

# CITIZEN

## CITIZEN Printer **Virtual HID Driver**

User's Guide

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For Version 1. 0.0

**CITIZEN SYSTEMS JAPAN CO., LTD.**

## 1. Updating History

Date	Version	History
2019/02/18	1.0.0.0	New

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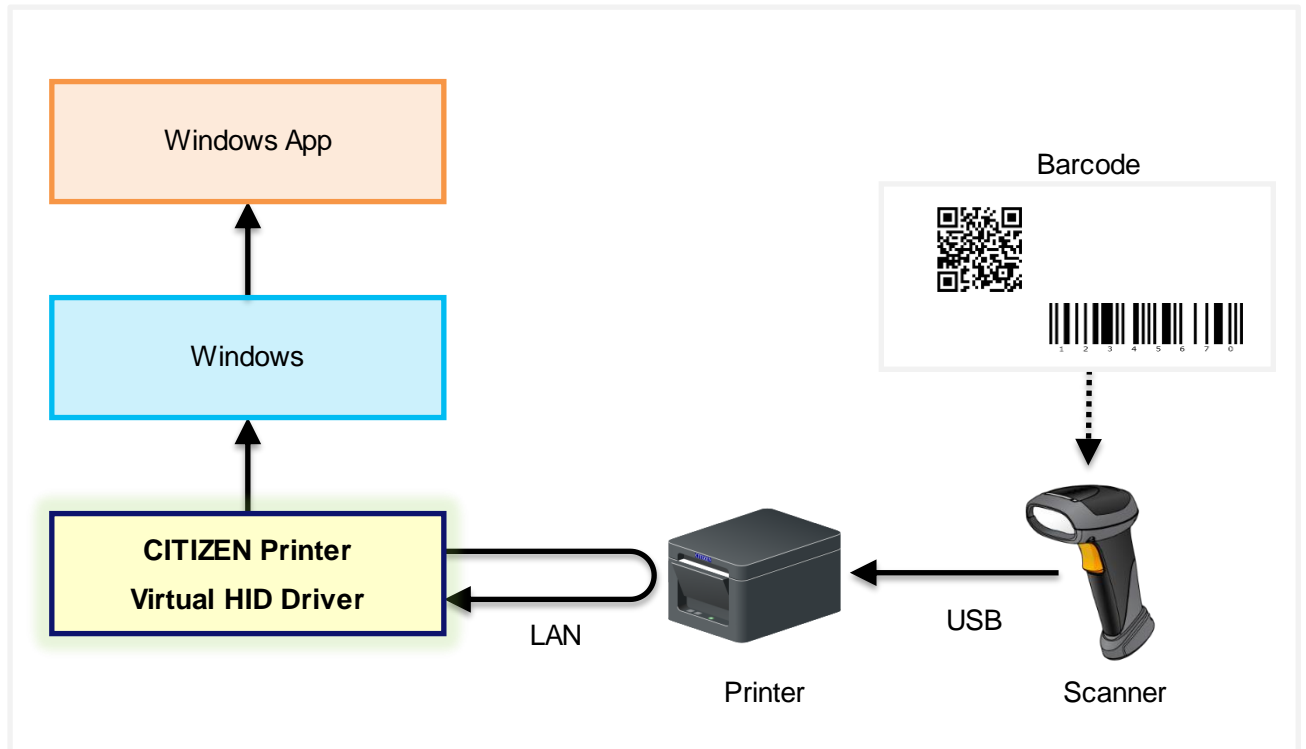
## 5. Introduction

This document is a user's guide for CITIZEN Printer Virtual HID Driver.

CITIZEN Printer Virtual HID Driver ("VHID Driver") is software for using barcode scanners connected to CITIZEN USB host printers. This allows you to use barcode scanners without modifying existing applications.

## 6. Operating Environment

### 6.1. System Diagram



### 6.2. Operating System

VHID Driver supports the following Microsoft Windows operating systems.

- Windows 7 (32bit, 64bit)
- Windows 8.1 (32bit, 64bit)
- Windows 10 (32bit, 64bit)

### 6.3. .NET Framework

VHID Driver requires the following Microsoft .NET Framework:

- Microsoft .NET Framework 4.5.2 or later

## 6.4. Supported Printer

VHID Driver supports the following printers.

Printer	Interface
CT-D150, CT-D151, CT-E351, CT-E651, CT-S251, CT-S601, CT-S601II, CT-S651, CT-S651II, CT-S751, CT-S801, CT-S801II, CT-S851, CT-S851II, CT-S4500,	Wired LAN USB host
CL-E720, CL-E730, CL-S400DT,	

Refer to the user's manual of the printer for the detailed functions of each model.

## 6.5. Supported Barcode Scanner

VHID Driver supports the following barcode scanners.

Series	Barcode scanner	Operation mode
1D	SCN01-Z1DB	HID, VCOM
2D	SCN02-Z2DB BC-NL3000U	

Refer to the user's manual of the barcode scanner for the detailed functions of each model.

## 6.6. Supported Barcode Symbolologies

Supported Barcode Symbolologies depend on each barcode scanner.

Refer to the user's manual of the barcode scanner for the detailed functions of each model.

## 6.7. Restriction

- VHID Driver is not available until you log in to Windows.
- VHID Driver can not handle multiple barcode scanners at the same time.
- VHID Driver can not handle binary data contained in a barcode.
- VHID Driver can handle Japanese characters in a barcode in the following conditions.
  - Character code : Shift JIS
  - Operating mode of the barcode scanner : VCOM

## 7. Installation and Uninstallation

### 7.1. Installation

Step to install VHID Driver to your PC:

The following two installation methods are available.

- BAT Installation using BAT file
- GUI Installation using GUI screen

Make sure your PC meets all requirements and close other programs before installation.

#### **BAT Installation**

1. Edit and save the [Settings File](#) [BATSettings.xml] with Notepad.
2. Run [BATInstaller.bat] as the administrator.
3. The User Account Control message pops up. Click the [Yes] button.
4. Restart Windows after installation is done.
5. VHID Driver will now start up automatically when you log in.

- NOTE -

[BATInstaller.bat] uses [BATSettings.xml] as the [Settings File](#).

See the [Settings File](#) for editing of [BATSettings.xml].



## GUI Installation

1. Run [setup.exe] with as administrator.
2. Click the [Next] button.
3. Read the license agreement, make a selection, and click the [Next] button.
4. Select the installation folder and the user, and click the [Next] button.
5. Click the [Close] button to complete the installation.
6. Click the [Yes] button to restart Windows.
7. VHID Driver will now start up automatically when you log in.

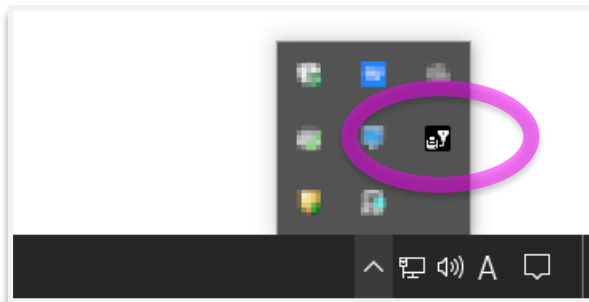
### - NOTE -

VHID Driver starts up with default values after installing with GUI installation for the first time. Make sure to set up all required settings before using the driver.

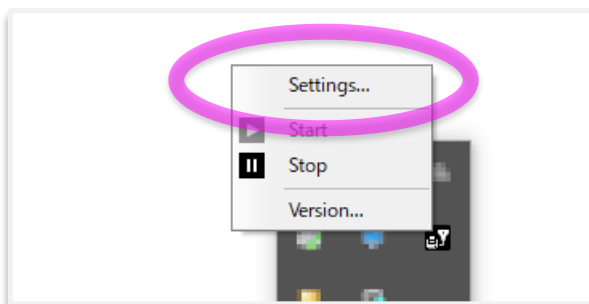
## Basic Settings

Here are the basic steps to set up the driver after installation.

1. Click VHID Driver icons in the task tray.

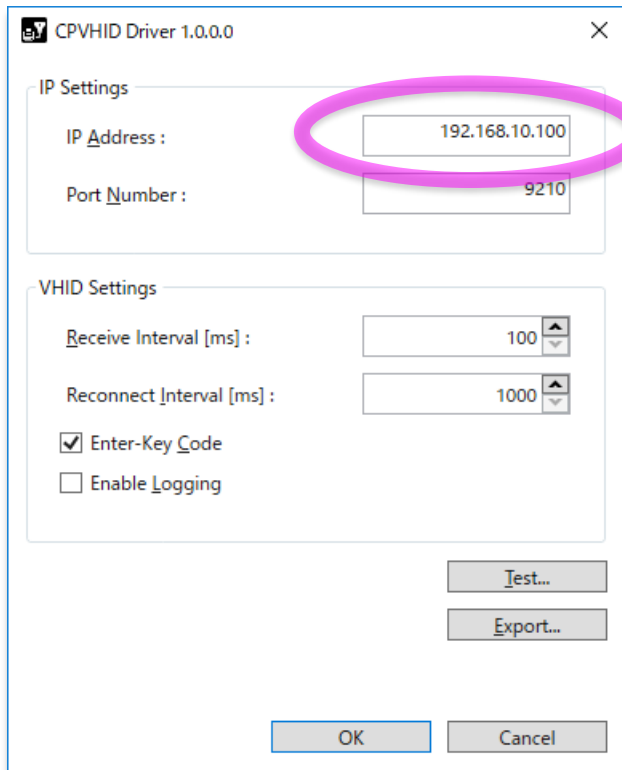


2. Click [Settings...] on [Context Menu](#).



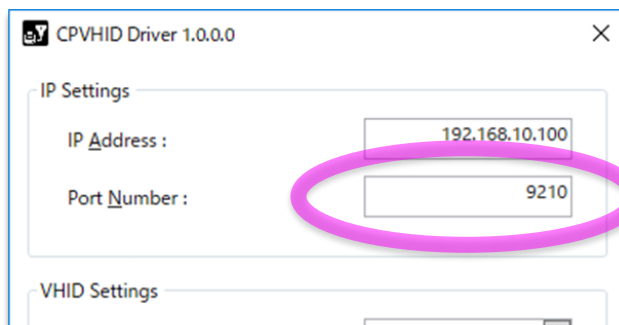
2. Enter the IP address of the printer in "IP Address" of [Settings Window](#).

You can confirm the IP address of the printer by pressing the button on the LAN interface card.



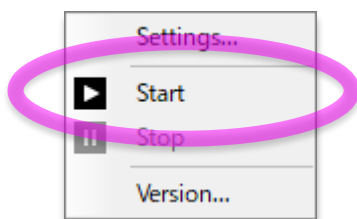
3. Enter the port number of the printer in "Port Number" of [Settings Window](#).

The port number depends on the operation mode of the barcode scanner.



Operation mode	Port number (default)
HID	9210
VCOM	9201

4. Click the [OK] button.
5. Click [Start] on [Context Menu](#).



## 7.2. Uninstalling

Steps to uninstall VHID Driver from your PC:

Make sure to close all other programs before uninstalling the driver.

1. Open [Control Panel].
2. Open [Uninstall a program].
3. Double-click [CITIZEN Printer Virtual HID Driver].
4. A confirmation message pops up, click the [OK] button.
5. If the [User Account Control] box pops up, click the [Yes] button.
6. The uninstallation will be done shortly.

- NOTE -

You may be required to restart Windows after uninstallation.

Follow the message to restart.

## 8. Window Descriptions and Features

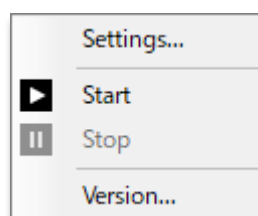
### 8.1. Context Menu

The Context Menu is the main menu for calling each function.

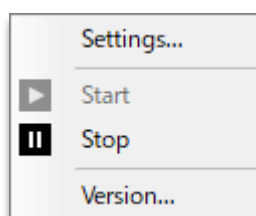
Click VHID Driver icons in the task tray to display the Context Menu.

#### Screen

Stopped



In operation



#### Functions of Each Part

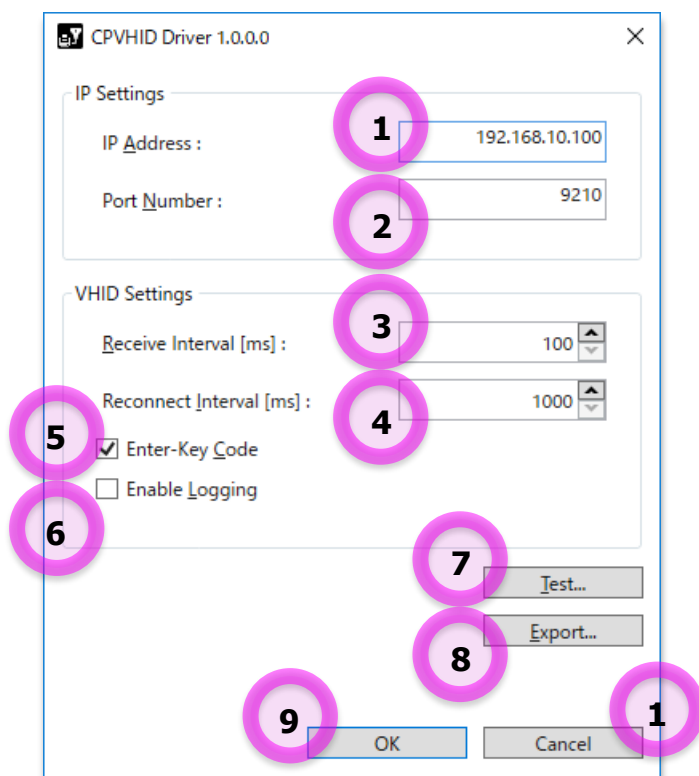
#	Name	Function
1	Settings...	Open <a href="#">Settings Window</a> .
2	Start	Starts receiving barcode data. The watch automatically starts receiving data when logging in.
3	Stop	Stops receiving barcode data.
4	Version...	Displays <a href="#">Version Window</a> .

## 8.2. Settings Window

The Settings Window is to set the operation of VHID Driver.

Clicking [Settings...] on [Context Menu](#) displays the Settings Window.

### Screen



### Functions of Each Part

#	Name	Function
1	IP Address	Specify the IP address of the printer.
2	Port Number	Specify the port number of the printer.
3	Receive Interval	Specify the reception intervals of the scanned data in msec.
4	Reconnect Interval	Specify the reconnection interval with the disconnected printer via TCP in msec. This cycle applies to the status checking of the barcode scanner.
5	Enter Key Code	Replace [CR +LF] in the scanned data with Enter Key.
6	Enable Logging	Enables the output of the <a href="#">Log File</a> .
7	Test buttons	Displays the <a href="#">Test Window</a> .
8	Export button	Exports configuration information.
9	OK button	Saves the configuration information to the <a href="#">Settings File</a> and exits the Settings Window.
10	Cancel button	Discards the settings and exits the Settings Window.

**Initial Values**

#	Name	Initial value [Min-Max]
1	IP Address	Blank
2	Port Number	9210 [0 – 65535]
3	Receive Interval	100 [100 – 1000]
4	Reconnect Interval	1000 [1000 – 60000]
5	Enter Key Code	ON
6	Enable Logging	OFF

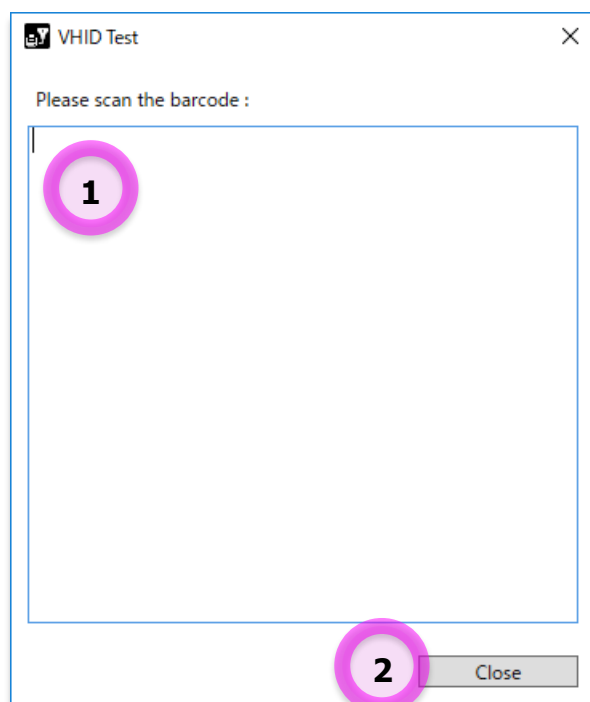
### 8.3. Test Window

The Test Window is to check the operation of VHID Driver.

Clicking [Test] on [Settings Window](#) displays the Test Window.

This helps you to check the operation of VHID Driver by scanning the barcode.

#### Screen



#### Functions of Each Part

#	Name	Function
1	Please scan the barcode	Scanned data will be displayed while this area is selected.
2	Close	Closes the Test Window.

## 8.4. Version Window

The Version Window displays VHID Driver version.

Clicking [Version...] on [Context Menu](#) displays the Version Window.

### Window Image





## 9. Settings File

The Settings File is to define the operation of VHID Driver.

This file will be read by VHID Driver when it starts up.

The Settings File can be updated in the [Settings Window](#).

The format of the Settings File is XML.

The Settings File path is written in the [Configuration File](#) generated during installation.

### Format

#	Configuration information	XML tags	Type
1	IP Address	<IPAddress>	String
2	Port Number	<PortNumber>	Ushort
3	Receive Interval	<ReceiveInterval>	Ushort
4	Reconnect Interval	<Reconnect Interval>	Ushort
5	Enter-Key Code	<EnterKeyCode>	Bool
6	Enable Log	<EnableLog>	Bool

### Example Usage

```
<?xml version="1.0" encoding="utf-8"?>
<ConfigModel xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <IPAddress>192.168.10.100</IPAddress>
  <PortNo>9210</PortNo>
  <ReceiveInterval>100</ReceiveInterval>
  <ReconnectInterval>1000</ReconnectInterval>
  <IsEnterKeyCode>true</IsEnterKeyCode>
  <IsEnableLog>false</IsEnableLog>
</ConfigModel>
```

You may update only the values shown in red above according to your own environment.

## 10. Configuration File

The Configuration File is to set the paths of the [Settings File](#) and the [Log File](#).

The Configuration File is saved in the same folder with VHID Driver during installation.

The preference File is [CPVHID Driver.xml].

The Configuration File format is XML.

### Format

#	Configuration information	XML tags	Type	Initial value
1	<a href="#">Settings File</a> path	<ConfigFilePath>	String	C:\CITIZEN\CPVHID Driver\CPVHID Driver Settings.xml
2	<a href="#">Log File</a> paths	<LogFolderPath>	String	C:\CITIZEN\CPVHID Driver\Log

## 11. Log File

The Log File is to record the operation of VHID Driver.

By checking [Enable Logging] on [Settings Window](#), it starts generating the Log File.

The Log File path is written in the [Configuration File](#) generated during installation.

The filename format of the Log File is "[YYYYMMDD]VHIDDriver.log".

The Log File is generated one file a day.

The Log File will be kept for 7 days. Older logs will be deleted when VHID Driver starts up or every 24 hours. The time stamp in the file name will be used for the sorting.

The format of the Log File is comma-separated text, written in order of date, time, category, message, and detail.

--- Example of logging in to an environment where a scanner is available ---

```
2018/12/14 16:40:42.649,DRIVER,Start,-
2018/12/14 16:40:42.664,TASK,Start,-
2018/12/14 16:40:42.664,SNMP,Start,192.168.10.100
2018/12/14 16:40:42.680,SNMP,Success,Scanner Connected
2018/12/14 16:40:42.696,TCP,Start,192.168.10.100: 9210
2018/12/14 16:40:42.696,TCP,Open,-
```

--- Example of receiving barcode data(seperated data in this case) ---

```
2018/12/14 16:41:37.594,VHID,Scan,1
2018/12/14 16:41:38.187,VHID,Scan,234567
```

--- Example of clicking [Stop] on [Context Menu](#) ---

```
2018/12/14 16:42:36.367,TCP,Close,-
2018/12/14 16:42:36.554,TASK,Stop,-
```

--- Example of clicking [Start] in [Context Menu](#) ---

```
2018/12/14 16:44:35.303,TASK,Start,-
2018/12/14 16:44:35.319,SNMP,Start,192.168.10.100
2018/12/14 16:44:35.319,SNMP,Success,Scanner Connected
2018/12/14 16:44:35.335,TCP,Start,192.168.10.100: 9210
2018/12/14 16:44:35.335,TCP,Open,-
```

--- Example of unplugging the scanner cable from the printer ---

```
2018/12/14 16:44:55.431,SNMP,Success,Scanner Disconnected
```

--- Example of plugging the scanner cable in to the printer ---

```
2018/12/14 16:45:15.449,SNMP,Success,Scanner Connected
```

--- Example of unplugging the LAN cable from the printer ---

```
2018/12/14 16:45:57.517,SNMP,Err,SnmpMgrRequest ErrCode: 0x28
```

--- Example of plugging the LAN cable in to the printer ---

```
2018/12/14 16:47:19.667,SNMP,Success,Scanner Connected
2018/12/14 16:47:19.667,TCP,Close,-
2018/12/14 16:47:19.667,TCP,Start,192.168.10.100: 9210
2018/12/14 16:47:19.667,TCP,Open,-
```

\*Please note that the Log File will be update every time when the status changes. This may affects to the performance of VHID Driver.

\*The Log File can not be updated in the following cases:

- A write protected device is selected as a destination.
- The destination does not have enough space.
- A write protected Log File exists.
- The driver does not have enough access privileges to the file or folder.
- Another application is using the Log File.

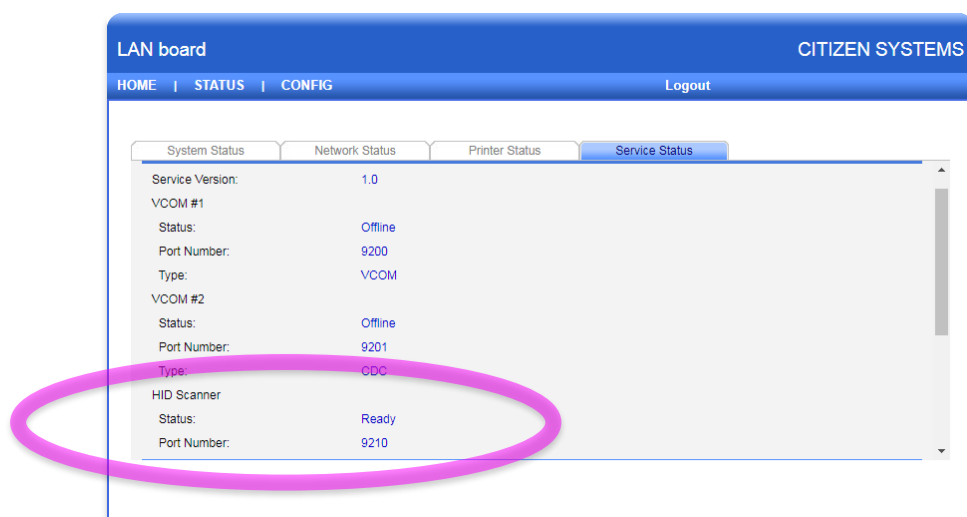
## 12. FAQ

Q. The scanned data does not come in. What should I do?

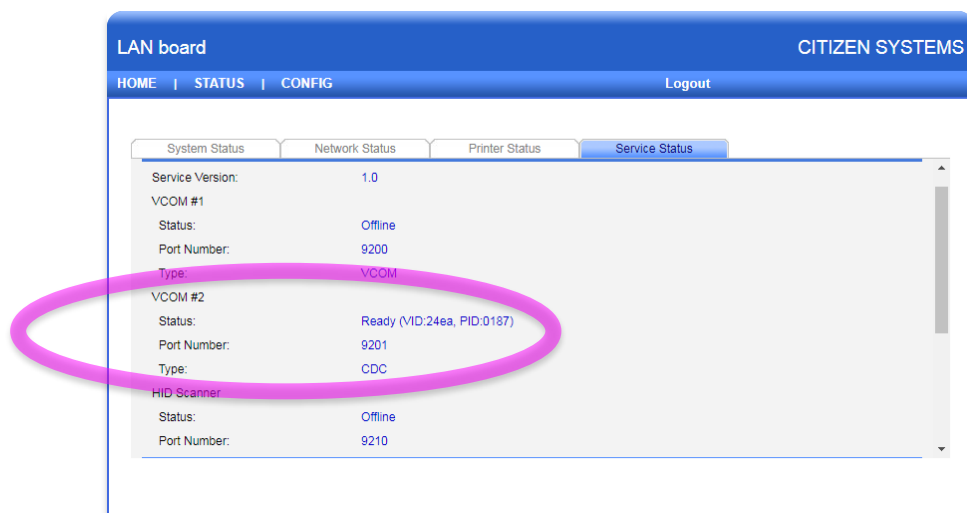
A. Please confirm below.

- Make sure the IP address of the printer and the [IP Address] setting in the [Settings Window](#) matches.  
The IP address of the printer appears in the printer self test by pressing the button on the LAN interface card.
- Make sure the port number of the LAN interface card and the [Port Number] setting in the [Settings Window](#) matches.  
The port number of the LAN interface card can be found by accessing the IP address with browser, in the [Service Status] window.

Here is an example of the [Service Status] window which shows the HID-mode scanner is connected.



Here is an example of the [Service Status] window which shows the VCOM-mode scanner(SCN02-Z2DB) is connected.



Q. The scanned data with the BC-NL3000 U does not come in. What should I do?

A. Please reset the scanner to the default setting (USB HID-POS).

Refer to the Barcode Scanner Operation Manual for more details.

Q. Can I use multiple scanners connected to a printer?

A. Please refer to [Restriction](#).

Q. Can I use barcodes which contain binary data?

A. Please refer to [Restriction](#).

Q. Can I use Japanese characters in a barcode?

A. Please refer to [Restriction](#).

# CITIZEN Printer **Virtual HID Driver**

User's Guide

For Version 1.0.0