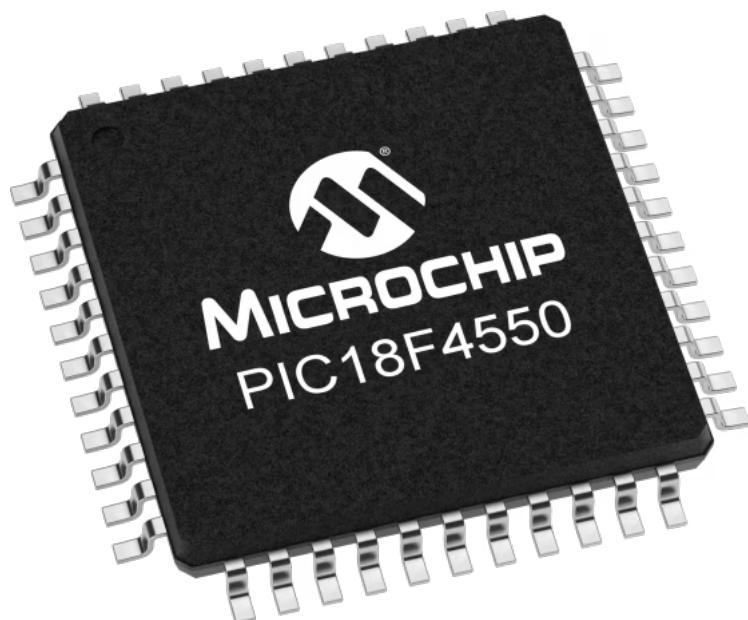


# **PIC18F4550**

## Bootloader Installation



By:  
Shreyas Deshpande

# Contents

<b>1</b>	<b>Getting Started...</b>	<b>1</b>
1.1	Pre-requisites . . . . .	1
1.2	Brief Procedure . . . . .	1
<b>2</b>	<b>Installing PICKIT-3 Application</b>	<b>3</b>
2.1	Installation Procedure . . . . .	3
2.2	Uploading Bootloader . . . . .	5
<b>3</b>	<b>Installing MCHPFSUSB v2.2 USB Framework</b>	<b>11</b>
<b>4</b>	<b>Installing Driver</b>	<b>12</b>
<b>5</b>	<b>Uploading firmware hex file</b>	<b>13</b>

# Chapter 1

## Getting Started...

### 1.1 Pre-requisites

Before we start, its always better to collect the tools and other necessary stuff required to achieve end result.

- PIC18F4550 Development Board
- PICKIT-3
- PICKIT-3 PC Application
- Bootloader Hex file
- Bootloader device driver
- PDFSUSB Application [For hex file upload]
- LED blink demo hex file [Optional]

### 1.2 Brief Procedure

We have provided you the folder with all the *installation* files, *Hex* files and *drivers*. Please Navigate to that folder and then follow the procedure given below.

1. Install the *PICKIT-3 PC Application*
2. Connect the *PICKIT-3* with *PIC18F4550* micro-controller.
3. Open the *PICKIT-3 PC Application* installed in Step 1.
4. Upload the *Bootloader hex file* into PIC18F4550 micro-controller.
5. Remove the *PICKIT-3* Programmer from micro-controller.
6. Install the *Bootloader Device Drivers* on the Windows.
7. Put the PIC18F4550 Microcontroller in the program mode.

8. Open the PDFSUSB Application
9. Select the microcontroller
10. Select the LED blink demo hex file or any other hex file you want to upload on the micro-controller.
11. Click on the Program button, and wait for the hex file to get upload in the micro-controller.
12. Reset the micro-controller to observe the output.

This is the brief procedure for power users who are used to the *Microchip's* and *PIC microcontroller's* eco-system.

If you are not familiar with this eco-system or you find the above procedure hard, don't worry, I have given the detailed and stepwise procedure in later part of this document, which will guide you making your PIC bootloader experience buttery smooth.

## Chapter 2

# Installing PICKIT-3 Application

This chapter guides you step-by-step to install the *PICKIT-3 Application*. Follow the procedure as mentioned bellow and at the end you will end up with *PICKIT-3 Application* installed in your PC succesfully.

### 2.1 Installation Procedure

1. Navigate to the *PICKIT-3 Application's* setup file location and double click on the exe file. After opening the exe file, a new window will appear as shown in figure 2.1.



Figure 2.1: Welcome Page

2. On this window, click on the *Next* button.

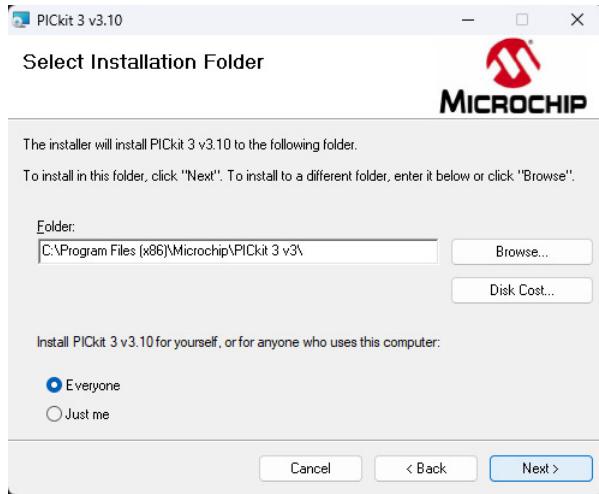


Figure 2.2: Select Installation Location

3. As we don't need to change the default location, just click on the *Next* button, without changing any option shown in figure 2.2.

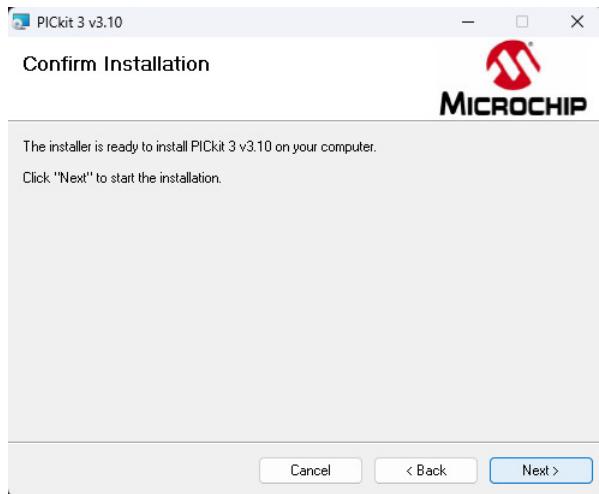


Figure 2.3: Confirm Installation

4. Here, the installer is all set to install the application on the PC, click on the *Next* button.



Figure 2.4: License Agreement

5. Next window appeared is of *License Agreement*, Select the *I Agree* radio button and then click on *Next*. [Refer Figure 2.4.]

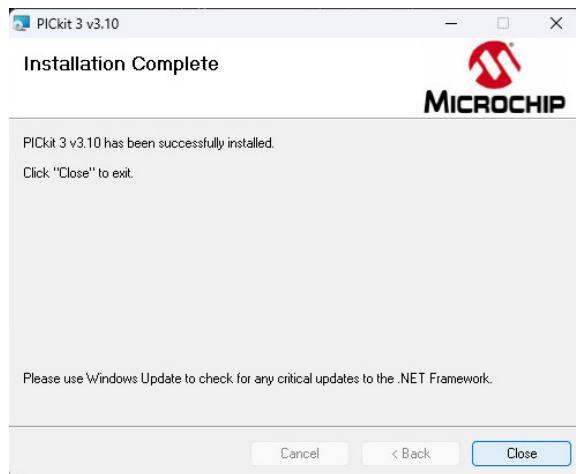


Figure 2.5: Installation Complete

6. We are now at last stage of our installation. At the end of the installation, the installer present you the window as shown in the figure 2.5. Click on the *Close* button to close the installer.

Congratulations !!! ... You have successfully installed the *PICKIT-3 Application* on your PC.

## 2.2 Uploading Bootloader

Now you have installed the application, it's time to use that application to upload the PIC USB bootloader in to the *PIC18F4550* micro-controller.

Follow the steps given below to upload the USB bootloader.

1. If PIC18F4550 micro-controller is powered ON, turn it OFF.
2. Connect the PICKIT-3 to micro-controller.
3. Now turn ON the micro-controller.
4. Connect the *PICKIT-3* to PC using USB Cable.
5. Open the *PICKIT-3 Application* we have installed in section 2.1. A new Window will appear as shown in Figure 2.6.

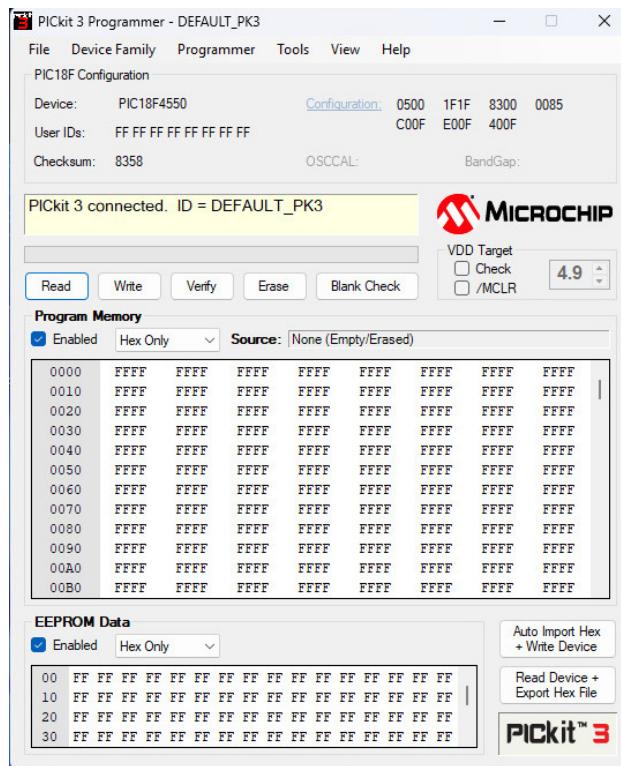


Figure 2.6: PICkit-3 Application

6. Now Navigate to Tools → Check Communication as shown in the Figure 2.7.

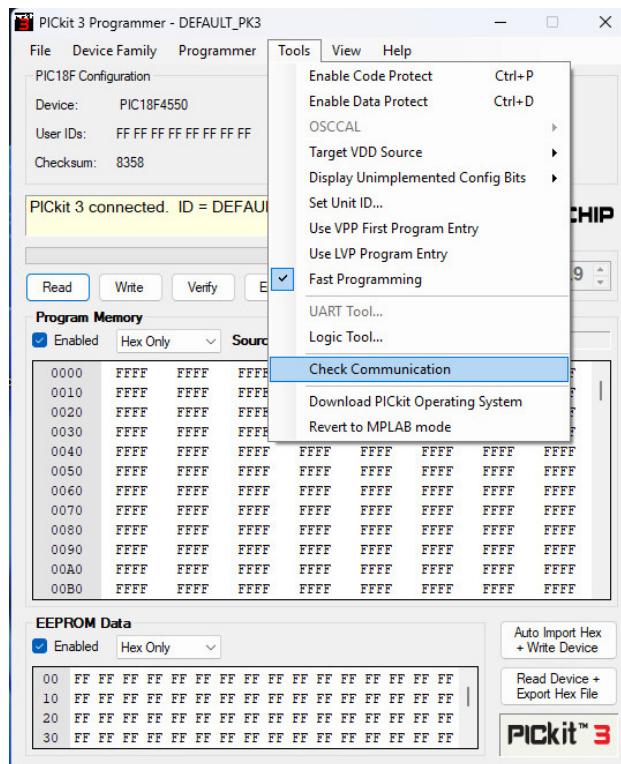


Figure 2.7: Check Connected Devices

7. The application will detect the PICKIT-3 and the micro-controller connected through it as shown in the Figure 2.8.

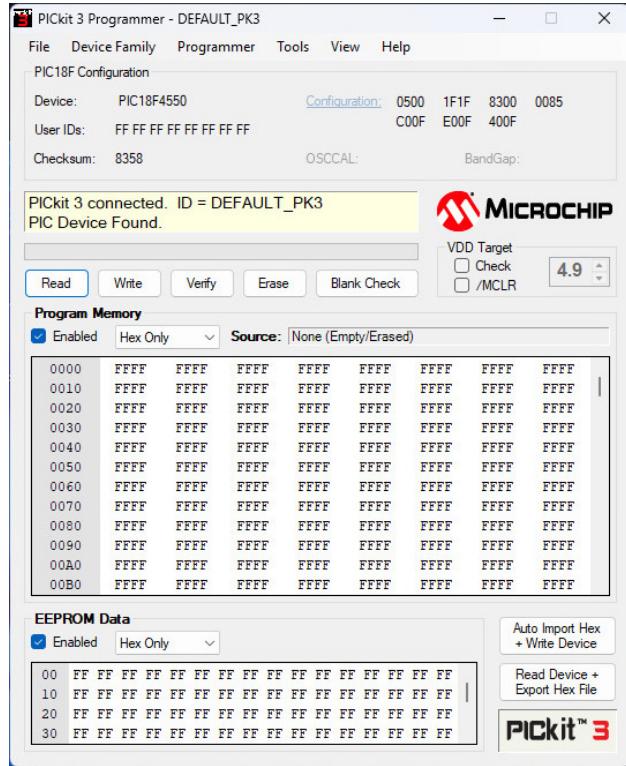


Figure 2.8: Device Detected

8. Now We need to select the hex file of the bootloader. To do so, navigate to **File -> Import File Add image here(Pending)**
9. Now navigate to the location where you have stored the bootloader's hex file and select the hex file as shown in the Figure 2.9. Here the filename of the hex file is **PIC-USB-4550-BOOT.hex**

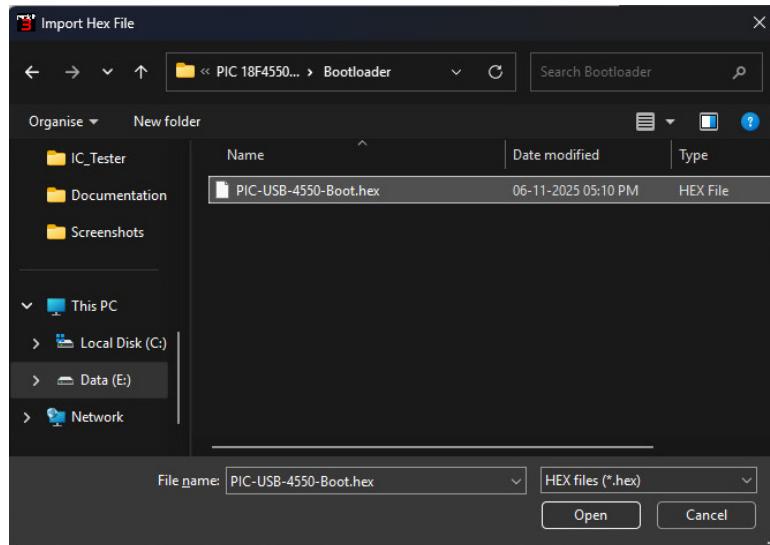


Figure 2.9: Select bootloader hex file

10. Now Click on the *Write* button as shown in the figure 2.10.

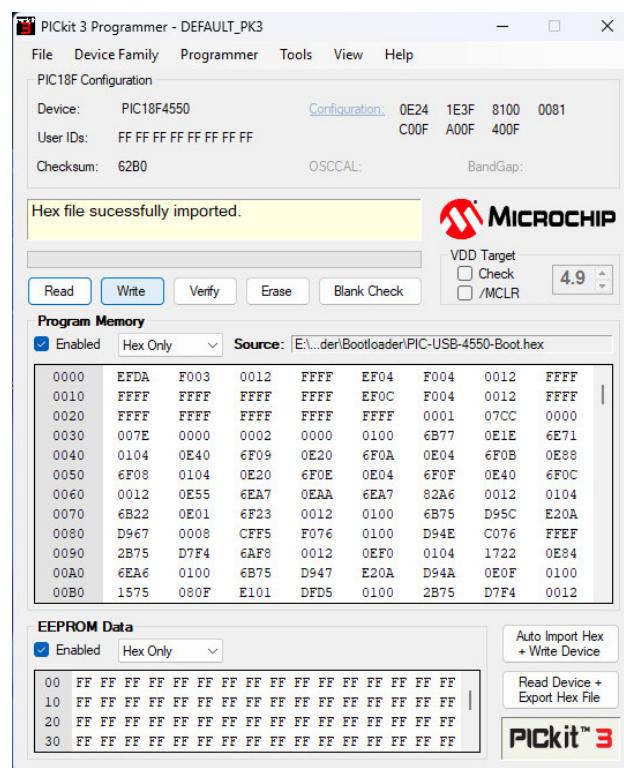


Figure 2.10: Write Hex File

- Once hex file gets written on the microcontroller successfully, the success message gets displayed on the application's message window as shown in figure 2.11.

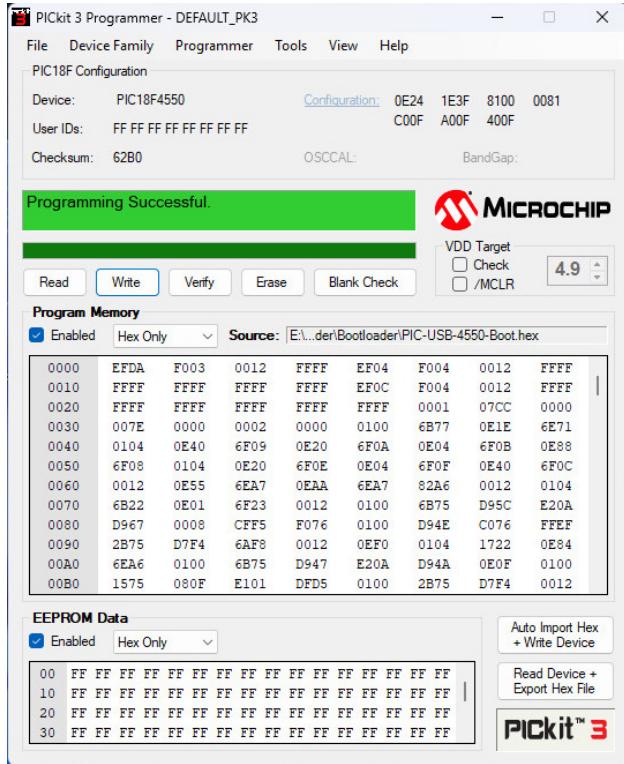


Figure 2.11: Hex File Uploaded Successfully

- Done !!!.. The bootloader is successfully get uploaded into the microcontroller. Now close the Application
- Remove the *PICKIT-3* from PC as well as from micro-controller.

## **Chapter 3**

# **Installing MCHPFSUSB v2.2 USB Framework**

# **Chapter 4**

## **Installing Driver**

## **Chapter 5**

### **Uploading firmware hex file**

# **Appendix A**

## **Schematic**