ABSTRACT

Digital communication system is commonly used in communication nowadays and will be developed. This system only used 2 logic value, that is for logic 0 and logic 1, this make digital communication didn't have to sense the voltage value or current value. So that, the product can produce in mass. Digital device needed to solve the problem of digital communication system.this digital device, commonly has small dimension and it can save more power for used. The digital device also used in high frequency problem. One of digital device to realize digital communication system is digital filter.

In this last project, designed a digital filer based on FPGA (Field Programable Gate Array). The filter has designed is aBPF (Band Pass Filter) that continue signal which has 1Mhz until 30Mhz frequency. These filter commonly used in PLC (Power Line Communication) to chose signal which process later.

After implemented the digital filter to FPGA board Virtex-4 XC4VLX25-SF363, need some resource: number of slice 74%, number of slice flip flop 15%, number of 4 input LUT 55%, number of bonded IOB 10%, number of Gclk 6%, number of DCM_ADV 25%, and number of DSP 48 100%.

Key word: Digital Filter, FPGA.