

ABSTRACT

GPS (Global Positioning System) is a system used to determine the position of a GPS user on the earth's surface which is sent directly or in real time by displaying the user's coordinates through satellite technology in outer space. GPS is the only fully operational global navigation satellite system used to determine position, speed, direction and time in today's world. The antenna is one of the main components of the GPS receiver, which will process the received signal, and greatly determine the performance of the GPS receiver.

In this final project, an antenna is designed and realized as a GPS receiver using a microstrip antenna made of textiles with a dual band frequency of 1575.42 MHz and 1227.60 MHz with a microstrip line feeding technique. The antenna design process begins with determining the antenna specifications, and performing theoretical calculations and simulations with the help of CST software.

This antenna uses a slot method and a double substrate made of cordura with a thickness of 1 mm per layer and copper tape as the material for the ground plane and patch. The slot method on the antenna succeeded in forming and producing the desired dual band response. The VSWR value that is in accordance with the antenna specifications is 1.4006, the bandwidth is 19 MHz wide for ($VSWR \leq 2$) at a frequency of 1227.60 MHz with circular polarization and at a frequency of 1575.42 MHz the VSWR value is 1.7813, the bandwidth is 36. MHz for ($VSWR \leq 2$) with elliptical polarization. The radiation pattern produced by each frequency is omnidirectional and unidirectional.

Keywords: microstrip antenna, textile antenna, dual band antenna, GPS.