ABSTRACT

Development in technology one of which is ultra wideband (UWB) antenna, today play an important role as an application that widely used for communication means such a radio and detection radar system[2]. Ultra wideband (UWB) good applied at indoor environment because high radiation transmission with low transmitt power is required especially for UWB. This research entitled "Design and Realization The Ultra Wideband Microstrip Antenna in Frequency 500-3000 MHz for Through-Wall Radar". In this final project, the antenna design fulfill the spesifications so capable to detect objects behind the wall which has a different material. Therefore, the microstrip antenna has designed to very wide frequency range (500-3000 MHz).

At this research, the results of UWB-FMCW through-wall radar system design for detecting the presence of an object behind the wall are described[3]. The execution done with designing a microstrip UWB antenna to determine patch wire bowtie and use Epoxy FR-4 as substrate material with values (ε_r = 4,3 dan h=1,6 mm). Next, prototype are measured, calculated, and compared with the simulation results[8].

In this final project, microstrip UWB antenna with patch wire bowtie for through wall radar applications that can be used at frequency 500-3000 MHz with omnidirectional radiation pattern; gain ≥ 3 dBi; linear polarization; return loss ≤ -10 dB and VSWR ≤ 2.0 are designed and simulated.

Keyword: *Microstrip, Ultra Wideband, Through-wall radar*