

## ABSTRACT

Broadband PLC is a technology that use the powerline network as media transmission on frequency above 1 MHz. A communication with broadband PLC is able to provide high data rate that can be used to transfer video signals. On transmitting video signals through PLC channel has a powerline noise and attenuation are quite large as the PLC channel characteristics. Therefore, it is needs a transmitter system with low noise, has a wide bandwidth and capable to keep signal information power level to be transmit via the PLC channel.

Transmitter system in the research consists of 4 blocks that is modulator, coupling, power amplifier and filter. Modulator has a characteristics of being able to convert the video signal to the modulated signals for minimalize damaged in transmission. Coupling has characteristics wide bandwidth (up to 1 MHz) and capable as information signal injection to entering powerline channel. Power amplifier have the characteristics of low noise so that the signal is not damaged when strengthened. Filter has a characteristic to hold 50 Hz power signal and forward information signal into powerline channel.

The results of the final project is the design and realization of the video signal transmitter system through a broadband channel PLC. Testing the performance and feasibility on frequency 10MHz-14MHz. Modulator is able to modulate the video signal into FM signal with a frequency of 11.5MHz-13.5MHz. Coupling capable as information signal injection to the PLC channel. Power amplifier has 10dB signal gain so that the signal is able to be sent to the PLC channel. Filter has 30MHz of bandwidth, and is able to pass the information signal into the PLC channel.

Key Word : broadband PLC, transmitter, video analog, bandwidth