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Directivity and Gain Improvement for Microstrip Array Antenna with Directors

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Abstract : Methodology is suggested to design a linear rectangular microstrip array antenna based on Yagi antenna theory. The antenna with different directors' lengths as parasitic elements were designed, simulated, and analyzed using HFSS. The calculus and results illustrate the effectiveness of using specific parasitic elements to improve the directivity and gain for microstrip array antenna. The results have shown that the suggested methodology has the potential to be applied for improving the antenna performance. Maximum radiation intensity (Umax) of the order of 0.47w/st was recorded, directivity of 6.58dB, and gain better than 6.07dB are readily achievable for the antenna that working.

Keywords : directivity, director, microstrip antenna, gain improvment
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