

# ANTENNA FOR MIMO SYSTEMS

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## **Abstract:**

This paper concentrates on studying, designing and manufacturing a three port antenna applied for MIMO systems. This antenna operates at 2.4 GHz and 5.2 GHz frequencies which are used for WLANs. The antenna is printed on FR4 substrate with size of 50 mm x 50 mm, thickness of 1.2 mm and relative permittivity of 3.34. The proposal antenna is experimentally studied.

This thesis has 4 chapters. Chapter 1 and chapter 2 present the theory of antenna, microstrip antenna, broadband antenna and antenna for MIMO systems. Chapter 3, Design in this chapter, author give the structure of antenna for MIMO systems. Parameters are calculated base on theory. Chapter 4 “Simulation and Experiment”, the antenna is simulate by CST Microwave Studio®. The parameters, which are calculated in the previous chapter, is optimized in this software. After that, those parameters are used for making the real antenna. Final, author compare between the simulation and measurement result to analysis some differences. In conclusion, author summaries and give the trend of thesis’s development.

**Keywords:** *MIMO antennas, Three ports antenna, Antennas for WLAN*