

ABSTRACT

There is hypothesis set by first supervising lecturer which feels that antenna is a construction of transmission channel as a matching device of intrinsic impedance of propagation space and that of radio frequency electromagnetic driving channel characteristic, the experiment is made to test the hypothesis.

The antenna designed and realized in the recent project included the two wires exponential antenna with 250 ohm and at minimum frequency 2000MHz. The antenna was designed at minimum frequency of 2000 MHz with exponential balance. The antenna used toroid to result in a wider bandwidth. It used a constructed parallel two wires as illustrated in the technical drawing.

From the calculated measurement, the result generally approached the specification of design ; VSWR < 1.5. The radiation pattern of antenna with and without reflector was unidirectional one. The polarization of antenna with and without reflector was almost linear (ellips). The gains reached by the antenna using antenna were of 12.154 dBi at 2000 MHz. The gains reached by the antenna without using antenna were of 9.366 dBi at 2000 MHz, respectively . All the gains at the corresponding frequencies fulfilled the specification ; > 2.14 dBi. The terminal impedance rates of antenna using reflector were $43.36 - j13.33$ ohm at 2000 MHz. The terminal impedance rates of antenna without using reflector were $52.59 - j5.581$ ohm at 2000 MHz. In fact the minimum frequency was not 2000 MHz, but it was 633,93 MHz , it could be happened because of the accuracies, exponential sectoring (deferring) ; in the air should be in dielectric medium.

Key word : Exponential, two wires, toroid