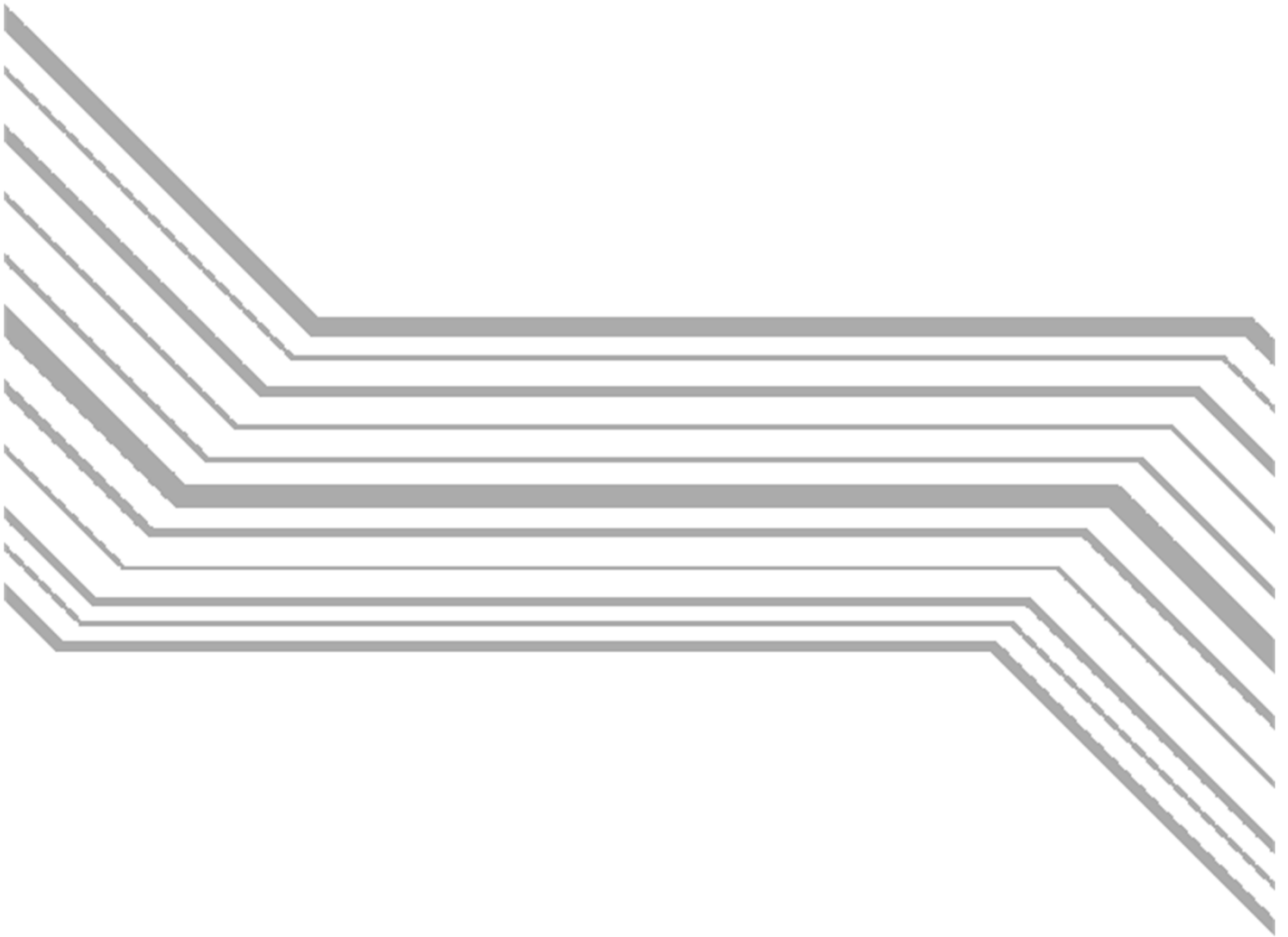


DENSO



Active USB-COM Port Driver

Installation Guide

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Preface

This manual describes installation/uninstallation of Active USB-COM Port Driver. Please read first before using devices those need Active USB-COM Port Driver.

■ Obtaining This Product and the Latest Information

This product and the latest information can be obtained by accessing the below URL.

<http://www.denso-wave.com>

Those customers who have purchased DENSO WAVE products can obtain more detailed information from our exclusive Web site for registered users (QBdirect). Please refer to the following URL.

<http://www.denso-wave.com>

■ Related Publications

Operator's Guide and User's Manual of the USB devices made by DENSO WAVE that use Active USB-COM Port Driver.

■ Screen Indication

The lettering in the screens in this manual is a little different from that in the actual screens. Device names used are only for description purpose, so they will not appear if you have not set devices having those names.

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1. Overview of Active USB-COM Port Driver

This section describes the overview of Active USB-COM Port Driver.

1.1 Usage environment

■ Checked Windows OS (When the issue of this edition)

The operations of the following Windows OS have been checked with Active USB-COM Port Driver.

Windows 7 (32 bit/ 64 bit)

Windows 8.1 (32 bit/ 64 bit)

Windows 10 (32 bit/ 64 bit) Version 1703/ 1709/ 1803

Windows 10 IoT Enterprise 2015 LTSB (64 bit)

Windows 10 IoT Enterprise 2016 LTSB (64 bit)

TIP:

The latest and detailed information of the supported Windows OS can be obtained by accessing the below URL.

<http://www.denso-wave.com>

Windows 10 IoT Enterprise is a Windows 10 embedded OS. We tested it with our environment, but it does not guarantee your any operational environment. Please test in enough to be no trouble with your operational environment, and use it.

■ Checked Devices (When the issue of this edition)

The operations of the following USB devices made by DENSO WAVE have been checked with Active USB-COM Port Driver.

TIP:

The latest information of the supported products can be obtained by accessing the below URL.

<http://www.denso-wave.com>

Product	Models
2D Code Scanner	QK20-U, QK21-U QK30-U, QK31-U, QB30-SU, QB31-SU GT15Q-HU, GT20Q-SM(U) AT20Q-SM(U), AT21Q-SM(U), AT25Q-SM(U), AT26Q-SM(U) AT31Q-SM(U)
Bar Code Handy Scanner	HC56TU, HC56IITU GT20B-SM(U) AT20B-SM(U), AT21B-SM(U)
Bar Code Handy Terminal*1	BHT-900 Series BHT-1300 Series
Communication Unit	CU-521 CU-621 CU-821 CU-921 CU-1321*2 CU-AU1-15*2
Bluetooth Communication Adapter	BA20-RU
RF TAG Reader/Writer	UR-21-MR-01, UR-22-MR-01

*1 Case that the USB connector of the side of the BHT body is used as a COM port.

*2 The CU only is not recognized as the USB device. Please hold the BHT on the CU.

1.2 Features

Active USB-COM Port Driver has following features.

- The USB device can be removed from the PC USB port while the application opens the Serial Port with which the USB device is connected. (It will be kept opening when the USB device is plugged into the USB Port again.)
- The Virtual Serial COM Port is always existed on PC even if the USB device is removed from the PC USB Port, so that the Serial Port can be opened anytime.
- On the Device Manager, the COM port is confirmed which port the USB device is connected with.

1.3 Notice

Precautions in using Active USB-COM Port Driver are as follows:

- Please install and uninstall the Active USB-COM Port Driver as the Administrator.
- Please uninstall the Active USB-COM Port Driver at the Windows Control Panel “Programs and Features” utility.
- Please stop the application with the COM port allocated by the Active USB-COM Port Driver before uninstalling the driver.
- After the installed Active USB-COM Port Driver into PC is uninstalled, please update it of the new version.
- The USB device can be removed and plugged into PC during communication. (COM port is opened.) However, communication data are lost while the USB device is removed. Please recovery the lost data with your application.
- The multiple use of the USB device is available when this driver is installed at the multiple times. However, this driver cannot be individually uninstalled. (All the installed drivers are uninstalled at one time at the Windows Control Panel “Programs and Features” utility.)
- A USB device may not be connected if the fast startup function with Windows 8.1 or later is set. In that case, at the Windows Control Panel “Power Options” utility, please set “Turn on fast startup” to “OFF”, restart the PC.
- Windows standard driver “Usbser.sys” will be loaded if you inserted the USB device in the USB port of the PC with Windows 10 or Windows 10 IoT Enterprise which does not install Active USB-COM Port Driver. The USB device does not support the operation with the Windows standard driver “Usbser.sys”. Please use it after installing Active USB-COM Port Driver by all means. And please stop the application with the COM port allocated by the Windows standard driver “Usbser.sys” before installing the Active USB-COM Port Driver.

2. Installation

This section describes how to install Active USB-COM Port Driver.

Note:

- Please install the Active USB-COM Port Driver as the Administrator.
- If a new device driver is started to search on Windows update site automatically, quite a bit of time for search is spent. The above problem may be improved with setting to skip the search of Windows Update. About setting it, comply with the OS specification.

2.1 Steps of Active USB-COM Port Driver's Installation

This driver consists of the virtual serial port driver and the USB driver.

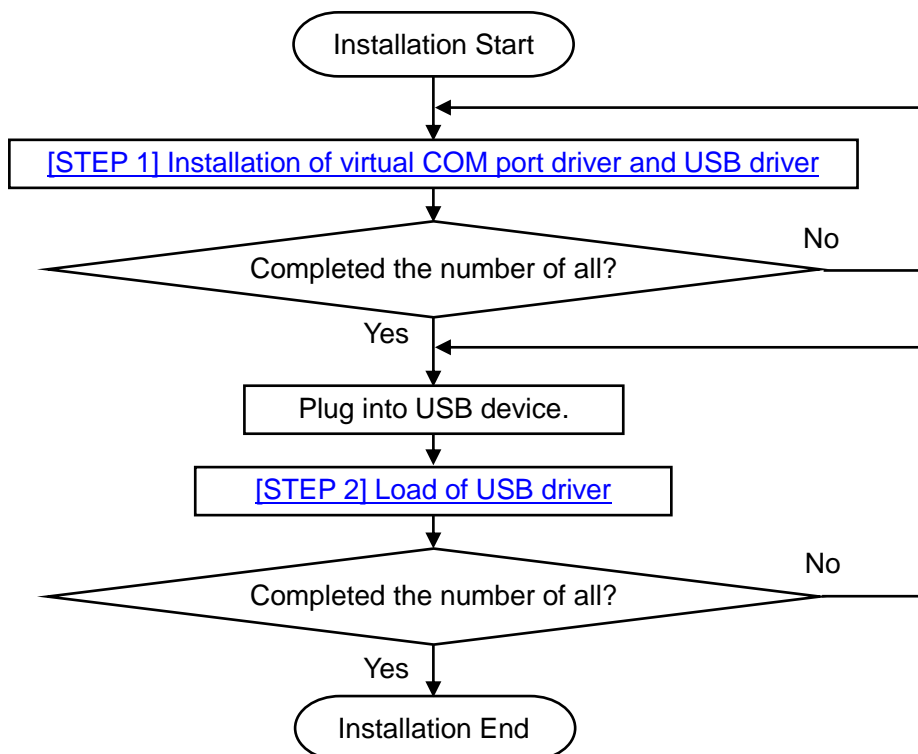
The steps of the driver's installation are following. Please comply with the below steps.

Note:

- Multiple USB ports cannot be assigned to 1 COM port.
- If you use multiple USB ports even if you use 1 USB device, you should add the COM port as same number as USB ports you use by executing the "Setup.exe".
- When many COM ports are made, the load may depend on the PC. Please confirm that you do not have any problem by test use.
- If CU-921 and BHT-900B/BB are assigned to 1 USB port, please execute "Setup.exe" twice.

2.1.1 The number of the connected USB device is determined.

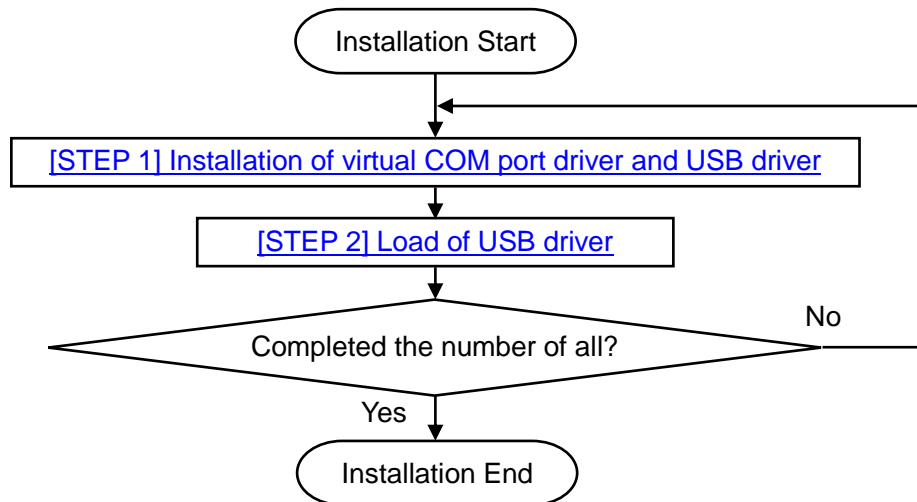
[Case 1] Before installation, all USB devices are unconnected. (Recommendation)



[Case 2] Before installation, all or some of USB devices are connected. (Not recommended)

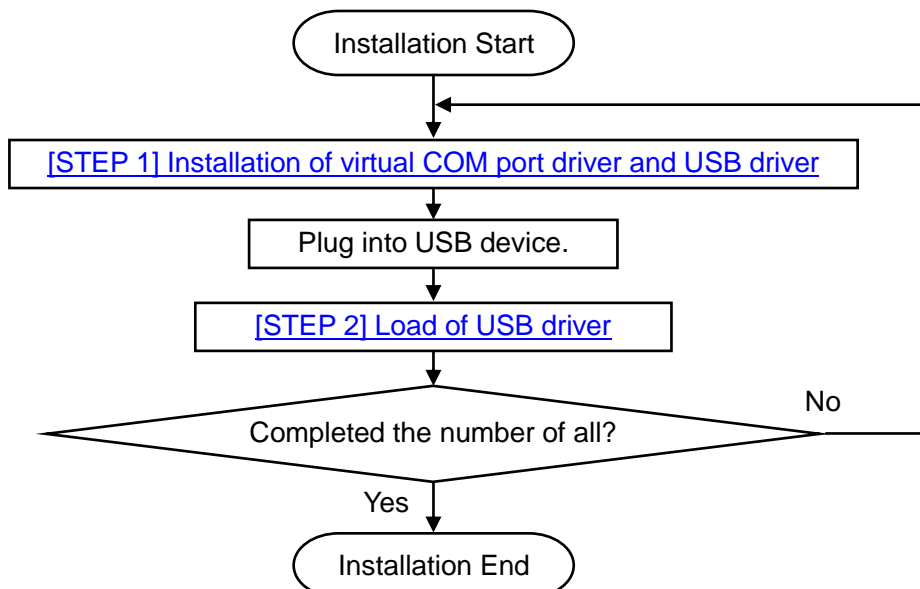
Note:

- In this method, the relationship between a USB device, a USB port and a COM port expected by you may not be constructed because Windows determines the relationship in order of detection by it. If you use the application whose relationship between a USB device, a USB port and a COM port is uniquely determined, please perform Section 2.1.1[Case 1], Section 2.1.2[Case 1] or Section 2.1.2[Case 2].
- In case of the driver's re-installation and version up, the above rule applied.

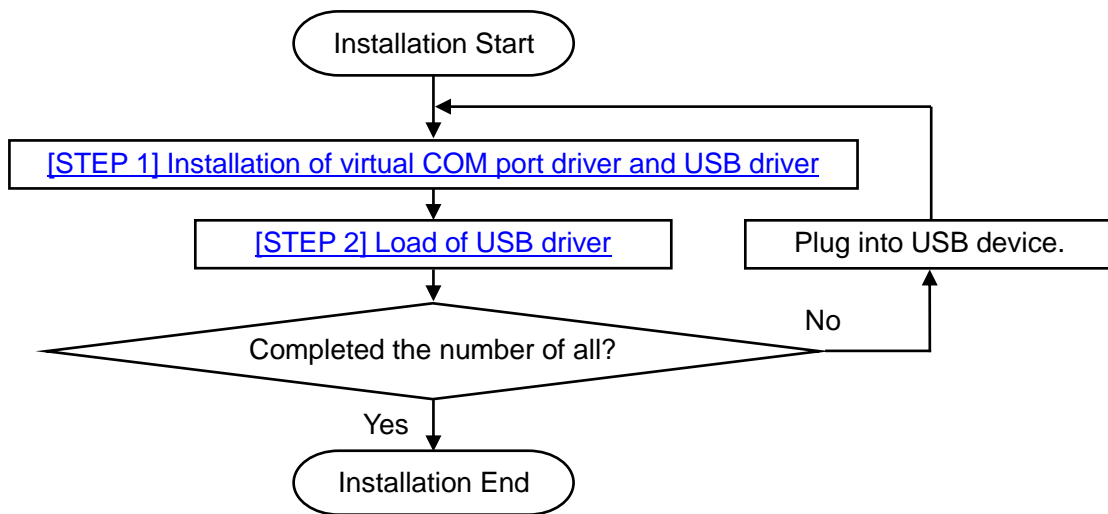


2.1.2 USB devices are sequentially added.

[Case 1] Before installation, the added USB device is unconnected. (Recommendation)



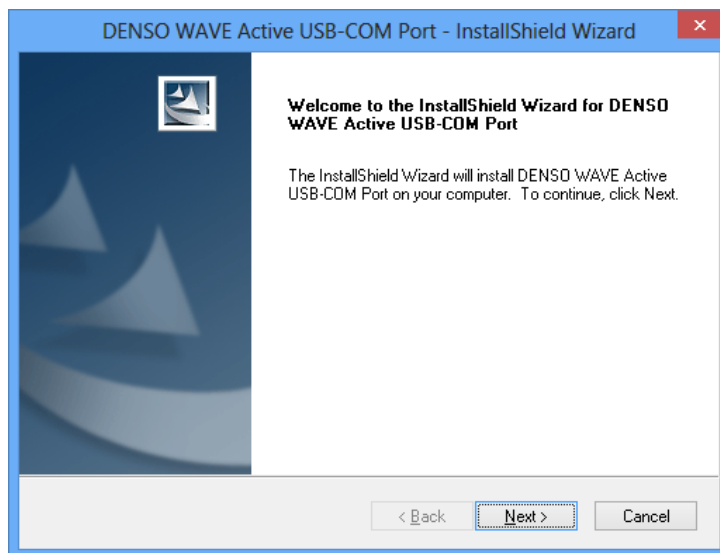
[Case 2] Before installation, the added USB device has been connected. (Recommendation)



2.2 [STEP 1] Installation of virtual COM port driver and USB driver

To install the virtual serial port driver and USB driver, please execute "Setup.exe". The step is as below.

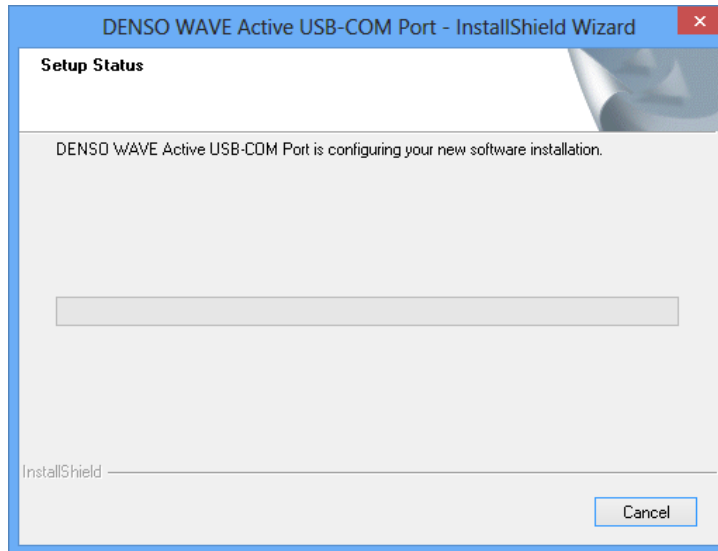
- 1) Execute "Setup.exe". The user account control message window is displayed. Then click "Yes" button.
- 2) The following welcome dialog is displayed. Then click "Next>" button.



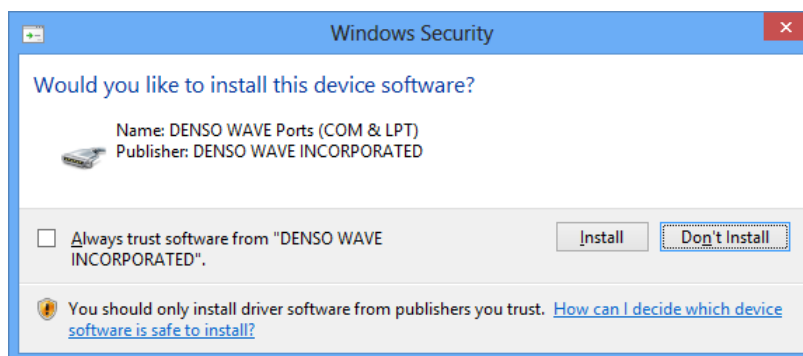
3) Installation is progressed.

Note:

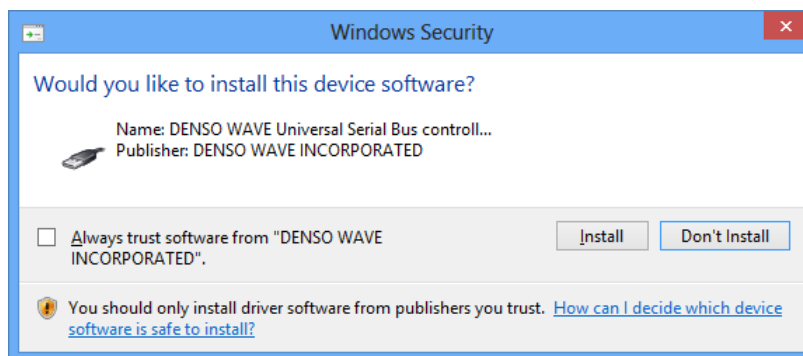
- Depending on the status of the PC, the progress bar may not advance as shown below, but please do not stop it in the middle.



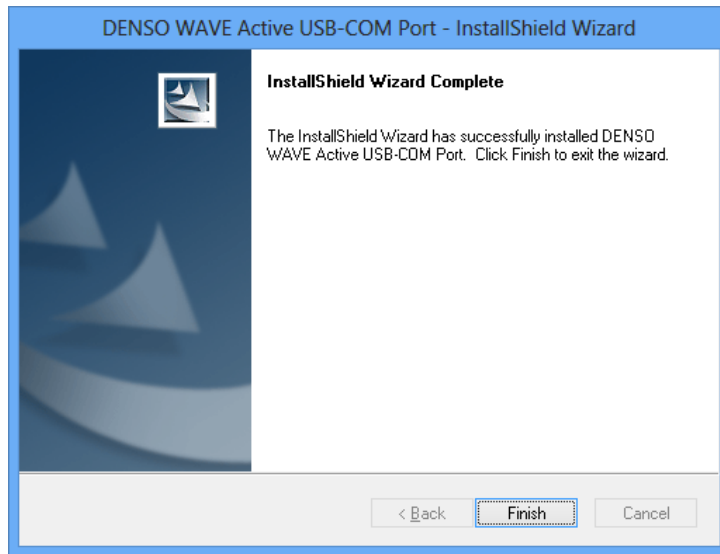
For Windows 8.1 or before, when the installation is started, the following message window might be displayed. Please click "Install" button.



And then, the following message window might be displayed. Please click "Install" button.



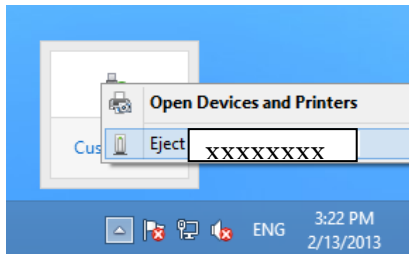
- 4) The following completion dialog comes out. Then click “Finish” button.



2.3 [STEP 2] Load of USB driver

To install the USB driver, please plug a USB device in the USB port. The step is as below.

- 1) Connect a target USB device to your PC.
- 2) The following message is displayed on Task Bar and the installation is finished.

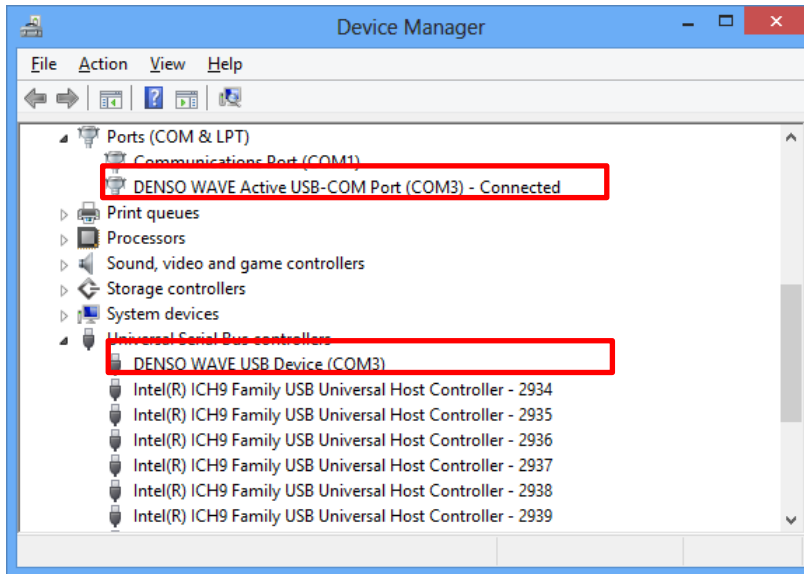


Note:

- When the device is inserted and [STEP 1] is executed, the loading of the USB driver is executed. Therefore, at the completion of Section 2.2 - 4), [STEP 2] is completed.

2.4 Checking connection of USB device

Open the Device Manager. Then check “DENSO WAVE USB Device (COMx)” and “DENSO WAVE Active USB-COM Port (COMx) – Connected”.



2.5 Changing COM port number

You can change the COM port number on the device manager.

Note:

- In installation, the unused smallest port number after COM 3 and later is assigned. In case of changing a COM port number manually, the unused COM port number that is equal to COM 1 or more than can be assigned.

You should change the COM port number after removing the device.

If you changed the COM port number, please restart the PC.

3. Uninstallation

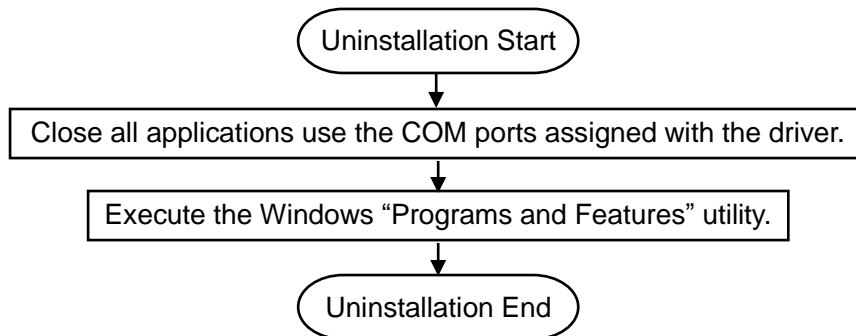
This section describes how to uninstall Active USB-COM Port Driver.

Note:

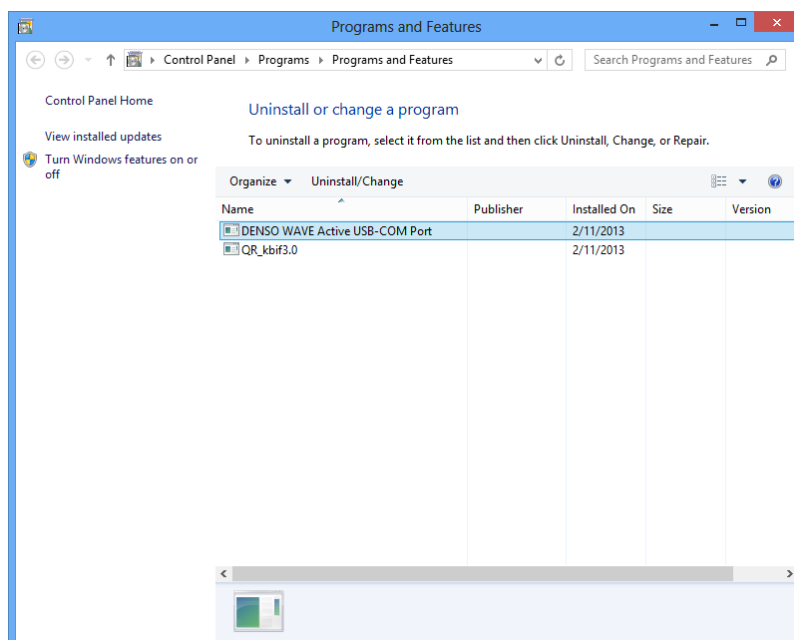
- Please close all applications that use the COM ports assigned with the driver before uninstalling it.
- Please uninstall the Active USB-COM Port Driver as the Administrator.
- When two or more devices that use this driver for the same PC are installed, the driver uninstallation means uninstalling all USB devices that use the Active USB-COM Port Driver. So, you cannot remove a device selectively.

3.1 Uninstallation of Active USB-COM Port Driver

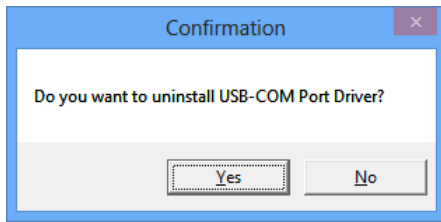
The steps of the driver's uninstallation are following. Please comply with the below steps.



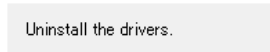
- 1) Close all applications that use the COM ports assigned with the driver.
- 2) Open "Add or Remove Programs" form control panel and click "Change/Remove" button of "DENSO WAVE Active USB-COM Port"



- 3) The following confirmation message comes out. Then click "Yes" to start uninstallation.



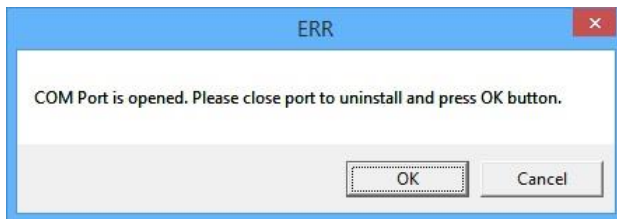
- 4) While uninstallation is progressed, the following message is displayed.



- 5) After uninstallation is finished, the above message goes out of the screen.

Note:

- After uninstallation is finished, Windows may display PC restart request message. In that case, please follow it.
- When uninstallation is started, if the COM port(s) is(are) use, the following message is displayed. If you want to uninstall, close the COM port(s) and then start uninstallation.



4. Log

This section describes the log of Active USB-COM Port Driver.

4.1 Specifications

■ Running time

After install, and from rebooting the PC to stopping the log

■ How to take the log

When rebooting the PC, the log is overwritten.

If the log reaches the maximum file size, the latest log is continued to take and save.

■ Path in which the log files are saved, file name and maximum size

Virtual serial port driver: c:\windows\system32\dwserial.etl (128MB)

USB driver : c:\windows\system32\dwusb.etl (128MB)

4.2 How to prohibit the log function

While taking the log, the access to the HDD or SSD is occurred. If you don't want the continual access to them, please execute the following steps.

1) Run a command prompt window as the Administrator.

2) Execute the following commands.

```
>reg delete HKLM\SYSTEM\CurrentControlSet\Control\WMI\Autologger\dwserial /f
```

```
>reg delete HKLM\SYSTEM\CurrentControlSet\Control\WMI\Autologger\dwusb /f
```

3) Reboot the PC.

Note:

- Please execute the above steps as the Administrator.
- Even if there is a trouble during operation, it may not be able to investigate in detail.
- After installing the driver, when the PC is rebooted, this function is re-permitted. Please execute the above steps.

5. How to check connected USB device

This section describes how to check the connected/disconnected USB device.

5.1 How to check command response from USB device

Send a command from the PC application to the USB device, and then check its response from the USB device to the PC application.

For the scanners, use a command (no impact on operation) with the USB device specification.

For the barcode handy terminals, decide the some rules between the PC application and the USB device.

5.2 How to check registry information

Active USB-COM Port Driver manages the device connection status with the following registries. Refer to them and check the connected/disconnected USB device.

Note:

- Please refer only for these registries.

[Registries]

Key	HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Enum\Root\PORTS\%nnnn (nnnn : Any four digits decided by Windows)
Entry	FriendlyName
Type	REG_SZ
Data	For connected : DENSO WAVE Active USB-COM Port (COMp) – Connected For disconnected : DENSO WAVE Active USB-COM Port (COMp) – Disconnected TIPS: After installation, no display "Disconnected". (p : COM port number)

Key	HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Enum\Root\PORTS\%nnnn\Device Parameters (nnnn : Any four digits decided by Windows)
Entry	ComNumber
Type	REG_DWORD
Data	COM port number is indicated with four bytes. (ex.) Case of COM3 : 0x00000003

Key	HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Enum\Root\PORTS\%nnnn\Device Parameters (nnnn : Any four digits decided by Windows)
Entry	ConnectStatus
Type	REG_DWORD
Data	Connection state is indicated with four bytes. For connected : 0x00000001 For disconnected : 0x00000000

Active USB-COM Port Driver Installation Guide

15th Edition, Jul. 2018

DENSO WAVE INCORPORATED

The purpose of this manual is to provide accurate information in the installation and uninstallation of Active USB-COM Port Driver. Please feel free to send your comments regarding any errors or omissions you may have found, or any suggestions you may have for generally improving the manual.

In no event will DENSO WAVE be liable for any direct or indirect damages resulting from the application of the information in this manual.