عنوان مقاله:

A Simple Method for Designing of Transmit Array Antenna

محل انتشار:

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خلاصه مقاله:

Determining the dimensions of the aperture to create the phase shift is regarded as one of the challenges of the Transmit Array (TA) designers after calculating the phase shift required by each cell. On the other hand, the mathematical relationships of this area are time-consuming and often complex. The present study aims to provide a simple method for calculating the phase shift and determining the dimensions of the aperture to create the required phase shift. In order to verify the proposed method, by changing the shape of a known cell, a TA was designed in 5 layers with dimensions 225×225 mm2 at the frequency of 10 GHz. Then, the TA was simulated in the range of 8.5 to 11 GHz by CST Microwave studio 2014 and verified by HFSS software. The final design was placed in front of a horn, which had the gain of 13.8 dB at the frequency of 10 GHz, and increased the gain to 24.08 dB with SLL=-20 dB.

کلمات کلیدی:

HFSS, CST studio, Substrate, Transmitarray