

## ABSTRACT

This final project presents the implementation of USB as an interface for data streaming on the process of filling program from computer to microcontrollers ATMEL 89 (AT89C51/52/55/S51,...). The filing program in this final project uses “*Parallel Flash Programming mode*”

A method which need programmed microcontroller to control programming mode, power controlling and as interfacing to computer. The program filler hardware which is later called as “*downloader*” that will be discussed in this final project is *Downloader version 3.1* in which extended the previous version that can only filing program for C51/52/55.

This 3.1 version has implemented on ATMEL 89 C51/52/S51/52/C2051 and the result can works on it. Furthermore, is expected to be able to fulfill a big part of *ATMEL 89* family. The result is hoped can be run with USB interface which is practical and *user friendly* moreover with cheapest production therefore can be accepted in the market.

Key word : Microcontrollers, Parallel Flash Programing, Downloader, AT89, USB