DESIGN AND ANALYSIS OF MICROSTRIP PATCH ARRAY ANTENNA FOR KU BAND APPLICATIONS

A project report submitted in the partial fulfillment of the requirements for the award of degree of

BACHELOR OF TECHNOLOGY
IN
"ELECTRONICS & COMMUNICATION ENGINEERING"

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CERTIFICATE

This is to certify that the project work entitled "**DESIGN AND ANALYSIS OF MICROSTRIP PATCH ARRAY ANTENNA FOR KU BAND APPLICATIONS** " is being submitted for the partial fulfillment of requirements for the award of Bachelor of Technology of in Electronics & Communication Engineering is a bonafied work done by P.APPALARAJU(20811A0455), K.TULASIRAM (21815A0402), T.HEMA SAI KUMAR (20811A0468), U. DARABABU (20811A0471), Y. GNANESWAR RAO(20811A0478) under guidance during year 2023– 2024 and it has been found suitable for acceptance according to the requirements of the University.

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ABSTRACT

Micro strip antenna arrays play important role in aircraft, spacecraft and missile applications because of their lighter weight, low volume, low cost, low profile, smaller in dimensions besides easy installation and aerodynamic profile are constrains. In this study, we designed single and 2x2 array antennas operating at the resonant frequency of 15 MHz within the KU band. Through extensive analysis, we obtained key performance metrics including gain, VSWR, S11, and directivity for both antenna configurations. Our results showcase the efficacy of these antennas in high-frequency applications, particularly within the KU band spectrum. The single antenna design demonstrates commendable performance in terms of gain and directivity, with acceptable VSWR and S11 values. Meanwhile, the 2x2 array configuration exhibits enhanced gain and directivity, albeit with potential trade-offs in VSWR and S11 characteristics. These findings provide valuable insights for optimizing antenna designs to meet specific requirements within the KU band frequency range. Further investigations may focus on refining the array configuration to balance performance metrics and address specific application demands effectively.