

RANCANG BANGUN DAN ANALISIS SEKTORAL ANTENA RADIASI SEMICIRCULAR FREKUENSI 2.4GHz UNTUK APLIKASI IEEE 802.11b/g

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Abstract	<p>Sectoral antenna is a widely used antenna for wireless communications IEEE 802.11b/g or Wi-Fi due to its large gain and ability to determine covered area. In this research, a sectoral antenna 2.4GHz frequency with semicircular radiation for IEEE 802.11b/g applications was designed and built. Design and simulation is done by 4NEC2 software. In order to get a better performance, the design was firstly optimized. Antenna parameters studied in this research are Gain, Radiation Pattern H-plane and E-plane, Directivity, Efficiency, and VSWR. Result shown that the simulated performance of sectoral antenna after optimization are 13.27 dBi Gain, 120 ° H-plane beamwidth, 10 ° E-plane beamwidth, 15.36 dB Directivity, 95.95% Efficiency, and 1.37 VSWR. While real performance testing of sectoral antenna in the field are 13 dBi Gain, 125 ° H-plane beamwidth, 15 ° E-plane beamwidth, 13.42 dB Directivity, 90.68% Efficiency, and 1.6 VSWR. There are some differences in performance between simulation and application in practice. Among the causes are the accuracy of manufacturing, quality of materials used, environmental conditions of measurement process, measurement precision, and accuracy of the instrument used. Overall, a sectoral antenna has been created properly and can be used to accommodate 2.4 GHz frequency communication, namely IEEE 802.11b/g. Keywords: antenna, sectoral, semicircular, IEEE 802.11b/g.</p>
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