

ABSTRACT

Radio transmission system is widely use nowadays. The easy installation and flexibility make radio transmission always been popular. With the limited resource of frequency, the use of unlicensed frequency is a right choice rather than the licensed frequency. With no licensed to proposed and the advanced technology of unlicensed frequency equipment make new Internet Service Provider (ISP) growing, education institution or other public uses for social purpose are easier to implement the unlicensed frequency. On this final task will talk about the planning to see whether the licensed or unlicensed is better to be implement in karawang west java. The step to plan of licensed and unlicensed frequency are site planning, simulation of licensed and unlicensed frequencies, analysis of the planning.

For the link budget calculation there are three channel bandwidth scenarios 5 MHz, 10 MHz dan 20 MHz for the unlicensed frequency and 7 MHz, 14 Mhz dan 28 Mhz for the licensed frequency, with 64 QAM modulation for both frequencies. Equipment used for the licensed frequency is Huawei RTN 950 and for unlicensed frequency is Radwin 2000b.

From the result performance analysis the best availability is 7 MHz licensed frequency bandwidth with 99.9963%, for the best sensitivity is 5 MHz unlicensed frequency bandwidth with Rx threshold of -73 dBm and for the best fade margin is 5 MHz unlicensed frequency bandwidth with fade margin of 17 dBm. From the performance analysis the best to implement is the 7 MHz licensed frequency bandwidth with availability of 99.9963%, fade margin of 10 dBm mand rx threshold of -73 dBm

Key Words : *Point to Point Microwave Radio, Unlicensed Frequency, Licensed Frequency , Link Budget, Line of Sight*