

ABSTRACT

Microstrip or patch antennas came into existence in the early 1970s and after that many development in the field of microstrip antenna engineering have been processed, greater than as compared to other type of antenna research. Printed patch antennas have so many benefits as compared to other type of antenna structures like flexible working, less weight, less production cost and can be used together with microwave monolithic integrated circuits (MMICs). Because of these qualities, the printed patch antennas have been utilized in many applications like in mobile communication systems, satellite communication systems, wireless communication systems etc. The biggest advantage of the microstrip patch antenna is easy to manufacture or development. These advantages motivate universities, research organization and other educational institutions all over the world to make serious efforts on the demerits of printed patch technology. Luckily, because of the energetic and appreciable attempt of many researchers and scientist every where in the world, most of these shortcomings of microstrip patch technology have been worked out and analyzed so that the microstrip patch technology will continue to be a thriving technology for many years to come.

Microstrip or patch antennas have a metallic patch of any arbitrary shape surfaced on a grounded dielectric substrate and have the interesting qualities of less weight, easy to fabricate using printed circuit technology. Although, microstrip antennas results very less bandwidth and enhanced bandwidth is required for many practical applications. To meet the requirement of compact mobile communication system, compact patch antenna is required. Therefore compact antenna with increased bandwidth is becoming the major thrust area of research for many practical applications of microstrip antenna. Researchers are engaged in design and analysis of small sized microstrip antenna giving wideband characteristics. In addition microstrip antennas for mobile communication system are fabricated using printed circuit board technology, so that large production can be obtained at a low cost to meet large mobile market requirement. To obtain high gain, microstrip elements can be brought together in the form of an antenna array. The antenna array elements make available with much larger effective aperture and consequently much higher gain as compared to a single microstrip element.