

ABSTRACT

Automotive radar is a radar system whose function is to detect objects in front of the vehicle. An antenna which can support the radar device is microstrip antenna. The reason uses microstrip antenna because of its small, lightweight, and portable. But the lack of microstrip antenna is the gain achieved is small, while the automotive radar requires a relatively large gain. Thus it is necessary to design antennas which can generate a large gain for the radar application.

In this final task designed four elements rectangular microstrip antenna for automotive radar applications which work on the K-Band frequency (24.05 to 24.25 GHz). Microstrip antenna is designed by using array antenna technique in order to obtain large gain.

From the measurement results, the antenna which has been designed to have $VSWR \leq 1.5$ at a frequency of 24.05 to 24.25 GHz, 575 MHz-wide bandwidth, a gain of 12.086 dB, linear polarization and directional radiation pattern.

Keywords : microstrip antenna, array, rectangular, VSWR, bandwidth, gain