

**A SLOTTED PLANAR INVERTED-F ANTENNA (PIFA)
WITH CAPACITIVE LOADED AT 960MHZ**

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ABSTRACT

A slotted planar inverted-F antenna (PIFA) with additional of shorting pin and capacitive loaded was designed and analysis in this paper. This antenna is feed by a 50Ω coaxial feed and covers the GSM900 frequency range with return loss value less than -10dB. A substrate of low dielectric constant, ϵ_r equal to 4.7, thickness of 1.6 mm and tangent loss of 0.019 was selected to obtain a desired radiating pattern that meets the demanding bandwidth specification. The design was verified using Computer Simulation Tool (CST) Microwave Environment software 2011. The slotted PIFA antenna with capacitive loaded was measured using Vector Network Analyzer (VNA). Both the simulation and experimental results are compared and analyzed from the return loss value, gain improvement, radiation pattern, bandwidth enhancement and voltage standing ratio (VSWR) value. The simulation and measurement result was resemble as nearly omnidirectional radiation pattern characteristic, improved antenna gain, improved back lobe, bandwidth and return loss.

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