

## ABSTRACT

Wearable antenna is type of antenna which can be attach in human body. It's light, flexible, and support mobility. One of the implementation is for GPS antenna receiver for firefighters. In this final project Firefighters Logo Patch Wearable Antenna had been designed and simulated. The patch is made by copper and substrate is made by protective closed-cell foam with 5.55 mm thickness, Substrate Permittivity = 1.12, loss tangent = 0.003. Line-Fed is used for feeding technique. To make circular polarization diagonal-slot is used.

Antenna Designing and simulation process using software. The result is antenna which has gain 7.87 dBi, return loss = -20.13, bandwidth = 115 Mhz, VSWR = 1.218, polarization circular, radiating pattern unidirectional on free-space. When antenna attached on chest phantom gain antenna is 7.629 dBi, return loss = -14.618, bandwidth = 117 Mhz, VSWR = 1.456, polarization circular, radiating pattern unidirectional. Specific Absorption Rate on chest phantom is 0.987 W/Kg.

**Keywords :** *Wearable antenna, GPS, Specific Absorption Rate.*