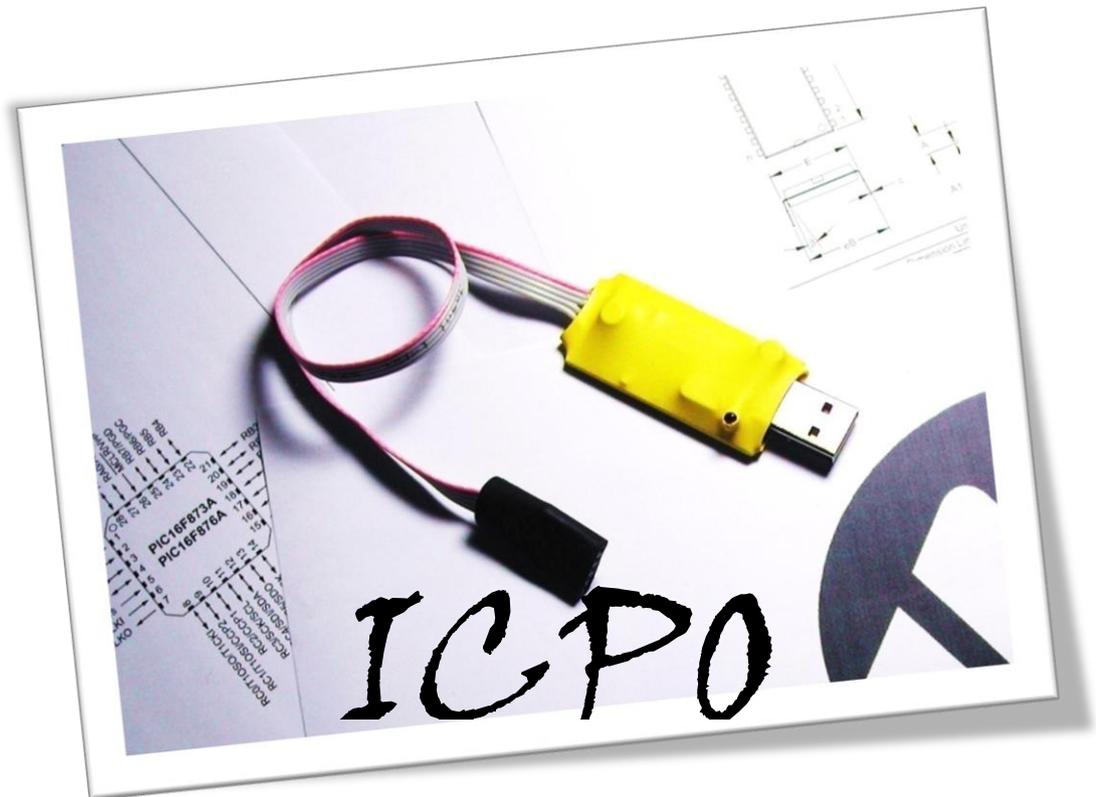# USB PIC

PROGRAMMER

1. Introduction and overview

iCP01 offers unprecedented level of performance, reliability and scalability for PIC programmer solution with low cost. By the same time, it allows users to program their hex code into the well-known Flash PIC MCU by using commonplace USB connection method. The features of iCP01 are listed as followings.

- Low cost, small size , high performance and user friendly device
- Every part is assembled perfectly and programmer is tested before submitting to users.
- Used for programming the popular Flash PIC MCU, includes PIC10F, PIC12F, PIC16F and PIC18F family
- No external power supply is required
- Compatible with Microchip's PICkit 2 and MPLAB IDE
- USB plug and play function
- Excellent flexibility that allows using in both PC desktop and laptop.
- High speed programming
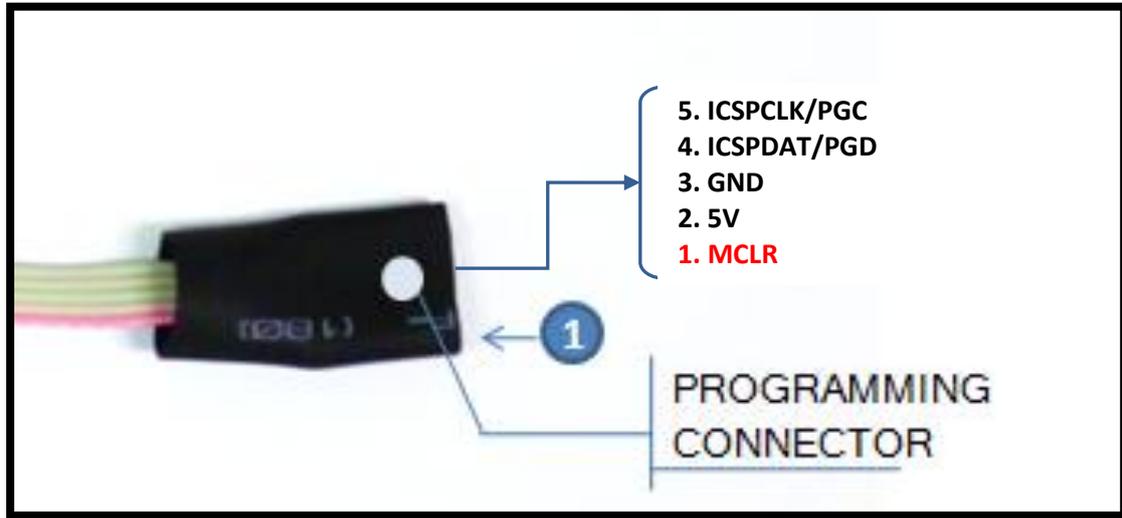- Allows to use in both commercial and free interface software

Dimension:

- Dimension: 6.8cm X 2.5cm X 0.9cm, easy to carry and store
- ICSP wire length: ~ 30cm
- Standard 2.54mm Pin Socket for ICSP connection
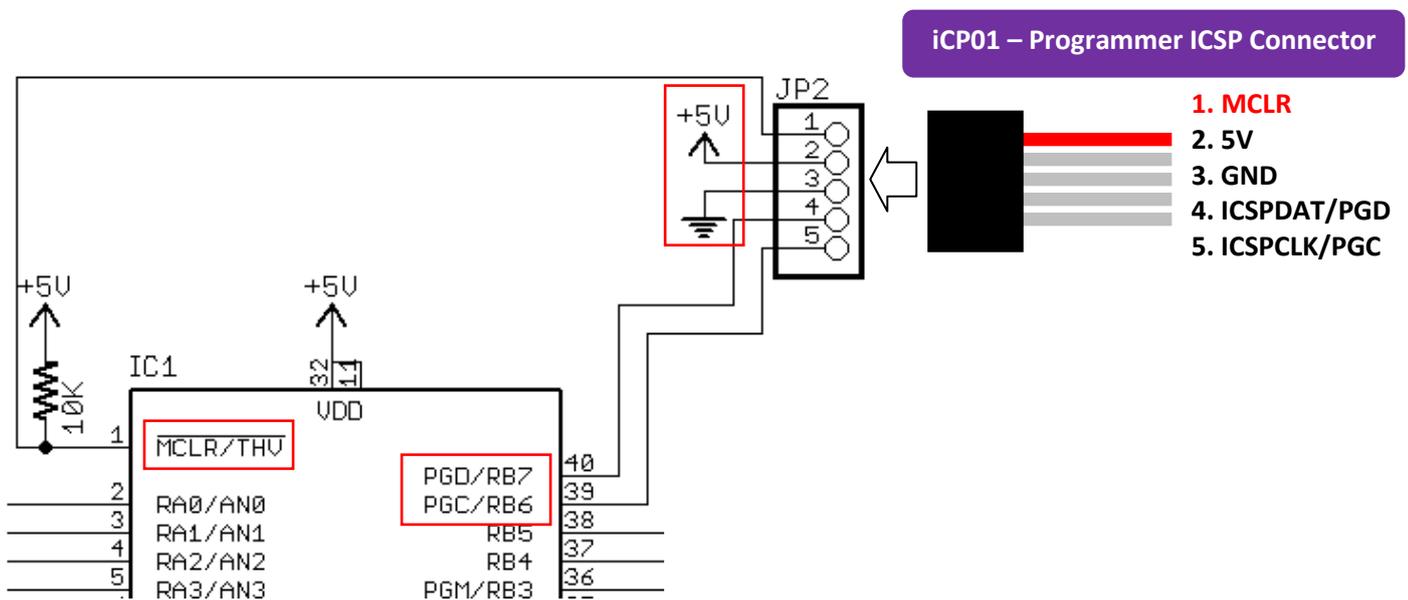
1.1 Programmer layout
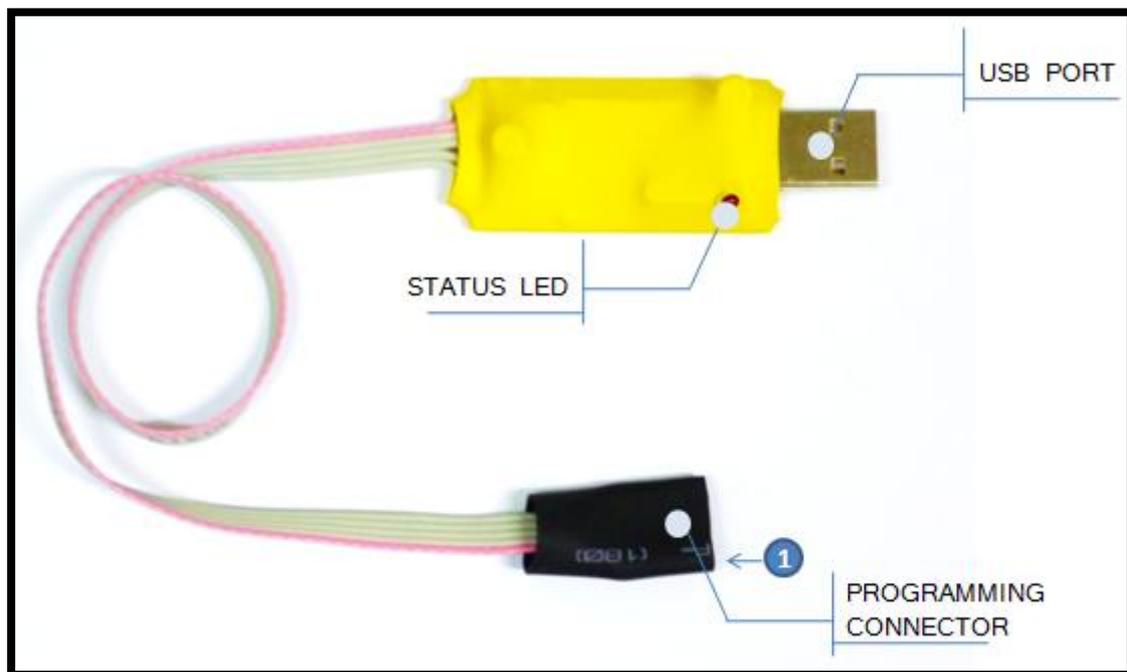
2. Programmer Connection

2.1 Programming Connector PIN

5. ICSPCLK/PGC
4. ICSPDAT/PGD
3. GND
2. 5V
1. MCLR

PROGRAMMING CONNECTOR

2.2 On-Board ICSP Connection

iCP01 – Programmer ICSP Connector

1. MCLR
2. 5V
3. GND
4. ICSPDAT/PGD
5. ICSPCLK/PGC

3. Hardware Installation

This section shows how to connect iCP01 to PIC MCU.

Please download the driver from the link below for the first time usage.

http://www.piccircuit.com/ins/PICkit2v2.61.zip

3.1 Direct connection between iCP01 and Development/Application Board

1. Connect the USB connection on iCP01 to laptop or desktop.
2. Connect the output port on iCP01 to target/application board
   - Target/application board is required an external power supply on it due to the USB port from PC/laptop can't supply large power usage.

3.2 Connection between iCP01 and iCP03

To augment the efficient of iCP01, Icircuit Technologies also provides users a extension circuit named iCP03 (Multi PIC Adapter) which allows users to program the MCU chips with iCP01 directly. This section shows user how to insert the PIC MCU chip onto the iCP03.
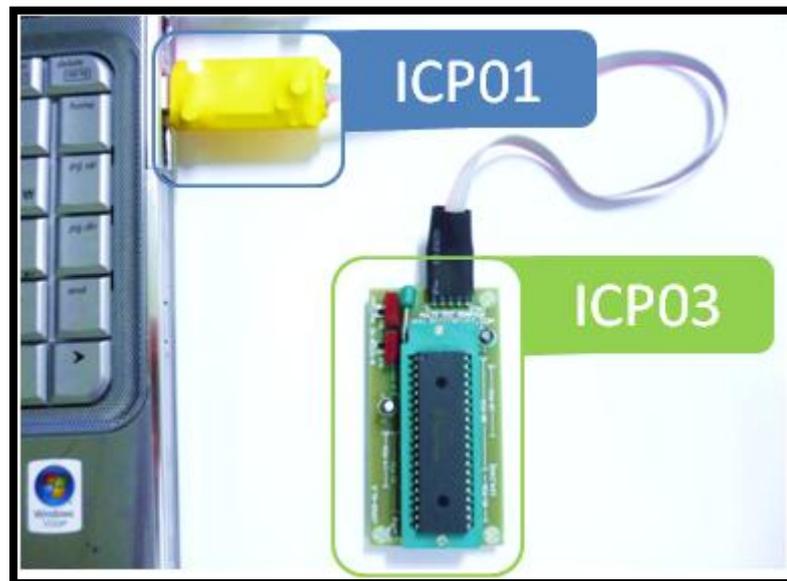
4. Software installation

For programming a microprocessor, programmer software is needed to transmit the machine code from PC to it. Here, our iCP01 can be used with the PICkit2 which is freeware provided by MICROCHIP and this software always been updated for better usage. So the following section will explain about how to install the PICkit 2 software into user computer.

4.1 Open the setup file
Select "**Setup.exe**" to install the PICkit software (Please download it from this link)
http://www.piccircuit.com/ins/PICkit2v2.61.zip

4.2 After the installation, update with the latest PIC devices list
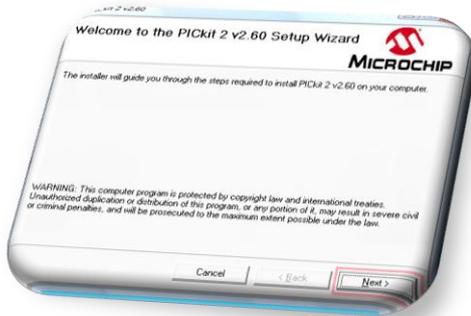Apply the patch PK2DeviceFile.dat at: (Replace it)
C:\Program Files\Microchip\PICkit 2 v2\PK2DeviceFile.dat (or)
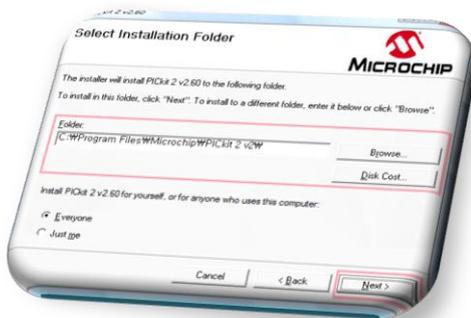C:\Program Files (x86)\Microchip\PICkit 2 v2\PK2DeviceFile.dat

4.3   Execute the PICkit setup process
Follow the guideline below to install the PICkit software.

i.   Select [**Next**]

iv.   Click [**I Agree**] and select [**Next**] to start installation procedure

ii.   Change the installation destination if necessary and click [**Next**]

v.   Wait for installation process to finish.

iii.   Click [**Next**] to confirm installation procedure

vi.   Select [**Close**] to end up after the installation is complete.
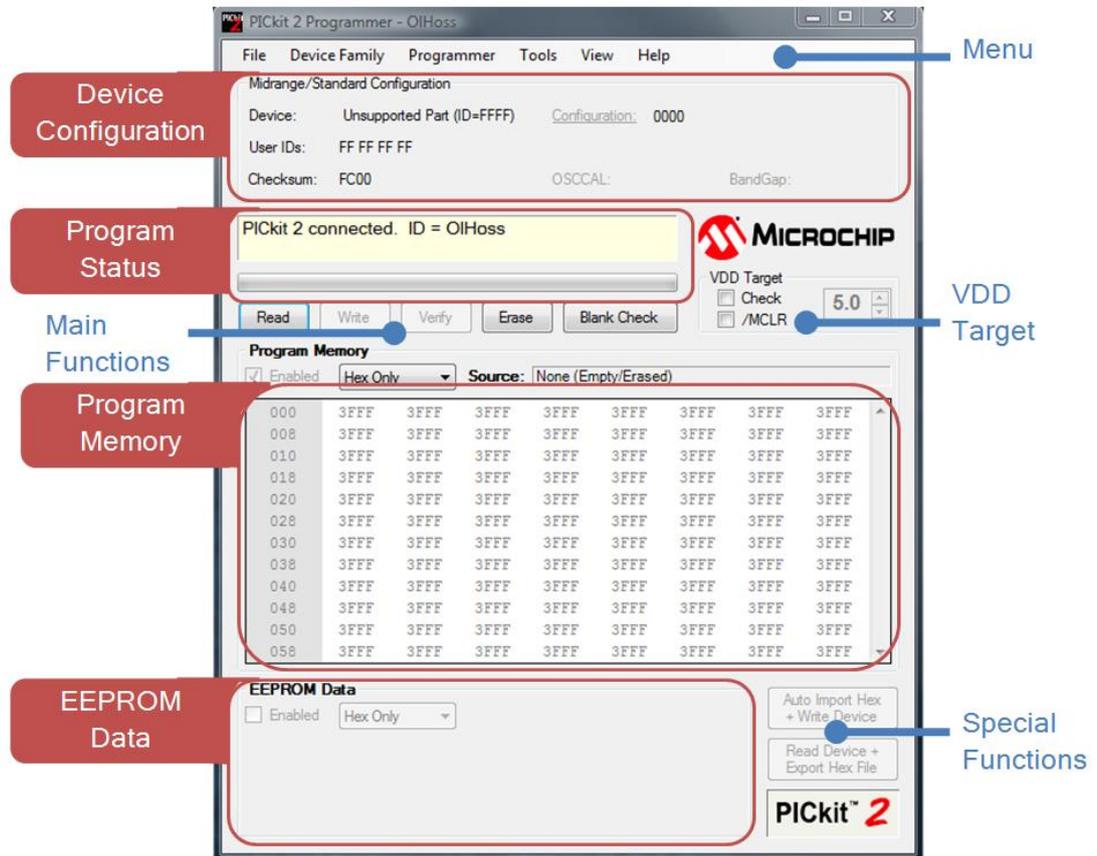
5. Programming MCU with PICkit 2

After previous hardware and software installation, user now is able to use iCP01 to program their PIC microcontroller. The following section illustrates the guidance steps for programming the MCU with PICkit programmer software.

5.1 First at all, ensure iCP01 is connected to PC desktop/laptop

- Ensure power supply of target/application board is on if user is using the target/application board.

5.2 Open PICkit 2 program by choosing the PICkit icon as below on desktop.
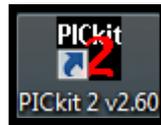
5.3 Here, the description of each part for PICkit program are shown as below.

5.4 If the program status box shows "PICkit 2 not found, …", then user is required to replug the iCP01 and to click [**Tools**] -> [**Check Communication**] for connecting the iCP01 with PICkit software.

PICkit 2 not found. Check USB connections and use Tools->Check Communication to retry.
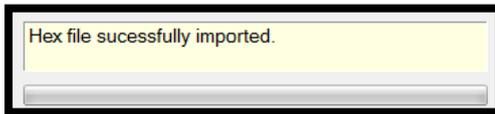
5.5   Now user can started either to download the machine code (hex file) into the MCU or to upload the hex code from MCU into PC after previous steps.

Download the hex code

i.   Select [**File**] -> [**Import Hex**] and choose the needed hex file to download.

ii.   After selected hex file, user can see the imported message at program status.

Hex file sucessfully imported.

iii.   Then, user can click [**Write**] to download the source code into MCU and

iv.   Finally complete message is shown at the end.

Programming Successful.

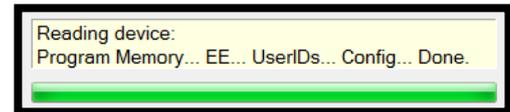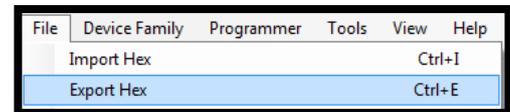### Upload the hex code

i.   First, user clicks the [**Read**] button to upload the source code in MCU into PICkit program.

ii.   Then user can see the done message at program status.

Reading device:
Program Memory... EE... UserIDs... Config... Done.

iii.   Now user can save the hex code into PC by selecting [**File**] -> [**Export Hex**].

Disclaimer

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