ABSTRACT

Indonesia has many areas with airports, to know the weather conditions, a fairly effective monitoring tool and an effisen namely weather radar. The range of monitoring of these devices can reach 10-150 km from the observation center. This 2x2 array antenna application is focused on weather radar and flight services especially for pioneer airports and extreme weather early warnings. In this final project I have designed a 2x2 microstrip array antenna for weather radar, X-Band frequency of 9.4 GHz and is used because it has smaller and practical dimensions to be applied, also has dual polarization which is a very significant increase in the world of research weather, this is because it already has a two-dimensional picture (horizontal and vertical).

The microstrip antenna has become the main object of this final project because it has many advantages such as easy to fabricate, relatively affordable, easy to supply, and easy to apply in a single or stacking configuration. The antenna design is done using duroid 4003 working at a frequency of 9.4 GHz with bandwidth above 60 MHz. The results of measuring 2x2 dual polarization arrays are VSWR 1,287 and 1,282, directional polaradiation, horizontal linear and vertical linear polarization. The results at the time of measurement meet the specifications needed for weather radar.

Keywords: Weather radar, microstrip antenna, dual polarization, X-band