A DESIGN OF DUMBELL SHAPED ANTENNA TO ENHANCE CAPACITY OF WIRELESS MIMO ANTENNA

With the development of wireless communication technology, the channel's capacity is escalating, and the speed of transmission is rising. The diverse operating system is becoming well-suited with one another by tuning the modes of service more flexible, which in turn makes the bands of operation to expand repeatedly. From the global system of mobile communication (GSM), PCS, DCS to the 4th generation (4G) communication system as well as from WiMAX to WLAN, standards may be used more and more in various systems simultaneously, as a result, there is a vital necessitate for the small size, multiband and integrated antennas. Multi-Input Multi-Output (MIMO) is the need for recent communication system for the enhancement of channel capacity. While the number of antenna array elements increased, the spacing between the array elements and size of the antenna reduced. Hence high coupling between the elements occur, and thus the channel capacity reduced which. There were several existing methods employs, however there were some limitations like reduced gain, dielectric constant, and bandwidth. So as to overcome this and to increase the performance characteristics such as bandwidth, gain of MIMO antennas and to lessen the dielectric constant of substrate material this proposed scheme is introduced. Using these considerations and requirements, an array of two-element MIMO system will be designed and developed with a less dielectric material (<4). So in this Taconic RF-35 dumbell-Shaped antennas are employed for 2.45GHz (ISM band) with multiple modes of operation to achieve the improved bandwidth of about -10 db. Simulation is done by HFSS 13.0.