

## ABSTRACT

Powerline is one of alternatives for telecommunications network by exploiting power line as media of data transmission. A communication network that utilizes the power line network is known as **Power Line Communication (PLC)** network. **Main.net Power Line Ultimate System (PLUS)** is a PLC network that enables always-on services from every electric outlet in home.

Nowadays, PLC technology in Indonesia have been implemented in PLN dwelling units Duren Tiga, South Jakarta. Actually, there are so many obstruction to introduce Internet over powerline to dwelling units in Indonesia now. Apart for price of PLC modem that is relatively expensive, also electric power supply configuration at dwelling complex that is not good arranged yet.

PLC in Indonesia which is implemented by PT. Indonesia Comnets Plus using power line as a broadband telecommunication medium with Direct Sequence Spread Spectrum (DSSS) modulation methods at range frequency 1-30 Mhz. For this modulation methods, the crucial figure in this context is called Processing Gain (PG), which is obtained through spreading. PG should be between 10 and 100 to obtain an efficient system for practical applications.

The powerline as a communications channel has specific characteristics that must be considered. These include the dominant and widely varying noise sources, impedance changes, and multipath effects. Noise sources are electronic, electro-mechanical, and even induced by the powerlines themselves.

This final project analyzes PLC network that use Main.net equipment for Internet application evaluated from the cost and number of hops. Moreover it also will be evaluated the steps that can be done to more improve existing performance.