

ABSTRACT

5G communication has become an important role in supporting technological growth. But the use of frequencies for 5G is still very limited. At this time the 5G frequency allocation is one of them at 3.5 GHz frequency and the frequency is the same as the frequency used by satellite communication. This results in interference with each other so there is a need for a system that can overcome this.

This Final Project will focus on designing a four sectorized array 2×2 rectangular patch antenna 3.5 GHz for 5G base station. In this antenna design, the antenna will be screened 60 degrees by four antennas so that one part will have a blank spot, the blank spot aims to avoid the satellite ground station.

This Final Project uses software and realizes antennas with FR-4 substrate with dielectric constant 4.4 with thickness of 1.6 mm. The antenna is designed to meet the expected specifications at a frequency of 3.5 GHz. The results of the realization of the stacking four sectorized antenna 2×2 rectangular patch 3.5 GHz have a bandwidth of 720 MHz. Return loss and VSWR parameters already meet the expected specifications with omnidirectional radiation patterns with blankspots in order to minimize signal interference.

Keywords: antenna, rectangular patch, 5G, array, sectorized.