ABSTRACT

In communication signal plays an important role, that is as a carrier of information. The process of sending information is always interrupted, or 'noise'. And the noise characteristic can't be eliminated but can be minimized. signal filter is a series of electronics designed to filter unwanted signals, so the delivered information can be transmitted to the receiver. There are 2 types of filter, Analog Filters and Digital Filters. The Author uses the digital filters rather than the analog filters, because they have many advantages that are easy to change, programmable, and relatively simple.

In this Final Project will be made FIR Filter implementation in Raspberry Pi device dan MATLAB Simulink software. MATLAB Simulink is used to design the filters to integrate with the device, and as a tool for analyzing FIR Filter. Raspberry Pi is used as a device that will process the filters. This implementation will perform tasks, consisting of filter design and filter simulation using MATLAB Simulink, Then implemented in Raspberry Pi device.

The result of the design and implementation of this final project, can know the ratio of input signal from software MATLAB with output signal from Raspberry Pi or already undergoing filtering process, also comparison of frequency response form before having filter process with after filtering process, cpu usage ratio at Raspberry Pi devices and Comparison of manual calculations with simulator calculations yield error percentage of not more than 10%.

Keywords : Filter, Digital Filter, FIR Filter, Raspberry Pi, MATLAB