## Modified Step Size Patch Array Antenna for UWB Wireless Applications

Authors : Hamid Aslani, Ahmed Radwan

**Abstract :** In this paper, a single element microstrip antenna is presented for UWB applications by using techniques as partial ground plane and modified the shape of the patch. The antenna is properly designed to have a compact size and constant gain against frequency. The simulated results have done using two EM software and show good agreement with the measured results for the fabricated antenna. Then a designing of two elements patch antenna array for UWB in the frequency band of 3.1-10 GHz is presented in this paper. The array is constructed by means of feeding two omni-directional modified circular patch elements with a modified power divider. Experimental results show that the array has a stable radiation pattern and low return loss over a broad bandwidth of 64% (3.1-10 GHz). Due to its planar profile, physically compact size, wide impedance bandwidth, directive performance over a wide bandwidth proposed antenna is a good candidate for portable UWB applications and other UWB integrated circuits.

**Keywords :** ultra wide band, radiation performance, microstrip antenna, size miniaturized antenna **Conference Title :** ICAE 2016 : International Conference on Applications of Electromagnetics **Conference Location :** Venice, Italy **Conference Dates :** July 18-19, 2016