PC USB Interface for mightyZAP

IR-USB01

User Manual

IR
IR ROBOT
Imagination to Realization

Overview
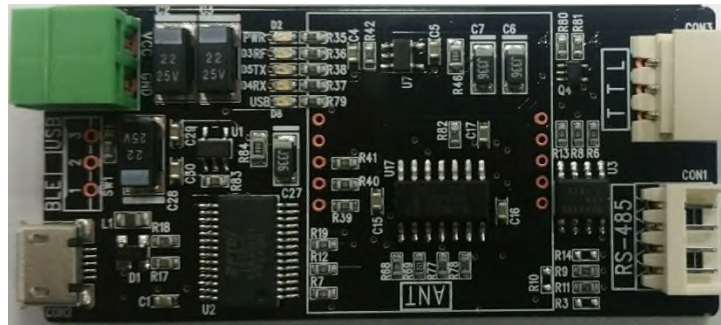
[IR-USB01]

IR-USB01 is an USB interface which connects mightyZAP linear servo motor and user's PC via USB port for various setting of servo motor. Input power needs to be supplied via power socket (Input power should be same as the input voltage of servo motor) and it supports TTL and RS-485 protocol. As standard accessory, the wire harness for TTL/PWM(3pin connector) and RS-485(4pinconnector) protocol are included in the package.

- Memory Setting
- Parameter Setting - Reading & Writing
- Error Indicator
- System Reset
- Firmware Update

※ NOTE : IR-USB01 does NOT include USB cable for PC connection. Any USB Micro B-type(Standard 5pin) cable(for Android smart phone) can be used without problem.

Specification

- Size : 29.5 X 64 X 11mm
- Input power : 7.4V(L7series, D7series) , 12V (L12series, D12series)
- Servo connection port : RS-485(F version connection), TTL(PT version connection)
- PC communication interface : USB Micro B-type(Android standard 5pin)
- Communication speed : 57600bps(default)
- Operating software : mightyZAP Servo Manager
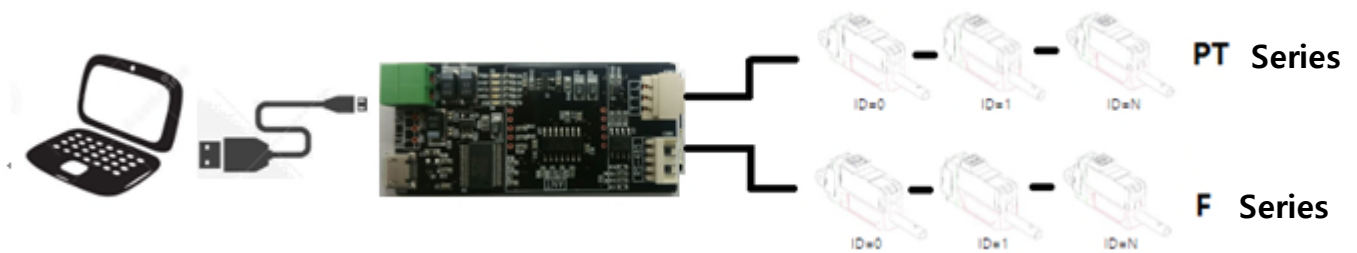
※ To use PT series(TTL/PWM) and F series(RS-485) at the same time together, different ID setting is required.

Board Layout

power Input

USB connection

Indicator LED

3Pconnector (TTL)
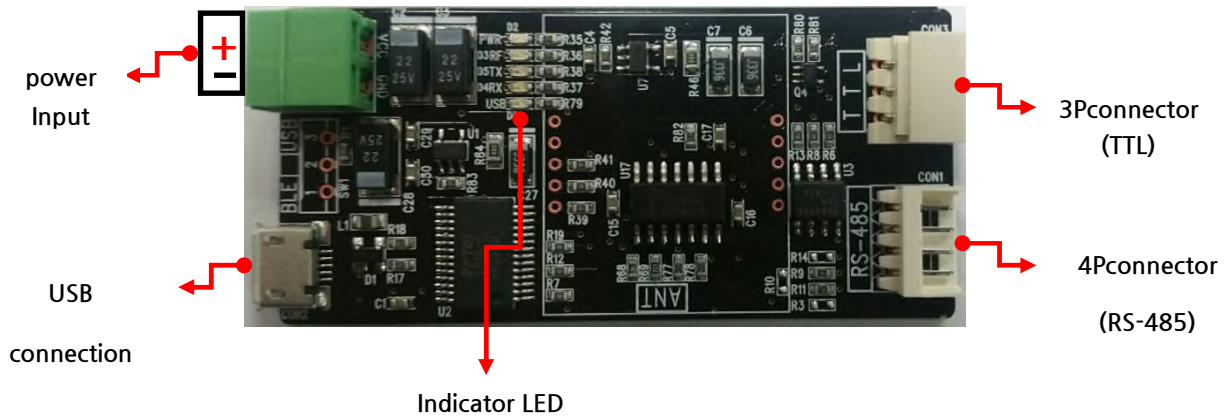
4Pconnector (RS-485)

| Part name	Descriptions
Indicator LED	USB connection status, Power status, TXD(data writing) & RXD(data reading) status
Power Input	7.4V or 12V input
3P connector	For PT series (TTL communication) mightyZAP
4P connector	For F series (RS-485 communication) mightyZAP
USB communication	PC USB connection via Micro B-type(standard 5pin) cable

⚠️ **Caution** Proper Power Input!

- Make sure polarity (+/-) when connect the power (see the back side of PCB). Improper polarity connection brings damage of product.
- Make sure to apply correct input voltage corresponding the voltage user's servo.(7.4V or 12V)

PIN Map

Below picture shows the pin map of connectors. There are two different pins according to servo motor's communication protocol. (For TTL/PWM, 3pin connector. For RS-485, 4pin connector is included)

[3Pins Cable Connector PIN Figure]
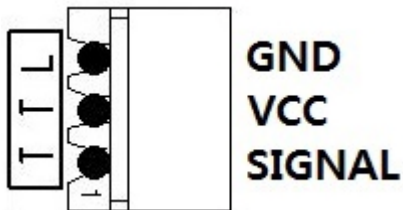
3Pins connector - for TTL	
GND	Servo Power -
VCC	Servo Power +
SIGNAL	Servo data communication(Half duplex)

[4Pins Cable Connector PIN Figure]
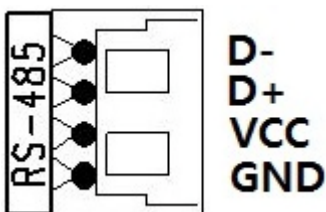
4Pins connector - RS485	
D-	RS-485 communication Data (-)
D+	RS-485 communication Data (+)
VCC	Servo Power (+)
GND	Servo Power (-)

How to Supply Power to IR-USB01

IR-USB01's power input voltages are 7.4V or 12.1V, so user needs to put proper voltage to the servo according to user's servo input voltage. For 7.4V version mightyZAP, put 7.4V input power to IR-USB01 and for 12.1V version of mightyZAP, put 12.1V input power to IR-USB01. This means that user CANNOT use different voltage versions of mightyZAP at the same time through IR-USB01.

⚠️ **Caution**   **Proper Power Input!**

- Make sure polarity (+/-) when connect the power (see the back side of PCB). Improper polarity connection brings damage of product.
- Make sure to apply correct input voltage corresponding the voltage user's servo.(7.4V or 12V)
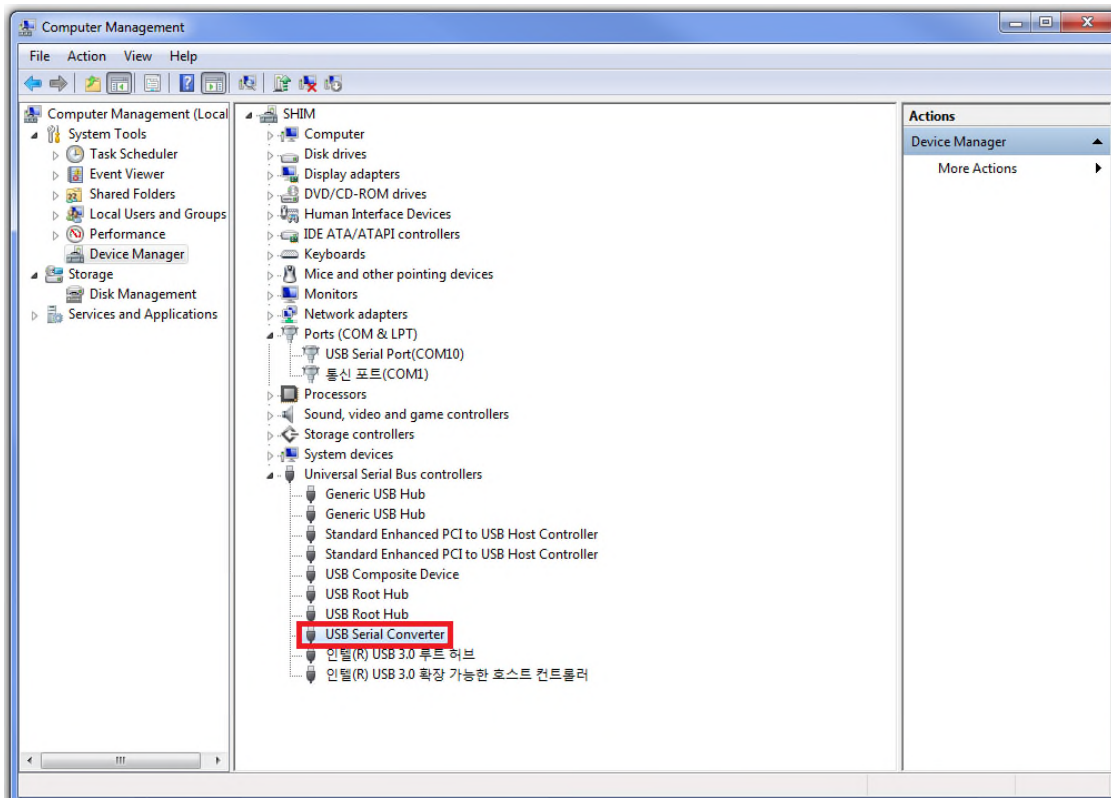
How to install Driver for IR-USB01

The driver of IR-USB01(FTDI Driver) will be installed automatically when IR-USB01 is connected with PC via USB. To check if IR-USB01 driver is installed properly in user's PC, follow below process. (Just in case that driver is not installed automatically, user may follow "Manual installation" process in next chapter.)
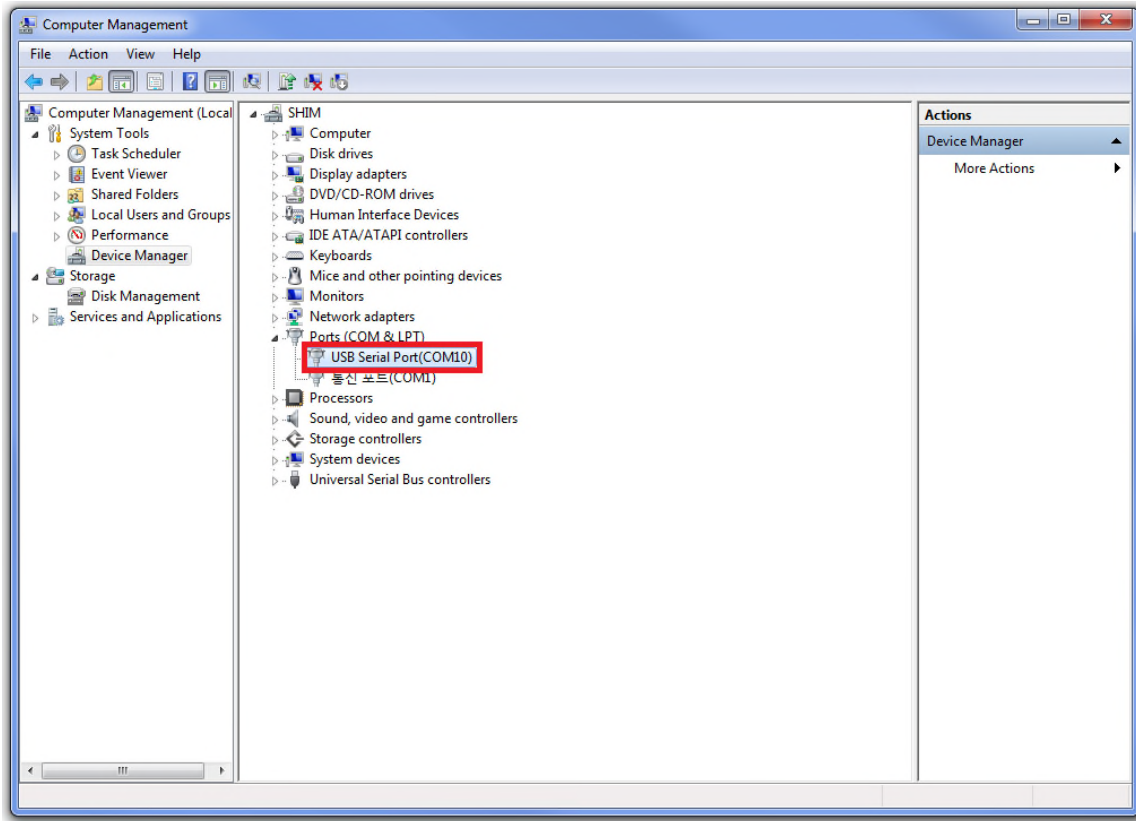
1. Connect IR-USB01 with PC using USB. (Micro B-type(standard 5pin) cable)

2. "Right click" of mouse on "My Computer" icon. Then, select "Manage" menu on popup menu.
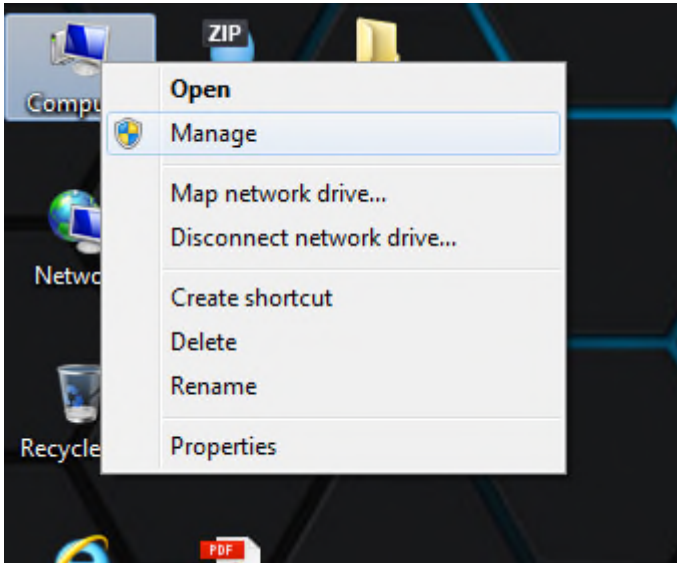
3. Check if "USB Serial Converter" exists in "Universal Serial Bus controller" menu.

4. See "Port(COM & LPT)" menu and check "USB Serial Port(COMXX)" is assigned for IR-USB01. If user disconnect

IR-USB001, this COM port will disappear. (COM port number may be different for each computer.)
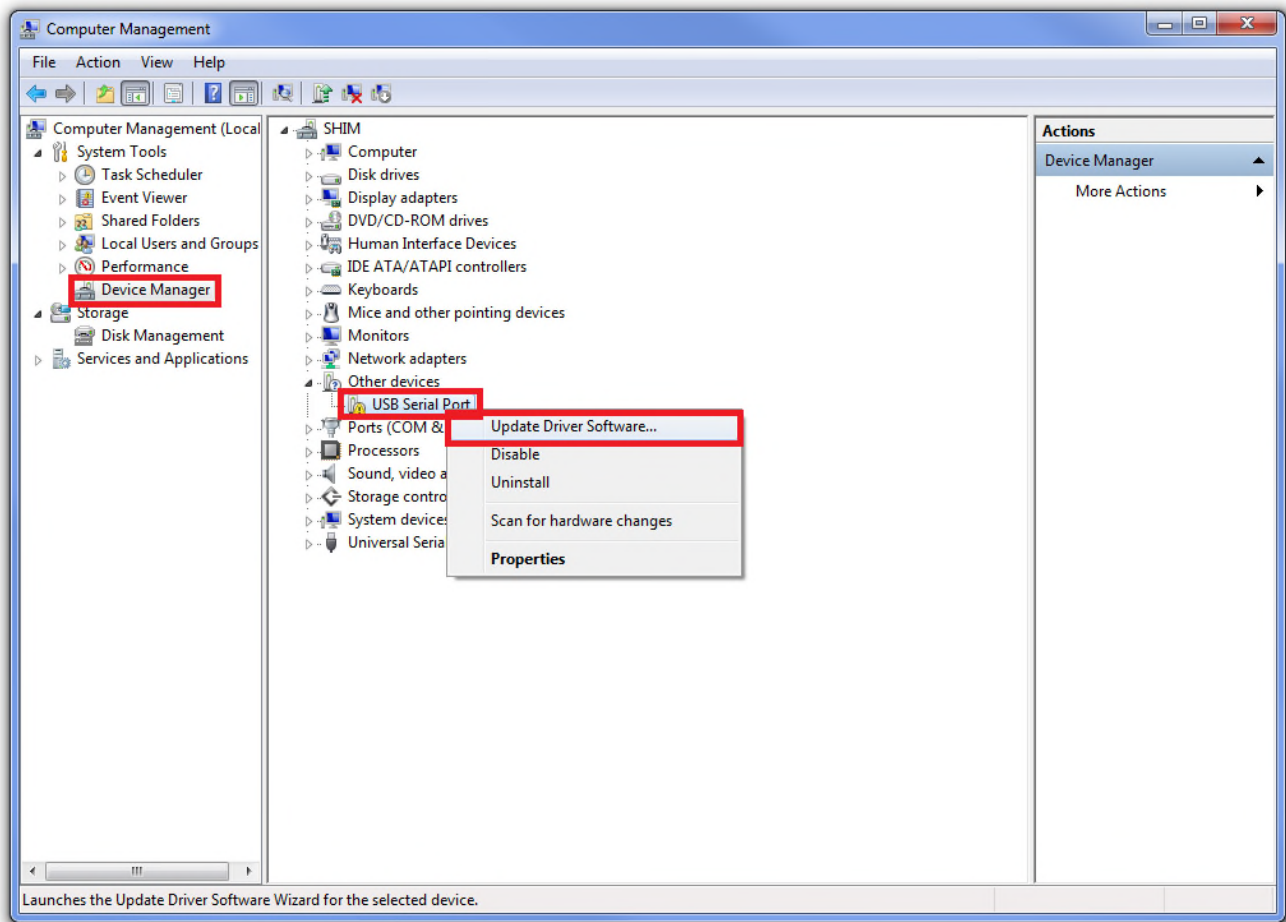

Manual Installation for Driver

Follow below process if driver is not installed automatically.

1. "Right click" of mouse on "My Computer" icon. Then, select "Manage" menu on popup menu.
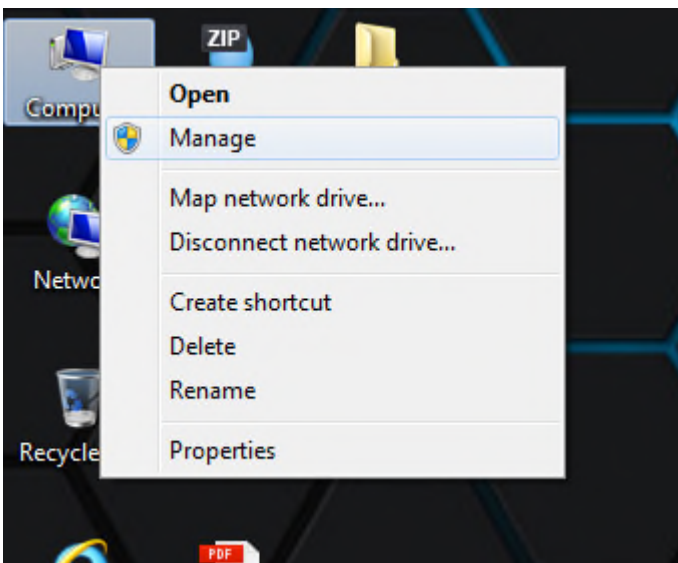
2. Connect IR-USB01 with PC. Then, see "Other devices" menu on Device manager and select USB-SIRIAL PORT. By

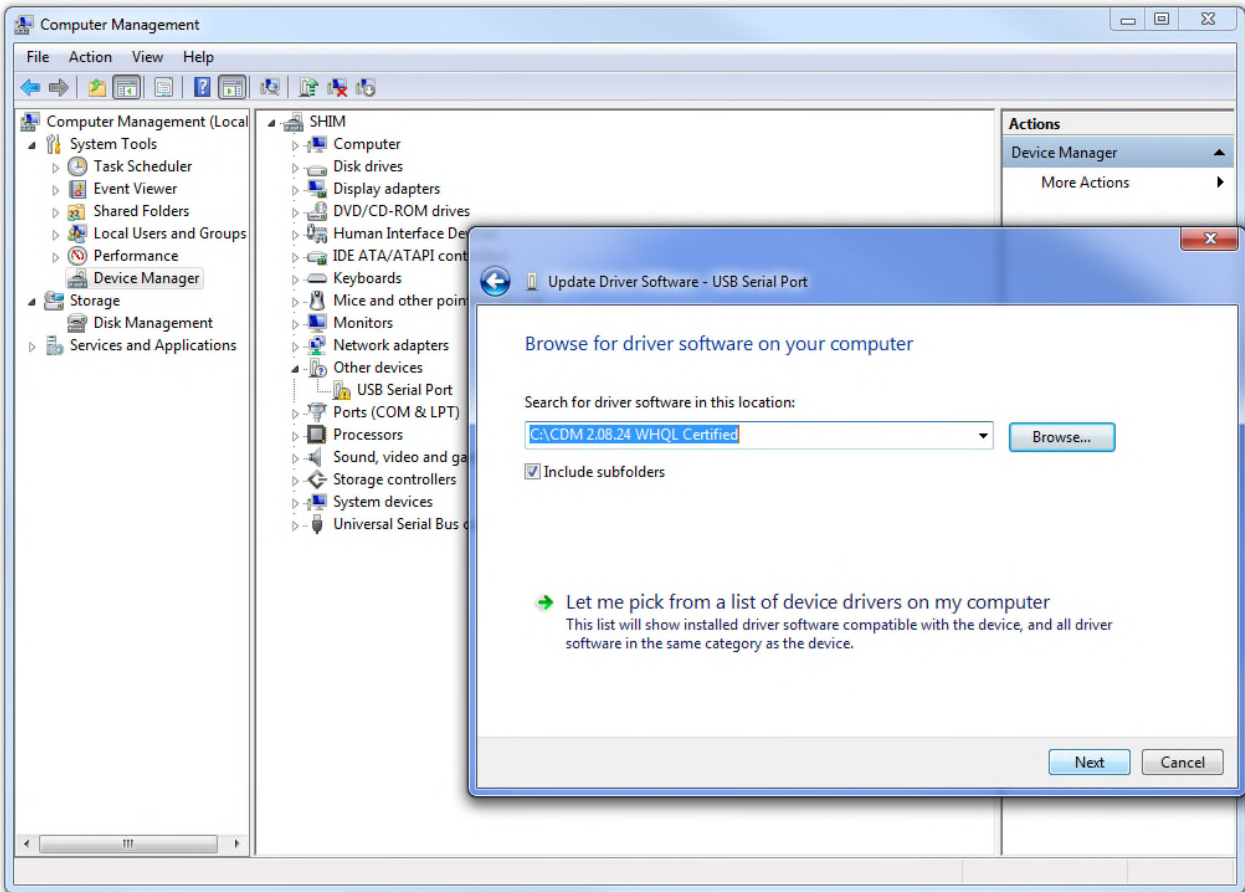   Right clicking of USB-SIRIAL PORT, select "Update Driver Software" menu.

3. Visit FTDI Driver download page at http://www.ftdichip.com/Drivers/VCP.htm to get a driver for each Windows version.
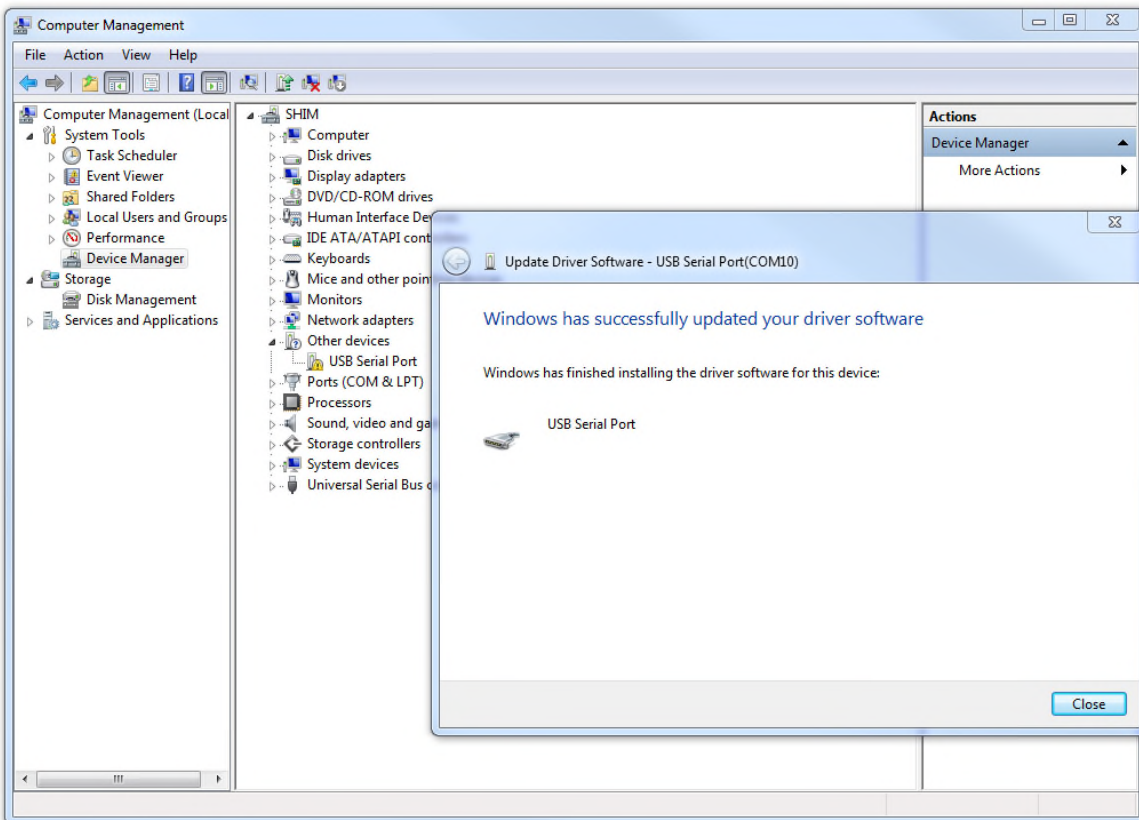
Windows 32bit Driver / Windows 64bit Driver

4. Assign the location of driver.
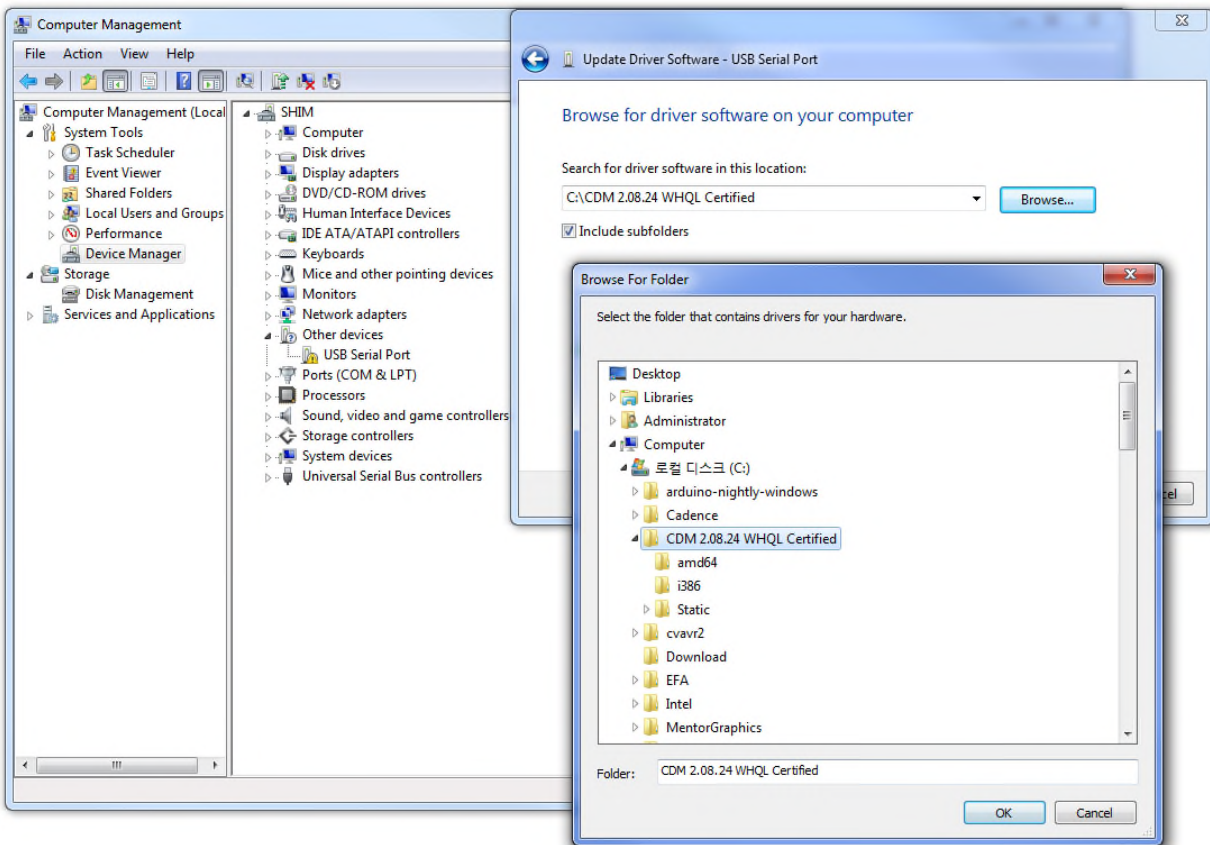
5.Click "Next" button for installation.

6. USB Serial Converter , USB Serial Port drivers are successfully installed.

End.