ABSTRACT

Wireless communications are developing rapidly, including mobile devices. The mobile devices are striving to have features that can adapt with people demands. Wireless communication technologies that currently developed in Indonesia are Wi-Fi (*Wireless Fidelity*), 3G/UMTS (*Universal Mobile Telecommunications System*), 3,5G/HSPA (*High-Speed Packet Access*), dan 4G/LTE (*Long Term Evolution*). Each of them has different frequency. Wi-Fi works on 2400 MHz – 2.483,5 MHz and 5.725 MHz – 5.825 MHz, 3G/UMTS and 3,5G/HSPA works on 2.110 MHz – 2.170 MHz, and 4G/LTE will works on 1.805 MHz – 1.880 MHz.

One of the main component in wireless communication technologies is antenna. Antenna in mobile devices strive to follow the development of mobile devices nowadays. A type of antenna used in mobile devices is Planar Inverted-F Antenna (PIFA) because of its simplicity, light weight, and its cost is cheaper to build. Former research tells that adding slot on the patch of PIFA can produce some resonance frequencies that can be used for multiband application.

This final project design and realize PIFA that work on 1.805 MHz – 1.880 MHz, 2.110 MHz – 2.170 MHz, 2.400 MHz – 2.483 MHz, and 5.725 MHz – 5.825 MHz frequency by adding L-shaped slot on patch and strip-shaped slot on groundplane. This designed antenna has linear polarization and omnidirectional radiation pattern.

Keywords : antenna, planar, PIFA, multiband, L-slot, slot groundplane