

## ABSTRACT

Power Line Communication (PLC) is a technology that using electricity as a medium transmitter. PLC services capable to operate in broadband area and it are also known as Broadband Power Line (BPL). The electricity system begins from high voltage transmission conductor (110 - 380 Kv), that escorted to electricity box with medium voltage (20 Kv). In that case, the medium voltage box escorted to low voltage electricity which be able to access by end user. This low voltage describe as Broadband Power Line.

Internet Protocol over Broadband Powerline is a thought that design IP network be able to past in star transmission medium – star electricity. The advantage from IP network is high availability, and also serves large services. By using IP network, Broadband Power Line capable to convey data, video, and voice.

The purpose for this final research is accomplishing Broadband Power Line network performance analysis. The research perform by looking triple play (download data, voice call, and video call) for obtain parameter delay, packet loss, jitter, and throughput. The analysis result assigns information that Broadband Power Line as an internet transmission medium. The measurement using wire shark 0.99.5 and NetMi ver.1.12. The average delay for Voice Call 30 - 60 ms, Video call 50 - 60 ms. the average jitter for Voice Call 30 – 60 ms, Video Call 55 – 61 ms. The packet loss for Voice Call 12.05%, Video Call 10.35%. The throughput for download data is 15.794 Mbit/s. Based on ITU-T standard and Thypon, only jitter that not proper as a performance network standardization.

This research also comprehensive with Mean Opinion Score measurement that describes customer satisfaction degree. The questioner result clarifies that customer's feels comfort when they access the BPL internet. The measurement takes place in PT. ICON +, Mampang and Asrama Putri Kencana, Depok.

**Key word** : *delay, jitter, throughput, packet loss, broadband power line network*