

## ***ABSTRACT***

*WiFi, is one of Wireless technology standard that is made as a solution of wired networks. Radar, an abbreviation from radio detection and ranging, is an electromagnetic wave that is used to detect, measure distance, and map for airplanes and other vehicles. And somehow, it is also used to get weather information. To support this technology, we need antennae that can operate on a frequency standard that is determined by the allocation. This way, antennae can operate in a WiFi frequency Range, where this antennae has perfect gain, suitable transmit direction, accurate, and efficient.*

*Turnstile antenna is an antenna that is designed for any frequency, and has the exact same gain. For better signal quality, we need an antenna that can operate in WiFi and radar frequency to cover operating band frequency that is used by common WiFi and radar devices. So far, there's a lot of antenna that is being sold in the market that have unidirectional capability, yet WiFi and radar placement is not directed to one direction. Antenna will be designed and implemented, by analyzing optimal antennae type to get gain that is suitable with specification of WiFi and radar receiver application. This antenna can operate in 2,4 – 2,484 GHz frequency with VSWR limit  $\leq 2$  and 9,37-9,43 GHz for radar. For antenna radiation pattern, we use omnidirectional one so the antenna can receive the wave from any direction with linear polarization. Expected antenna gain is  $\geq 3$  dBi, and the turnstile antenna is designed to produce an antenna with optimal capability such as radiation pattern, operating frequency, and antenna strengthening (gain), by simulating it using CST Microwave Studio.*

**Key word : Wifi, radar, Omnidirectional.**