

ABSTRACT

The advancement in telecommunications technology, especially regarding the transmission media makes the media that can be used as an information transmission medium increase. One of the most commonly used transmission media is cables such as copper, coaxial and fiber optic cables. In addition to these media, another alternative developed is Power Line Communication.

Power Line Communication is a communication system that sends information signals through electric power transmission lines. Broadly speaking, Power Line Communication is divided into two types namely Narrowband PLC and Broadband PLC. The grouping is based on the working frequency of each type of PLC.

In this final project, an audio communication device using Power Line Communication has been designed. The results obtained from the design and realization process are devices that are designed to be able to transmit an audio signal in the form of a human voice that has a frequency range of around 200-4000Hz and will be transmitted through the grid with a maximum voltage of 24V with a frequency of 50-60Hz. In addition, the device designed is capable of transmitting human voice with a mesh cable network with a distance of 2.5-50 meters and has a maximum transmission loss of $\pm 38\text{dB}$.

Keywords : Power Line Communication, Analog Modulation, Analog Transmission, Frequency Modulation, Narrowband PLC