ABSTRACT

PLC (Power Line Communication) is one of the technology of data transmission with transmission channels of net-net electricity. It had a shortage of transmission channels have distortion, noise, and low enough impedance. The channel also has a high amplitude and power 50 Hz so that it required a tool if the output power is connected directly to a device in the absence of an insulator string or adapters.

One workaround to resolve the issue with using the clutch to PLC. In the final project will be designed a clutch which has the characteristics which have a wide enough bandwidth (> 1 MHz) in order to achieve the datarate to high enough in the transmission of data. This series serves to dampen the signal power 50 Hz and passed the signal information to and from the PLC.

The results of the final project is a design and realization of optical coupling and coupling optical system performance testing. This is a prototype system of clutch on the transmitter and receiver with bandwidth above 1 MHz. results of this research is pretty good where the optical coupling has a wide enough bandwidth (above 1 MHz) and has a resistance to noise which is pretty good with the awarding of the domestic burden of households such as: electric drill, soldering vapour, and vacum cleaner. It opens up opportunities to develop this research use of optical coupling for applications that are more varied and fruitful in the future.

Key word : PLC, *bandwidth, filter*