

Circular Polarized and Surface Compatible Microstrip Array Antenna Design for Image and Telemetric Data Transfer in UAV and Armed UAV Systems

Authors : Kübra Taşkıran, Bahattin Türetken

Abstract : In this paper, a microstrip array antenna with circular polarization at 2.4 GHz frequency has been designed using the in order to provide image and telemetric data transmission in Unmanned Aerial Vehicle and Armed Unmanned Aerial Vehicle Systems. In addition to the antenna design, the power divider design was made and the antennas were fed in phase. As a result of the analysis, it was observed that the antenna operates at a frequency of 2.4016 GHz with 12.2 dBi directing gain. In addition, this designed array antenna was transformed into a form compatible with the rocket surface used in A-UAV Systems, and analyzes were made. As a result of these analyzes, it has been observed that the antenna operates on the surface of the missile at a frequency of 2.372 GHz with a directivity gain of 10.2 dBi.

Keywords : cicrostrip array antenna, circular polarization, 2.4 GHz, image and telemetric data, transmission, surface compatible, UAV and armed UAV

Conference Title : ICRAMETT 2023 : International Conference on Radar, Antenna, Microwave, Electronics and Telecommunications Technologies

Conference Location : Nicosia, Cyprus

Conference Dates : June 22-23, 2023