

ABSTRACT

Radar is a device part of an electronic element consisting of electromagnetic waves to detect and determine the location of an object. Airport Surveillance Radar (ASR) is used at the airport to detect and display aircraft positions on the air surveillance Radar. Currently air surveillance radar belonging to airports still cannot cover all NKRI air areas and the number of airports that have radar is also few. The ASR radar operating is a foreign product and a portion of the radar is not ready due to its very old age and the unavailability of its spare parts.

Power divider is used to divide the input signal into multiple output signals with the same phase. Its main principle is to provide high isolation between outputs, by limiting the effects of signal reflection. Wilkinson added a resistor to seek out a match output port and fully isolating Port 2 of Port 3, and also for Port 3 of Port 4, as well as Port 4 of Port 5 at the centre frequency. Tapered is realized by inserting part of a different transmission line with the appropriate characteristic impedance.

Based on the condition, in this study was made a power divider realized using FR4 type PCB with a frequency of 2.8 GHz. Measurement results obtained return loss of 23.8078 dB, insertion loss of 7.8830 dB, phase of 97.4384 °, VSWR of 1.156, and impedance of 50.84 Ω , where the specification meets the specifications of power divider 4 way.

Keywords: Airport Radar, Power Divider, Wilkinson, Insertion Loss.