

ABSTRACT

Mobile device be required for have features which compatible with people requirement and desire. Indonesian Telecommunication still use different mobile technology. Mobile technology be used and evolve in Indonesian are Wi-Fi (Wireless Fidelity), 3G/UMTS (Universal Mobile Telecommunications System), 3,5G/HSPA (High-Speed Packet Access) and 4G/LTE (Long Term Evolution). Each of these technologies has a working in different work frequency. Wi-Fi works at frequency 2400 MHz - 2485 MHz and 5725 MHz - 5825 MHz. 3G / UMTS and 3.5G / HSPA works at frequency 1910 MHz - 2110 MHz and 2170 MHz - 2200 MHz. GSM1800 and 4G / LTE works at frequency 1710 MHz - 1880 MHz. . In wireless cellular technology, one of the most important components is the antenna. In this final project has been realized Fractal PIFA with MIMO 2x2 arrangement combined with a slot in the ground plane with a strip-shaped copper materials and techniques rationing coaxial probe so that the antenna works on each frequency GSM, UMTS, LTE, and Wi-Fi. At 1795 MHz frequency generated value of VSWR 1.5094 and value of gain 4.05 dB. At 1965 MHz frequency generated value of VSWR 1.6638 and 4.01 dB value of gain. At 2185 MHz frequency generated value of VSWR 1.3825 and 4.17 dB value of gain. At 2445 MHz frequency generated value of VSWR 1.7343 and 4.24 dB value of gain. At 5775 MHz frequency generated value of VSWR 1.4756 and 5.25 dB value of gain. Radiation pattern is omnidirectional, polarization is linear, the lowest correlation coefficient <0.00018342 and the highest <0.14693, and the highest value of diversity gain at 9.9991 dB and the lowest value at 9.3885 dB.

Keyword : *Fractal, MIMO, PIFA*