ABSTRACT

One of technologies for post-disaster management is Mobile Cognitive Radio Base Station (MCRBS). This under graduated thesis designs a Vivaldi antenna of Cavity class antenna for MCRBS. Vivaldi antenna is considered because this antenna has high gain, wideband that could receive signals from 2G up to 5G, and also supplied with high power.

In this final project designs antenna with frequency operation from 0.7 GHz up to 6 GHz. aluminium is chosen for material to build this antenna, with 100 cm length, 50 cm width, and 0.5 cm for its thickness. Furthermore this antenna is using N female for connector type.

From realization and measurement shows that this antenna have several result of characteristic as well as Return Loss value is $RL \leq$ -10 dB, VSWR value is $VSWR \leq 2$, radiation pattern is unidirectional, elips as its polarization, and also gain is $G > 8$ dB. With these good results and wide bandwidth, this antenna can be implemented for MCRBS for future disaster network which can cover all generations of telecommunication from 2G, 3G, 4G, and 5G.

Keywords: MCRBS, Ultra Wide Band Vivaldi Antenna, Bandwidth