IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 3, October 2024

A Comprehensive Survey on Pattern Reconfigurable Antenna for Sub 6G Applications

Satyam Jadhav[1], Sakshi Bonde[2], Mayur Chidrawar[3], Prof. Ganesh Madhikar[4]
Students, Department of Electronics and Telecommunication[1,2,3]
Assistant Professor, Department of Electronics and Telecommunication[4]
Sinhgad College of Engineering Vadgaon (BK), Pune, India

Abstract: *A Survey of Yagi-Uda antenna is proposed in this paper. This project focuses on the design and implementation of a pattern reconfigurable Yagi-Uda antenna operating in the 5 to 6 GHz frequency band. The antenna design switches between the reflector and director accordingly of a Yagi-Uda antenna by using radio frequency PIN diodes. This enables the antenna to switch between the maximum and minimum radiation towards desired signals or keeping away from the unwanted /interfering signals. The proposed pattern reconfigurable antenna is designed to dynamically adjust its radiation pattern to optimize performance in varying environments. Simulation and experimental results demonstrate the antenna's capability to operate efficiently within the 5 to 6 GHz range, offering significant improvements in coverage, signal quality, and interference management. The findings highlight the potential of pattern reconfigurable antennas as a key technology for next-generation wireless communication systems.Recent developments in antenna technology have highlighted the importance of incorporating reconfigurable features, especially in scenarios with changing signal environments. By utilizing radio frequency (RF) PIN diodes, the Yagi-Uda antenna design presented here not only allows for variable control of its radiation pattern but also maintains a compact and cost-effective configuration. This adaptability is essential for implementations within contemporary wireless networks, such as Wi-Fi, 5G, and various other developing communication systems, where effective spectrum usage and dynamic coverage are necessary*

Keywords: Antenna , Yagi-Uda, Pattern Reconfigurable