

ABSTRACT

Antennas are simple in terms of structure, size, and can work stably for the wide frequency range needed in wireless communication systems. Wireless communication system technology is supported by the development of microstrip antennas that have advantages such as, its small, lightweight, easily fabricated, and can be applied to microwaves. However, microstrip antennas have the disadvantage that one of them is the resulting narrow bandwidth.

In this Final Project, a proximity coupled antenna with a Chebyshev multisection transformer will be designed. This method can increase bandwidth at the expense of ripple on the passband so that the response of the passband is more flatten. Antennas that have been designed will be analyzed for wide bandwidth. The analysis is carried out to change every addition section in the Chebyshev transformer.

From the results of the design of a proximity coupled antenna with a one section Chebyshev transformer produces a bandwidth of 0.5977 GHz, two sections of 0.9180 GHz, three sections of 0.9448 GHz, and four sections of 0.9563 GHz. From the results of optimization that have been carried out there are dimensions of the length and width of the transformer which give a significant influence on wide bandwidth. The measurement results of the proximity coupled antenna with the Chebyshev four sections transformer produce 1.329 GHz bandwidth.

Keywords: microstrip antenna, proximity coupled, Chebyshev multisection transformer, bandwidth.