeding method has narrow bandwidth.

Electromagnetically coupled (EMC) feeding is different from both feeding method above. With electromagnetically coupled (EMC) feeding, spurious radiation does not occur and has the advantage of having wider bandwidth. With these advantages, microstrip with electromagnetically coupled (EMC) feeding can be used for WIMAX (Worldwide Interoperability for Microwave Access) application which operates in frequency 2.3 – 2.4 GHz.

This final project develop for designing and implementing of antenna with electromagnetically coupled (EMC) feeding method so this antenna can operate in frequency 2.3 – 2.4 GHz with VSWR \leq 1.5, at frequency range 2.27 – 2.46 GHz. The antenna's polarization is ellipse polarized and radiation pattern is unidirectional. The available Gain of this antenna is able to reach 7.1326 dBi. Software Ansoft HFSS 9.2 is used for designing and simulating this antenna.

Key word: *electromagnetically coupled (EMC), microstrip antenna, patch, WIMAX*