

CITIZEN

Windows Driver Installation Guide

For Ver3.6xx

CITIZEN SYSTEMS JAPAN CO., LTD.

Index

Index.....	- 1 -
Revision history (3.xx/2.xx).....	- 2 -
1. Operating systems.....	- 5 -
2. Supported interfaces (Ports)	- 5 -
3. Driver installation.....	- 7 -
3.1 Outline of driver installation	- 7 -
3.2 Advance preparation	- 7 -
3.2.1 Common preparations (Memory Switches)	- 7 -
3.2.2 USB (Printer class).....	- 7 -
3.2.3 Parallel interface (LPT port)	- 7 -
3.2.4 Serial interface (Serial port, COM port)	- 8 -
3.2.5 USB Virtual COM.....	- 8 -
3.2.6 Wired LAN / Wireless LAN (TCP/IP)	- 8 -
3.2.7 Bluetooth.....	- 8 -
3.3 Running the driver installer	- 15 -
3.3.1 Up to Port Selection”	- 15 -
3.3.2 Port selection	- 16 -
3.3.3 After Port Selection	- 19 -
3.4 Post-processing (Connecting printer and PC).....	- 21 -
3.5 Additional driver installation	- 24 -
3.6 Addition of COM port and TCP/IP port	- 25 -
3.7 Remarks for installation and uninstallation.....	- 26 -
4. Uninstallation.....	- 27 -

Revision history (3.xx/2.xx)

Date	Version	Details
2009/06/25	V2.00	Issued
2009/10/29	V2.01	Added CT-S601
2009/12/15	V2.02	Windows7 is supported Installer is changed. (Status function is supported on all the drivers.) Explanation for CITIZEN COM port is added. Explanation for Additional driver function is added.
2010/5/20	V2.02 (Modified)	CT-S651/851 are added.
2010/5/27	V2.23	Version number is changed to same version as driver itself. Status monitor is updated to Ver2.2.4.0. Online/Offline can be detected correctly. USB data transfer time out value of language monitor is changed to 8 seconds to avoid the communication error caused by bi-directional communication via USB on Windows7. (32-bit)/(64-bit) are added to File Description of DLLs. Windows7 device icon for CT-S60,651,801 and 851 are added.
2010/11/25	V2.24	Ethernet is added for supported interface POS Printer Utility is updated to Ver1.8.3 (Wrong setting values are corrected.) Status Monitor Library is updated to Ver1.3.1 (The time to get status is shortened.)
2011/4/13	V2.25/1.660	CT-S310II driver is added. 2-dimensional barcode fonts are added. "Label/BM" function is changed to "Paper Media" function. "Cutter Mode" is refined to support Label/BM paper cutter mode. "Paper Feed" function is newly added for the adjustment of paper feeding before the cut. File sender garbage character problem is fixed. Changes to show/hide buttons and tabs are added. Status monitor is updated to Ver2.2.5.2 for minor changes. POS Printer Utility is updated to 2.0 and is excluded from driver installer. Document for Ver1.660 is integrated.
2012/6/15		Explanation about TCP/IP port is added.
2013/3/1	V2.27/1.680	Windows8 is supported. Version dialog function is added. The problem of cutting in the middle of watermark is fixed. The problem of reprint and coupon print from client PC to shared printer is fixed. Status monitor is updated to 2.2.5.3. Win8/Win Server2012 are supported. Log file function is improved. Setting to accept/reject Offline status is added. Setting to enable/disable notification of printing completion is added. Status inquiry command sequence for each interface except parallel is changed. Unit of status monitor setting is changed from driver base to model base. Driver port setting tool is updated.
2013/7/22	V2.28/V1.690	Installation failure on non-English Windows is fixed. Problem to get printer status with LAN/WLAN is fixed. Problem of PMU2xxxIII presenter status is fixed. "X" mark is removed from the icon for software un-installation list
2014/1/21	V2.281/1.691	Support of CT-S281BD is added.
2015/3/9	V3.1xx/V2.28x/V1.69x	Ver 3.xx driver is added. CT-S251/ CT-S8xx (II)/CT-S6xx (II) are added. CT-S2000 is removed from target OS.
2015/08/20	V3.200	Windows10 is supported. 1.xx/2xx drivers are integrated to 3.xx by having function to enable/disable "Driver Advanced Functions".
2016/2/12		The base of explanation is changed Windows7 from Windows Vista. Explanation of CITIZEN TCP/IP Port Monitor is added.
2017/3/1	V3.3.00	Installer is improved to have less trouble during installing. Stream of installation is improved. Time for installation is shorter and file size is smaller. Related tool is installed/uninstalled together with the driver. Even printer is connected via USB, final installation can be done by power recycle of printer. TCP/IP port monitor installed together. Status function for LAN interface is improved not to have offline status easily.

		<p>Driver itself has function of settings like port time out which was done by external tool.</p> <p>Added CT-D150/151/E351/651 support</p> <p>New standard is applied for CT-D150/151/S351/651 page size.</p>
2018/7/17	V3.4.0.0	<p>There is no change in the driver body.</p> <p>The status acquisition method by SNMP can be selected.</p> <p>Improved handling when Bluetooth connection is broken.</p> <p>The installation procedure has been slightly improved</p>
2018/12/28		Added CT-S751 support.
2019/3/15	V3.5.0.0	<p>Added CT-S4500</p> <p>ETW is implemented for deeper analysis at the trouble.</p> <p>Descriptions about 1.6 driver are deleted.</p>
2020/11/17	V3.6.0.0	<p>Install Guide is significantly revised.</p> <p>Added the function of "Automatic reprinting on error".</p> <p>Added "Package-Aware" function which solves various remote driver installation problems</p> <p>Added support for CT-E601/CT-D101</p> <p>Fixed a bug that prevented the combination of standard TCP/IP port and status driver from causing an exception error.</p> <p>Fixed a bug that prevented the status function of (Copy 1) driver from being enabled immediately after PnP.</p>

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- (3) We tried to ensure the content of this document but if you find any mistakes, please let us know.
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What is covered in this document

Depending on your application, printer specifications, and the paper (media) you are using, you may need to make additional settings after installation is complete, but this document describes only steps to the end of installation. For additional settings, please refer to another document "Windows Driver Specifications (Functions, Settings and Specifications)".

This document assumes that you are installing our drivers for the first time. If you have already installed our drivers on your PC, please uninstall the drivers in advance. And do not install an older version driver than uninstalled one.

Windows 10 offers two types of configuration screens, traditional and newer, but this document uses the traditional configuration screen as much as possible to illustrate it so that even pre-10 Windows can understand it.

1. Operating systems

Our drivers are designed to work on any of following operating systems.

- Microsoft Windows XP
- Microsoft Windows Vista
- Microsoft Windows 7
- Microsoft Windows 8, 8.1
- Microsoft Windows 10
- Derived OS from the above such as Server OS

2. Supported interfaces (Ports)

Supported interfaces(ports) are as follows.

- Serial / CITIZEN COM / COM generated by Bluetooth SPP connection
- Parallel (LPT)
- USB (Printer Class)
- USB Virtual COM (VCOM)
- LAN or Wireless LAN / CITIZEN TCP/IP

As for USB, there are two types of USB, depending on the printer's settings: printer class (default mode of USB for normal printers) or USB virtual COM. Normally, printer class is used, but if your PC does not have serial port and your application only supports printing from serial port, you need to use virtual COM.

Caution

USB Virtual COM (Driver)

If you use USB Virtual COM mode, it is necessary to install USB virtual COM driver separately.

This document does not describe how to install the virtual COM driver. Please refer to the VCOM Driver Guide.

CT-S280's USB supports only virtual COM and has a dedicated installer.

CITIZEN COM (Port Monitor)

Use "CITIZEN COM" if you want to monitor the status of the printer connected via the serial interface. CITIZEN COM is described in this document.

CITIZEN TCP/IP (Port Monitor)

Use "CITIZEN TCP/IP" if you want to monitor the status of the printer connected via LAN or wireless LAN interface. CITIZEN TCP/IP is described in this document.

If multiple PCs connect to a printer through LAN or wireless LAN and one of the PC is turned off without terminating LAN connection, the printer will check the communication between the PC and the printer and then terminate the LAN connection. During checking the communication, printer stops any communication with other PCs. (Max. 180 sec.)

3. Driver installation

3.1 Outline of driver installation

The process of installing the driver can be roughly divided into three parts: **"Advance preparation"**, **"Running the driver installer"** and **"post-processing"**. Advance preparation and "Selection of the port" in "Running the driver installer" is particularly important, and what to be done in the steps varies depending on the type of interface. For this reason, we will explain the procedures and other information for each interface where there are differences.

3.2 Advance preparation

In addition to the connection between the PC and the printer, there are two types of preparations that must be made in advance: one for the PC and one for the printer.

3.2.1 Common preparations (Memory Switches)

Our printers have memory switches that store the settings.

When using the driver, there is almost no problem with the factory default memory switch settings, but it is recommended to set as follows for correct status acquisition and Bluetooth communication.

(Old model may not have some of the memory switches.)

For the method of changing each switch, it is recommended to use the POS Printer Utility.

MSW No.	Function	Setting	Description (meaning)	Factory default
1-3	Busy condition	ON	Full	Full/Err
5-3	USB Mode	ON	Printer Class (USB mode for printer)	Printer Class
		OFF	Virtual COM (Setting to use the USB port as a serial port)	
6-1	Act. for Driver	OFF	Invalid	On (Valid)
13-6	Auto Reconnect (Bluetooth model)	Invalid-	(Printer does not request Auto Reconnect.)	Valid

3.2.2 USB (Printer class)

1) The memory switch "MSW5-3 USB Mode" should be set for "Printer Class", but as this is the default setting on almost all the models, changing this memory switch is not required. The exceptions are CT-P29x and CT-S280. (Printer Class cannot be selected on CT-S280.)

2) Connecting PC and printer at the time of this preparation is recommended.

3) Make sure the power is off at this point, as it will be turned on in post-processing.

3.2.3 Parallel interface (LPT port)

1) At the time of this preparation, it is recommended that PC and printer are connected.

2) Make sure the power is off at this point, as it will be turned on in post-processing.

3.2.4 Serial interface (Serial port, COM port)

1) The serial port settings of printer and PC must be same. Check the settings of each.

If you want to adjust the printer's serial port settings to match the PC's, you need to use the utility or DIP switches to change the settings. Refer to the printer or utility manual for details.

If you want to match the Windows side serial port settings to the printer, there are situations that can be configured during the driver installation and are described in section 3.3.2.

2) Connecting PC and printer at the time of this preparation is recommended.

3) It is recommended that the power is on at this point.

3.2.5 USB Virtual COM

1) Make sure you need to use the USB as a virtual COM.

2) Set the printer memory switch "MSW5-3 USB mode" to VCOM. (Excluding CT-S280)

3) Install the USB Virtual COM (VCOM) driver on PC. This allows to use the USB port as a virtual serial port. The COM port number depends on the model you are using and the type of VCOM driver. For details, refer to the VCOM driver manual.

4) For virtual serial ports, the PC and printer do not need to have the same port settings.

3.2.6 Wired LAN / Wireless LAN (TCP/IP)

If necessary, connect the cables and configure the wireless and network settings, then let the printer join the network.

There are two ways to configure the network: using a utility or accessing the configuration screen from browser. For more information, please refer to the printer or network board instructions.

3.2.7 Bluetooth

Windows treats Bluetooth as a serial port (virtual COM port), but requires the following preparations in advance.

A) Bluetooth pairing between PC and printer

B) Checking COM port number assigned to Bluetooth printer

C) Advance preparations required by the printer

D) Other items that require attention for Bluetooth on Windows

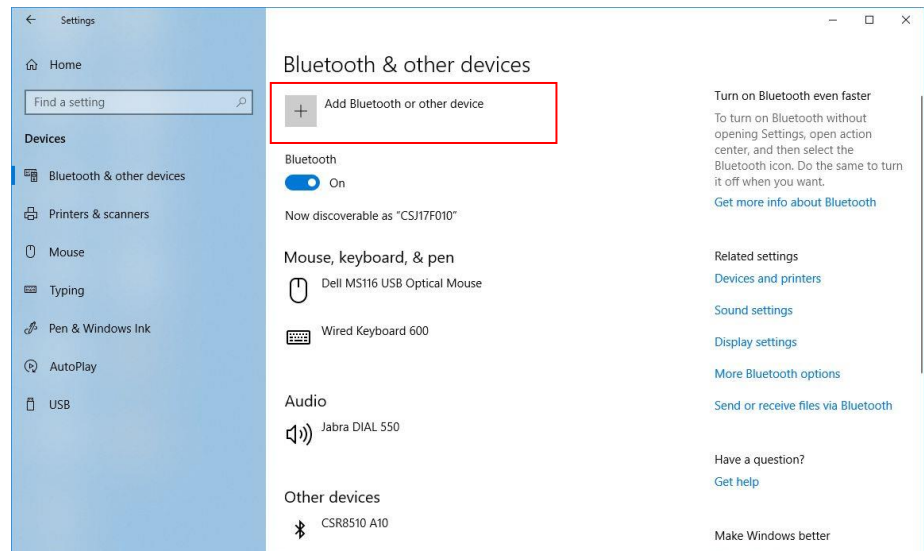
Each of these items is described below.

A) Bluetooth pairing between PC and printer in advance

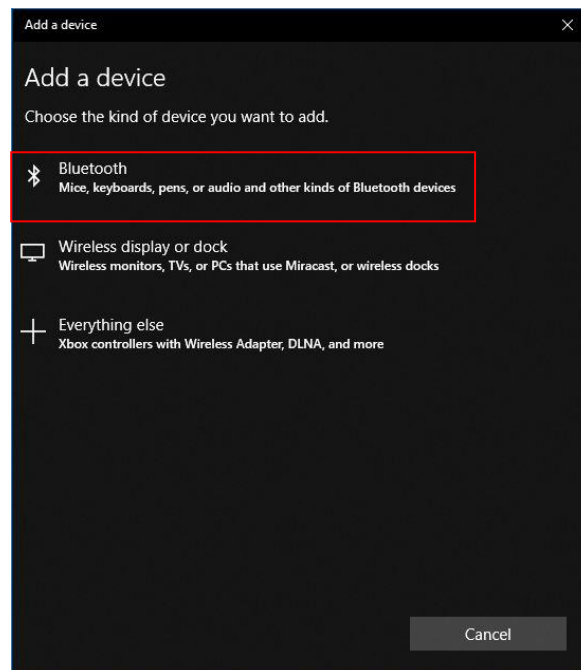
Before using Bluetooth devices, pairing is required.

The following are the steps for pairing on Windows 10.

"Settings"-> "Devices" -> "Bluetooth & other devices". When the screen on the right appears, select "Add Bluetooth or other device".



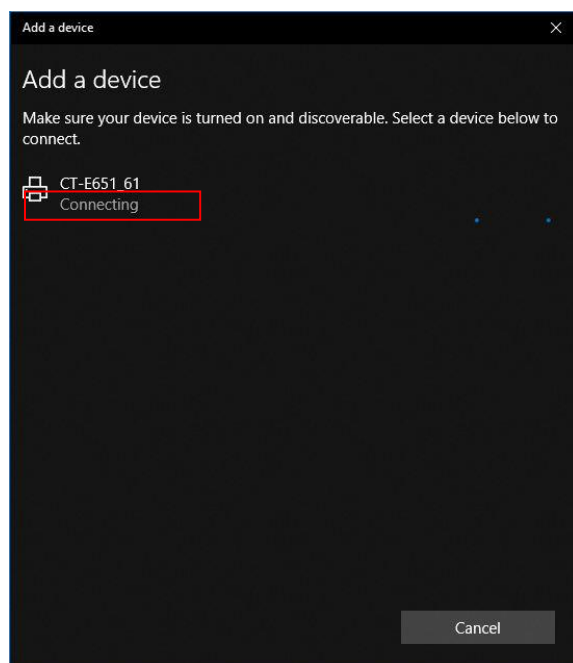
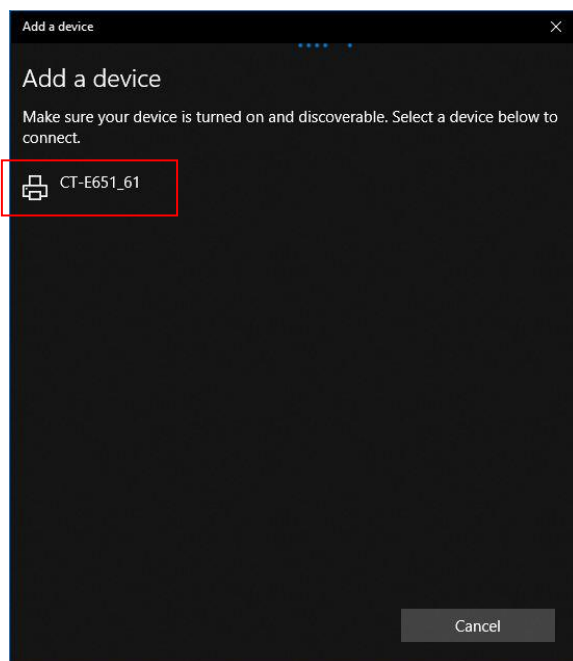
The screen on the right will appear. Select "Bluetooth".



The devices found by Bluetooth search will be displayed. When the printer is displayed, select it.

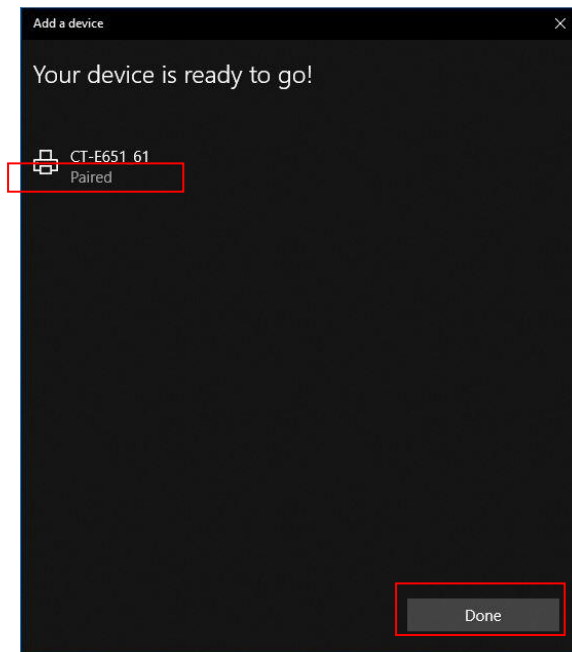
(In some cases, you may be asked to enter the PIN code here. The PIN code is the last 4 digits of the Bluetooth BD address. Please confirm the BD address in advance by self-printing.)

Then "connecting" is shown.



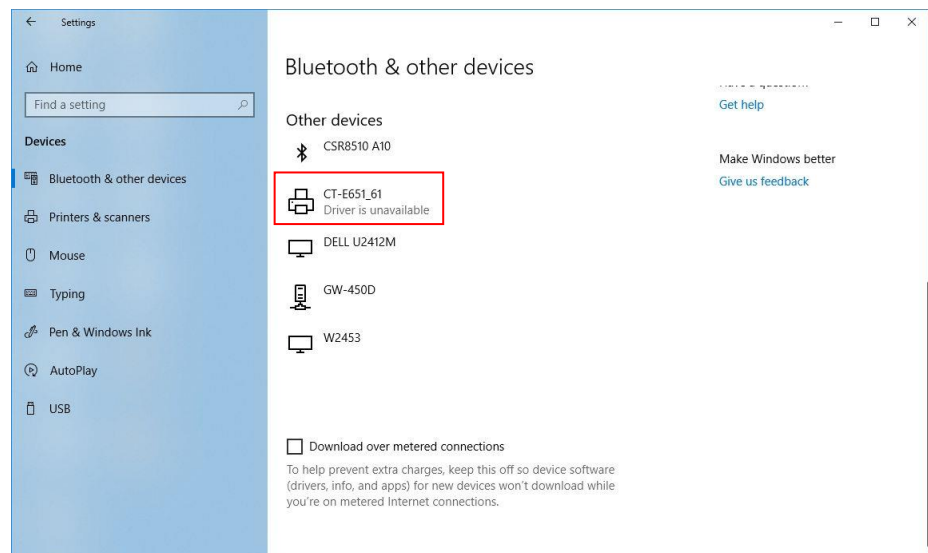
"Paired" is displayed.
(Some models require manual pairing.)

Press "Done".



Return to the "Bluetooth and other devices" screen.
Check that the selected printer is displayed in "Other devices"

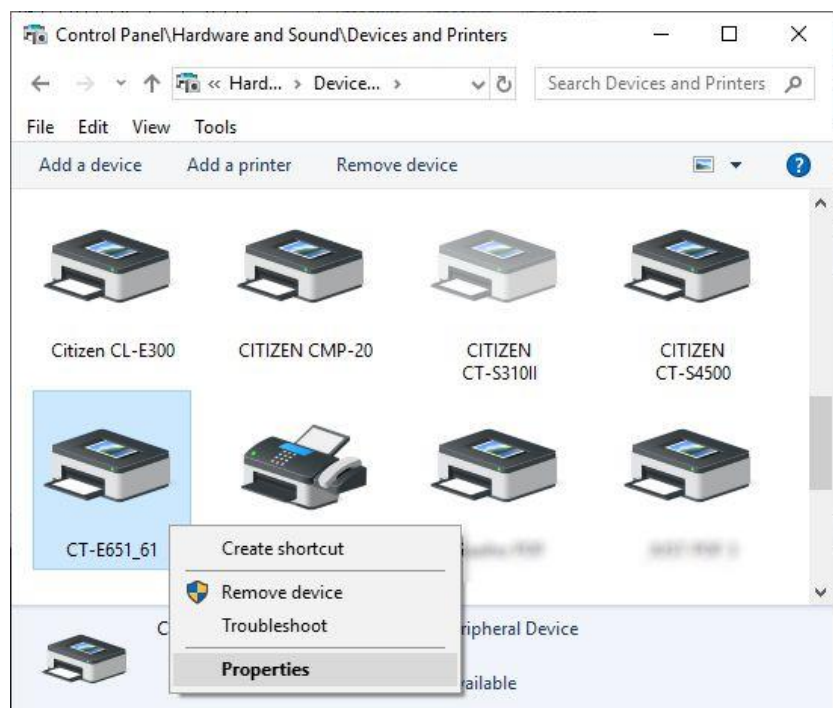
The message "Driver is unavailable" is displayed.



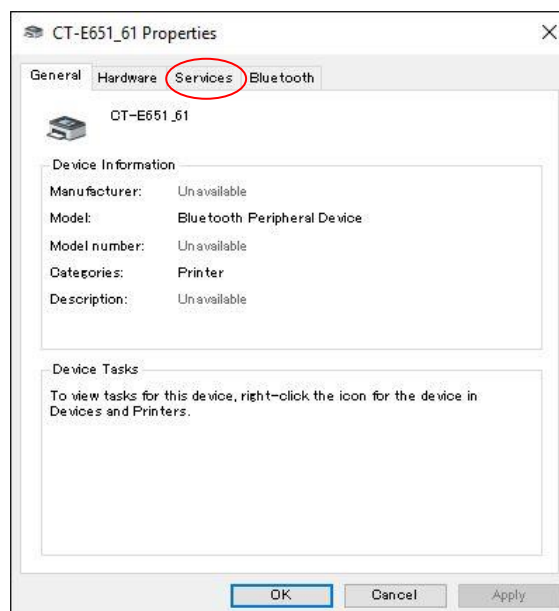
B) Checking COM port number assigned to Bluetooth printer

Since Bluetooth is treated as a COM port on Windows, it is necessary to specify the COM port number assigned to Bluetooth during the driver installation process, and you need to verify that COM port number before you start installing the driver. The following are the steps to follow.

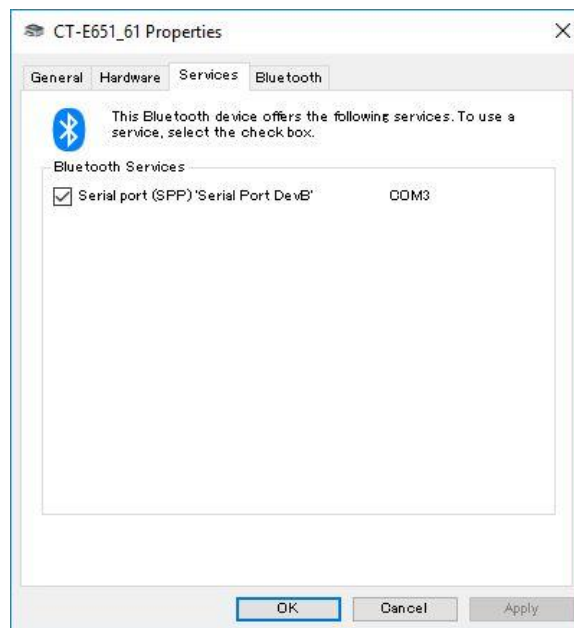
Right-click on the icon in the "Devices and Printers" screen and select "Properties". (The icon appears here indicates tht the printer's Bluetooth is recognized. It is not a driver for printing.)



When the screen on the right comes up, select the "Services" tag.



You will see a screen like the one on the right, and in this example, you can confirm that "COM3" is assigned.



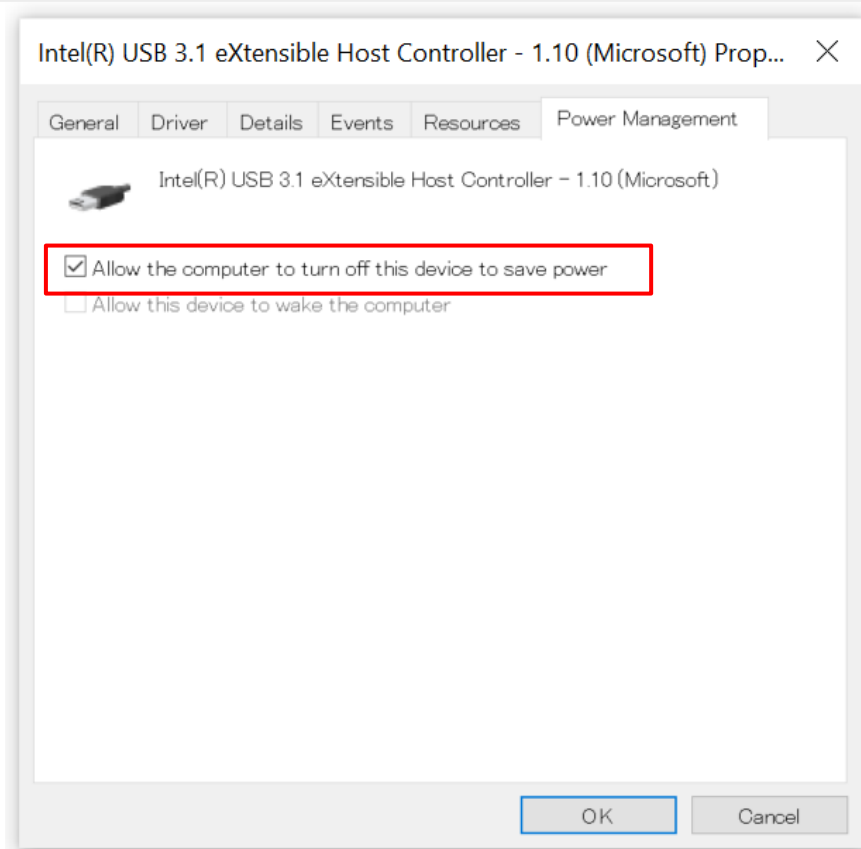
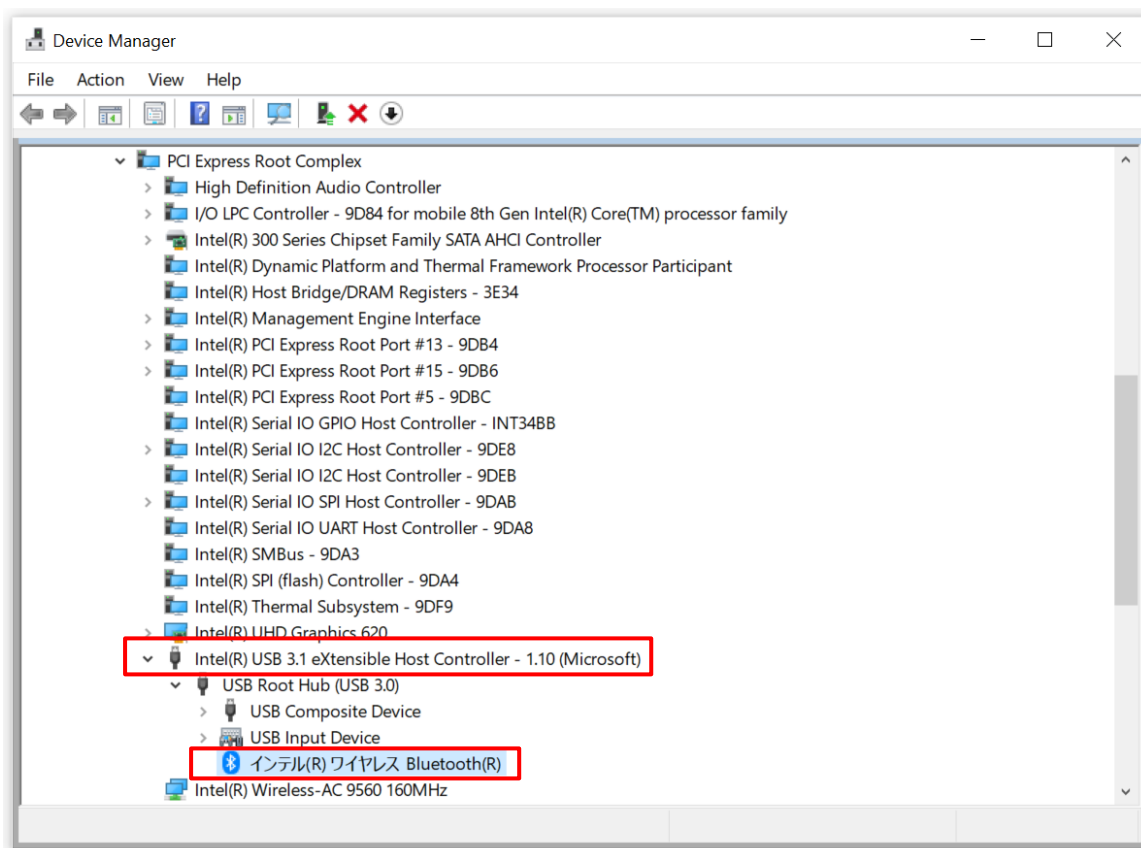
C) Advance preparations required by the printer

It is recommended that the printer's memory switch "MSW13-6 Auto Reconnect" is set to "Invalid". The "Auto Reconnect" is only a feature for iOS and should be disabled for stable Bluetooth communication with Windows. The printer provides an easy way to disable "Auto Reconnect" manually. For more information, refer to the user's manual.

D) Other items that require attention for Bluetooth on Windows

Since Bluetooth communication is slow, it takes longer and is more susceptible to communication problems when printing large amounts of data, such as graphic printing. It is recommended to use the printer's built-in fonts to reduce the amount of data as much as possible.

- If the Bluetooth connection is unintentionally disconnected and you suspect it is related to the power saving feature of Windows, check the Bluetooth adapter in Windows Device Manager or the controller etc. that the Bluetooth adapter is connected to. If "Allow the computer to turn off this device to save power" is checked, it is recommended to uncheck it.



3.3 Running the driver installer

The following explains the installation of CITIZEN CT-S801II on Windows 10 as an example.

Since the "Port Selection" part is important, we will divide it into "Up to Port Selection", "Port Selection" and "After Port Selection".

This installer proceeds with the installation procedure in a wizard format. Although there are some differences depending on the operating system (OS), it is almost the same procedure.

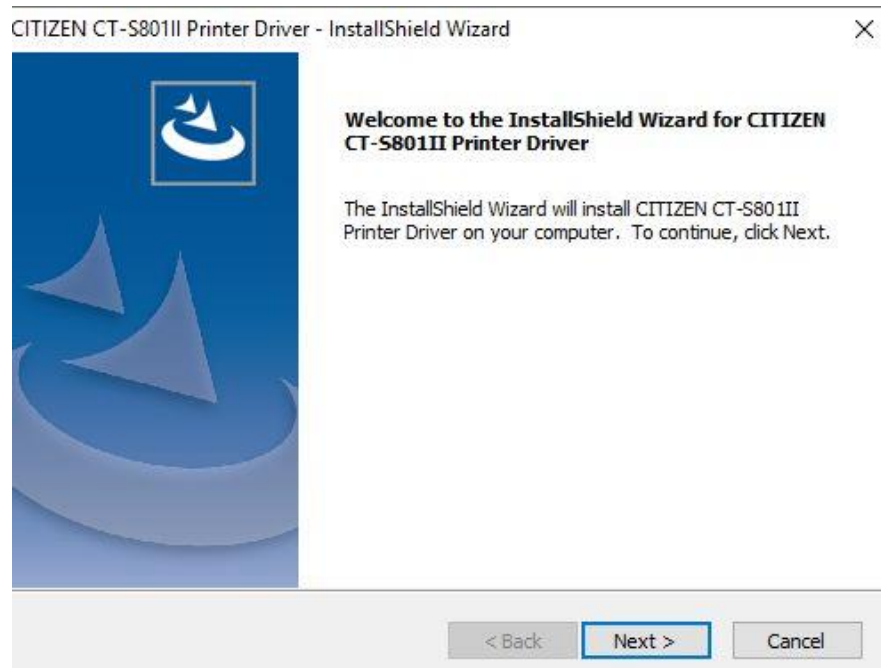
3.3.1 Up to Port Selection"

This installation software installs printer driver and the tools automatically.

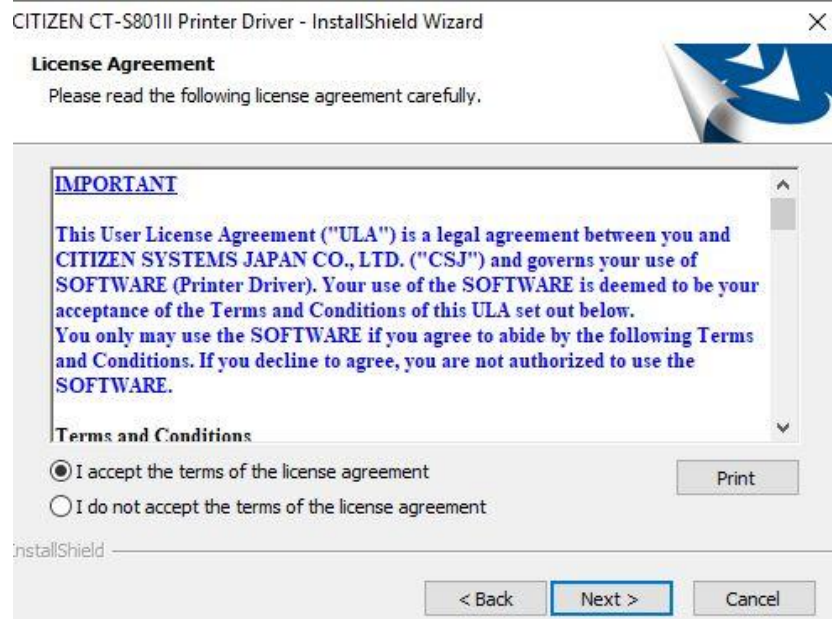
Run installer such as "cts801ii_lm_v3000.exe".

Then "User Account Control" dialogue shows up. Then press "Continue".

Press "Next".

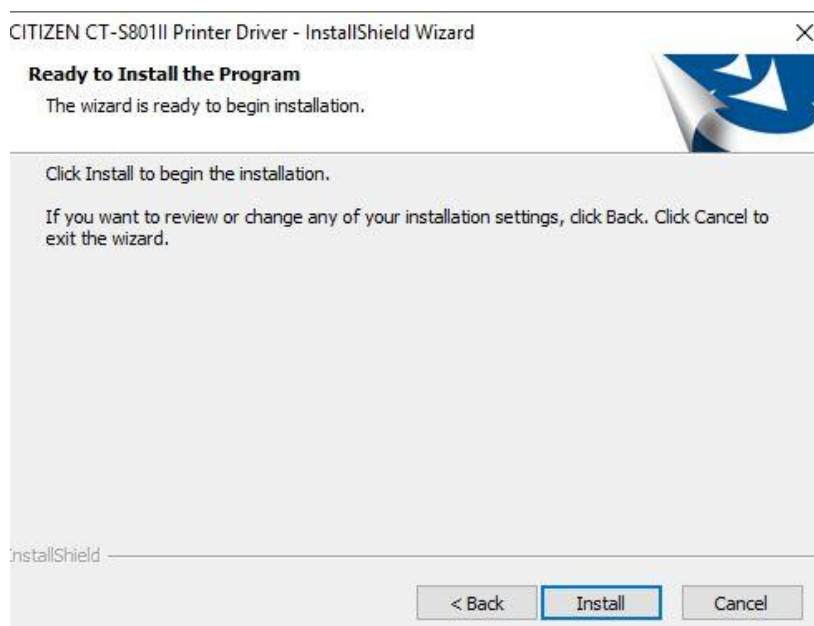


Choose "I accept the terms of the license agreement" and press "Next".



Press "Install" here.

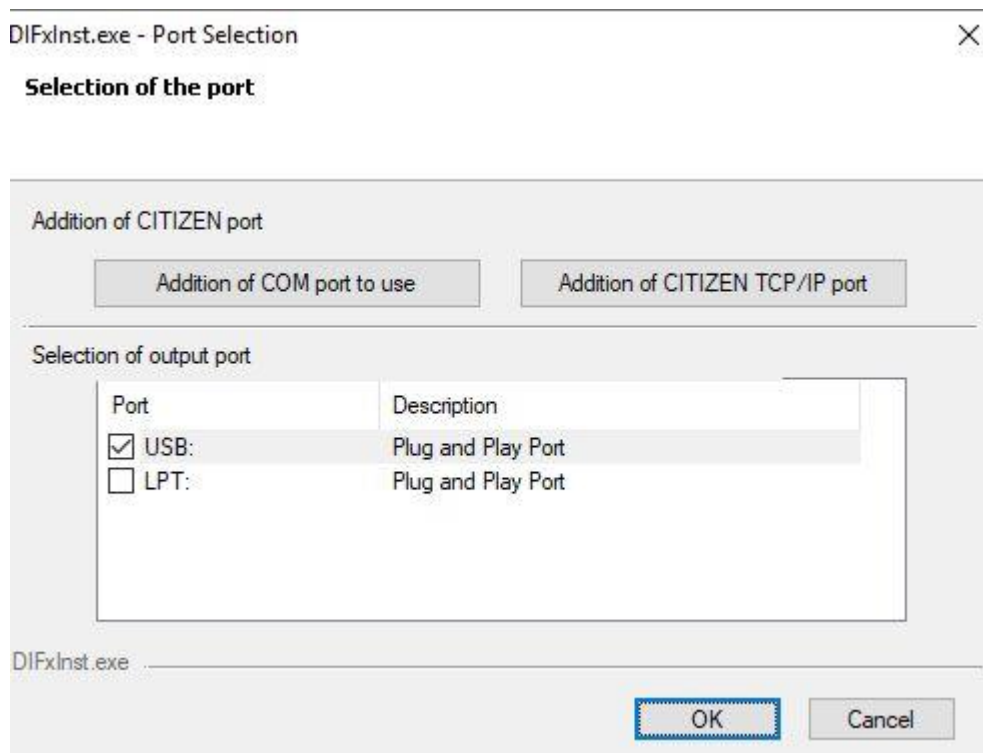
Then necessary software
will be installed
sequentially.



3.3.2 Port selection

After completing the steps
before port selection, you will
see the port selection screen
on the right.

Here, select the port
(interface) you are connecting
to the printer.



1) USB (Printer class) / LPT

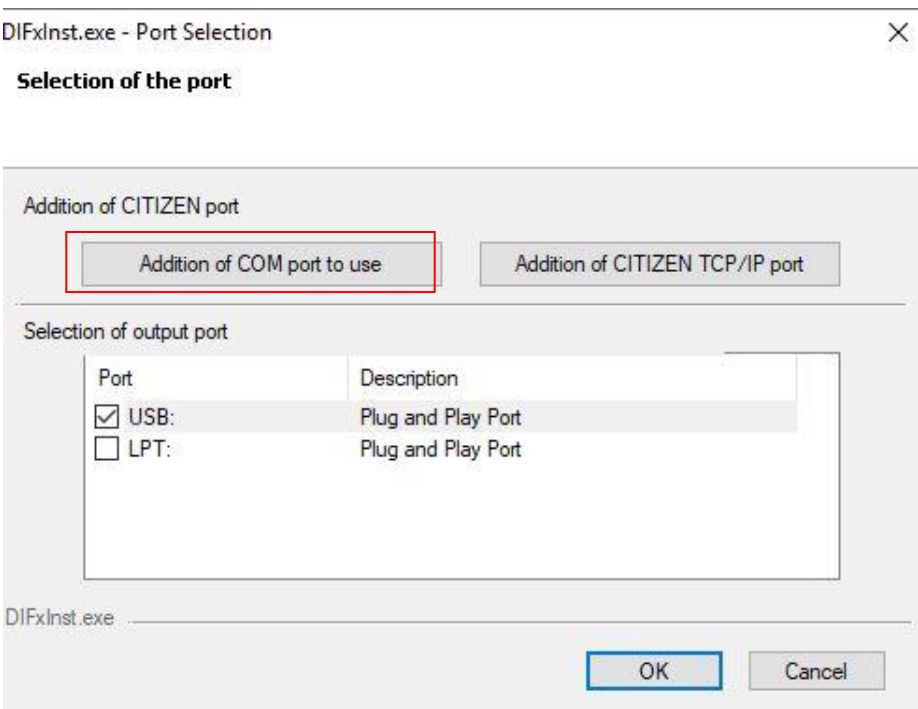
Check USB or LPT and press OK.

2) COM (Serial / Virtual COM / Bluetooth)

Press the "Addition of COM port to use" button and add a CITIZEN COM port. See below for the procedure.

* Combining a non-CITIZEN COM serial port on "Selection of output port" with a driver with a status function can cause problems.

Press "Addition of COM port for use" button.



Choose serial port to assign to CITIZEN COM port.

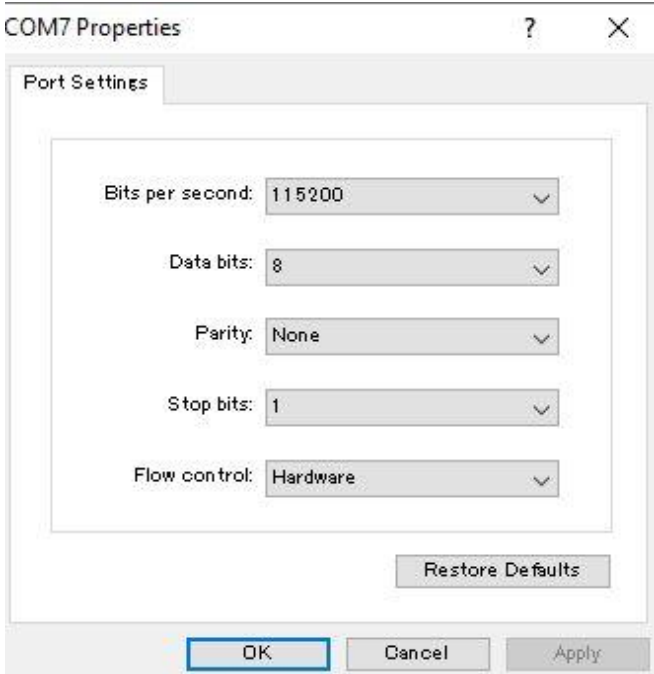
Once selected, press "OK".

Configure the settings of the selected port.

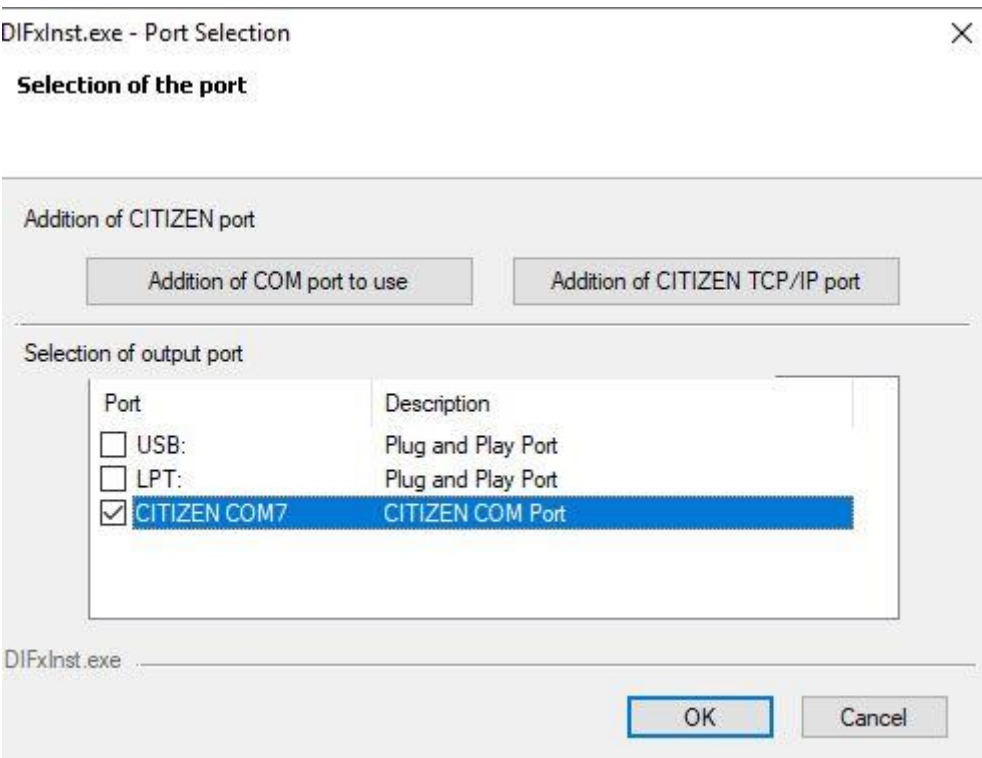
For a normal serial port, match the settings of the port you have checked in advance.

For virtual COM or Bluetooth, use the settings shown in the left picture.

When you are done configuring the port, press "OK".



When it returned to "Selection of the port", press OK.

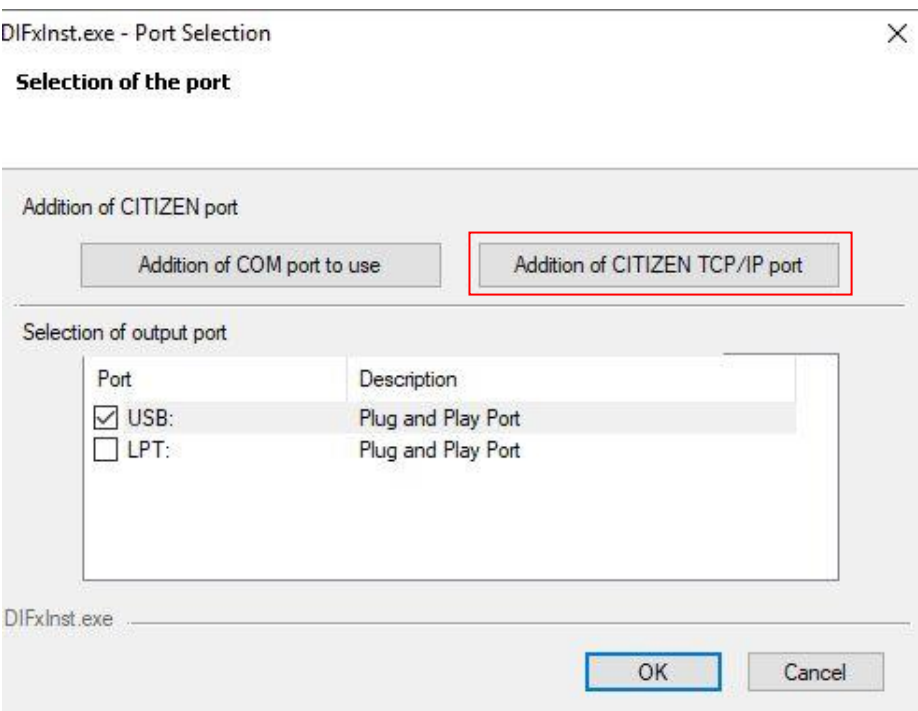


3) Wired LAN / Wireless LAN

Press the "Addition of CITIZEN TCP/IP Port" button to add a dedicated port.

Note that if you use the standard Windows Standard TCP/IP port, you will not be able to get the status of the printer. See below for the procedure to add the port.

As shown in the right picture, press "Addition of CITIZEN TCP/IP port" button.



Check IP address assigned to the printer and enter it in "Port Name".

"Host Name or IP" is automatically filled in conjunction with the entered IP address.

Change "Host Name or IP" as necessary.

Change the Port Number in Raw Protocol Setting only if you have changed it on the printer's LAN / WLAN board.

Please click "OK" when setting is completed.

When it returned to "Selection of the port", press OK.

Port	Description
<input type="checkbox"/> USB:	Plug and Play Port
<input type="checkbox"/> LPT:	Plug and Play Port
<input checked="" type="checkbox"/> 192.168.0.1	CITIZEN TCP/IP Port

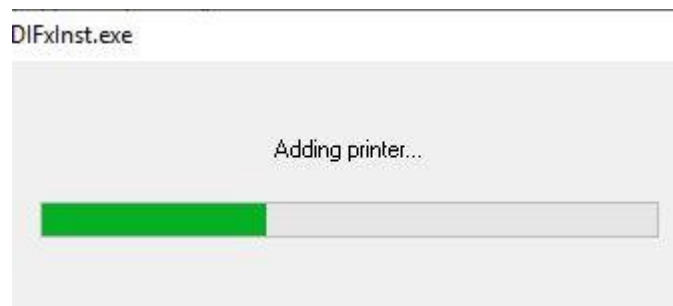
Addendum information

"SNMP Monitor Setting" (Red rectangle above) selects the method for acquiring status information. SNMP is a status acquisition method that can be used only on the network, and if SNMP is selected, you can expect problems due to the conventional status acquisition method such as time-consuming printing and printing failure are solved. Depending on the printer model, firmware version, and interface board, there are cases where SNMP is not supported or where less types of statuses are available through SNMP.

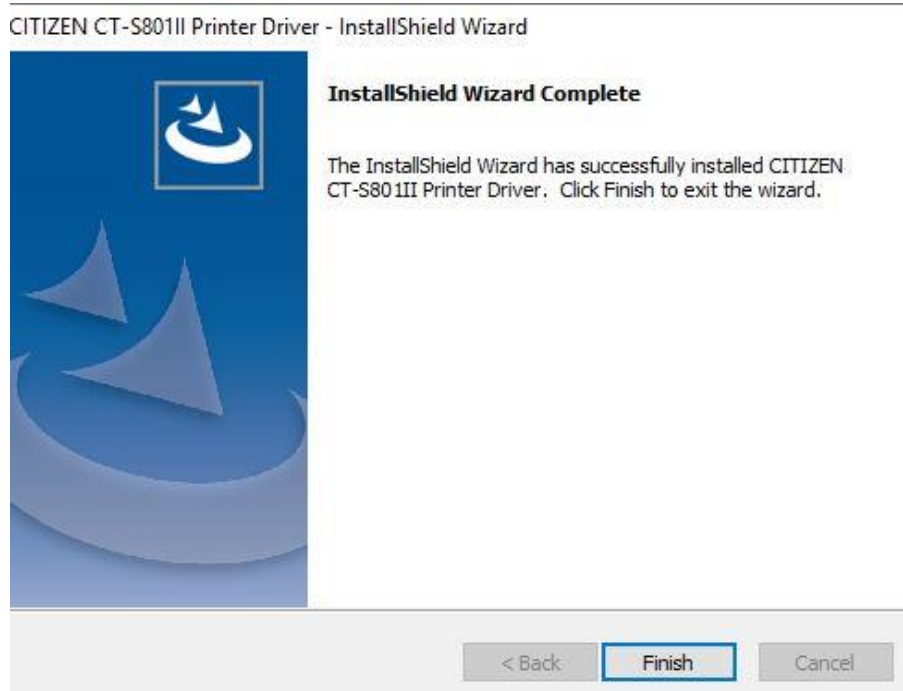
3.3.3 After Port Selection

If you press OK at "Selection of the port", copying of the required driver files will start and a screen like the one on the left will appear.

The message shown right shows up. Please choose "Install" to go forward. (This screen may be shown multiple times.)



When all the installation steps are finished, the right message is shown. Press "Finish".



If the port you select is USB or Parallel (LPT), the installation is not complete yet. After the post-processing in the next chapter, the installation is complete.

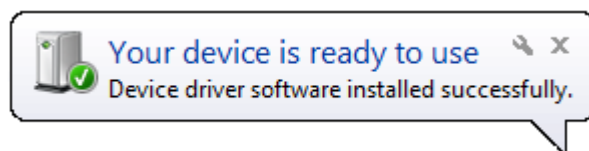
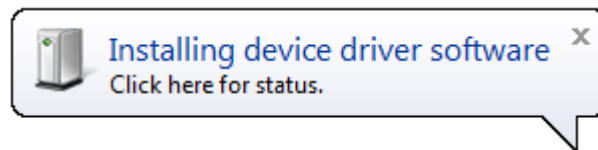
3.4 Post-processing (Connecting printer and PC)

If the interface between printer and PC is USB or LPT, it is necessary to connect the printer and PC physically by cable and have each other recognized mutually.

(This installation procedure assumes that the printer connected to the PC is not turned on before installing the driver, but if you connect the USB or parallel (LPT) interface to the PC and install it with the power on, "Thermal Printer" icon will remain on the screen, so please turn the printer off and then on again.)

Turn the printer ON.

Then the printer is automatically detected, and driver installation starts. Depending on the OS, you may get a message like the one on the right. After a while, the driver installation is completed. Depending on the OS, you may get a message like the one on the right.

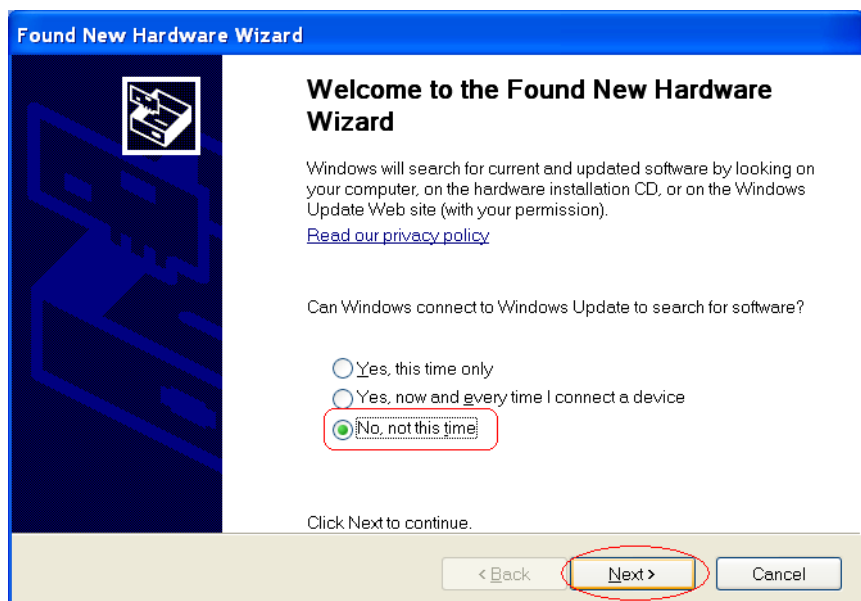


* Messages and step are different on Windows XP.

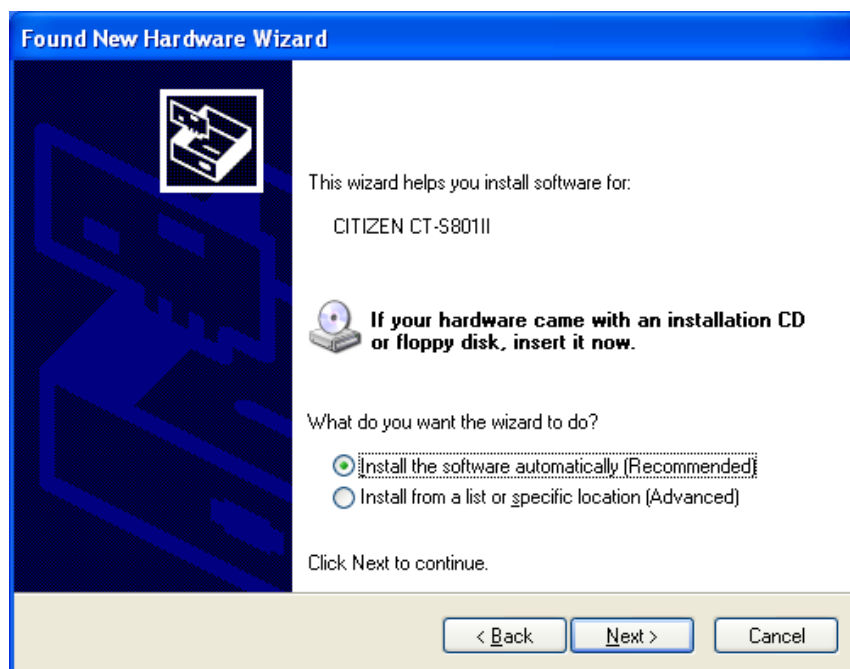
After connecting the printer and the PC, turn the printer ON.

If the driver does not have digital signature, the message in right picture show up.

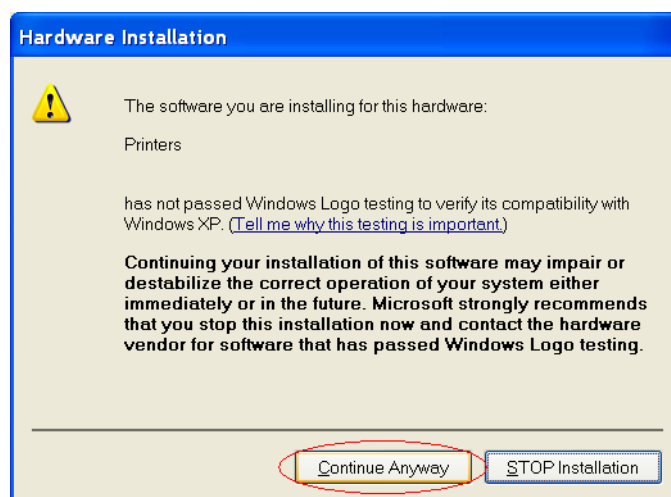
For the question about Windows Update, choose, "No, not this time" and press "Next".



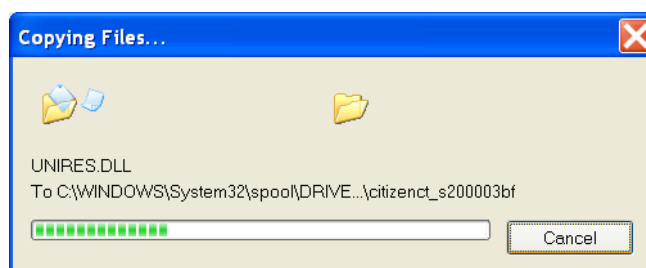
Choose "Install the software automatically (Recommended)" and press "Next".



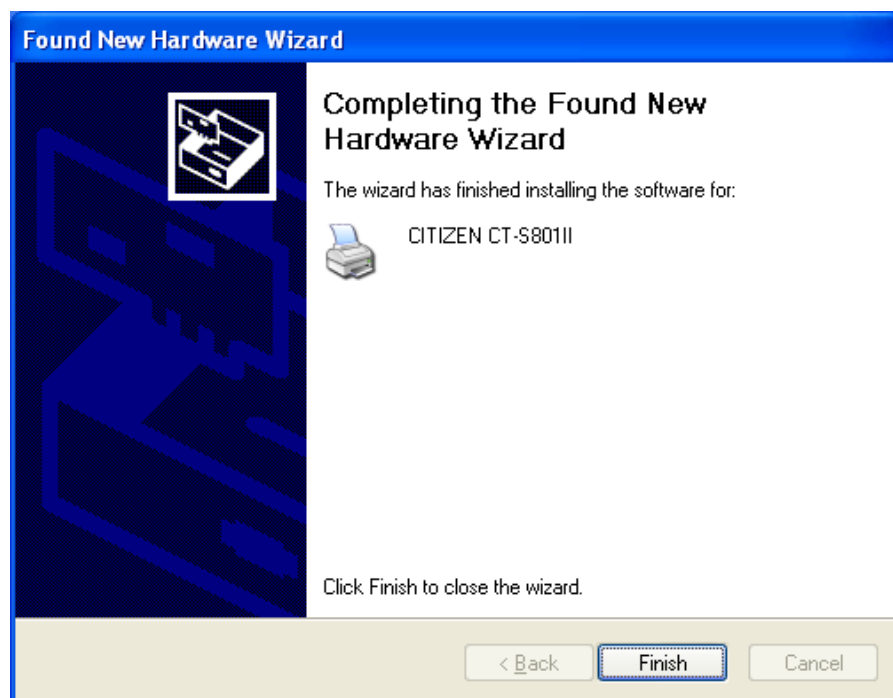
If printer driver does not have digital signature, the message like shown right shows up. As our driver does not harm the PC, please choose "Continue Anyway".



Driver files are under being copied to system folder.



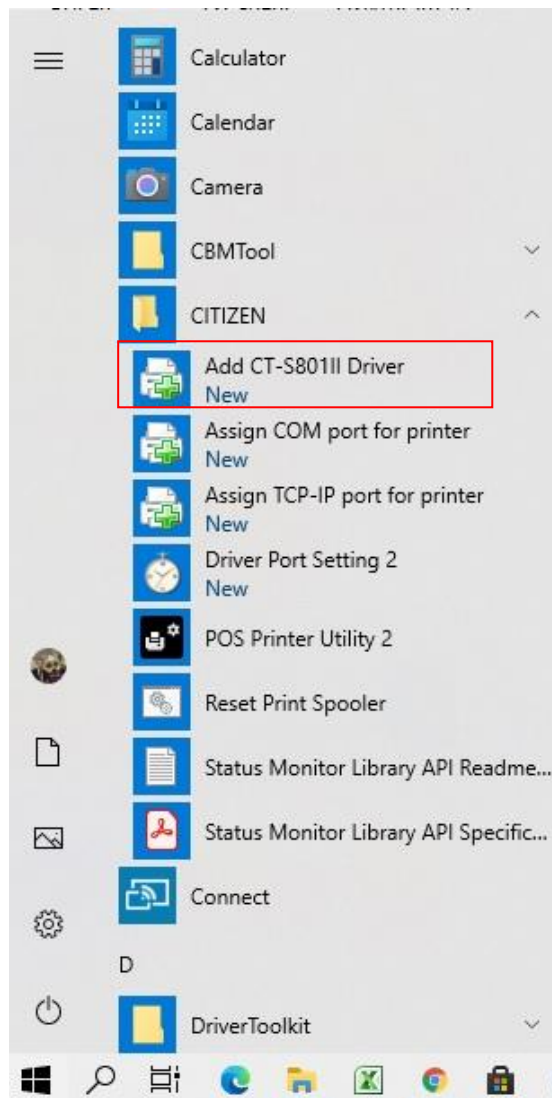
Driver installation is finished. Press "Finish".



3.5 Additional driver installation

If you want to install additional drivers for the same model that already has a driver installed, additional drivers will be installed automatically when you connect the printer via USB or Parallel interface.

In case of serial (VCOM/Bluetooth) or wired/wireless LAN (TCP/IP) connection, select [CITIZEN] - [Printer Driver] - [Add CT-S801II Driver] in the menu as shown in the picture below.

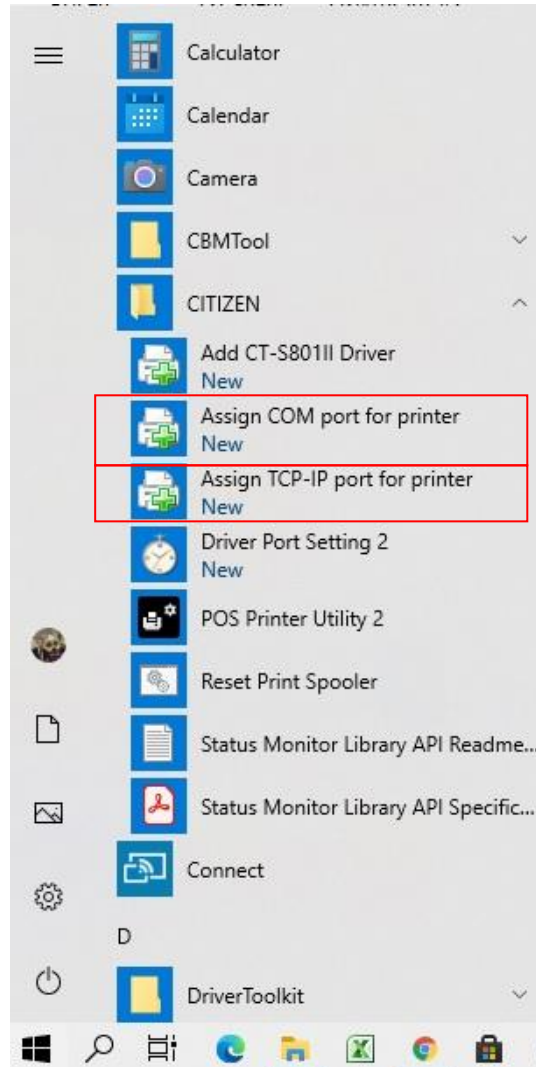


After this, the procedure is the same as in chapter 3.3.2 and beyond. The additional drivers will be named like (copy 1).

3.6 Addition of COM port and TCP/IP port

To configure a new serial port or TCP/IP port for the driver for a printer on the network, select "Assign COM port for printer" or "Assign TCP/IP port for printer" in the Start menu.

This will allow you to configure the port in the same way as described in section 3.3.2. The set port can be selected directly on the "Selection of the port" screen of the driver installation.



3.7 Remarks for installation and uninstallation

USB Port

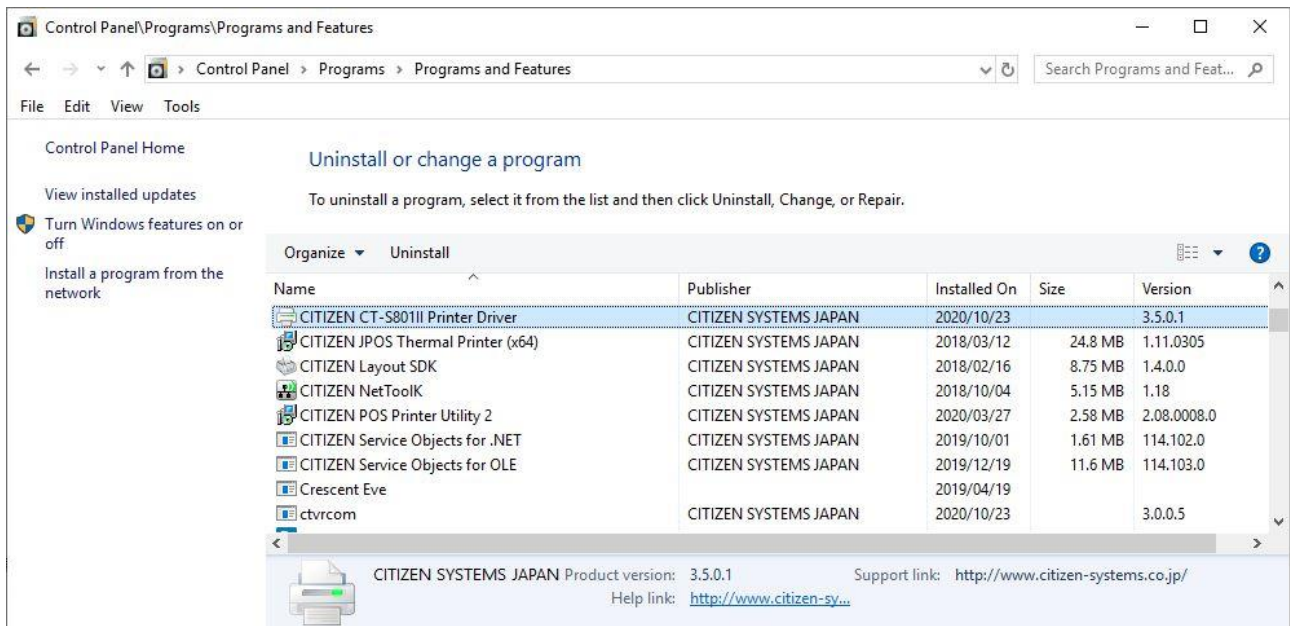
- * Once a USB port is used for driver installation, please do not use other USB port. If other USB port is used, it may not be possible to print correctly. If it happens, it may be necessary to uninstall the driver and install the driver again.
- *If POS Printer Utility is used right after driver installation through Plug & Play port, it may cause communication failure. If it happens, reboot PC to have stable communication.
- * If you connect the same model of printer to multiple USB ports on a single PC simultaneously, Windows cannot detect the difference between the printers and they will not work properly.
In such case, use our POS Printer Utility to make the USB serial number different each other.
Also see section 3.5 for information on installing the second and subsequent drivers of same model.
- * With USB interface, installation failed by some reason and not possible to uninstall, printer may be recognized as Unknown device in Device Manager of Control Panel. In such case, delete the unknown device from Device Manager.
- *If you have problems printing via USB and print jobs are piling up in the spooler, and you have to reconnect the USB cable or reboot the printer or PC to get back on line, the reason may be a USB communication breakdown. Newer models and firmware versions are designed to monitor for USB communication breakdowns and reset the printer when the communication is interrupted. If you wish to use this mechanism, please contact us.

Serial Port

- *The serial port settings on both the printer and PC need to match. If the setting does not match, it may cause no printing, garbage characters printing and so on.
- *If the driver uses COM port, other application to use same COM port may not work. In this case, you may be able to avoid the trouble by changing the COM port of the printer driver tentatively to another port.

4. Uninstallation

Uninstallation of driver and software can be done from "Control Panel" --> "Programs and Features"
(The name may be "Add or Remove Programs" depending on OS.)



Choose "CITIZEN CT-S801II Printer Driver" to uninstall CT-S801II printer driver.

When multiple drivers are installed, depending on conditions, you may be asked to restart at uninstallation. Please restart according to the instructions.

We have a tool called "Driver Cleaner" that will force the driver to be removed. If you can't uninstall the driver, please contact us.