HMI (39 Series) Development Guide

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1. Environment Setup

1.1 HMI Software Installation

1.1.1 Environment Requirements for Installation

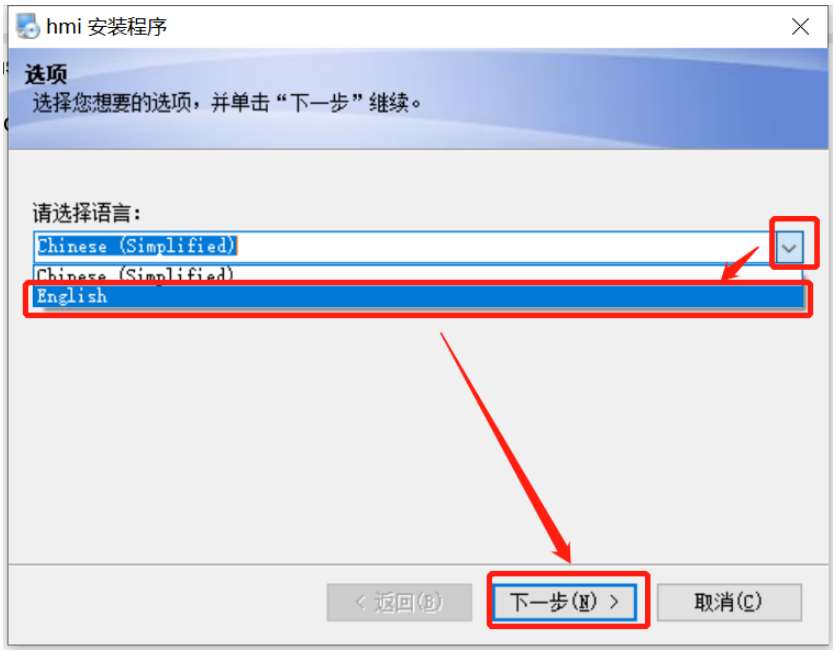
All the following OS are compatible with the software.

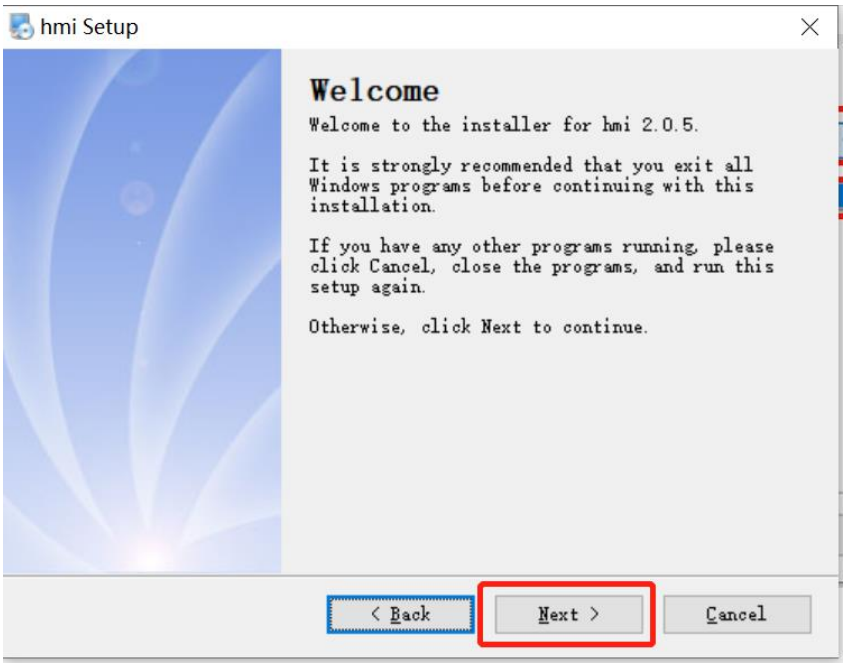
Windows 7 (32bit / 64bit)

Windows 10 (32bit / 64bit)

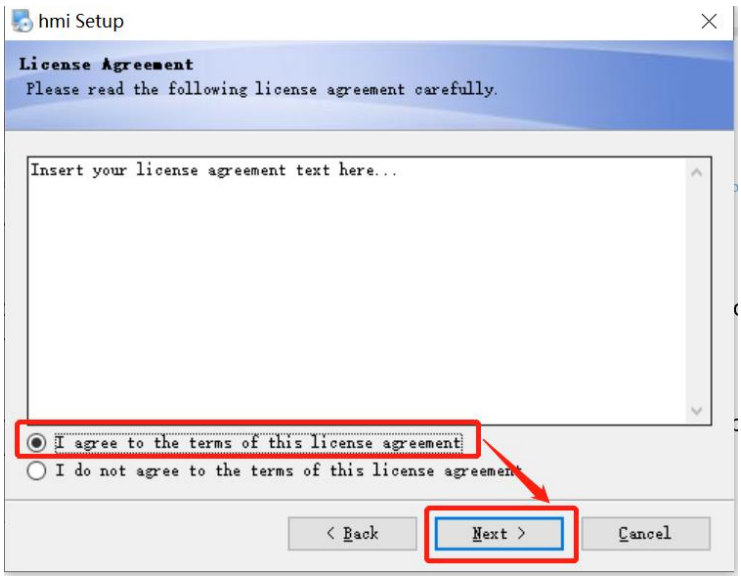
1.1.2 Installation Steps

1) Double click hmi.exe. Select a language and then click [**Next**].

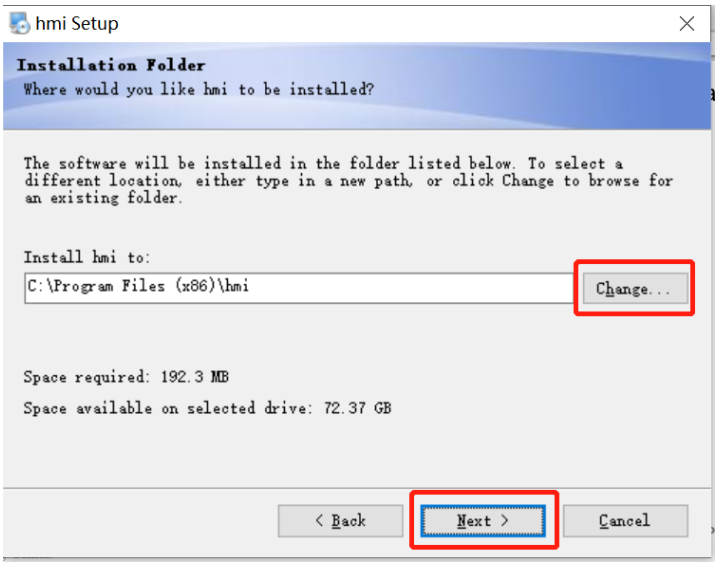




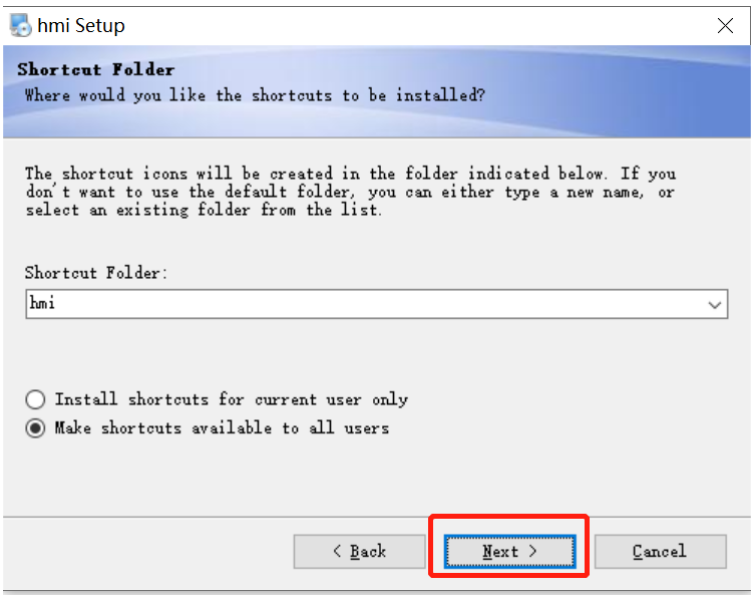
2) Select [**I agree to the terms of this license agreement**] and click [**Next**].



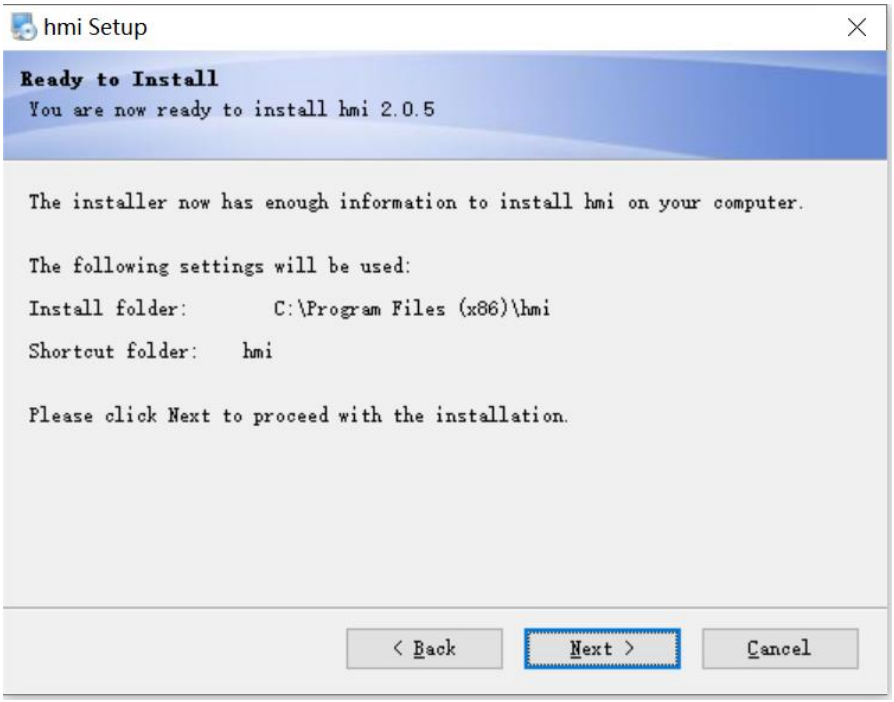
3) Specify the destination directory. and then click [**Next**]. It's not recommended to install the HMI in C drive. Sometimes the HMI will not open if installed in C drive.



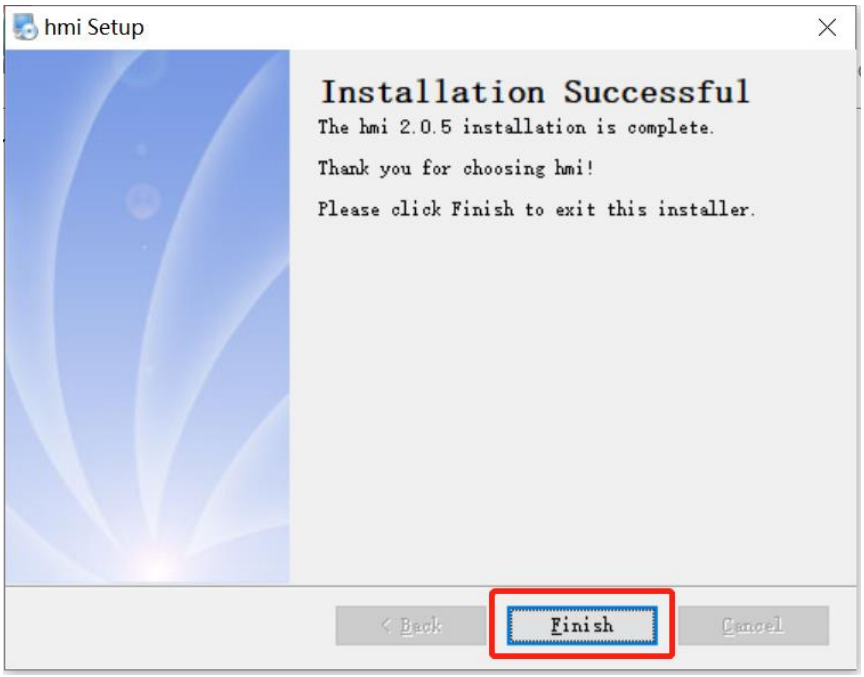
4) select [**Install shortcut for current user only**] or [**Make shortcuts available to all users**] and then click [**Next**]



5) click [**Next**] to start the installation.



6) Click [Finish].



1.2 Development Board Configuration

1.2.1 Terminal Software

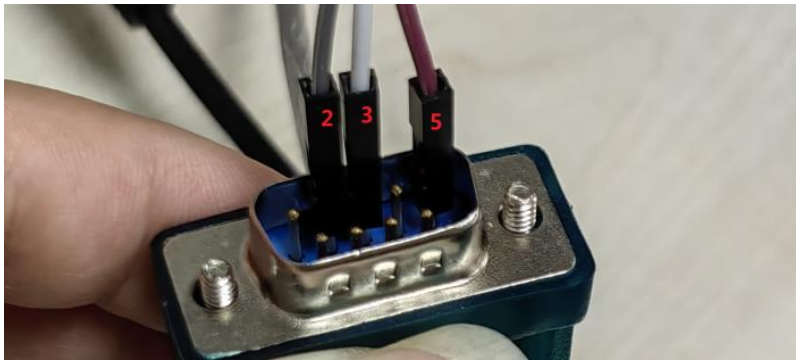
(1) You can download and use either SecureCRT or MobaXterm. This section will introduce the use of MobaXterm.

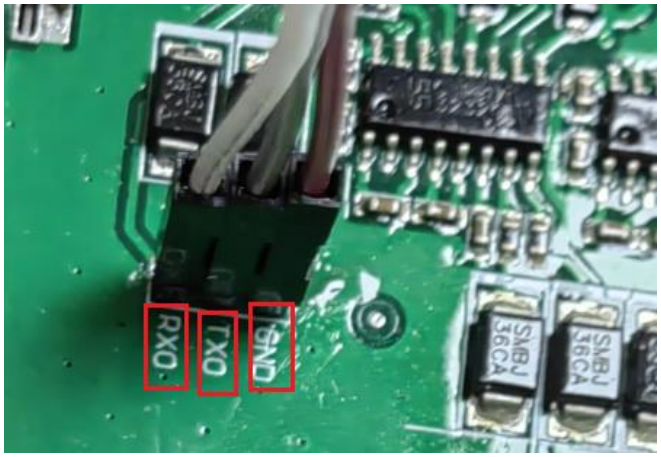
(2) HMI (39 series) can only be connected through Serial (UART 0).

1.2.2 Serial Connection

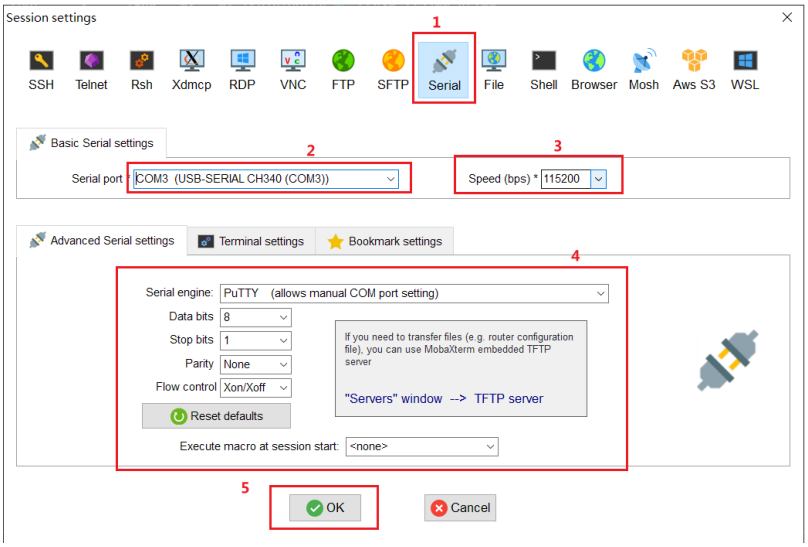
(1) Serial (UART 0) connection. As illustrated in the following pictures, connect No.2 to TX,

No.3 to RX and No.5 to GND.





(2) Open MobaXterm. Select **[Sessions]**-> **[New Session]**. First, select “**serial**”. Next, select **serial port** and select **speed**. Last, check the information and click “**OK**” to finish.



(3) Power up the development board, and the following interface is displayed. Enter “root” to start.

Note: If you operate after a while after powering up, there may be no text on the displayed interface, and only a black screen with no boot information. In this case, you only need to enter “root”.

2. Project Setup

2.1 Download Projects via Ethernet

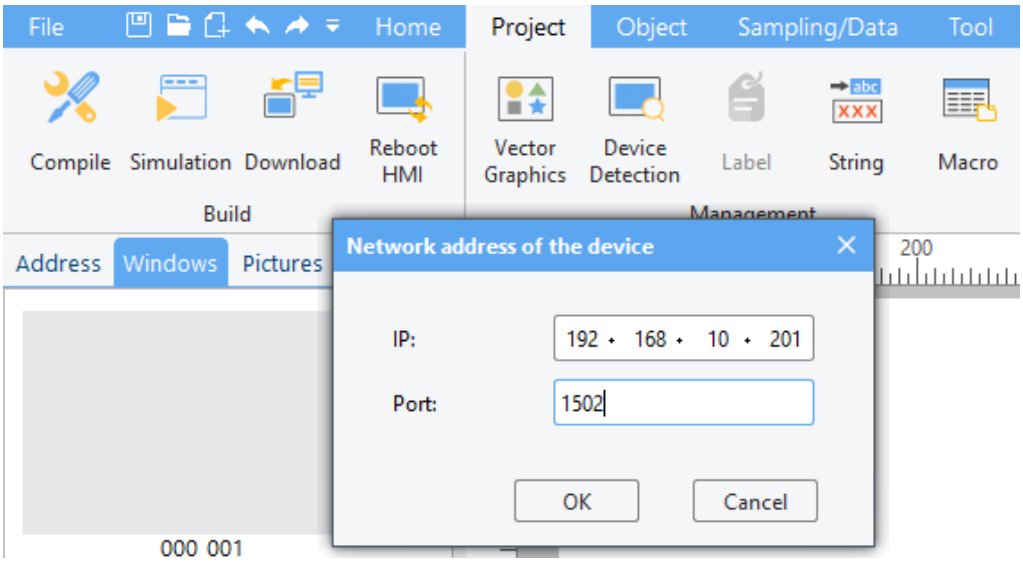
Connect the device to your computer with an Ethernet cable.

Open the HMI software and select the project that you want to download. Click [Project] -> [Download(PC to HMI)]. Set the IP address and com in the pop-up reminder to specify the target device.

The default IP address is 192.168.10.202 or 192.168.10.201 and the default com is 1502.

Click [OK] and the downloading starts.

Note: Please keep the Ethernet cable connected to your computer and power on the device during downloading.



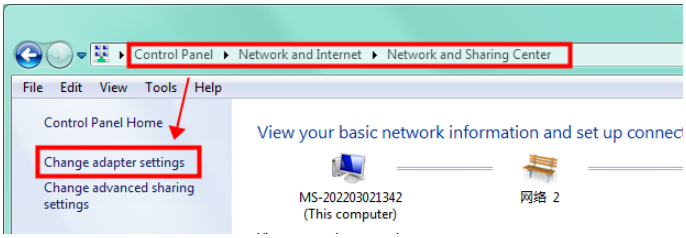
When the HMI software reminds that the downloading is completed, wait for the device to restart automatically. The device will run the downloaded project after the restart.

You can also shut down the device manually after the downloading is completed and power on again. The device will automatically run the downloaded project after startup.

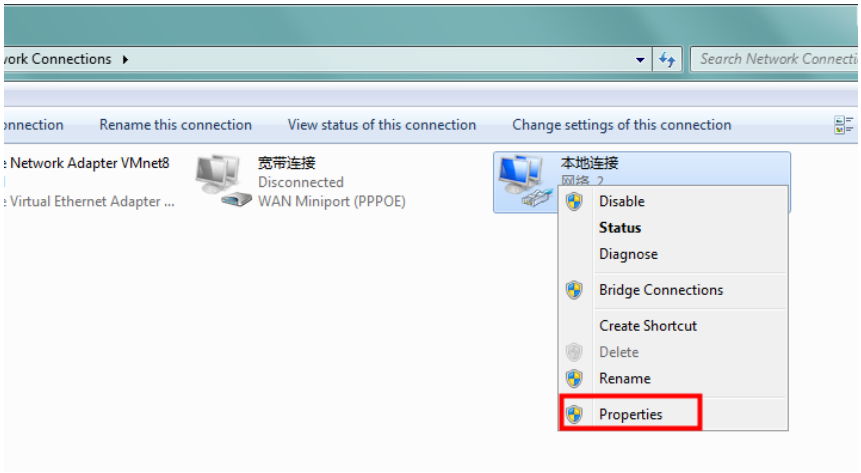
Note: To achieve communication, the IP addresses of the device and the computer should be in the same network segment during downloading.

2.2 IP Address Configuration

(1) Open **control panel** and click on “**Network and Internet**” and then click on “**Network and Sharing Center**”. Click on “**Change adapter settings**”.

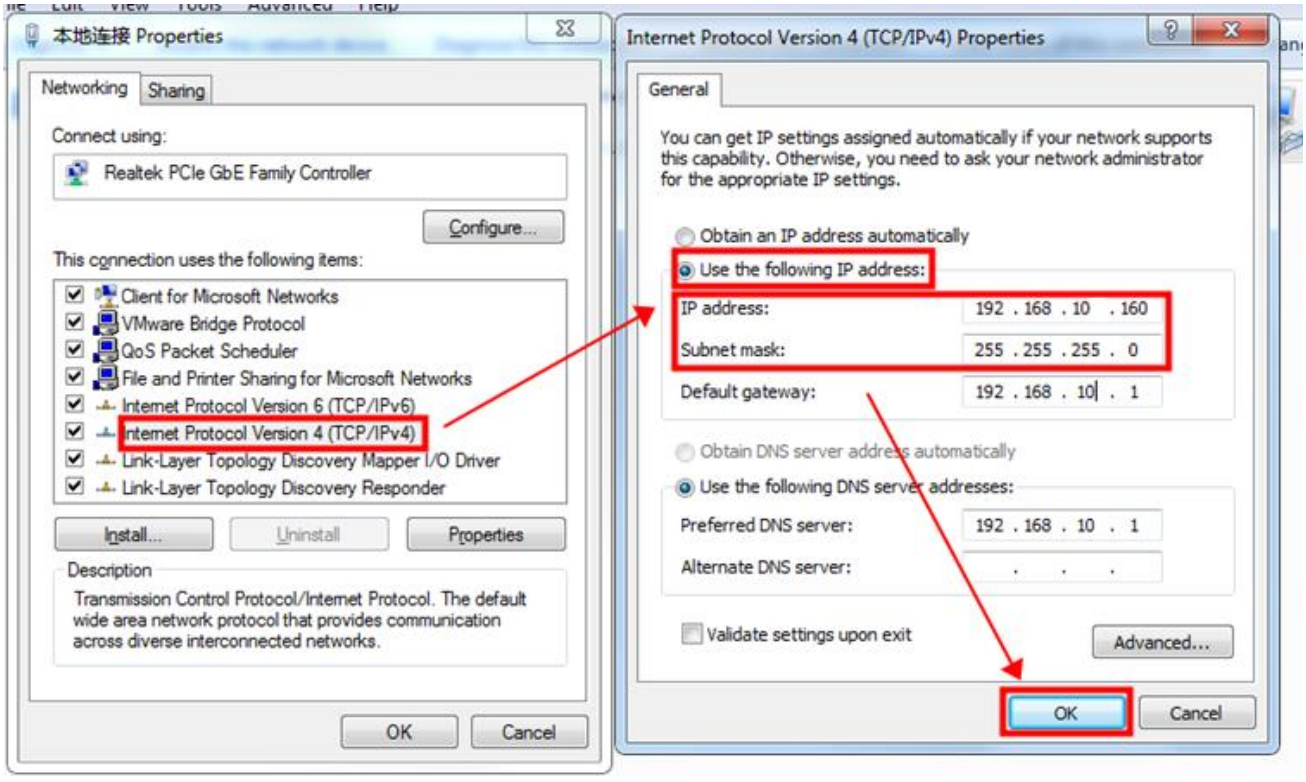


(2) Right-click on the adapter and select “**Properties**”.



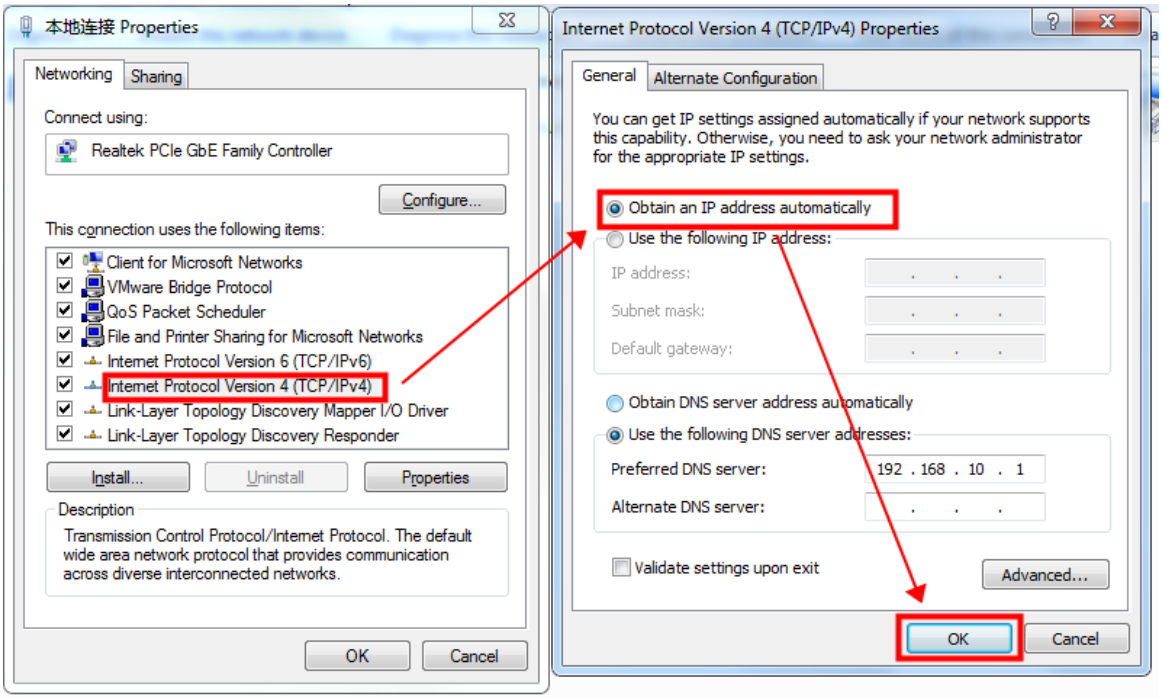
(3) Double-click on “**Internet Protocol Version 4(TCP/IPv4)**”.

(4) Select “**Use the following IP address**” and specify the IP address. The first three numbers should be 192.168.10 to make sure that the computer is in the same network segment as the device. The last number can be filled in 0~255. Do not set it to the same as the IP address of the device. Click the OK button on “Internet Protocol Version 4 (TCP/IPv4) Properties” window, and also click the OK button on “Ethernet Properties” window.



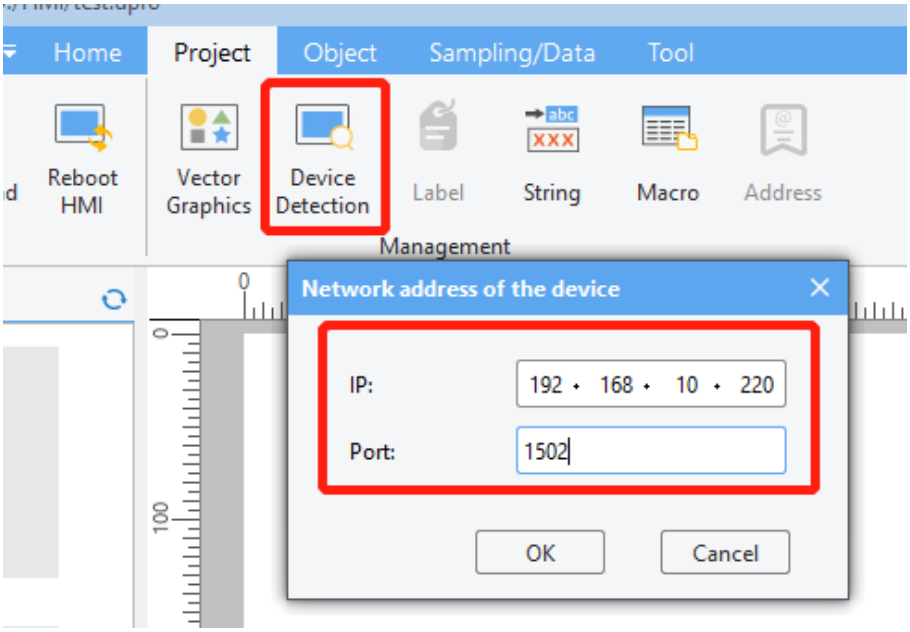
Note: Your computer cannot connect to internet through a cable after changing the IP address to STATIC.

You can set your computer back to DHCP to connect to internet. Repeat steps (1)-(3) again. When you get to the “Internet Protocol Version 4 (TCP/IPv4) Properties” window, click “Obtain an IP address automatically”.

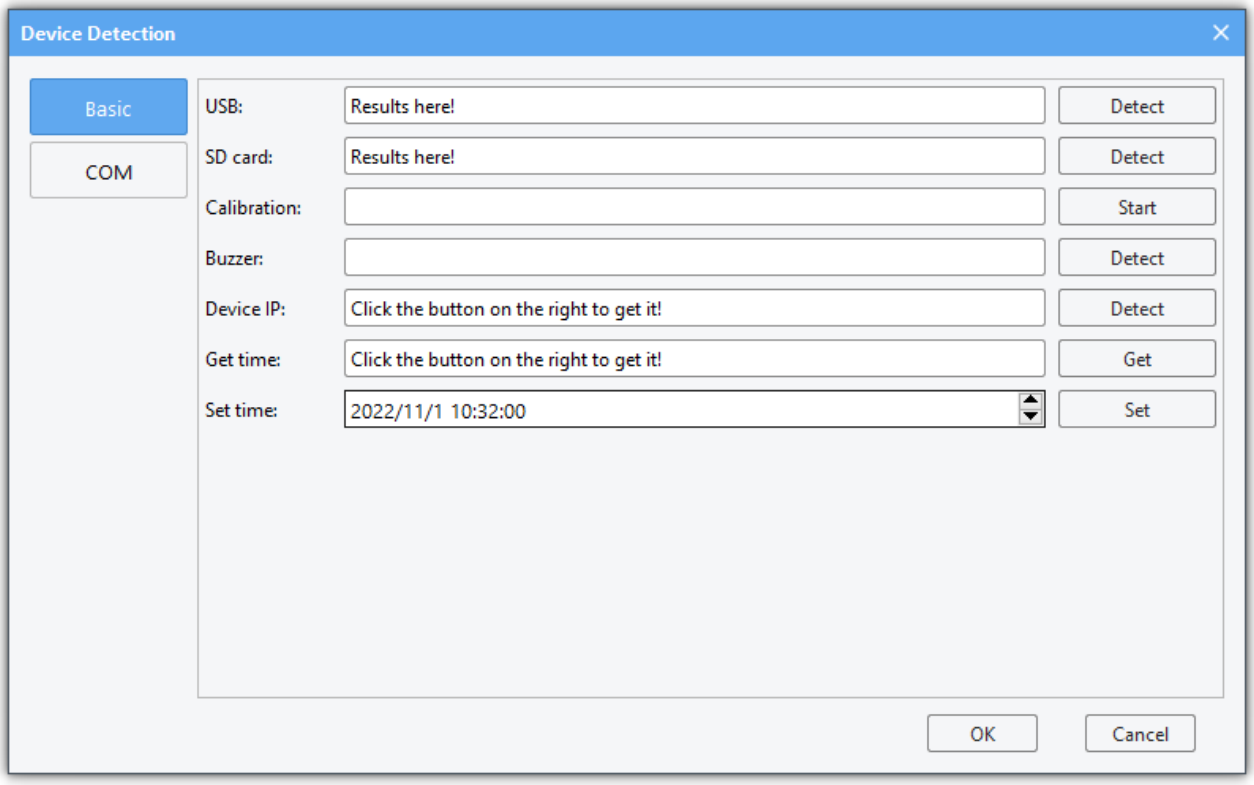


2.3 Check the Communication between the Target Board and the PC

(1) Click [Project] -> [Device Detection]. Specify the IP address and com in the pop-up window. (192.168.10.220 here). Then click **"OK"**.



(2) Click [**Detect**] button on the buzzer. If you hear the beeping sound from the target board, it means that the HMI software and the target board have established a good connection and can communicate normally, otherwise the connection has not been established.

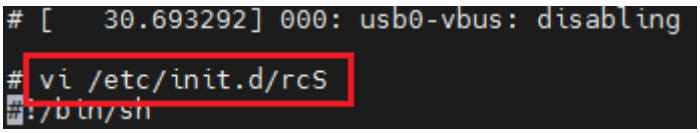


2.4 Change the Startup Types

The program will run automatically after the device is powered on.

If you want to change the startup type from automatic start to manual start, you can follow steps below.

Connect the device to your computer referring to 1.2.3. Enter the command: **vi /etc/init.d/rcS**



Move the cursor to the beginning of "**/etc/init.d/runhmi**" line. Press **i** to enter insert mode. Input "**#**" to comment out this line.

Press **Esc** to exit insert mode and then enter "**: wq**" to save the modification.

```
/etc/init.d/runupdate

#/etc/init.d/runhmi
#/etc/init.d/runqt
/adb.sh
:wq
```

Enter “**reboot**” to restart the device.

```
#/etc/init.d/runhmi
#/etc/init.d/runqt
/adb.sh
"rcS" 66L, 1415C written
# reboot
```

Power on the device. Enter “root” to enter the system. Enter “**freeview**” to run the project.

```
[    2.011436] 001: EXT4-fs (mmcblk0p8): recovery complete
[    2.011477] 001: EXT4-fs (mmcblk0p8): mounted filesystem with ordered data mode. Opts: (null)
# [    3.642463] 000: random: fast init done

#
#
# freeview

before SDL_InitDC(),ff-fe-fd-fc,int=fcfdfeff,BYTEORDER=1234[   25.217837] 001: setting to uart
serial set the ttyS5
```

If you want to change the startup type from manual start to automatic start, Connect the device to your computer referring to 1.2.3. Enter the command “**vi /etc/init.d/rcS**” and then move the cursor to the beginning of “**/etc/init.d/runhmi**” line. Press **i** to enter insert mode. Press “**Backspace**” to delete “**#**”. Press **Esc** to exit insert mode and then enter “**: wq**” to save the modification. Enter “**reboot**” to restart the device.

2.5 Modify Resource

2.5.1 View Project Files

Enter command “**cd /var/setting/hmi/**” to enter the project files category. Enter command “**ls**” to view the contents of the project file.

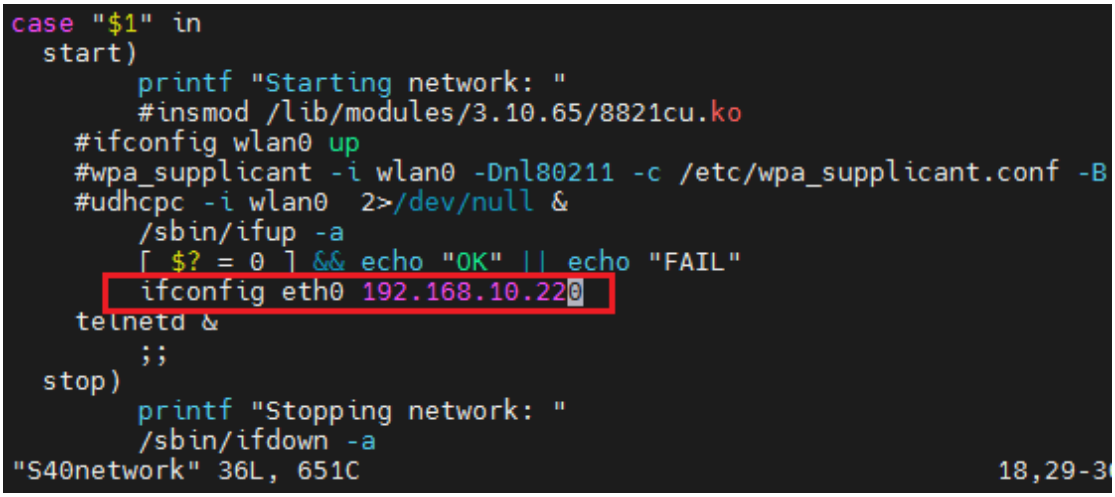
```
000_blank.html           012_no_usb.html          js
001_start.html           013_dlg_analysis.html    language
002_history.html         014_dlg_dont.html        plugin
003_alarm.html           015_test_piechart.html   rdb001.dat
004_rdb.html             016_test_history1.html   recipedef.xml
005_opsave.html          017_test_alarm1.html     regmap_fx3u_232.dat
006_exporthistory.html   018_test_normal.html     resource.xml
007_exporthistoryt.html  adctrl.map               sampledef.xml
008_exporthistoryp.html  alarmdefine.xml          softkb.xml
009_deletehistory.html   devices_node.dat         timerdef.xml
010_export_success.html  eventfile.dat            trigger.xml
011_export_fail.html     images                   usermanager.dat
```

0xx_xxxx.html	Html file of interface corresponding to the number. It cannot be deleted, otherwise the involved interface may appear black screen and the device will be stuck, etc.
adctrl.map	Automatically generated by HMI software for PC

	and cannot be edited.
alarmdefine.xml	Alarm event settings xml
images folder	User-added custom images in HMI software for PC.
js folder	Store JavaScript files.
language folder	Store xml for multi-language configuration. Format: language001.xml(default language)，language00x.xml.....
plugin folder	Store the plug-ins required for project, generally automatically downloaded to the device from the PC and cannot be edited.
recipedef.xml	Recipe database settings xml
resource.xml	Organize HMI system resource structure
sampledef.xml	Data sampling settings xml
softkb.xml	Keyboard related xml, cannot be edited
timerdef.xml	Timer setting xml
trigger.xml	action trigger xml
xxx.dat	Automatically generated by HMI software for PC, cannot be edited.

2.5.2 IP Address Modification

Enter command “vi /etc/init.d/netconfig” to open IP address settings file. Modify “ifconfig eth0 xxx.xxx.xxx.xxx” line. Press Esc and save the modification. Enter “reboot” to restart the device. The IP address is modified successfully.



Revision Records

Rev	Revise Date	Content	Editor
00	2022-12-05	First Edition	Lvzhi Chen