

4-Element Yagi-Uda Antenna Offering Highest Gain at 2100MHz

Jimba Tenzin^{1*}, Chimi Rinzin², Purna Bdr. Samal³

^{1,2,3} Department of Electronics and Communication Engineering, College of Science and Technology, Royal University of Bhutan

* 0215408.cst@rub.edu.bt

^{1,2,3} {0215408.cst, 0215404.cst, purna.cst}@rub.edu.bt

Abstract—The paper presents the design and optimization of 4 element Yagi-Uda antenna to achieve the highest possible gain for its application as base station transmitting antenna in urban cellular communication system. The antenna is designed to operate at 3G frequency of 2100 MHz. The design and evaluation of the proposed antenna is carried out in Computer Simulation Technology studio suite 2016 software. The designed antenna achieves an operating bandwidth of 278 MHz with its center operating frequency of 2100 MHz. It achieved high gain and directivity of 9.4 dB and 10.6 dBi, suitable for base station transmitting antenna.

Keywords— Linear antenna, yagi uda antenna, directional antenna, high gain and directivity, cellular communication, base station antenna, Computer Simulation Technology (CST).