**MicroEmbedded** Technologies.

# MicroPIC18F

Development Board Software User Manual

V3.0

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# PIC18F Development.

## Software's to be installed.

The software CD provided by Microembedded Technologies contains the software which need to be installed on the PC by the user.

1) **MPLABX IDE for program development and creating output HEX file**.
   **a) MPLABX-v2.00-windows-installer.exe** located in MPLABX IDE folder.

   Right click on the executable and RUN as administrator. This will install the mplabx IDE for program development. It will also create the hex file to be downloaded into the microcontroller.

   **b) xc8-v1.30-win.exe** located in MPLABX IDE folder.
   Right click on the executable and RUN as administrator. This will install the XC8 compiler for C program development.

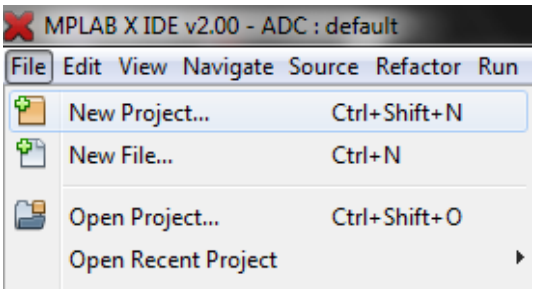
2) **USB to Serial Drivers** .
   **CDM v2.08.30 WHQL Certified.exe** is located in the USBtoSerial folder.
   Right click on the executable and RUN as administrator.

3) PICLoader utility to download the HEX file to the Microcontroller.
   PICLoader.exe is located in the PICLoader folder.
   **Right click on PICLoader.exe and send the shortcut to Desktop.**

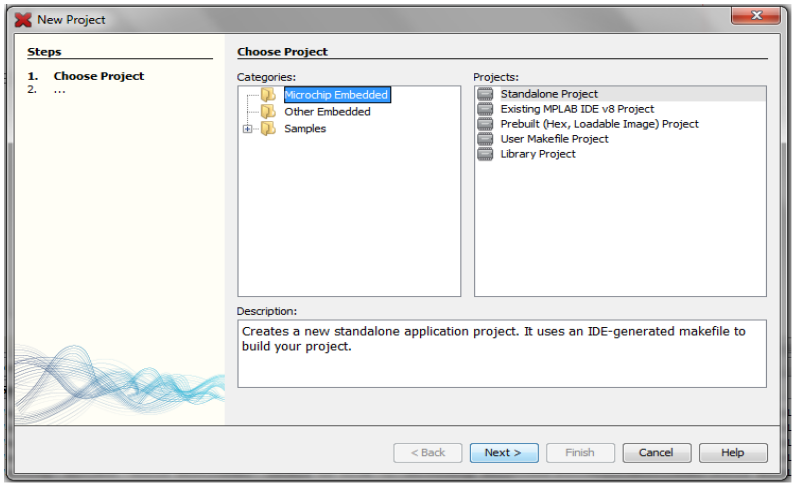
**MPLABX IDE for program development.**

## 1. Creating a New Project.

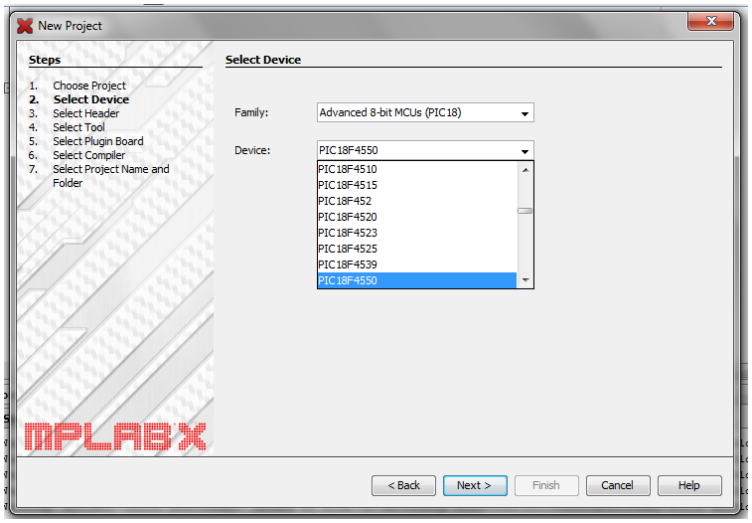
- Create a folder on the PC drive and give it appropriate name.
- Now click on the MPLABX IDE icon and start the IDE.
- Go to the File Tab.
- Click on New Project.



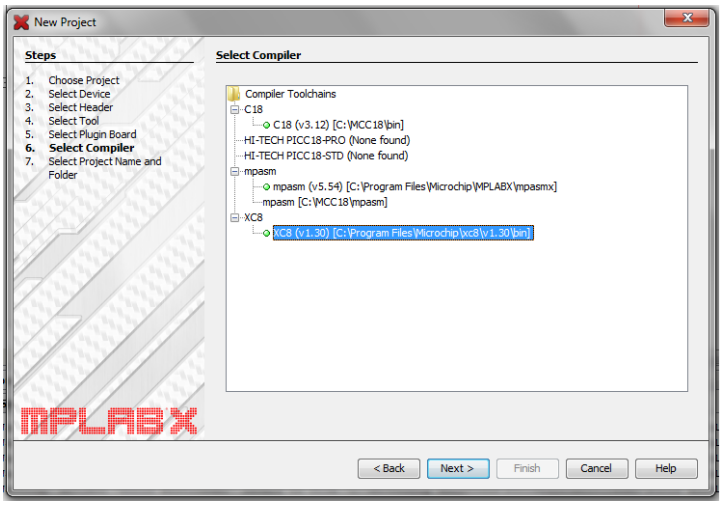

- Step1: Choose Project:
  - Select : Microchip Embedded → Standalone Project. Click Next.



- Step2: Select Device:
  - Select: Family →Advanced 8 Bit MCU (PIC18).
  - Select: Device: **PIC18F4550**. Click Next.




- Step3: Select Tool: Simulator. Click Next.
- Step4: Select Compiler →XC8. Click Next
  - **Note: if you are developing a program using assembly language then select the compiler as →mpasm(v5.68)**




- Step5: Select Project Name and Folder.
  - Give Project Name.
  - Select project Location (the project folder we created) using Browse Button.
  - Uncheck **Set as main project option**.
  - Click Finish.

**Very Important Note:**

**Step6: Adjustment for Bootloader. (only for C programs)**

- From the Projects window Right click on the project name and Go to properties.
- Select XC8 linker.
- In Option Categories → select Additional Options.
- In Code Offset: write **800**.

## 2. Opening an existing project.

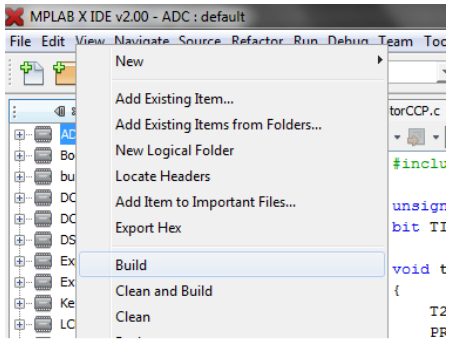
- Go to the File Tab.
- Select Open Project.
- Browse to the location and select the **projectname.X** file (project file). Click on Open Project .

## 3. Creating a new Source file and Header File.

- Go to the Project location in the Project window.
- Click the + sign to open the project space.
- Right Click on the **Source Files** folder (for a C file) and **Header files** (for a .h file).
- New → C Source file / or C Header File.

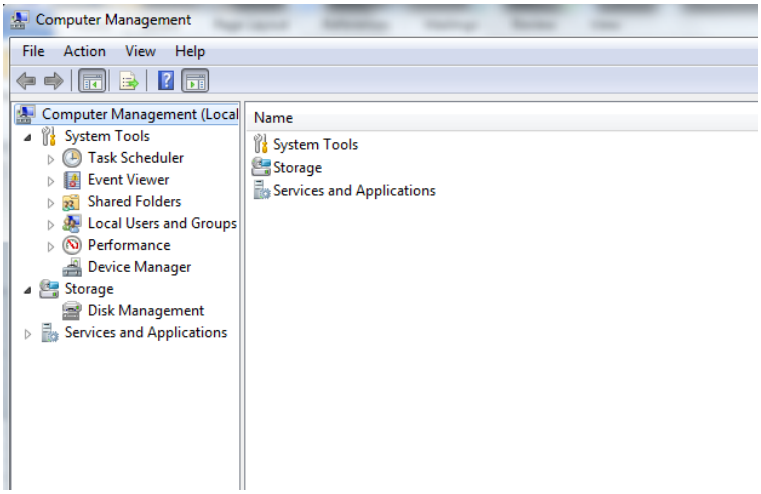
## 4. Compiling Project.

- Step1: Go to project window.
    - Right Click on the project folder and select **Build** or **Clean and Build**.

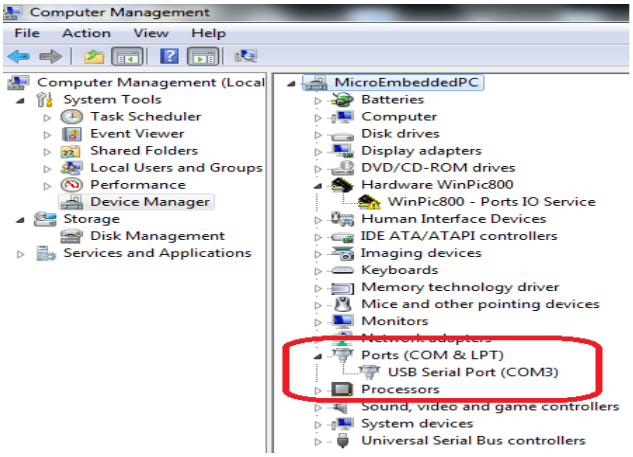


## Finding the COM Port Number.

- Right click on My Computer → Manage.
- The Computer Management window will open.




- Click on Device Manager → Ports (COM and LPT)
- Check for the USB Serial Port number assigned by the system.

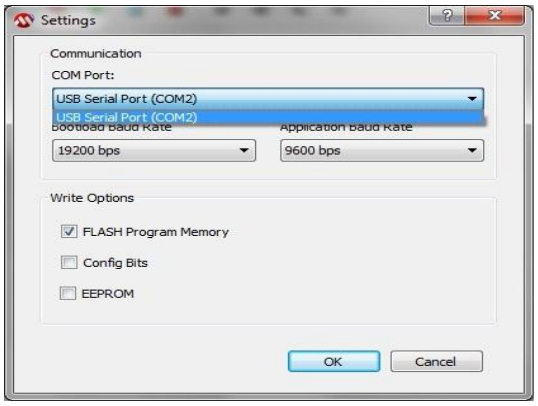


## Programming the Hex File USING PICLoader.

- Connect the USB Cable to the Board.
- Step 1: Double Click the PICloader.exe.

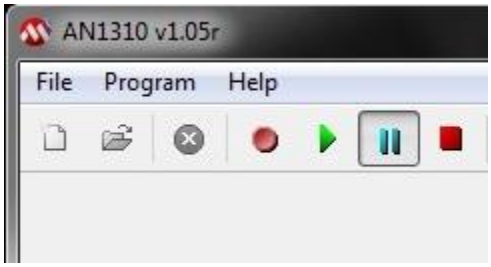

- Step2: Go to Programs → Settings.


  - Select the USB to serial com port. Click OK.



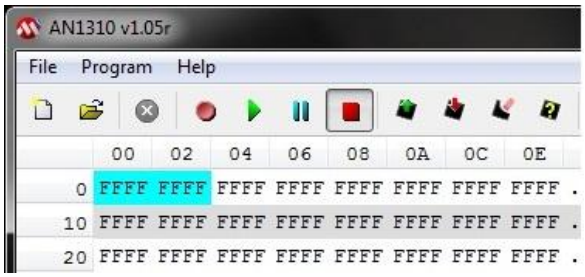

**Note: Make sure not to select Config Bits and EEPROM Settings as these can damage the bootloader.**

- Step3: Go to Programs → Break/Reset Mode or Press F3.




- Step4: Press the Reset Switch on the Micro-PIC18F Board.

- Step5: Go to Programs →Bootloader Mode or Press F4.

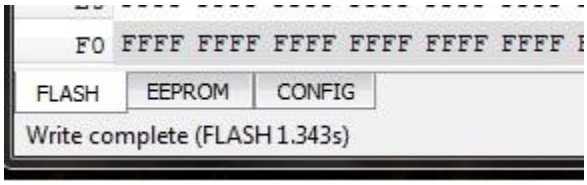



- Step6 : Select Hex file :
  - File →Open → Browse to location.


  - Project folder → dist → default->production.

- Step7: Go to Programs → Write Device or Press F6

After successful writing it will display Write Complete at the bottom.




- Step8: Press Reset on the board to Run the program.

## Peripheral Device Selection Matrix.

While using the peripherals for checking the output of the program please make the appropriate selection of peripheral switches SW21, SW22 and SW23.

| Peripheral Device Selection Matrix | | | |
|---|---|---|---|
| **Device** | **SW21** | **SW22** | **SW23** |
| LED | 1-2 | 2-3 | NA |
| LCD | NA | 1-2 | NA |
| Seven Segment | 2-3 | 2-3 | NA |
| COM2 | NA | NA | 2-3 |
| Keypad | NA | NA | 1-2 |