Sure Electronics

MPLAB ICD2 Clone

User's Guide

Product Name	:	MPLAB ICD2 Clone for PIC Microcontrollers, USB Interface
Product ID	:	DB-DP002
Product Version	:	V1.2
Document Version	:	V1.1

User's Guide

Contents

Chapter 1. Overview and Port Definition

1-1. Introduction

MPLAB ICD2 Clone from Sure Electronics is based on original MPLAB ICD2, most features and characters are same. In this documentation, we will only discuss around the difference. If you need more instructions on how to operate MPLAB ICD2, please see the documentation from Microchip, you could find it in the MPLAB installation directory in your PC, or in our accessory CD-ROM.

1-2. Overview

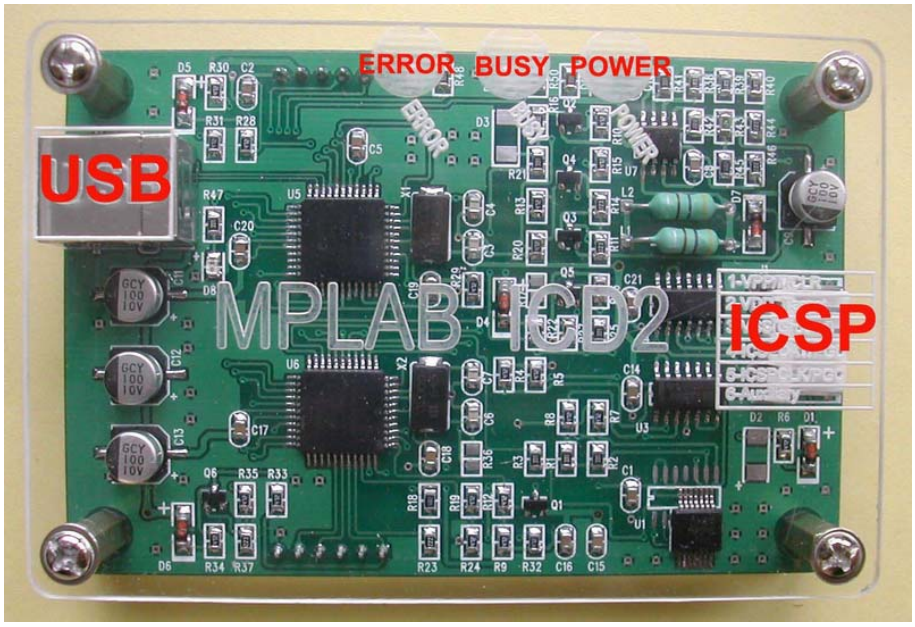

Figure 1 Top View with Acryl Clear Cover

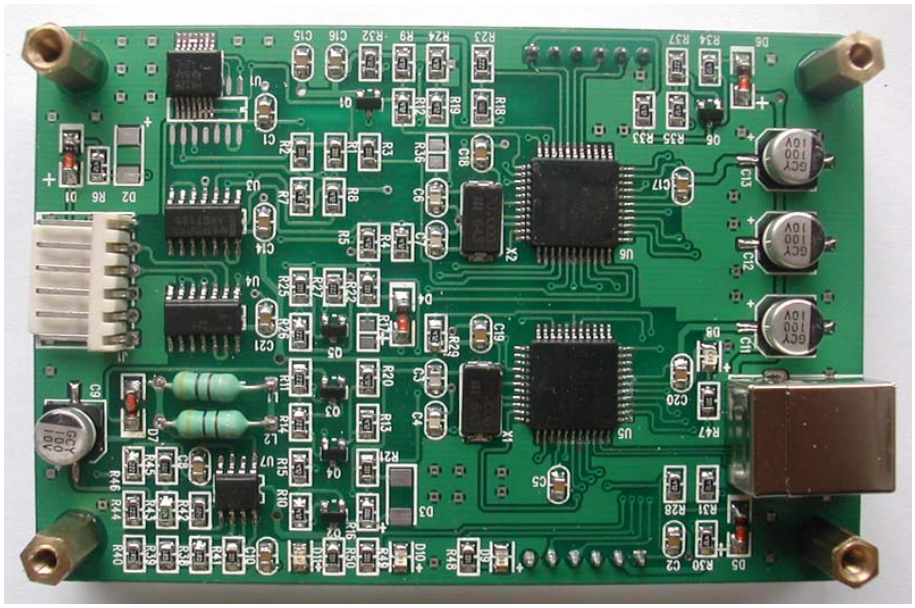

Figure 2 Top View without Clear Cover

1-3. USB Port Definition

The USB port in original MPLAB ICD2 can not power the target board, and it got an integrated external power socket, it is a safe and reliable solution but it is not flexible for users. In this clone, we use USB port as power source and communication port. It could power the target board.

To enable this function, you should select power target circuit from MPLAB ICD2 (5V VDD) option, you could find this option in ***Debugger/Programmer→ Settings→ Power menu***. Never forget select ICD2 as debugger or programmer first. It can not power a 3.3V type target board, if the target is 3.3V type, you must use external power adapter.

But never forget the current limit from USB port, if your target board would consume over 200mA current, never power the target board from MPLAB ICD2. If the target board cost too much current, the 5V supply in this board may go down to 4.xV, then the analog voltage would be too low, it may cause the ICD2 report Vpp too high error continually.

USB cable is a standard accessory. It is industrial standard USB A-B cable, same like those used in Printers. It could be found in the accessory kit.

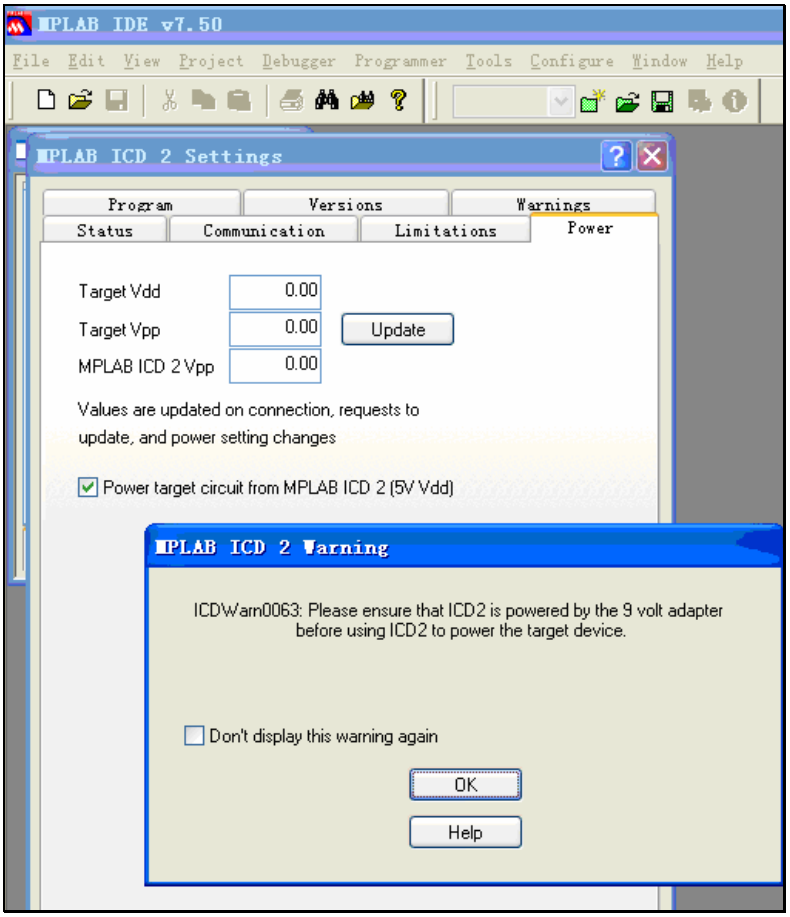

Figure 3

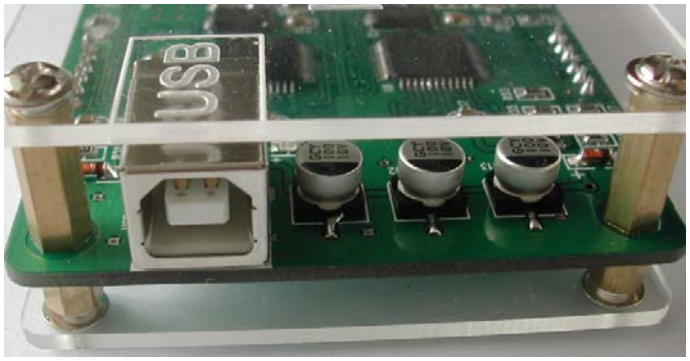

Figure 4 Left Side View (USB Port)

1-4. 6pin Debug/Program Port Definition

The debug/program port in original ICD2 is a RJ11 type female socket. But in the clone it is a normal 100mil pitch socket with 6 pins. The definition is marked on the acryl cover.

2 program cables are standard accessories. The difference between the 2 cable is only the shape, in this version, RJ11 type cable is not standard accessory. Never forget check the pin sequence before connect to the target board.

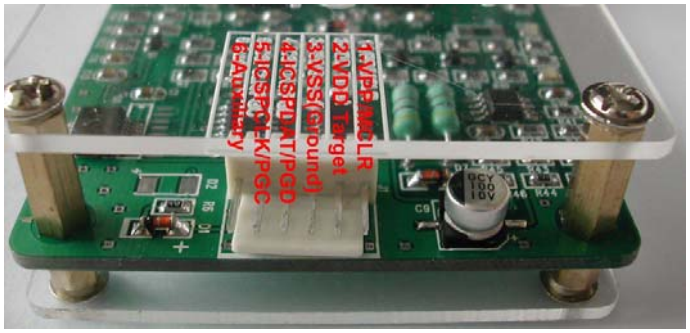

Figure 5 Right Side View (Debug/Program Port)

This ICD2 clone could work with 3.3V/5V target board. The original one will work with a wider range, normally 2-5.5V. When work with a 3.3V target board, target must get its own power supply.

1-5. LED Indicator Definition

1-5-1. D8 is the USB connection indicator. It is only for debug use. Normally it will not light if the 18F4550 chip works properly. If this chip is flashing, it means the USB connection is lost.

1-5-2. D9 is Error indicator, if something wrong during debugging/programming, this indicator will turn RED.

1-5-3. D10 is BUSY indicator, this indicator will turn YELLOW during debugging/ programming.

1-5-4. D11 is POWER indicator, it is always GREEN during ICD2 connect to USB

port.

Chapter 2. Warning

2-1. First select the connection in main menu of MPLAB IDE, you could find it in Debugger– Select Tool- MPLAB ICD2, or from Programmer- Select Programmer- MPLAB ICD2, then click ***Debugger/Programmer→Settings→Communication***, set communication port to USB.

2-2. ***VERY IMPORTANT!!!***

If the warning is shown like below diagram (Figure 6), please remove and re-plug the USB connector again. DO NOT try to re-connect the plug in 30 seconds after remove it.

In most INTEL chipsets, the connection would be very stable, but if the USB port compatibility is not so good, the ICD2 may got some problems in connection. Normally you will hear 'Dingdong' after the USB port insertion, notice this alert should appear after 3-5 seconds, if you hear this sound within 1 second, that means it is not recognized properly. Please remove the plug and try again after 30 seconds.

If the ICD2 still could not be found correctly, please power off or restart the computer. Try to connect the USB port to host computer in power off state is a good solution too. If ICD2 is running correctly, you can find 2 devices in Device Manger in Windows, press Windows + Pause/Break key to check your Device Manager, or by click right button of your mouse on My Computer icon, then select ***Properties →Hardware → Device Manage***r to open it (Figure 7).

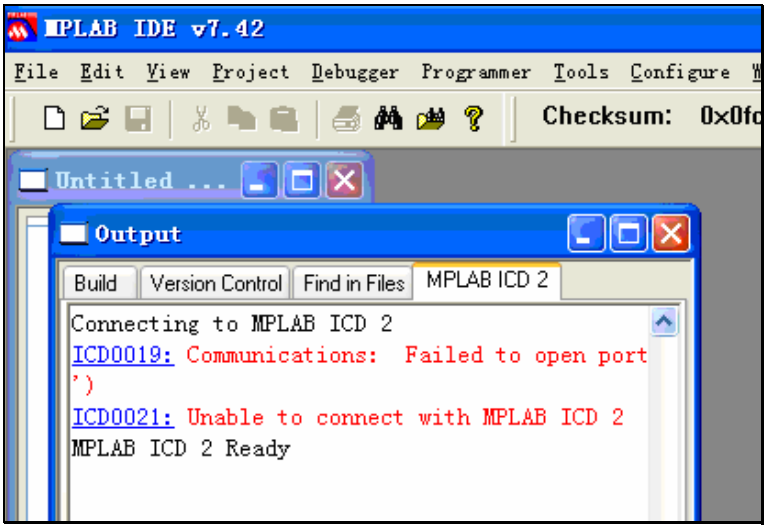

Figure 6

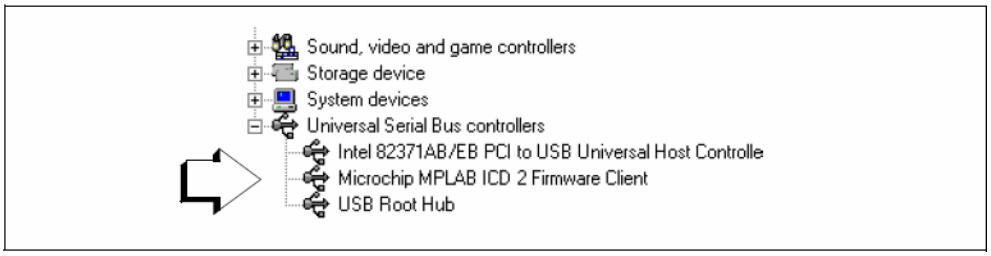

Figure 7 Found ICD2 in Device Manager

2-3. If below diagram shown (Figure 8), that means the target chip is not found by MPLAB ICD2, please check the connection to target chip.

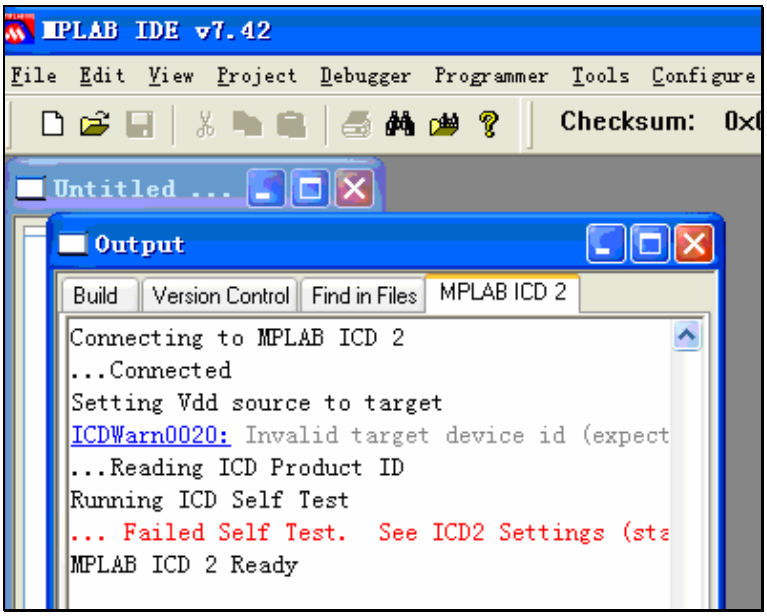

Figure 8

2-4. Try to mount it at an INTEL chipset.
Sometimes it can not compatible with some VIA and SIS,ALI/ULI/ATI chipset.

2-5. Remove target board before mount ICD2 to a USB port.

2-6. Use a high quality USB A-B print cable, the accessory USB cable is a high quality USB2.0 high speed compatible one. It is a standard accessory.

2-7. Test it with a simple demo board will help you in get familiar with those tools.

2-8. Setting ICD2 (For example 16F877A)

A simple guide of how to set MPLAB ICD2, sample is based on 16F877A, for other chips or setting, please take reference from the User’ s manual from Microchip.

Open MPLAB IDE, the sample is based on V7.42 (Figure 9).

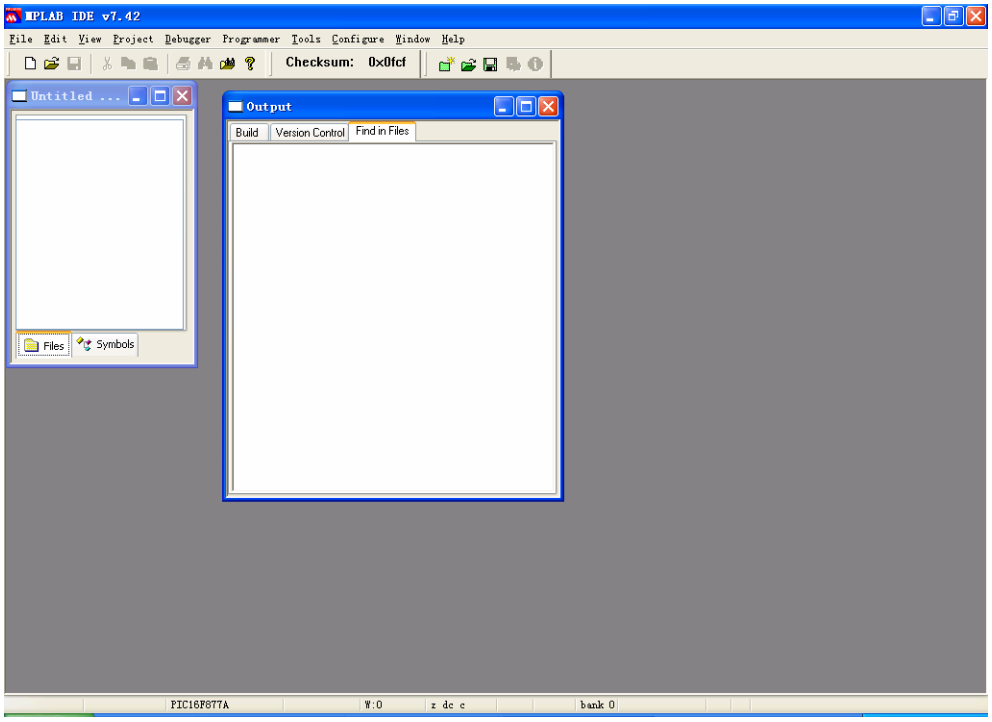

Figure 9

Select ***Configure→ Select Device***, find the target chip part number. Here Select PIC16F877A and press OK (Figure 10).
Select ***Programmer→ Select Programmer→MPLAB ICD2***.

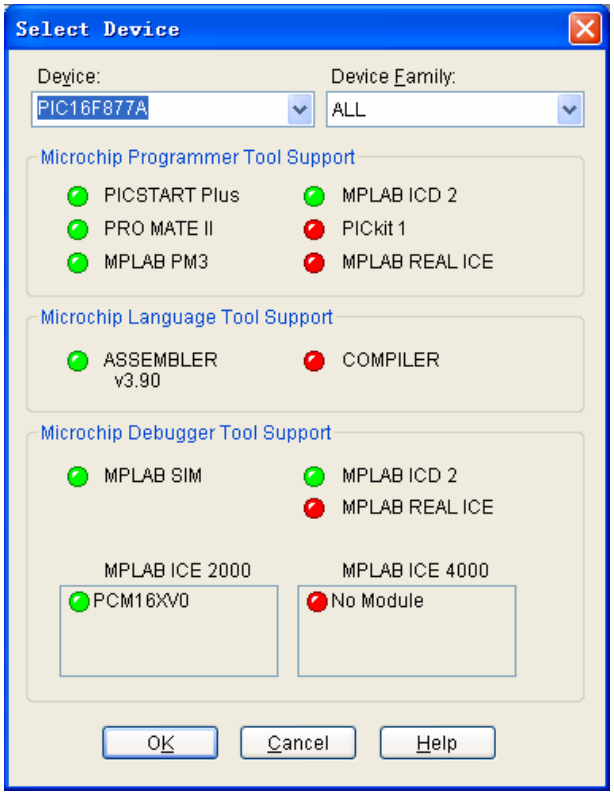

Figure 10

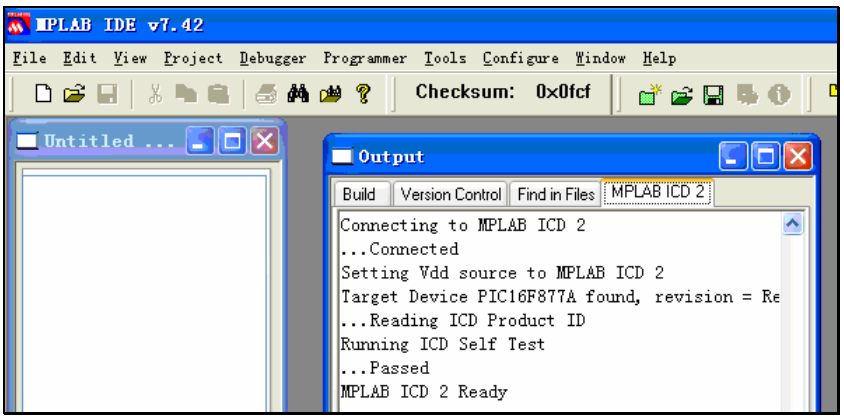

Figure 11

If the settings are correctly, target board gets its own power supply, then you should see Figure 11. If need, let MPLAB IDE update the firmware in MPLAB ICD2 automatically.

2-9. Power Target Board from MPLAB ICD2

If you want to power target board from MPLAB ICD2 (Notice the total current consume should be less than 200mA), first run MPLAB ICD2 setup wizard from debugger or programmer menu.

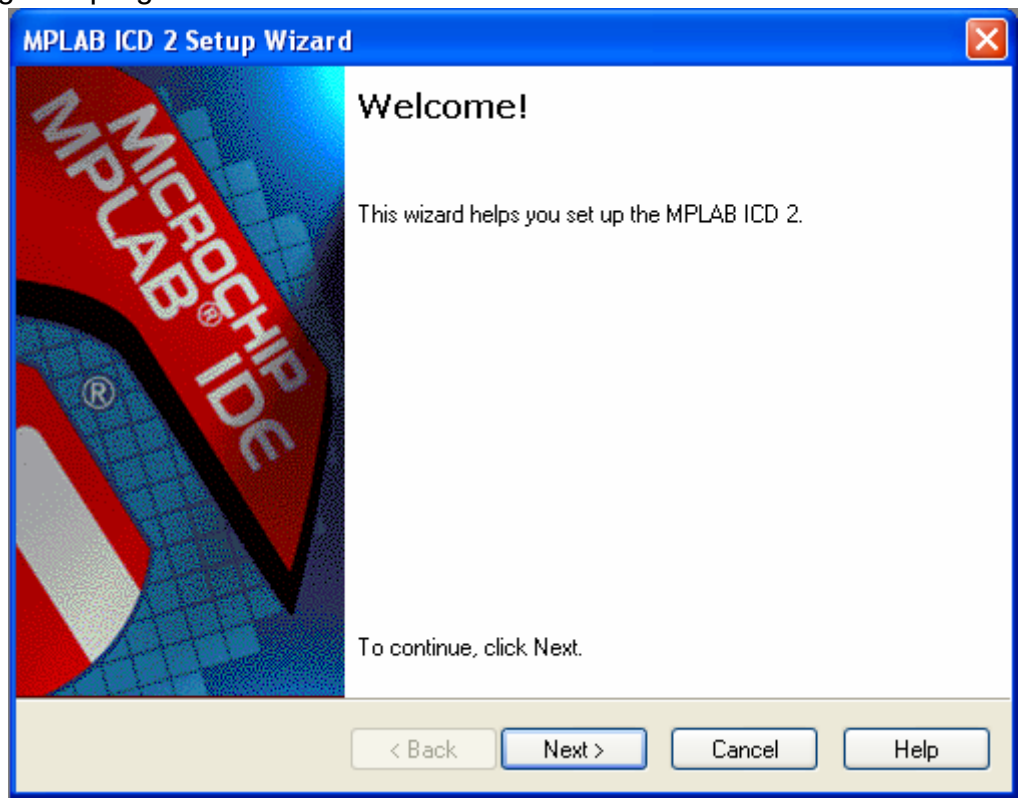

Figure 12

Then click next,

Figure 13

Select USB port, click next.

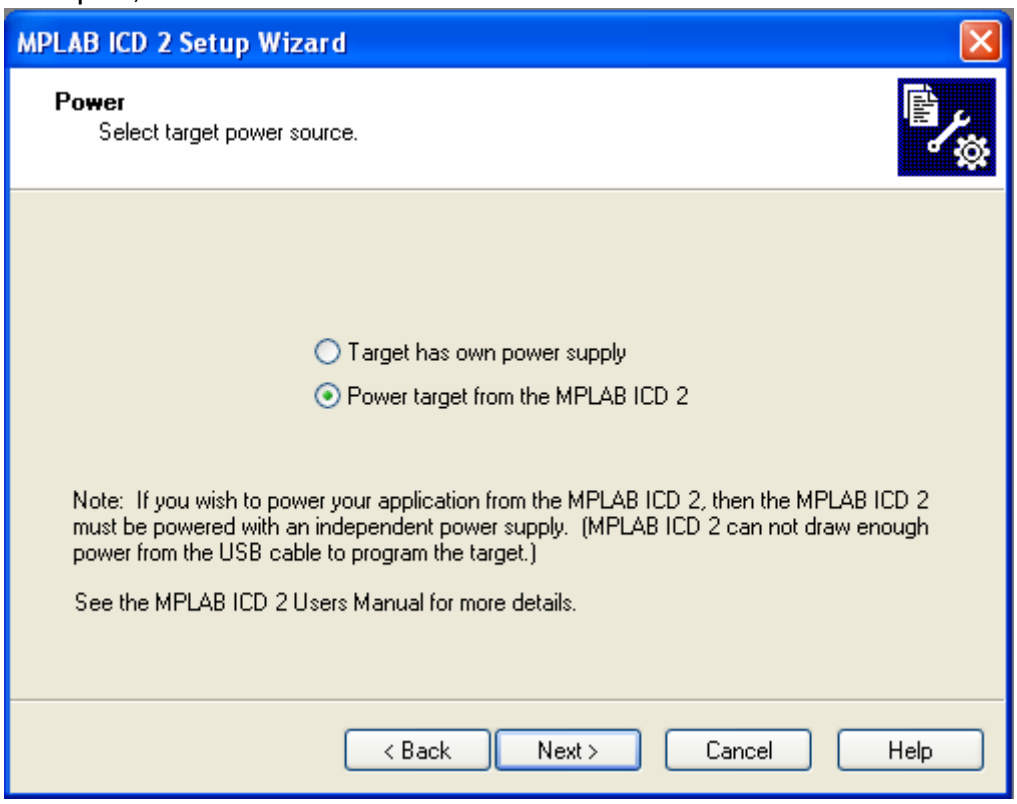

Figure 14

Select target has own power supply or power target from the MPLAB ICD2, notice if your target board has its own power supply, never use ICD2 to power it, it may cause a current circular or short, it is dangerous. Then select next.

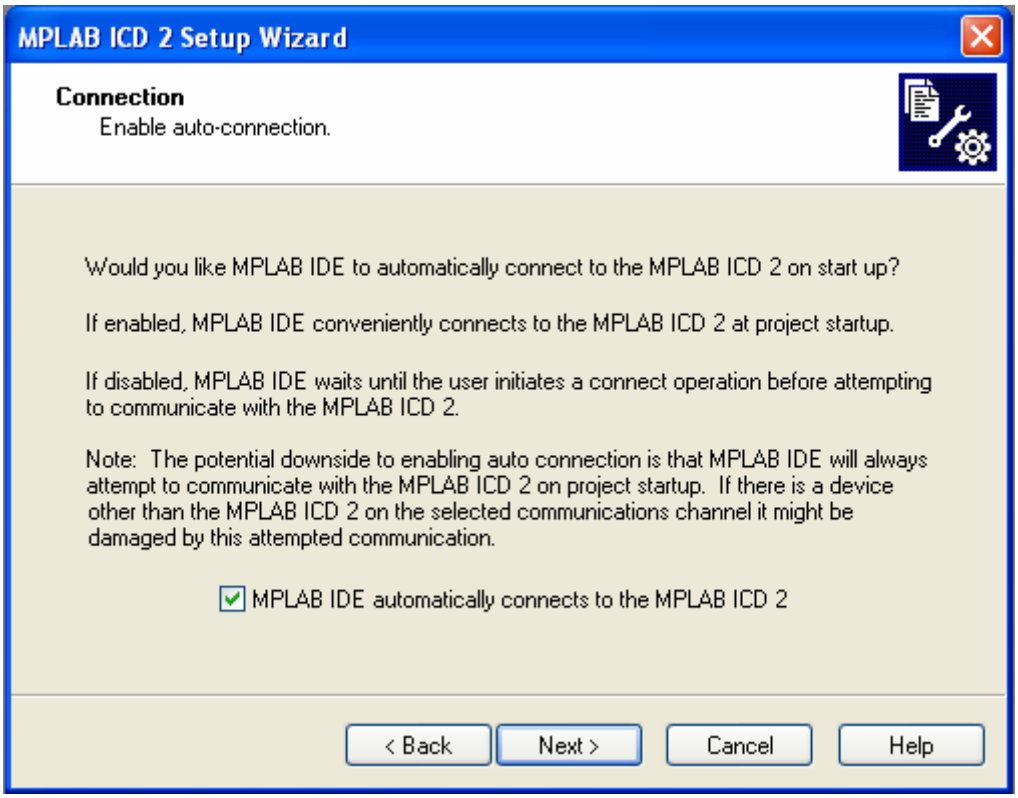

Figure 15

If you want MPLAB ICD2 connect to target automatically, select it here, we suggest you to allow it.

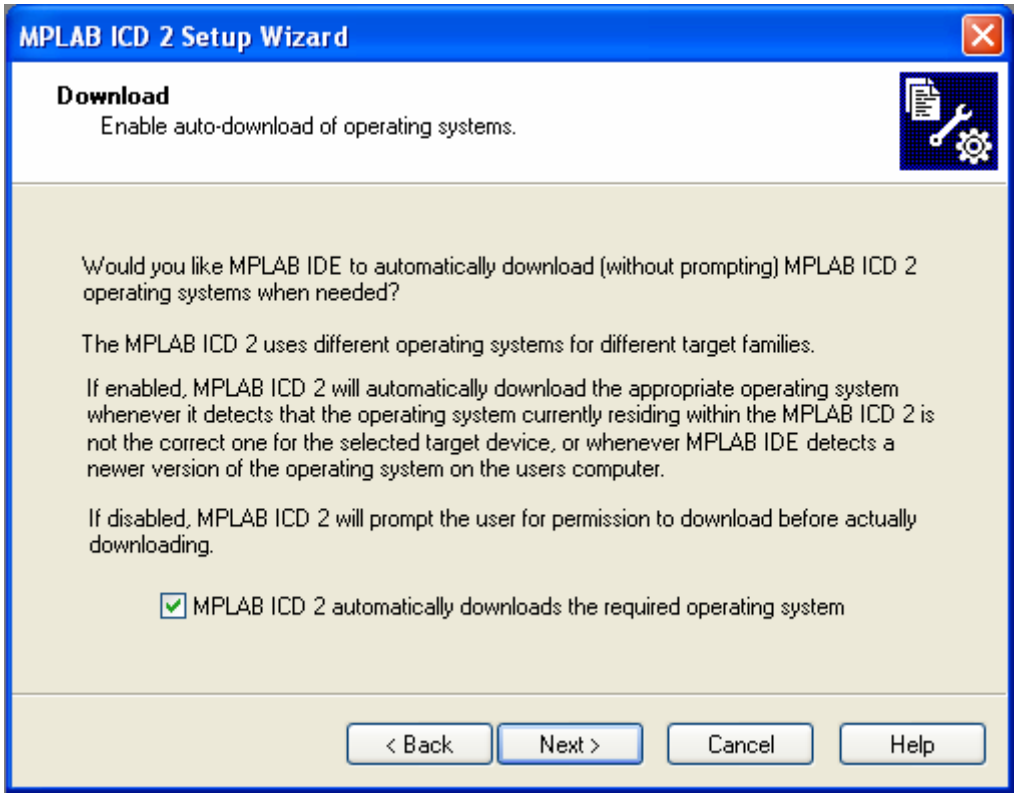

Figure 16

Normally you should allow MPLAB ICD2 download operating system automatically.

Figure 17

Then setting is finished.

If you need more information for how to create a project with ***Hitech PICC for Midrange PIC16 series*** or with ***Microchip MCC18 for Hi-end PIC18 series***, please see the How to Create a Project in MPLAB and PICC/MCC pdf format documentation, you can find this documentation in the accessory CD-ROM.
If you need more information for how to operate ICD2, please see the User’ s Manual of MPLAB ICD2.

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