MEASUREMENT OF MIMO 2X2 IMPULSE RESPONSE RADIO CHANNEL ON FREQUENCY 2.4 GHz USING WARP (WIRELESS OPEN ACCESS RESEARCH PLATFORM)

Student name : Viving Frendiana
NRP : 2212203010
Supervisor : 1. Prof. Ir. Gamantyo Hendrantoro, M.Eng., Ph.D.
2. Dr. Ir. Suwadi, MT.

ABSTRACT

Proper knowledge about the condition and characteristics of MIMO channel is very important to develop a MIMO communication system. For MIMO channel under different conditions in a realistic environment needed MIMO channel impulse response measurements. In this research, channel impulse response measurements using pseudo-random noise sequence (PN code) type Gold code. The measurement is performed indoor in frequency band 2.4 GHz for 2x2 MIMO radio propagation analysis on hardware WARP (Wireless Open Access Research Platform). The Validation multipath propagation use Ray Tracing method. Sum of register that used is 13 with code length 8191 and produce cross correlation is 127, -1, and -129. Average of response impulse channel reach of the top in times 1.9x10^-3 with each amplitude 30, 100, 60, and 90. Direct path that occurred in 15.46 x10^-7 seconds according to the image of the channel impulse response measurement, as well as the first path, the second path, third path and the fourth path.

Keywords: MIMO, PN Code, WARP, Impulse Response.