

## **A Compact Ultra-Wide Band Antenna with C-Shaped Slot for WLAN Notching**

**Authors :** Maryam Rasool, Farhan Munir, Fahad Nawaz, Saad Ahmad

**Abstract :** A patch antenna operating in the Ultra-Wide Band of frequency (3.1 GHz - 10.6 GHz) is designed with enhanced security from interference from other applications by incorporating the notching technique. Patch antennas in the Ultra-Wide Band are becoming widely famous due to their low power, light weight and high data rate capability. Micro strip patch antenna's patch can be altered to increase its bandwidth and introduce UWB character in it. The designed antenna is a patch antenna consisting of a conductive sheet of metal mounted over a large sheet of metal called the ground plane with a substrate separating the two. Notched bands are public safety WLAN, WLAN and FSS. Different techniques used to implement the UWB antenna were individually implemented and their results were examined. V shaped patch was then chosen and modified to an arrow shaped patch to give the optimized results operating on the entire UWB region with considerable return loss. The frequency notch prevents the operation of the antenna at a particular range of frequency, hence minimizing interference from other systems. There are countless techniques for introducing the notch but we have used inverted C-shaped slots in the UWB patch to get the notch characteristics as output and also wavelength resonators to introduce notch in UWB band. The designed antenna is simulated in High Frequency Structural Simulator (HFSS) 13.0 by Ansoft.

**Keywords :** HFSS, Notch, UWB, WLAN

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