DESIGN OF DUALBAND LINEAR ARRAY ANTENNA BY CIRCULAR MICROSTRIP PATCH ANTENNA

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ABSTRACT

This paper describes the performance evaluation of 2x2 linear array circular patch antenna. This antenna has been designed on Flame Retardant 4 (FR-4) printed circuit board, dielectric substrate ε_r= 4.7. it has been simulated by using Computer Simulation Technology (CST) 2009 software. It has been simulated based on 50Ω characteristic impedance for the transmission line model. After simulation, this antenna design have two suitable frequency that is its return loss is below than -10dB. Linear array also have been used in order to increase gain and directivity. Performance of return loss (S_{11}), Voltage Standing Wave Ratio (VSWR) and gain have been analyzed. Their performances also have been compared between simulation and measurement result. By using array, it have been approved that performance of gain and directivity are increase.

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INTRODUCTION

1.1 INTRODUCTION

In this chapter, background of the project, objectives and scope of the project will be discussed. According to the project title that is "Design Of Dualband Linear Array Antenna By Circular Microstrip Patch Antenna", dualband or also known as multiband antenna is one of the smart antennas. The main reason why smart antenna is growing fast in communication fields is because of its capacity increase. Smart antenna will increase the useful received signal level simultaneously and decrease the interference level. Another benefit of this smart antenna is range. This is because smart antenna are more directional than omnidirectional antennas, in other words it is able to focus their energy toward the intended users.

Multiband antenna is normally used for mobile phone application. With the widespread use of the GSM system, multiband operation for mobile phone will increase rapidly. The communications applications of mobile phone such as GPS and Bluetooth are increasing so it is not possible that all the handsets will probably become compatible with multiband in the near future. In such multiband system, a multiband antenna is the keyword since it is compatible with the entire frequency band. Besides that, the requirements for the mobile phone to be compact and light weight are also important.