

ABSTRACT

In the development of wireless technology using antennas that can perform various capabilities and functions. Wireless technology is a technology that makes it possible to communicate by utilizing electromagnetic waves to transmit information without using cables. Therefore, the Ultra wide band (UWB) communication system is one option that can be used. The operating frequency range of the ultra wideband antenna works in the frequency range of 3.1 to 10.6 GHz and a wide *bandwidth* allocation of 7.5 GHz.

Ultra Wideband antennas have multiple services covering a wide range of frequencies that are in a narrow band. UWB antennas have several advantages, including low transmit power consumption and the *bandwidth* generated by the UWB system is very large, with a variety of frequency services covered, it will experience electromagnetic interference or cause interference problems. Interference or interference that occurs must be avoided.

From the design of this ultra wideband antenna, it produces a frequency that works at a frequency of 3.1 GHz to 10.6 GHz with a return loss value of the UWB frequency range of ≤ -10 and the width of the bandwidth obtained is 7.6657 GHz. From the simulation results of the ultra wideband antenna with the addition of slots, it is found that the rejection of the frequency in the range of 4.8 GHz to 7.15 GHz. In the rejection frequency range, it is able to reject several working frequencies, including WLAN at a frequency of 4.9-5.9 GHz, Mid Band 5G at a frequency of 4.8-6 GHz, DSRC at a frequency of 5.85 GHz – 5.925 GHz, and downlink communications. X-Band satellites on a frequency of 7.1–7.6 GHz..

Keywords: Ultra WideBand, notch band, *bandwidth*, rejection.