

A SINGLE ANTENNA WITH WIDEBAND AND NARROWBAND FUNCTIONS

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To the absent Sheikhs; Taken from us just because they preached the truth, for the North and especially the muslims to go to school. Specially dedicated to the great Governor. Engr. (Dr.) Rabiu Kwankwaso.

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ABSTRACT

Wireless communication is the process of exchanging information between two or more entities over air facilitated by wireless devices. Antenna serves as the interface between the hardware and free space. To achieve high data rates and high capacity it is essential that a system capable of attaining such rates be complemented with the appropriate wideband antenna, for specific applications requiring less adjacent channel interference and also concentrated power at certain utilized/desirable frequencies requires antenna with good out of band rejection and precise resonance at the desired frequencies. In this project a CPW fed slot single antenna is proposed to be reconfigurable by implementing switches in order to operate in the wideband(1.7-6.0GHz) mode and narrowband modes (3.5GHz and 5.0GHz). In particular, this antenna will find application in GSM (1800/1900), Bluetooth (2.4GHz) and WLAN/WiMAX (2.4/3.3/3.5/5.0/5.5/5.8GHz) bands which can all be found within the considered range of 1.7-6.0GHz.

ABSTRAK

Komunikasi tanpa wayar adalah proses pertukaran maklumat di antara dua atau lebih pihak melalui udara dipermudahkan oleh peranti tanpa wayar. Antena berfungsi sebagai antara muka antara perkakasan dan ruang bebas. Bagi meningkatkan kadar data yang tinggi dan kapasiti tinggi adalah penting bahawa sistem yang mampu mencapai kadar yang dilengkapkan dengan antena dengan jalur lebar yang sesuai, untuk aplikasi tertentu yang memerlukan gangguan saluran bersebelahan dan kurang kuasa juga tertumpu di tertentu digunakan frekuensi / wajar memerlukan antena dengan baik di luar band penolakan dan resonans tepat pada frekuensi yang dikehendaki. Dalam projek ini slot antena tunggal CPW mencadangkan konfigurasi dengan melaksanakan suis untuk beroperasi dalam mod jalur lebar (1.7 - 6.0Ghz) dan mod sempit (3.5GHz dan 5.0Ghz). Khususnya, antena ini akan mendapati aplikasi dalam GSM (1800/1900) , Bluetooth (2.4GHz) dan WLAN / WiMAX (2.4/3.3/3.5/5.0/5.5/5.8Ghz) jalur yang boleh didapati dalam julat yang bersesuaian iaitu antara 1.7 - 6.0GHz .