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DESIGN AND ANALYSIS OF SQUARE PATCH ANTENNA AND ITS ARRAYS AT 5 GHZ

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ABSTRACT

The patch antenna is a radiating element which radiates along the walls of edges. The size of the patch antenna reduces by increasing the resonant frequency. The gain and bandwidth of single patch antenna is not sufficient for military applications. For this purpose the patch array antenna is designed. In the present work a square patch antenna design at resonant frequency 5GHz and its array analysis is presented. Array antennas has wide applications in both military, wireless communications. The side lobe levels of linear and planar patch antenna array are -13.5dB. This is not suggestible for tracking the targets.

In this present work the side lobe level are decreased in the patch array antenna by introducing the standard amplitude distribution and side lobe level is reduced from -13.5dB to -31.24dB. In this work raised cosine amplitude distribution is used to reduce side lobe level up to -31.24dB.

KEYWORDS: Antenna Array, Square Patch Antenna Array, Raised Cosine Amplitude Distribution, Pattern Multiplication