Abstract

Citarum River BTS monitoring device requires a transmission system that can transmit data in real time. So that it requires an antenna system that accommodates these requirements. This study proposes that the MIMO antenna system uses array elements to meet the expected monitoring system specifications. MIMO antenna system can be a solution because it offers increased capacity and throughput, increases data rate, and is able to reduce losses due to multipath fading, and has a flexible working frequency that can work in almost all working frequency ranges. While the array method is used to produce radiation patterns that have certain characteristics and increase the gain. In this research, MIMO Array 4X4 Rectangular Patch antenna has been designed that works at UHF working frequency, that is at frequency 886-906 MHz. As a transmitter antenna that will be tried to be implemented in the Citarum River BTS. The antenna has a gain of 3.359 dBi and a bandwidth of 20.73 MHz, unidirectional radiation pattern and linearly shaped polarization. The results of this study indicate that the MIMO Array 4X4 Rectangular Patch antenna has met the specifications to be applied in the Citarum River BTS

Keywords: Citarum Harum, MIMO, Antennas, Frequency, Gain, Bandwidth.