

## ABSTRACT

Indonesia is an archipelago country where the interisland transportation way is dominated by sea and water transportations. A massive navigation system is needed to solve the high traffic of sea transportation activity in Indonesia. S-Band is one of band frequency which is established by ITU for Sea Radar Surveillance. S-Band frequency which is used for radar surveillance is 3 GHz. An Antenna is important component in Radar Technology System.

Microstrip Antenna is a board shaped antenna which has patch layer, substrate and ground. Those can work in high frequency. Array Antenna is an antenna that built on arrangement of isotropic antenna. That antenna could correct the phase and axial ratio from that isotropic antenna. Rectangular patch is a squared shape patching technique.

This designed antenna will have 3 GHz frequency with 10 dB Gain likely rectangular patch that arranged with array method. Array method is used for increasing gain value that will produce. Implementation of S-Band frequency radar technology into sea surveillance is a huge innovation through and will applied in existed radar communication system.

Key word: *microstrip antenna, array, Isotropic, Rectangular patch, S-Band*