Abstract

This paper describes how an antenna can be positioned according to the received signal strength. We used Field Programmable Gate Array (FPGA) based intelligent alignment system which aligns antenna automatically towards the maximum SNR. We have used a Yagi-Uda 7-element simple dipole antenna for transmission and folded dipole with reflector for reception,
FPGA Based Intelligent Antenna Alignment System

as a part of our demonstration. The individual signals that are obtained from the detector, after converted into their digital domain using Analog to Digital Converter (ADC), is fed into the FPGA. The signals are then compared and the point at which the maximum signal is noted. Finally it guides the antenna in the direction of the maximum signal received. The proposed system has been realized using Xilinx FPGA Spartan3E XC3S500E. The experimental results are found to be positive and effective.

Reference

3. Dong Xue, Department of Engineering Mechanics “Yagi-Uda Antenna”
5. Wireless Networking, available at www.vias.org/wirelessnetw/wndw_06_05_05.html

Index Terms

Computer Science Communications

Key words

FPGA SNR
ADC
P2P
LOS