

Design of a microstrip patch antenna using low temperature co-fired ceramic technology

Abstract

This paper presents the design of a single rectangular microstrip patch antenna for operation at 2.4 GHz frequency on Radio Frequency (RF) antenna application using Low Temperature Co-fired Ceramic (LTCC) technology. LTCC is chosen as the substrate because of compactness and or being light-weight. It also offers high-speed and functionality for portable electronic devices used for wireless voice and data communication in rapidly expanding mobile network systems. The aim of this project was to design and simulate a microstrip patch antenna on the LTCC substrate call Ferro A6M tape operating at 2.4 GHz. Two microstrip patch antennas operating at 2.4GHz was designed, and simulated; a rectangular microstrip patch antenna using LTCC technology has a length, L , 25.5 mm and a width, W , 34 mm and a rectangular microstrip patch antenna using Printed Circuit Board (PCB) technology has a length, L , 28 mm and width, W , 37 mm. Those designs were simulated with Microwave Office software.

Author Keywords

Low temperature co-fired ceramic (LTCC); Microstrip patch antenna; Microwave antennas; Printed circuit board (PCB)