DS-700

User's Manual

silex technology

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WA106460XB

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1. Introduction

Thank you for purchasing the USB Device Server "DS-700".
This manual provides information on how to configure and use DS-700.
Please read the **1-2. Safety Instructions** carefully before using DS-700.

1-1. Introduction

Indication of Symbols

This manual uses the following symbols to indicate specific information for operating DS-700.
Be sure to carefully review before using DS-700.

TIP : This symbol indicates important information that needs to be observed when operating DS-700. Make sure to read this information for safe and proper use.

Note : This symbol indicates information that is useful when using DS-700. If you experience difficulties operating DS-700, please refer to this information first.

Disclaimers

- The unauthorized transfer or copying of the content of this manual, in whole or in part, without prior written consent is expressly prohibited by law.
- The content of this manual is subject to change without notice.
- This manual was prepared to accurately match the content of each OS, but the actual information shown on the PC monitor may differ from the content of this manual due to future OS version upgrades, modifications, and other changes.
- Although every effort was made to prepare this manual with the utmost accuracy, Silex Technology will not be held liable for any damages as a result of errors, setting examples, or other content.

Trademarks

- AMC Manager is a registered trademark of silex technology.
- Microsoft and Windows, Microsoft Edge, Azure are either registered trademarks of Microsoft Corporation in the United States and/or other countries.
- Safari is registered trademark of Apple, Inc in the United States and/or other countries.
- Google Chrome is trademark of Google LLC.
- OpenVPN is a registered trademark of OpenVPN Inc.
- Other brand or product names are registered trademarks or trademarks of their respective owners.

1-2. Safety Instructions

This page provides the safety instructions for safe use of DS-700.
To ensure safe and proper use, please read the following information carefully before using DS-700.

<Indication of the warning>

	Warning	- "Warning" indicates the existence of a hazard that could result in death or serious injury if the safety instruction is not observed.
	Caution	- "Caution" indicates the existence of a hazard that could result in serious injury or material damage if the safety instruction is not observed.

<Meaning of the symbols>

	- This symbol indicates the warning and caution. - (Example: "Danger of the electric shock")
	- This symbol indicates the prohibited actions. - (Example: "Disassembly is prohibited")
	- This symbol indicates the actions users are required to observe. - (Example: "Remove the AC plug from an outlet")

<Installation>

Warning	
	- Do not place anything on top of the product. Also, do not place the product on top of the other product. Failure to do so may cause fire, electrical shock, malfunction or performance degradation. - Do not cover up the product with a cloth such as blanket or table cloth. The heat remains inside and it may cause fire or malfunction.

Caution	
	- Do not use or store the product under the following conditions. It may cause malfunction. - Locations subject to vibration or shock - Shaky, uneven or tilted surfaces - Locations exposed to direct sunlight - Humid or dusty places - Wet places (kitchen, bathroom, etc.) - Near a heater or stove - Locations subject to extreme changes in temperature - Near strong electromagnetic sources (magnet, radio, wireless device, etc.) - When installing the product to a high position, make sure that the product is firmly fixed so it does not drop for weight of the cables.

<Safe handling>

Warning	
	- Do not move the product when the AC adaptor is connected to it. The cable of AC adaptor may be damaged, and which may result in fire or electric shock. - For use of the devices connected to the product, please follow all warnings, cautions and notices given by that manufacturer and carefully use them in a proper manner. Failure to follow these instructions may cause fire, electrical shock or malfunction. - If a ground wire is supplied with your device to use with, connect it to the ground terminal in order to prevent an electrical shock. Do not connect the ground wire to gas pipe, water pipe, lighting rod or telephone ground wire. It may cause malfunction.

Caution	
	- The product may become hot when it is in use. Be careful of the heat when moving or removing the product.

<Handling of malfunctioned units>

Warning	
	- In the following cases, turn off the connected devices and unplug the AC plug of the product from a power outlet. Failure to follow these instructions may cause fire or an electrical shock. - When the product emits a strange smell, smoke or sound or becomes too hot to touch. - When foreign objects (metal, liquid, etc.) gets into the product. - When the product is dropped or the case is broken or cracked.

<Ventilation>

Warning	
	- Do not cover up the vents on the product. The temperature inside may rise and cause fire or malfunction.

<Disassembly / Modification>

Warning	
	- Do not disassemble or modify the product. It may cause fire, electrical shock or malfunction. - Do not disassemble or modify the AC adaptor that comes with the product. It may cause fire, electrical shock or malfunction.

<Power supply>

Warning	
	- Use the correct power voltage. Improper voltage may cause fire or an electrical shock.

Caution	
	- Always use the AC adaptor supplied with the product. Other AC adaptors may cause malfunction. - When the product will not be used for a long period of time, unplug the power cables of the product and other devices.

<Use of AC adaptor and AC cord>

Warning	
	- Do not place any objects on top of AC adaptor, and do not cover it up with anything. Also, do not use the AC adaptor on top of the heat/moisture retaining materials (carpet, sponge, cardboard, styrofoam, etc.). The accumulated heat may result in fire or malfunction. - Do not roll up or wrap the AC cord. It may cause fire or an electrical shock. - Do not plug or unplug the AC adaptor or any other cables with wet hands. It may cause an electrical shock or malfunction. - Keep the cords and cables away from children. It may cause an electrical shock or serious injury.

Caution	
	- Do not place anything on top of the cables, and do not bend, twist and stretch the cables by force. - Do not use the cables or AC cords at a place where someone may trip over them. It may cause serious injury. - Do not pull on the cord to disconnect the plug from the power supply. The code may be broken, which could result in fire or an electrical shock. - Verify all codes or cables are plugged correctly before using the product. - When removing the product, disconnect the AC plugs of both the product and the other device you are using with.

1-3. Notes on Use

This page explains the caution you need to pay attention to when using this product.
Please be sure to read this page before begin.

- This product is not intended to be incorporated to or be used for control of equipment that affects human life or requires a high degree of reliability, such as medical equipment, nuclear equipment, aerospace equipment, and transportation equipment.
  Silex Technology, Inc. is not liable for any injury, fire, property damage, etc. that may arise as a result of using this product for these facilities or control systems.

- Silex Technology, Inc. is not liable for any malfunction of the device connected to this product or loss, damage, falsification, leakage, etc. of the data of that device. The same applies when these problems occur as a result of unauthorized access to this product.

- When disposing of this product, please follow the regulations of your local governments.

- This product (and its accessories) is subject to change without a pre-notice.

1-4. Product Information and Customer Services

Product Information

The services below are available from the Silex Technology website. For details, please visit the Silex Technology website.

Silex Technology website
(URL) **https://www.silextechnology.com/**

- Latest firmware download
- Latest software download
- Latest manual download
- Support information (FAQ)

Customer Support Center

Customer Support is available for any problems that you may encounter. If you cannot find the relevant problem in this manual or on our website, or if the corrective procedure does not resolve the problem, please contact Silex Technology Customer Support.

Contact Information	
USA	support@silexamerica.com
Europe	support@silexeurope.com

Note

- Refer to the Silex Technology website (**https://www.silextechnology.com/**) for the latest FAQ and product information.

2. About DS-700

2-1. Package Contents

This page explains the items that came with DS-700.

Following items are bundled with DS-700.
If you find any items missing, please contact your point of purchase.

- DS-700
- AC adaptor
- Setup Guide
- Distribution of source code subject to open source software

2-2. Features

This page explains the feature of DS-700.
DS-700 has the following features.

Supports Gigabit Ethernet

High-speed data transfer with Gigabit Ethernet (1000BASE-T) as well as 100BASE-TX / 10BASE-T Ethernet (auto-sensing).

Easy Configuration

If a DHCP server (or broadband router with DHCP function) is installed to your network, you can use the DS-700 just by connecting it to the network.
Also, when you want to assign IP address to your network devices manually, you can easily configure the DS-700 using the Device Server Setup which can be downloaded from our website.

USB Device Server Feature

- Share various USB devices
  By using DS-700 and the utility, SX Virtual Link, you can share various USB devices such as printers, scanners and storage devices among Windows PC (refer to **2-3-2. Software Specifications**). DS-700 allows you to use USB devices as if they were connected directly to your PC.

Note

- For details on SX Virtual Link, refer to **4-1-2. What is SX Virtual Link?**.

- Support USB device that uses isochronous transfer
  You can share the USB devices that use isochronous transfer (e.g. Web camera, USB speaker, etc) over the network. For the isochronous devices, it is recommended to use Gigabit Ethernet environment.

- Printer auto connection
  When printing to a USB device, the print operation executed to the device will automatically prompt SX Virtual Link to connect with the device to print and disconnect after the job is printed. It is not required to manually connect to the device with SX Virtual Link for printing.

Print Server Feature

- Supports Raw / LPR printing
  DS-700 supports "Raw" and "LPR" of network printing protocols.
  When a printer is connected to DS-700, you can use standard Windows printing feature.
  Print server feature runs in bidirectional communication.

ECO Mode

If DS-700 is not used for a specified period of time, it will switch to ECO Mode which turns off the USB Bus power. This feature allows you to save power used by USB Bus powered devices connected to DS-700. As soon as DS-700 is used during ECO Mode, the USB Bus power will automatically be switched on again.

Please note that DS-700 will not switch to ECO Mode if the USB device connection utility, "SX Virtual Link", is active on any PCs in your network. Please shut down all PCs that have SX Virtual Link installed or close SX Virtual Link on each PC to use this feature.

TIP

- Depending on the USB printing device specification, the Printer auto connection function may not be available.
- If a USB HUB is used, multiple USB devices can be connected, however, the USB3.0 port does not support connection of a USB HUB. Also, when using a USB HUB for the USB2.0 port, make sure that only one HUB is connected.
- When you use isochronous devices such as Web camera, USB speaker, etc, please connect them directly to DS-700.
- If isochronous devices such as Web cameras or USB speakers, etc. are used on a 100BASE-TX/10BASE-T network, frame dropping or sound skipping may occur.
- Depending on the USB printing device specification, the Printer auto connection function may not be available.
- When a print server feature is used, it is impossible to get printer status using the status monitor software that came with the printer or MFP. Also, if the printer supports bi-directional printing only, a print server feature cannot be used.
- When using a print server feature, up to 1 printer can be used at a time. To connect 2 or more printers, SX Virtual Link must be used.
- Some USB devices may not be supported depending on the driver specification. For the latest compatibility information, please visit our website (https://www.silextechnology.com/).

Supports AMC Manager® (non-free program / free program)

The AMC Manager® provides the useful features as follows:
- Remote device control and monitoring
- Bulk configuration and firmware updates

Note

- For details on the "AMC Manager®", please visit our homepage.

2-3. Specifications

2-3-1. Hardware Specifications

This page explains the hardware specification of DS-700.

Operating environment	Temperature : 0 degrees to +40 degrees Humidity : 20% to 80%RH (Non-condensing)
Storage environment	Temperature : -10 degrees to +50 degrees Humidity : 20% to 90%RH (Non-condensing)
EMI	VCCI Class B FCC Class B ICES Class B CE / UKCA Class B
Memory	SDRAM 256MByte FlashROM 32MByte
Network interface	10BASE-T / 100BASE-TX / 1000BASE-T (Auto-sensing)
Device interface	USB 2.0 Hi-Speed x 1 USB 3.0 Super-Speed x 1
Power supply	DC12V adaptor
Maximum power consumption	4.2W (excluding USB bus power)
Push Switch	1 button
LED	LINK LED : Orange / Green POWER LED : Yellow

Notice to US Customers

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice to Canadian Customers

CAN ICES-3 (B)/NMB-3 (B)

Notice to European Customers

Notice to UK Customers

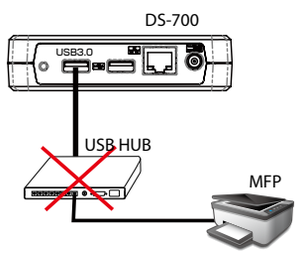
2-3-2. Software Specifications

This page explains the software specification of DS-700.

Supported protocols	ARP, ICMP/ICMPv6, IP/IPv6, TCP, UDP, DHCP/DHCPv6, HTTP/HTTPS, NBNS, LLMNR, mDNS, DNS, SNTP, SNMPv1, JCP(silex proprietary protocol), SXUPTP(silex proprietary protocol), SX-KeepAlive(silex proprietary protocol), TCP#9100, LPD, SXSMP(silex proprietary protocol)
Supported OS	Windows 7 or later Windows Server 2008R2 or later
Number of max connection at a time	15 (Only one printer can be connected using Raw Port, LPD printings.)

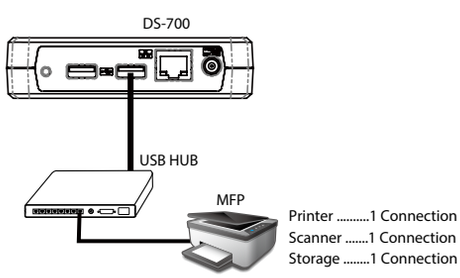
TIP

- For the latest compatibility information for each operating system, visit our website (https://www.silextechnology.com/).
- The USB3.0 port of DS-700 does not support connection with a USB HUB, USB HUB embedded device and USB video converter.



Note

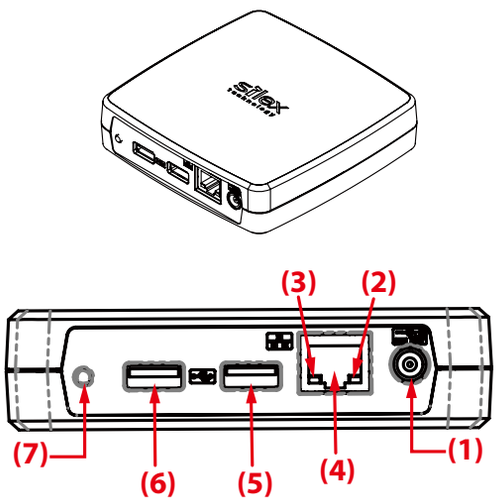
- About the number of connection
  If DS-700 is used with a MFP as shown below, total 3 connections will be occupied (1 connection for each printer, scanner and storage features).



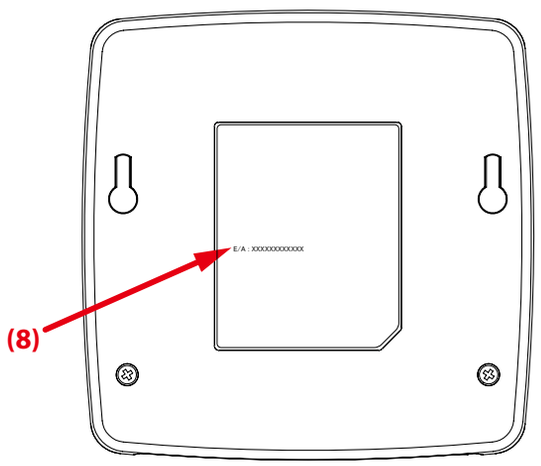
2-4. Parts and Functions

This page explains the parts and functions of DS-700.
The parts name and functions are as follows:

<FRONT>



<BOTTOM>



(1)	Power Connector	Connect an AC adaptor.
(2)	POWER LED	Lights up when DS-700 is powered on (Yellow).
(3)	LINK LED	Indicates a network port status. - 10BASE-T/100BASE-TX:ON (Orange) - 1000BASE-T:ON (Green)
(4)	Network Port	Connect a network cable. 10BASE-T / 100BASE-TX / 1000BASE-T (Auto-sensing)
(5)	USB2.0 Port	Connect a USB2.0 device. USB2.0 Type-A Port x1(Hi-Speed)
(6)	USB3.0 Port	Connect a USB3.0 device. USB3.0 Type-A Port x1(Super-Speed)
(7)	Push Switch	Resets DS-700 to the factory default settings. For details, refer to **8-4-2. Resetting to Factory Defaults**.
(8)	MAC Address	MAC Address of DS-700. Example) If the MAC Address is 84:25:3F:00:11:22, it is noted as "84253F001122".

TIP

- If an overcurrent is detected on a USB port, power supply to the USB port is automatically cut off via an overcurrent protection feature.
- If you are using USB devices that run on USB Bus power, it is recommended to avoid using two or more devices at once, so that the total power used does not exceed the maximum power capability of DS-700.

3. Before You Begin

This chapter explains the installation flow.

3-1. Before You Begin

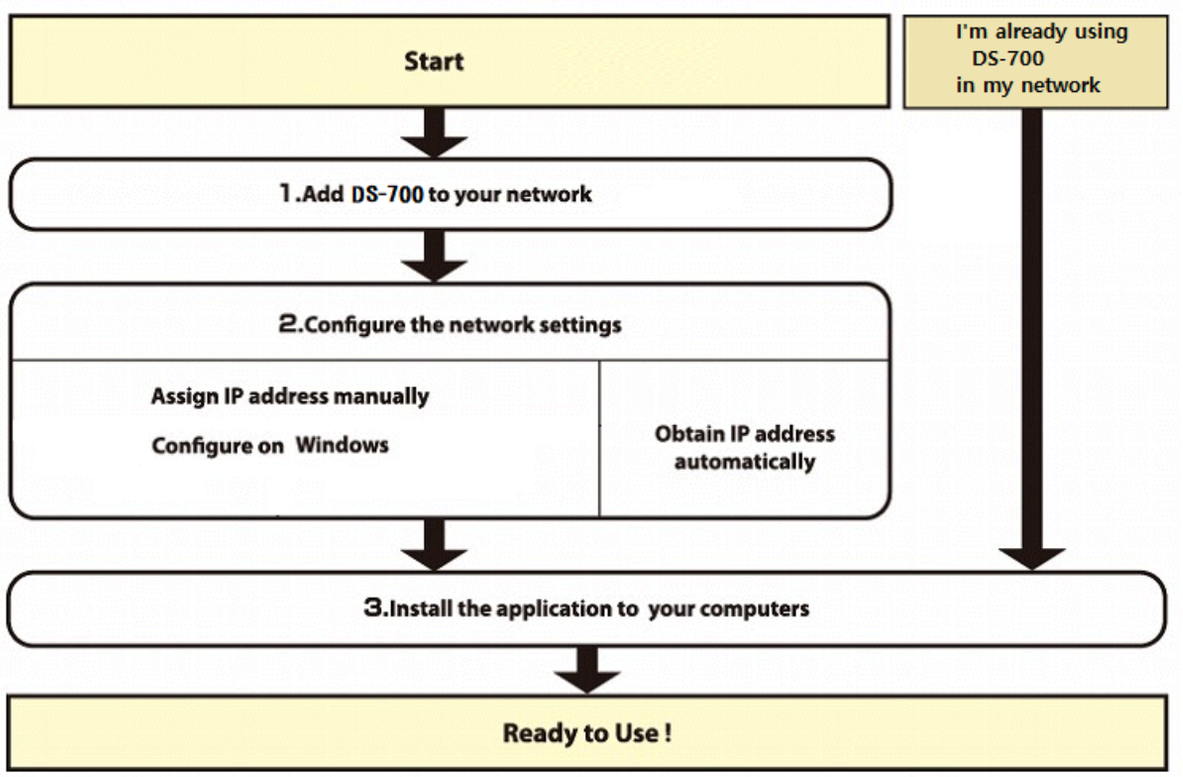
This page explains the installation flow.

3-1-1. Installing a USB device driver to your PC

Install a driver of the USB device to be shared using DS-700 to your PC.
For details on how to install the driver, please refer to the operation manual that came with the USB device.

3-2. Installation flow

Follow the procedures below to install and setup DS-700.



3-2-1. Installation

Install and set up DS-700 in your network environment.

1. Add DS-700 to your network environment.

Refer to **5-1. Powering on DS-700 and USB Device** for how to add to your network.

2. Configure the network settings of DS-700.

When assigning the IP address manually

When there are no network devices with DHCP server function on your environment, or when you wish to assign the IP address manually, configure the network settings manually.

On a Windows PC :

Refer to **5-2-1. Configuring Network Settings in Windows** for how to configure the network settings.

When assigning the IP address automatically

When there are network devices with DHCP server function on your environment and you wish to obtain the IP address automatically from it, you do not have to configure the network settings.

Note

- Please configure the network settings when you are not sure if you are in the environment where the IP address can be obtained automatically.

3. Install the necessary applications on your PC.

Refer to **6. Installing the Application to PC** for how to install the necessary applications on your PC.

3-2-2. Preparing other PCs to use DS-700

Install the necessary application on all PCs from which you wish to use the USB devices.

Install the necessary application on all PCs that you wish to use.

- Refer to **6. Installing the Application to PC** for how to install the necessary applications on your PC.

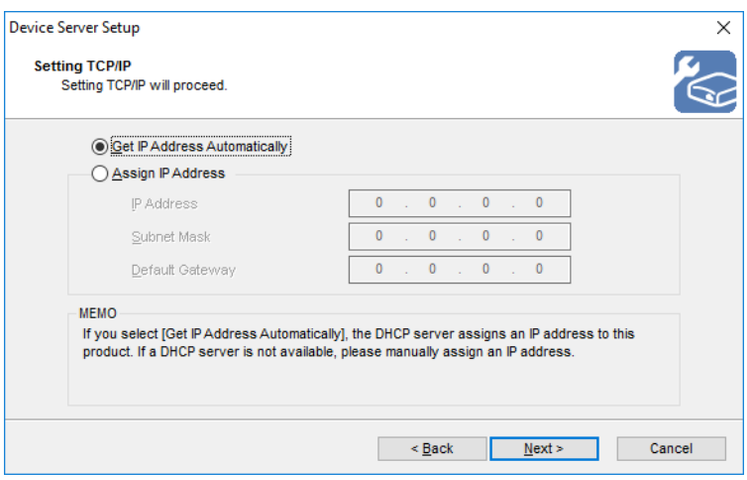
4. Software Overview

4-1. Necessary Utilities

4-1-1. What is Device Server Setup?

This page explains the Device Server Setup used to configure DS-700.

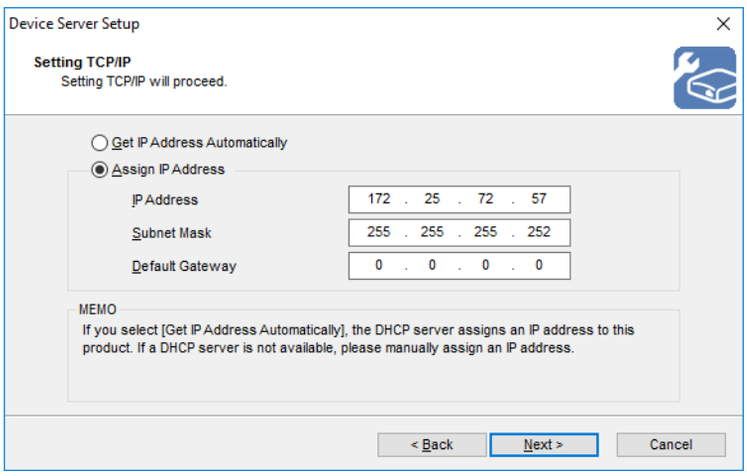
Device Server Setup is the configuration utility exclusively designed for Device Server products.
In the TCP/IP setting window of Device Server Setup, you can configure the IP Address of DS-700.



Get IP Address Automatically	Select this to automatically assign an IP Address using the DHCP server.
Assign IP Address	Select this to manually configure IP Address, subnet mask and default gateway.

TIP

- Enter a **Subnet Mask** and **Default Gateway** if necessary.
- If there are no DHCP servers on your network and the IP address of your PC is assigned manually, a sample address created with your PC's settings will be displayed in the window below. In such a case, please enter an IP address manually.
- The IP address used in the screen below is a sample address. Please specify an IP address appropriate for your environment.

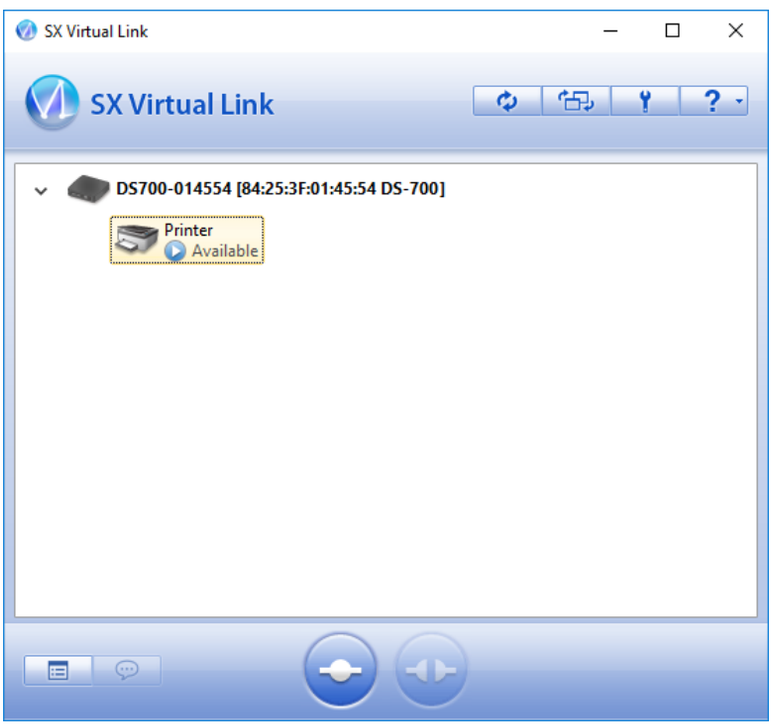


4-1-2. What is SX Virtual Link?

This page explains the application "SX Virtual Link" that is necessary to use DS-700.

About SX Virtual Link

SX Virtual Link allows you to connect your PC to a USB device that is connected to a device server.
Use SX Virtual Link when you connect/disconnect to/from the USB device.



Functional Overview

Easy to Use

You only have to select the USB device in SX Virtual Link and click the **Connect** button.
The USB device can be used from your PC as if it was directly connected to your PC. When finished using the USB device, click the **Disconnect** button in SX Virtual Link.

Printer Auto Connection

When you print to a USB printer, SX Virtual Link will automatically connect your PC to the printer. When the print job is complete, SX Virtual Link will disconnect your PC from the USB printer. Thus, you will not have to manually connect/disconnect to/from the USB printer using SX Virtual Link.

Allows Control from the Task tray

The minimized menu window in the task tray will allow you to connect/disconnect to/from USB devices without displaying SX Virtual Link's main window.

Send a Remote Message to Another User to Request for Disconnect

When you are sharing a USB device with several users and one of them occupies the USB device for a long time, you can request to the user to disconnect the device by sending a remote message. If the user accepts the disconnect request, the right of use is automatically passed down to you, so that you can use the USB device.

Operating Settings for Each USB Device

The operational settings such as **Start designated application when connected** or **Automatically connect this device when it is available** can be configured for each USB device.

TIP

- Depending on the printing capability of the USB device, the Printer auto connection feature may not work properly.
- The USB3.0 port of DS-700 does not support connection with a USB HUB, USB HUB embedded device and USB video converter.

Note

- If you are planning to use a particular USB device alone without sharing it with other users, SX Virtual Link Lite can be used to automatically connect to it when the PC is powered on.
- For details on SX Virtual Link Lite, refer to **8-6. Using SX Virtual Link Lite**.

4-2. Downloading the Utilities

This page explains how to download the necessary utilities.

The utilities to configure and use DS-700 can be downloaded from our website.

1. Access the URL below on the PC to use to configure DS-700.

URL : https://www.silextechnology.com/

2. Go to the **Support** page and select the product model.

Product Model	DS-700

3. Download the utilities below and extract them on the PC.

Utilities	Device Server Setup
	SX Virtual Link

Note

- In order to upgrade the firmware version, the firmware file needs to be downloaded.

The download is now completed.

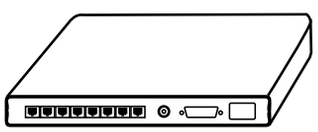
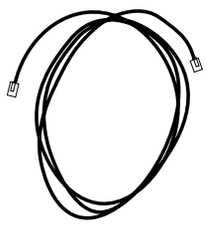
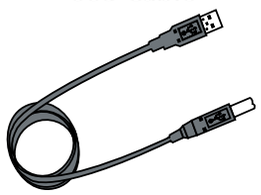
5. Configuration

5-1. Powering on DS-700 and USB device

This page explains how to power on DS-700 and connect a USB device.

5-1-1. Necessary Items

The following items are required in order to connect DS-700 to a network.

Ethernet HUB 	Use to connect DS-700 and other network devices such as a PC. When there are available LAN ports on the network in which DS-700 is to be installed, you do not have to purchase a new Ethernet Hub or broadband router as DS-700 can be connected to the available LAN port.
Network Cable 	Use to connect DS-700 and network devices such as an Ethernet Hub, broadband router and PC.
USB Cable 	Use to connect DS-700 and USB devices. A USB Cable is not required if the device is the one that connects itself directly to a USB port (e.g. USB memory) or there is a bundled USB cable.

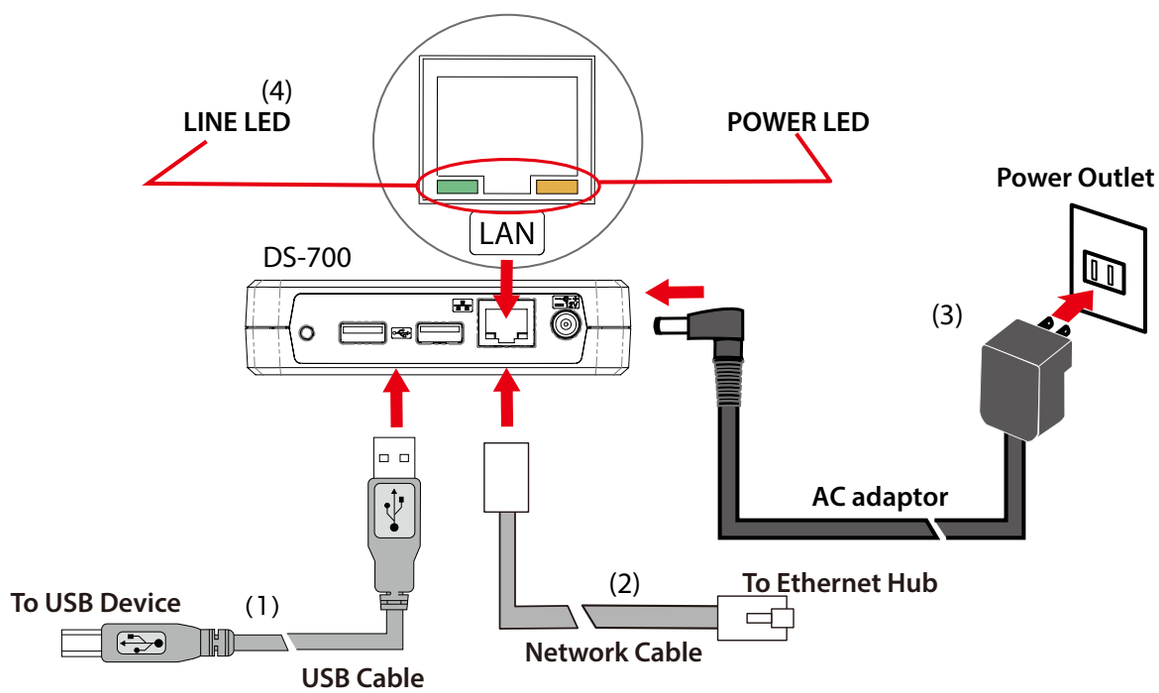
TIP

- In a 100BASE-TX environment, please use Ethernet Hub and network cable that support 100BASE-TX network (category 5 or above).
- In a 1000BASE-T environment, please use Ethernet Hub and network cable that support 1000BASE-T network (category 5e or above).
- Use a crossover cable when you connect DS-700 to a PC directly.
- For a USB cable, it is recommended to use the one with a USB logo certification.

5-1-2. Power on

TIP

- Please be sure to read the operation manual of your USB device before you connect it to DS-700. The connecting method and position may vary depending on the USB device to be connected.
- If an overcurrent is detected on a USB port, power supply to the USB port is automatically cut off via an overcurrent protection feature. If you are using USB devices that run on USB Bus power, it is recommended to avoid using two or more devices at once, so that the total power used does not exceed the maximum power capability of DS-700.
- Please use the AC adaptor bundled with DS-700. Other AC adaptors may cause unexpected damages.
- If DS-700 has been used in another network, reset it to the factory default settings before you start the configuration. (Please refer to **8-4-2. Resetting to Factory Defaults** for details.)
- The USB3.0 port of DS-700 does not support connection with a USB HUB, USB HUB embedded device and USB video converter.



1. Connect DS-700 and the USB device using a USB cable (1).

2. Connect DS-700 and Ethernet Hub using a network cable (2).
   Connect an AC adaptor to DS-700 and power plug to an outlet (3).

3. Check that the POWER LED and LINK LED turn on (4).

4. Turn on the USB device if it requires external power.

5-2. Configuring the IP Address of DS-700 Manually

5-2-1. Configuring Network Settings in Windows

This page explains how to configure DS-700 using "Device Server Setup" that you have downloaded from our website.

The IP address of DS-700 can be assigned automatically or manually. DS-700 is set to **Assign IP address automatically** by factory default.

- Please skip instructions in this page and go on to **6. Installing the Application to PC** when you match one of following conditions

  - Internet Protocol (TCP/IP) Properties of your PC is set to **Obtain an IP address automatically**.
  - Network devices with a DHCP server feature (e.g. broadband router, etc) are on the network where DS-700 is installed.

- In case of the followings, please complete the configuration according to the instructions in this page:

  - When there are no network devices with a DHCP server function on the network, and the IP address of the PC is assigned manually.
  - When it is not sure if there are network devices with a DHCP server function on the network.
  - When you wish to assign an IP address to DS-700 manually.

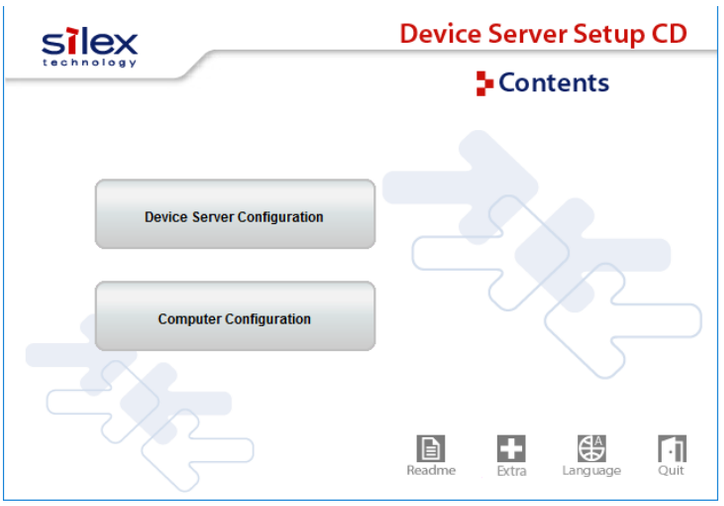
TIP

- For details on how to download the "Device Server Setup", refer to **4-2. Downloading the Utilities**.
- Please note that printing using the print server feature will become unavailable if the IP address of DS-700 is changed.
- In case of the following, it is recommended that you configure your DHCP server to assign a static address for DS-700.
  - DS-700 is configured to obtain its IP address from a DHCP server
  - You are using the print server feature
- If you are using the firewall feature of a commercial security application, disable it while you configure DS-700. Refer to the FAQ on our homepage (https://www.silextechnology.com/) for details

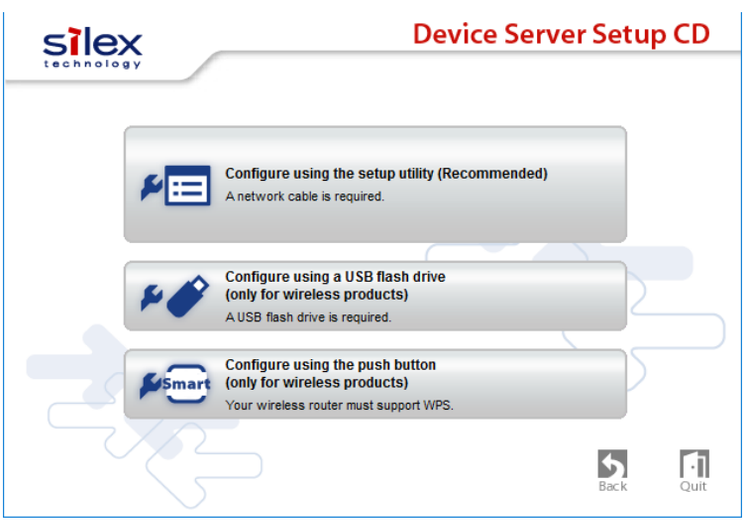
How to setup DS-700 is as follows

1. Extract the downloaded Device Server Setup file on your desktop.
Double-click **Dssetup.exe** to start the Device Server Setup utility.

2. Startup menu is displayed. Click **Device Server Configuration**.



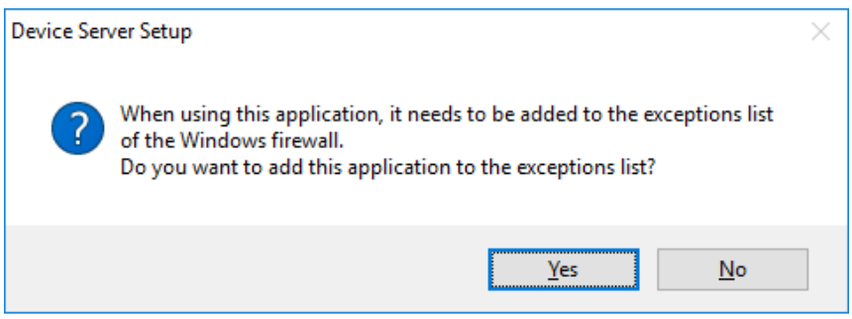
3. Click **Configure using the setup utility (Recommended)**.



TIP

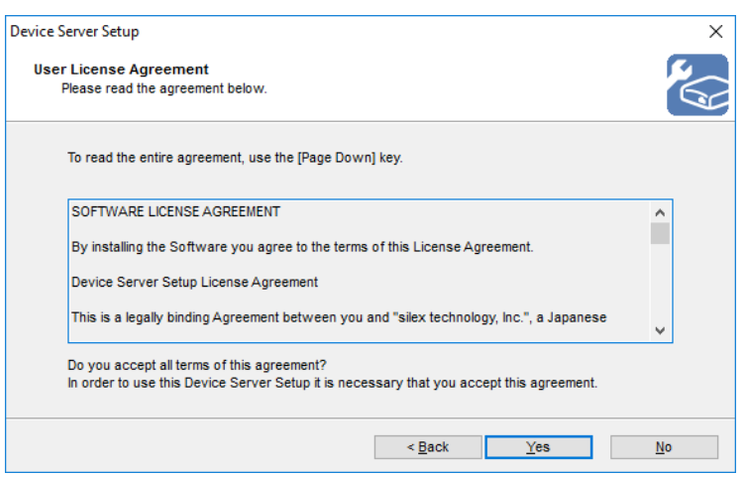
- In Windows 7 or Newer, the User Account Control screen is displayed. Click **Yes**.

4. The message below is displayed. Click **Yes**.

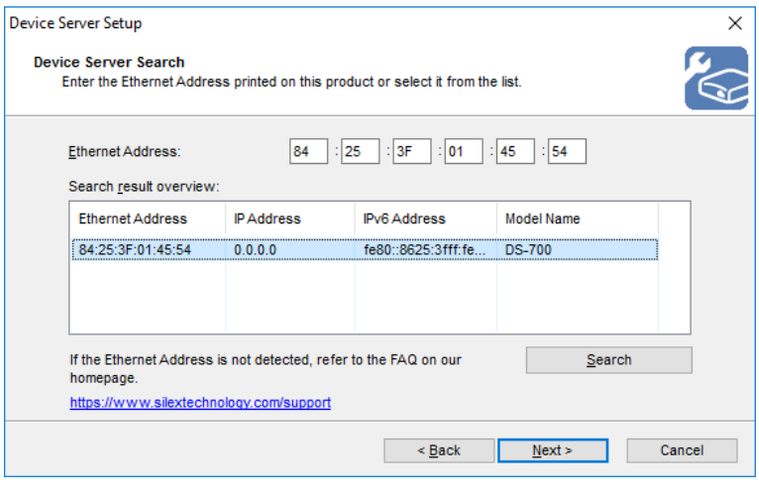


5. The Device Server Setup screen is displayed. Click **Next**.

6. Read the **SOFTWARE LICENSE AGREEMENT** and click **Yes**.



7. Select DS-700 and click **Next**.



Note

- If an IP address other than 0.0.0.0 is displayed in the list, it means an IP address was obtained from a DHCP server or was already configured manually. If you wish to use the displayed address, click Cancel to cancel the setup and go on to **6. Installing the Application to PC**.
- If DS-700 is not displayed on the list, click Search.
- If this does not help, refer to **9-2-1. Problems During Setup-DS-700 is not displayed in the search result of the Device Server Setup** in Troubleshooting**.**

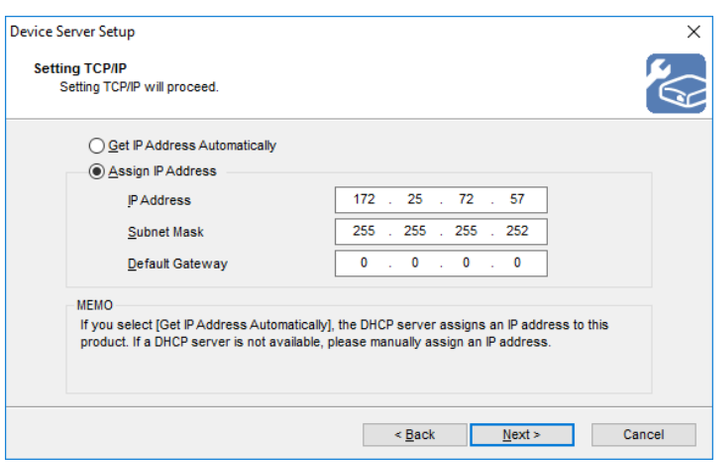
8. Configure the TCP/IP settings appropriate for your environment.

Note

- If you are not sure how to determine the IP address to set, refer to **9-2-1. Problems During Setup-How should I determine the way to assign an IP address to DS-700?** in Troubleshooting.

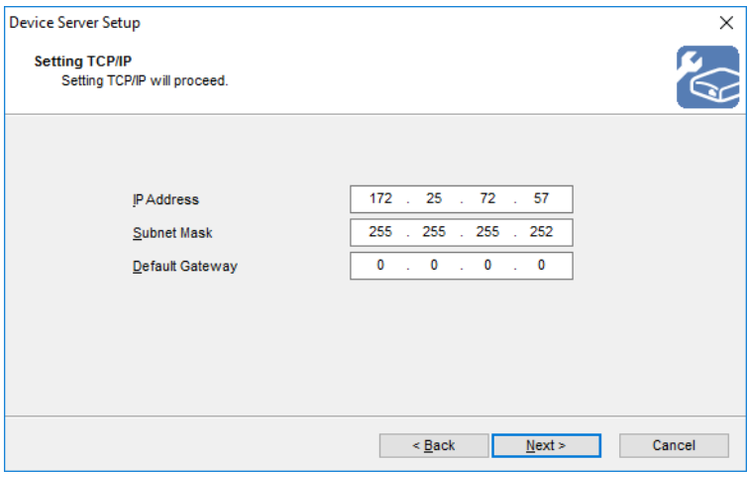
<< When assigning an IP address manually in a DHCP environment >>

Enter an IP address and click **Next**.



<< When assigning an IP address manually in a non-DHCP environment>>

Enter an IP address and click **Next**.

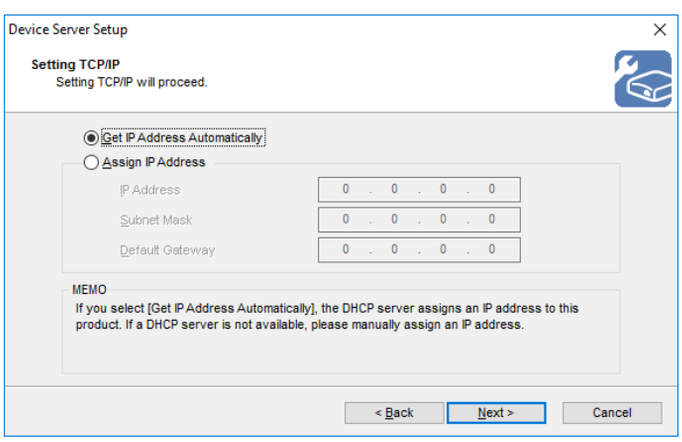


TIP

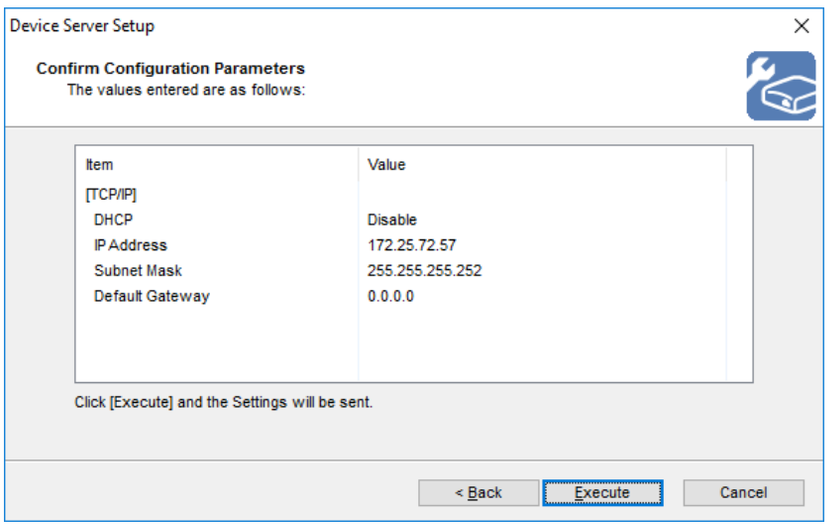
- The IP address used in the above screen is a sample address. Please specify an IP address appropriate for your environment.
- Enter a **Subnet Mask** and **Default Gateway** if necessary.
- If there are no DHCP servers on your network and the IP address of your PC is assigned manually, a sample address created with your PC's settings will be displayed in the window below. In such a case, please enter an IP address manually.

Note

- When there is a DHCP server on your network and you wish to obtain an IP address automatically from it, select Get IP Address Automatically and click **Next**.



9. Check the settings and click **Execute**.



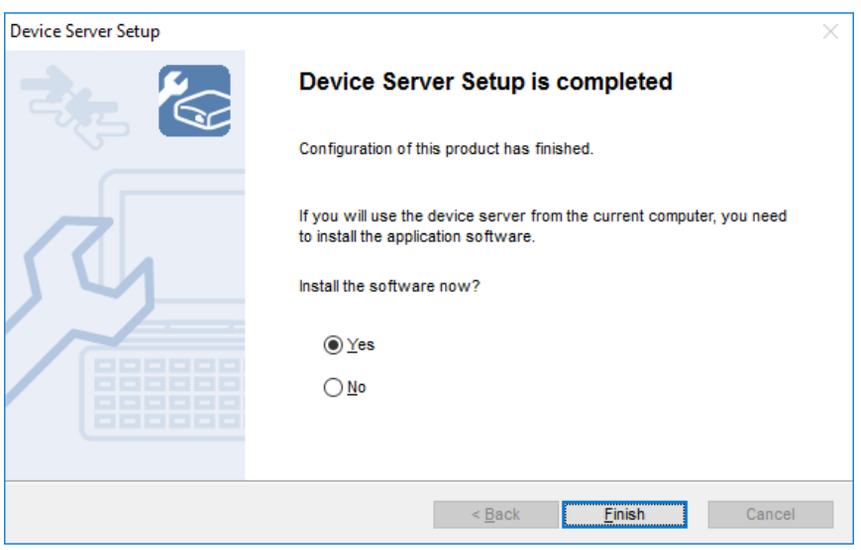
TIP

- The information displayed on this screen will vary depending on the items you have configured.

Note

- If an error occurs after clicking **Execute**, please refer to **9-2-1. Problems During Setup-Communication error occurs when configuring with Device Server Setup** in Troubleshooting.

10. Select **Yes** or **No** and click **Finish**.



Note

- If you plan to use the Device Server feature, click **Yes**.
- In the following cases, click **No**. SX Virtual Link does not need to be installed.
  - When you do not use the Device Server feature on the PC used for this setup.
  - When you use only a printer with standard Windows printing.

The setup is now complete.

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6. Installing the Application to PC

6-1. Installing the Application to PC

This page explains how to install the USB device connection utility "SX Virtual Link" on Window environment.

Install SX Virtual Link according to the instructions below.
If you have completed the configuration and continue to install the application, start from 3 in this section.

TIP

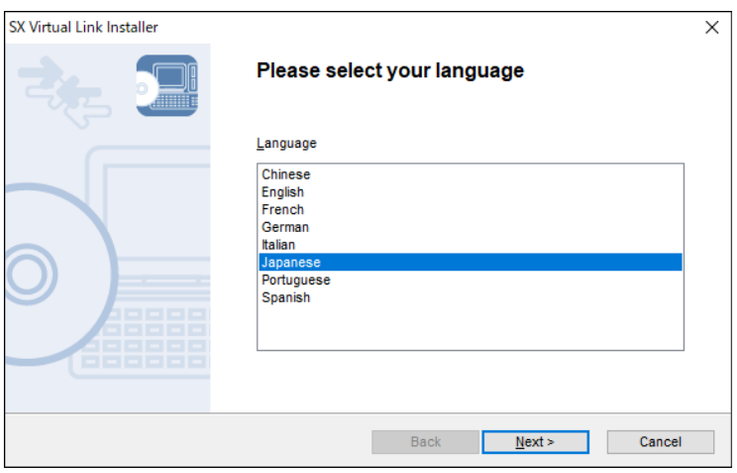
- For details on how to download the "SX Virtual Link", refer to **4-2. Downloading the Utilities**.
- Administrator privilege is required for installation.

1. Extract the downloaded SX Virtual Link file on your desktop.
Double-click **Cosetup.exe** to start the SX Virtual Link installer.

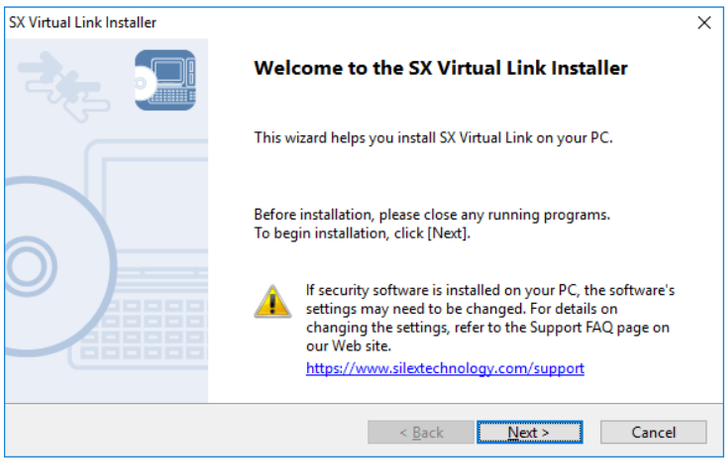
TIP

- In Windows 7 or Newer, the User Account Control screen is displayed. Click **Yes**.

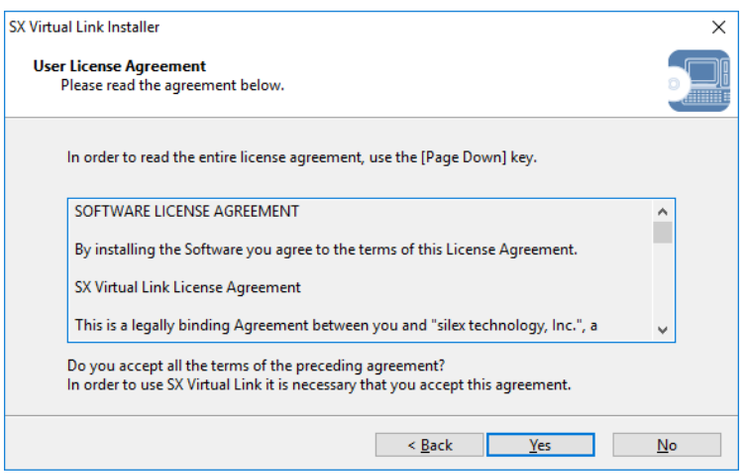
2. Select your language and click **Next**.



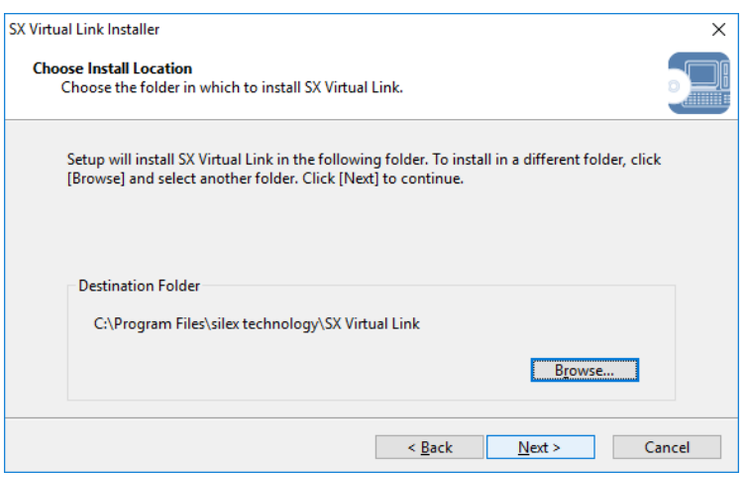
3. SX Virtual Link Install wizard is displayed. Click **Next**.



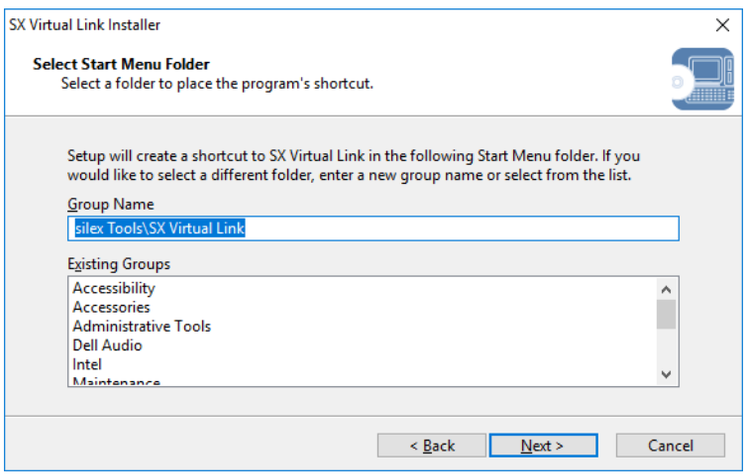
4. Read the **SOFTWARE LICENSE AGREEMENT** and click **Yes**.



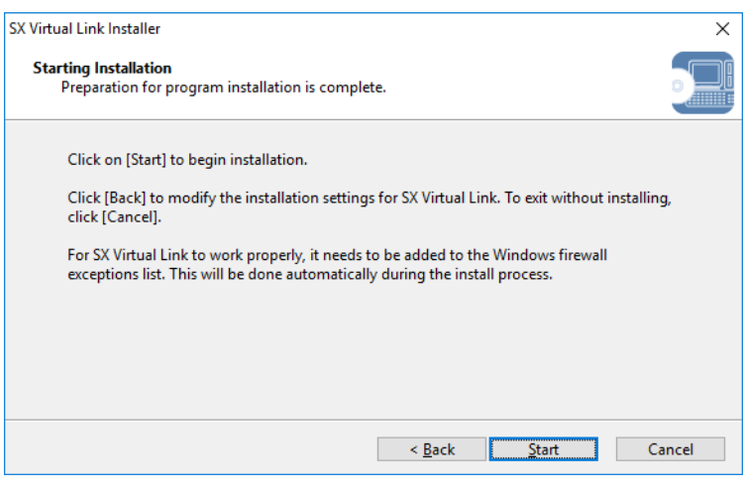
5. Select a folder to install SX Virtual Link into and click **Next**.



6. Enter a Group Name to be displayed in the Start Menu. Click **Next**.

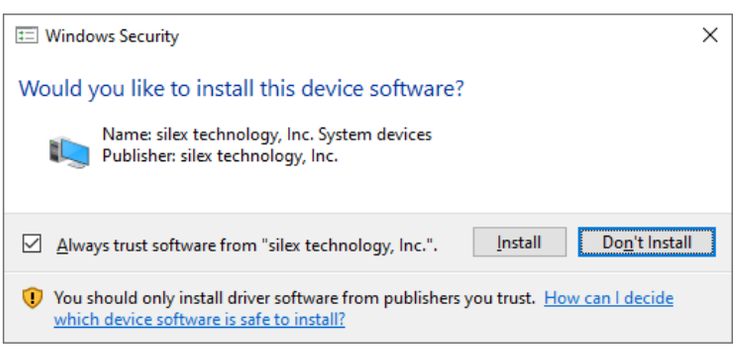


7. Click **Start** to begin the installation.

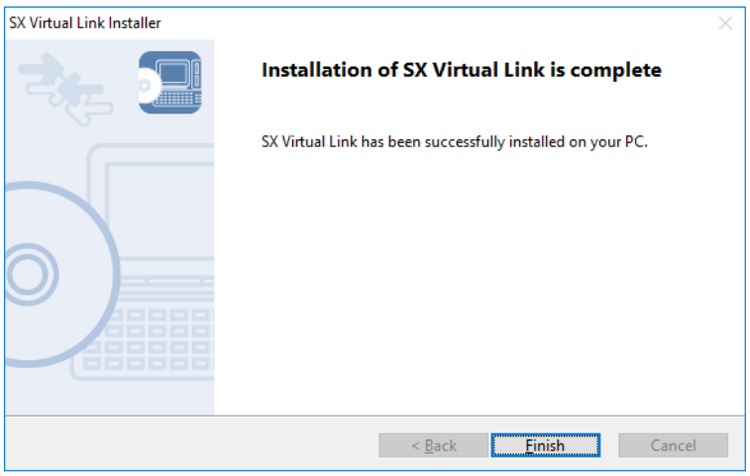


TIP

- When Windows Security screen is displayed, click **Install**.



8. SX Virtual Link has been installed. Click **Finish**.



TIP

- Restart your PC when it is required by the system.
- If using a firewall function of commercial security software, please add SX Virtual Link to the exception list in your security software. Refer to the FAQ on our website (https://www.silextechnology.com/) for details on adding an application to the exception list.

SX Virtual Link has been installed on your PC.

Note

- For how to uninstall SX Virtual Link, refer to **8-7-1. Uninstalling SX Virtual Link**.

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7. Using USB Devices Connected to DS-700

7-1. Using USB Devices in Windows

This page explains how to use USB devices connected to DS-700 after installing SX Virtual Link on Windows.

7-1-1. Starting SX Virtual Link

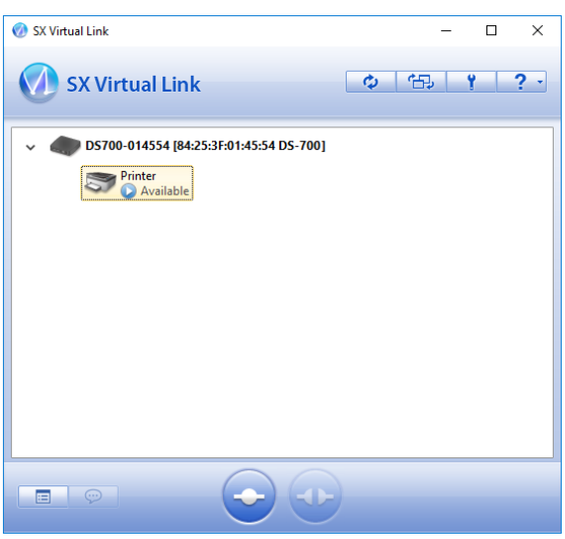
How to start SX Virtual Link:

1. Click the SX Virtual Link icon ( ) in the task tray.

Note

- If SX Virtual Link is not running, click Start - (All apps) - silex tools - SX Virtual Link.
- In Windows 7, click the ( ) button on the notification area (bottom right corner of your desktop) to display the tasktray icons.

2. The SX Virtual Link's main window appears. The USB devices running on a network are displayed in the device list.



Note

- SX Virtual Link can be set to automatically run at startup as a minimized application in the task tray by changing the optional settings. For details on optional settings, refer to **7-1-4. Online Help**.

7-1-2. Connecting / Disconnecting to / from a USB device

Basic usage of a USB device:

1. Select the USB device in SX Virtual Link's main window and connect to it.
2. When successfully connected to the USB device, Windows Plug and Play will run and the USB device will become ready to use.
3. When finished using the USB device, disconnect it using SX Virtual Link.

How to connect:

Double-click	Double-click the USB device in SX Virtual Link's main window.
Use a button	Select the USB device and click the **Connect** button ( ) in SX Virtual Link's main window. If you select two or more USB devices, you can connect to them at once.
Right-click	Right-click on the USB device in SX Virtual Link's main window and click **Connect** in the menu displayed. If you select two or more USB devices, you can connect to them at once.
Use a keyboard	Select the USB device using the up/down arrow keys and press **Alt + C** on your keyboard.

How to disconnect:

Double-click	Double-click the USB device in SX Virtual Link's main window.
Use a button	Select the USB device and click the **Disconnect** button ( ) in SX Virtual Link's main window.
Right-click	Right-click on the USB device in SX Virtual Link's main window and click **Disconnect** in the menu displayed.
Use a keyboard	Select the USB device using the up/down arrow keys and press **Alt + D** on your keyboard.

TIP

- If a USB device is shared among several users, make sure that each user disconnects from the USB device after they have finished using it. Otherwise, other users will not be able to connect to the USB device.

Note

- For details on how to use SX Virtual Link, refer to the **7-1-4. Online Help**.

7-1-3. Finishing SX Virtual Link

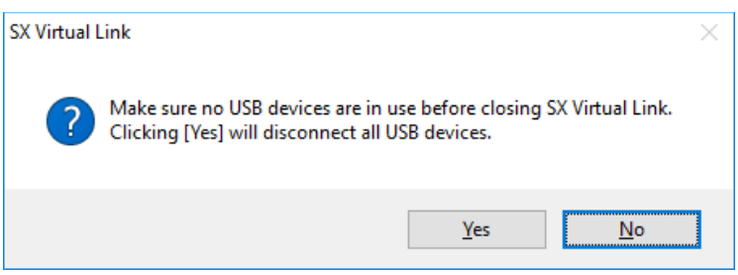
How to finish SX Virtual Link:

1. Click the close button on SX Virtual Link.

Note

- When **Hide the main window if the close button is clicked** setting is enabled on the SX Virtual Link's optional setting, right-click on the SX Virtual Link's icon ( ) in tasktray and select Exit from the menu.

2. When USB device is in use, the dialog below is displayed. Click **Yes**.



TIP

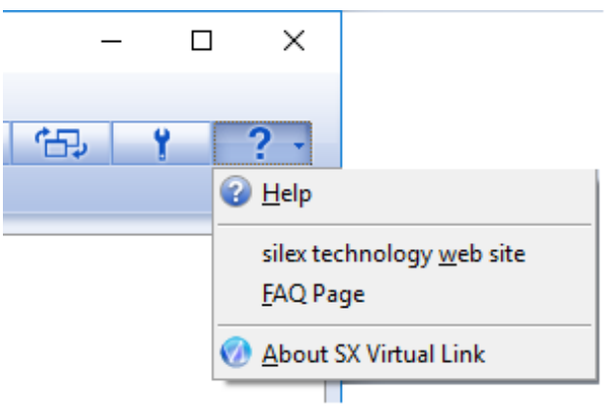
- Clicking **Yes** will disconnect all USB devices. Check that no USB devices are in use before finishing SX Virtual Link.

7-1-4. Online Help

SX Virtual Link has an Online Help which provides helpful information on its usage.
How to access the Online Help is as follows:

1. Start SX Virtual Link.

2. In SX Virtual Link's main window, click the **Help** button ( ) and select Help from the menu displayed.



3. Online Help will open.

8. Other Features

8-1. Using the Web Configuration Page

This page explains how to configure advanced settings using a Web browser.

Since DS-700 has the HTTP protocol, advanced settings can be configured or changed via a Web browser. Useful functions such as a remote restart or status monitor are available.

TIP

- To use a Web browser, the TCP/IP settings need to be enabled, and an IP address needs to be configured.
- We recommend the following Web browsers:

Internet Explorer11 / Microsoft Edge / Safari / Google Chrome

- In the following instructions, Internet Explorer 11 and Windows 10 are used as example. Display may vary depending on the Web browser.

Note

- The Web configuration page complies with HTTP 1.0(RFC1945) / HTML 3.0
- The operating status of the connected USB device is automatically refreshed in every 30 sec.

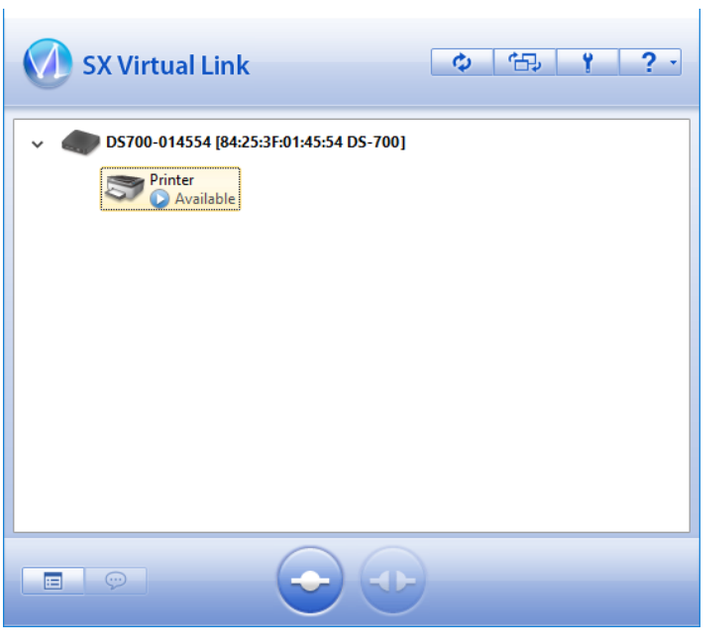
8-1-1. Displaying the Web page of DS-700

Display the Web page of DS-700.
There are 2 ways to display the Web page described below.

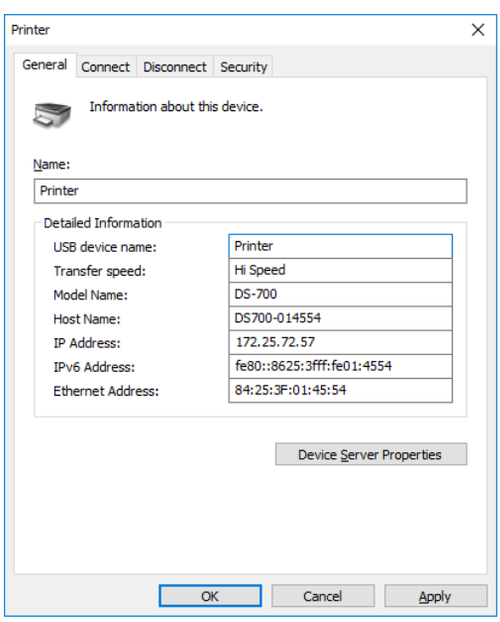
Using SX Virtual Link to display the Web page

Follow the instructions below to display the Web page using SX Virtual Link.

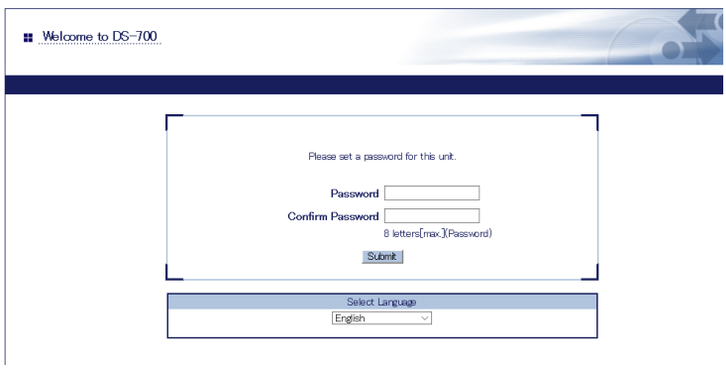
1. From the SX Virtual Link's main window, select the USB device and click the Properties button ( ).



2. In the Properties dialog, the **General** tab is displayed. Click **Device Server Properties** button.



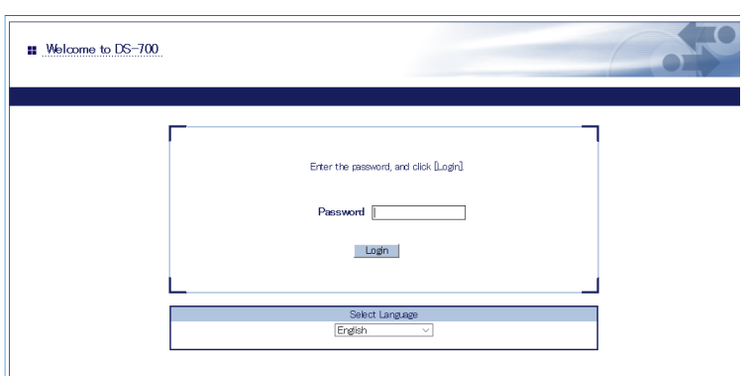
3. The Web browser will run and the login password configuration page will be displayed.
Enter the password to configure for DS-700 and click **Submit**.



Note

- When the login password is already configured, this page is not displayed.

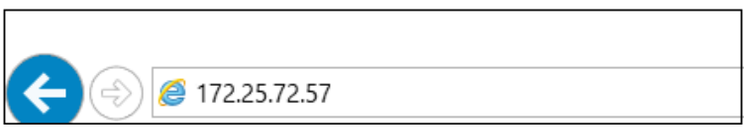
4. The login page is displayed.
Enter the password you have configured for DS-700 and click **Login**.



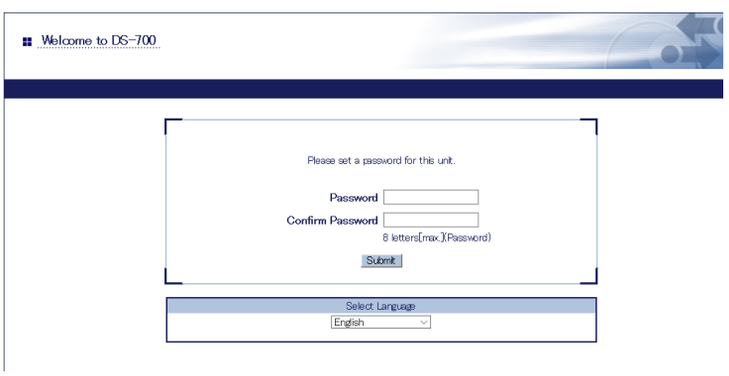
Using a Web browser to display the Web page

1. Enter the IP address that is configured on DS-700 in the address bar of the Web browser. Press the ENTER key.

Example) Enter 172.25.72.57 and press the ENTER key.



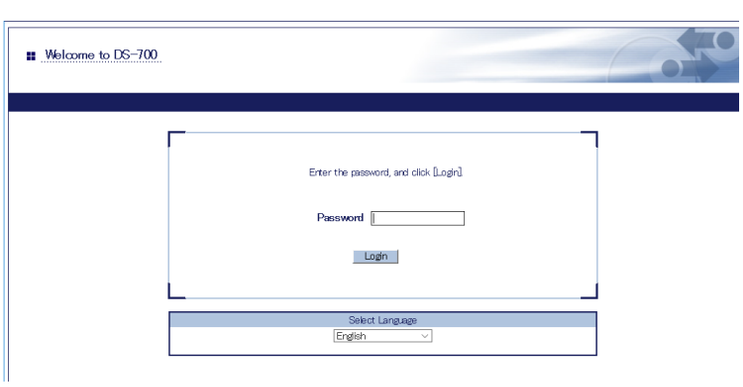
2. The Web browser will run and the login password configuration page will be displayed. Enter the password to configure for DS-700 and click **Submit**.



Note

- When the login password is already configured, this page is not displayed.

3. The login page is displayed.
Enter the password you have configured for DS-700 and click **Login**.



About each page

Status	Shows the operating status of USB device and DS-700.
Network Conf.	Configures the network settings of DS-700.
Security	Configures the access control for DS-700.
Maintenance	Provides the system information, event logs, initialization, reboot and firmware update.

Note

- By clicking **Select Language**, you can switch the language among Japanese, English and Chinese.

8-1-2. Status Information

This page explains the status information page.
The status information page shows the operating status of DS-700 and the USB devices connected to it.

USB Device Status

USB Device status page shows the operating status of the USB device connected to DS-700.

< USB Device Information [x] > (*This shows as many information items as the number of connected USB devices.)

Name	Details
USB Device Name	Displays the name of the USB device. If the device name cannot be obtained, it is displayed as ProductID(PID[0xXXXX]).
Manufacturer Name	Displays the manufacturer name of the USB device. If the manufacturer name cannot be obtained, it is displayed as VendorID(VID[0xXXXX]).
USB Speed	Displays the bus data transfer rate of the USB device. (Super-Speed, Hi-Speed, Full-Speed, Low-Speed)
Connected PC	Displays the IP address of PC (host) that uses the USB device. If the USB device is not connected to a PC, it is displayed as "Not Connected".
Duration (H:M:SEC)	Displays the period of time since the USB device is connected to PC.

< Printer Information >

Name	Details
Printer Name	Displays the name of the printer. If the printer name cannot be obtained, it is displayed as ProductID(PID[0xXXXX]).
Raw Port No.	Displays the TCP port number for RAW mode printing with this printer.
Queue Name	Displays the queue name for LPR printing with this printer.

System Status

System status page shows the operating status of DS-700.

<System Status>

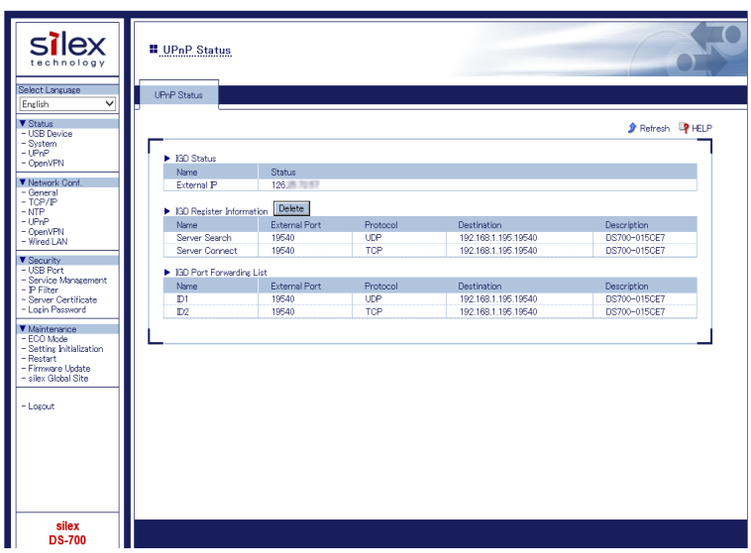
Name	Details
Series Name	Displays a series name of DS-700.
Product Name	Displays the product name.
Version	Displays the version of DS-700.
MAC Address	Displays the MAC Address of DS-700.
Host Name	Displays the host name.

<TCP/IP Status>

Name	Details
IP Address	Displays the IP address.
Subnet Mask	Displays the subnet mask.
Default Gateway	Displays the default gateway.
DNS Server (Primary)	Displays the primary DNS server.
DNS Server (Secondary)	Displays the secondary DNS server.
DHCP Server	Displays the address of the DHCP server from which the IP address was obtained. (This information is displayed only when the IP address was obtained from a DHCP server.)
WINS Server	Displays the WINS server. (This information is displayed only when the WINS server is set.)
IPv6 Address	Displays the IPv6 address.
IPv6 Router	Displays the IPv6 router.

UPnP Status

UPnP Status page displays the IGD operating status obtained by UPnP.



< IGD Status >

Name	Details
External IP	Displays the IGD external IP address.

< IGD Register Information >

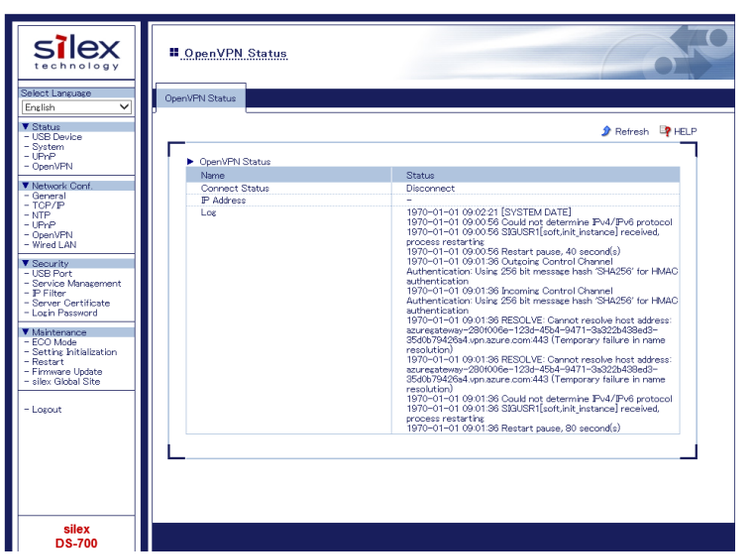
Name	Details
Server Search	Displays the port forwarding setting registered to IGD to search for DS-700.
Server Connect	Displays the port forwarding setting registered to IGD to connect the USB device.

< IGD Port Forwarding List >

Name	Details
IDx	Displays all port forwarding settings obtained from IGD. * This shows as many information items as the number of rules registered to IGD.

OpenVPN Status

OpenVPN Status page displays the VPN connection status and IP Address.



< OpenVPN Status >

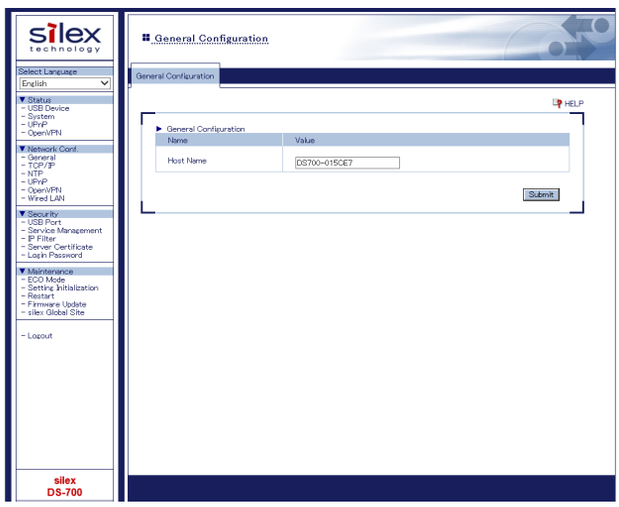
Name	Details
Connect Status	Displays the VPN connection status.
IP Address	Displays the VPN IP address.
Log	Displays the newest VPN log and the system time.

8-1-3. Network Settings

This page explains the network settings of DS-700.

General Configuration

General Configuration page provides the host name setting.

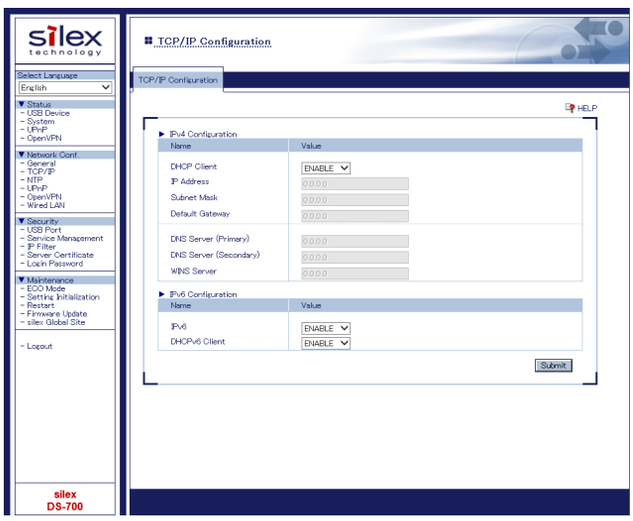


< General Configuration >

Name	Details	Default
Host Name	Set the host name. The host name is used for SX Virtual Link, WINS, etc. Be sure to use a unique name that is not used by other devices.	DS700-xxxxxx (xxxxxx is the last 6 digits of the MAC address)

TCP/IP Configuration

TCP/IP Configuration page provides the IP address setting.



<IPv4 Configuration>

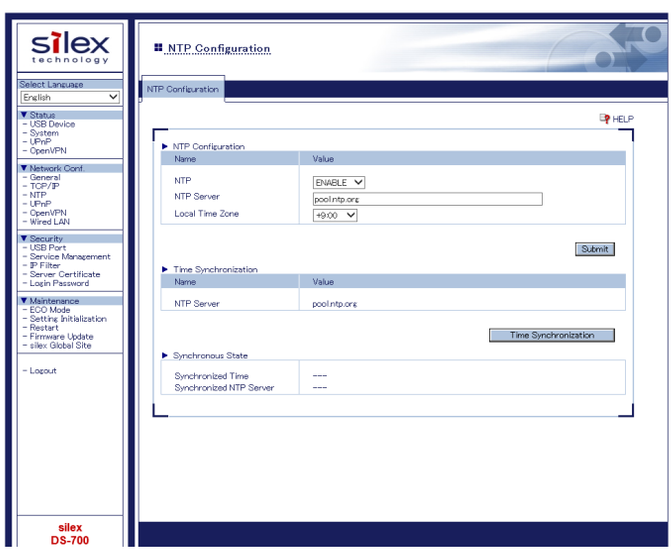
Name	Details	Default
DHCP Client	Enable/Disable the DHCP client feature. To assign an IP address using DHCP, the DHCP server must be running in your subnetwork.	ENABLE
IP Address	Set an IP address. The value must be 4 numbers separated by dots and expressed in the format [xxx.xxx.xxx.xxx].	0.0.0.0
Subnet Mask	Set a subnet mask. The value must be 4 numbers separated by dots and expressed in the format [xxx.xxx.xxx.xxx]. When set to "0.0.0.0", a subnet mask appropriate for the IP address is automatically used.	0.0.0.0
Default Gateway	Set a gateway address. The value must be 4 numbers separated by dots and expressed in the format [xxx.xxx.xxx.xxx]. Also, the gateway needs to be running in the same subnetwork as this product. If "0.0.0.0" is set, this setting is disabled.	0.0.0.0
DNS Server (Primary)	Set a primary DNS server address. When DHCP is enabled, the DNS address obtained from it will be given higher priority.	0.0.0.0
DNS Server (Secondary)	Set a secondary DNS server address. When DHCP is enabled, the DNS address obtained from it will be given higher priority.	0.0.0.0
WINS Server	Set a Primary WINS server address. The value must be 4 numbers separated by dots and expressed in the format [xxx.xxx.xxx.xxx].	0.0.0.0

<IPv6 Configuration>

Name	Details	Default
IPv6	Enable/Disable the IPv6 address. If this setting is enabled, IPv6 communication can be established when IPv6 address is automatically obtained.	ENABLE
DHCPv6 Client	Enable/Disable the DHCPv6 client function. If this setting is enabled, the network setting will automatically be obtained from the DHCPv6 server.	ENABLE

NTP Configuration

NTP Configuration page provides the NTP functional setting.



<NTP Configuration>

Name	Details	Default
NTP	Enable/Disable the NTP protocols.	ENABLE
NTP Server	Set the host name or IP Address for NTP server.	pool.ntp.org
Local Time Zone	Set Local Time Zone this product.	+9:00

<Time Synchronization> (* Displayed when the NTP setting is enabled.)

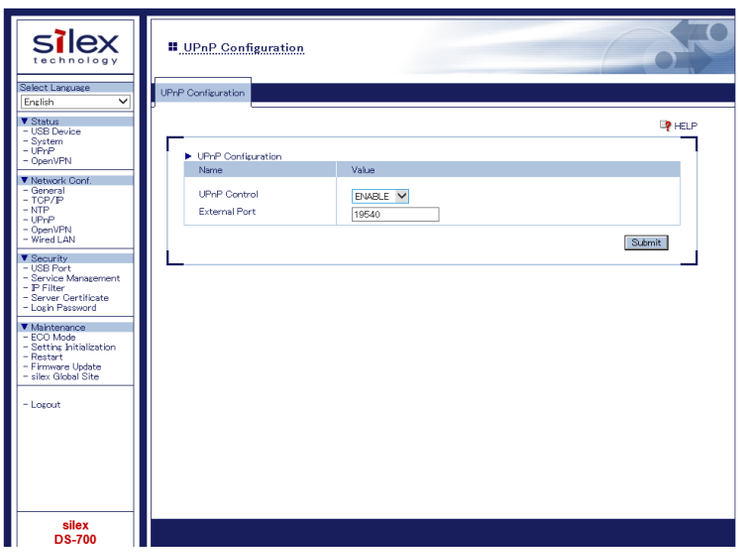
Name	Details	Default
NTP Server	Displays the name of NTP server to synchronize from. This product can be synchronized to the server configured for NTP Server at NTP Configuration.	pool.ntp.org

<Synchronous State> (* Displayed when the NTP setting is enabled.)

Name	Details	Default
Synchronized Time	Displays the time retrieved from the NTP server.	--
Synchronized NTP Server	Displays the name of synchronized NTP server used to retrieve a time.	--

UPnP Configuration

UPnP Configuration page provides the UPnP functional settings.

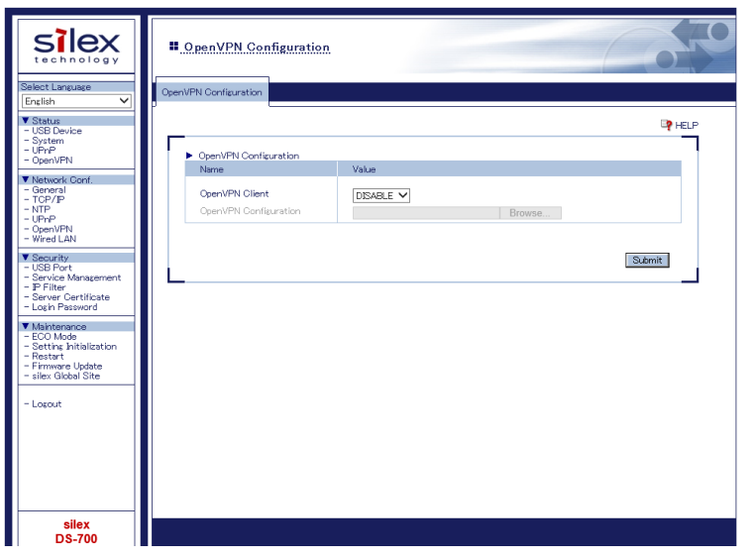


< UPnP Configuration >

Name	Details	Default
UPnP Control	Enable/Disable a function to set port forwarding to IGD over UPnP.	ENABLE
External Port	Set an external port number to configure for IGD. This port number is used for port forwarding. The same port number is used for UDP(Server Search) and TCP(Server Connect).	19540

OpenVPN Configuration

OpenVPN Configuration page provides the OpenVPN functional settings.



< OpenVPN Configuration >

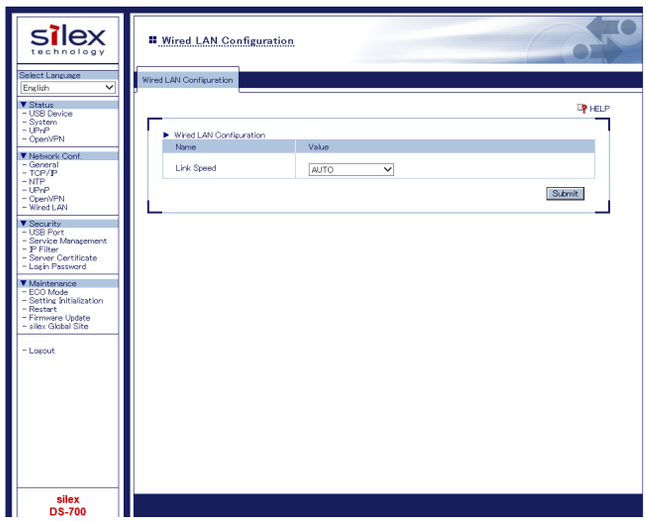
Name	Details	Default
OpenVPN Client	Enable/Disable the OpenVPN client function.	DISABLE
OpenVPN Configuration	Import an OpenVPN client configuration file(*.ovpn).	None

< Registration Status > (* Displayed when the OpenVPN Client is enabled.)

Name	Details
OpenVPN Configuration	Shows the information of connection destination.

Wired LAN Configuration

Wired LAN Configuration page provides the link speed setting.



< Wired LAN Configuration >

Name	Details	Default
Link Speed	Select the physical network type (AUTO / 10BASE-T-Half / 10BASE-T-Full/ 100BASE-TX-Half / 100BASE-TX-Full). In most cases, AUTO is used. If the LINK lamp on your HUB does not light up when DS-700 is turned on, configure this setting to match that of the HUB.	AUTO

8-2. About the Print Server Feature

8-2-1. About the Print Server Feature

This page explains the print server feature

The print server feature uses network printing protocols to allow you to print over the network.

DS-700 supports the common network printing protocols, "Raw" and "LPR".
When a printer is connected to DS-700, standard Windows printing can be used.

Please note that you do not have to use SX Virtual Link for printing via the print server feature.

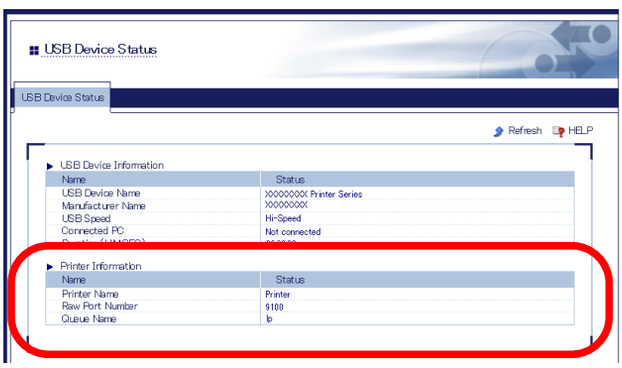
TIP

- When standard Windows printing is used, it is impossible to get printer status using the status monitor software that came with the printer or MFP.
  Also, if the printer supports a-directional printing only, standard Windows printing cannot be used.
- When using standard Windows printing, only 1 printer can be used at a time. To connect 2 or more printers, SX Virtual Link must be used.
  For how to connect 2 or more printers, refer to **9-1. Useful Information-How can I use two or more USB devices?**.
- It is impossible to print to printers or MFPs connected to other PCs via SX Virtual Link. Also, when printers or MFPs are busy with standard Windows printing, they cannot be connected via SX Virtual Link.

8-2-2. Before Using Standard Windows Printing

This page explains how to configure the settings to print using standard Windows printing.

Before adding a printer port, access the Web page of DS-700 and check the destination printer port assigned to the printer connected to DS-700.



[STEP 1] Select a printing protocol	**[STEP 2]** Take notes of the destination printer port	**[STEP 3]** Add a printer port
Raw mode printing	Take notes of the **Raw Port No.** assigned to the printer.	Print using the Raw port of Windows 7 or newer.
LPR printing	Take notes of the **Queue Name** assigned to the printer.	Print using the LPR port of Windows 7 / 8 / 8.1 / 10 or newer

Note

- Refer to **8-1-1. Displaying the Web page of DS-700** to access DS-700 using a Web browser.

8-2-3. Printing Using the LPR Port on Windows 7

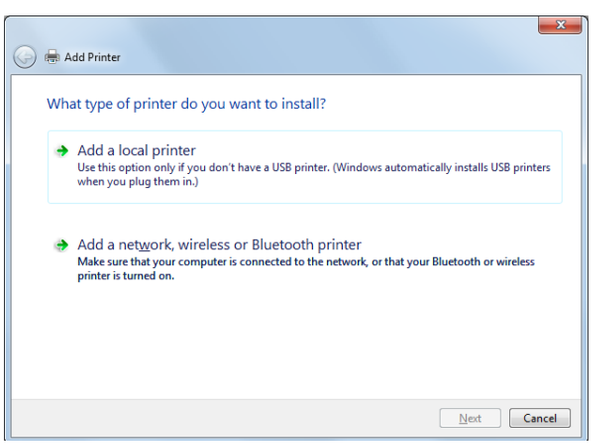
This page explains how to configure the settings to print on Windows 7 using the standard LPR port.

TIP

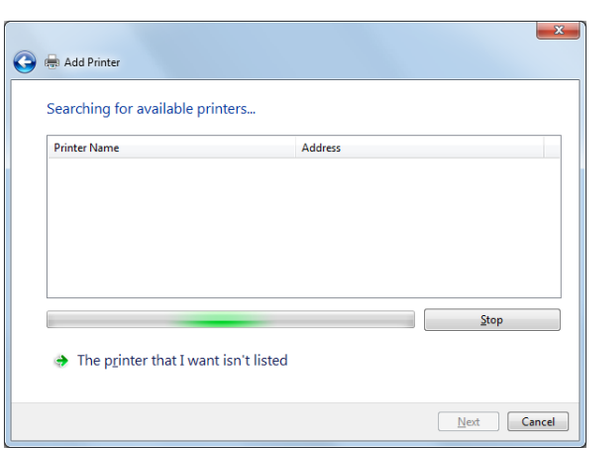
- When standard Windows printing is used, it is impossible to get printer status using the status monitor software that came with the printer or MFP.
  Also, if the printer supports bi-directional printing only, standard Windows printing cannot be used.
- When using standard Windows printing, only 1 printer can be used at a time. To connect 2 or more printers, SX Virtual Link must be used.
  For how to connect 2 or more printers, refer to **9-1. Useful Information-How can I use two or more USB devices?**.
- It is impossible to print to printers or MFPs connected to other PCs via SX Virtual Link. Also, when printers or MFPs are busy with standard Windows printing, they cannot be connected via SX Virtual Link.

1. Click **Start - Control Panel - View devices and printers - Add a printer.**

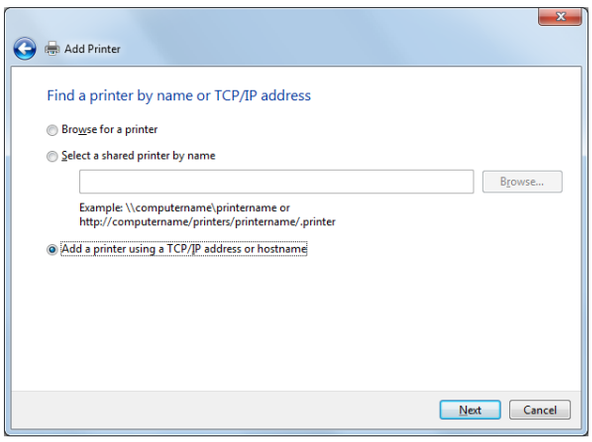
2. The wizard for adding a printer appears. Click **Add a network, wireless or Bluetooth printer.**



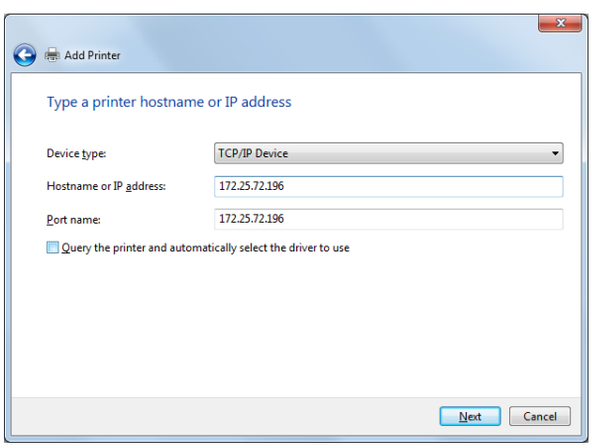
3. Click **The printer that I want isn't listed**.



4. Select the method to add a printer.
Click **Add a printer using a TCP/IP address or hostname** and click **Next.**



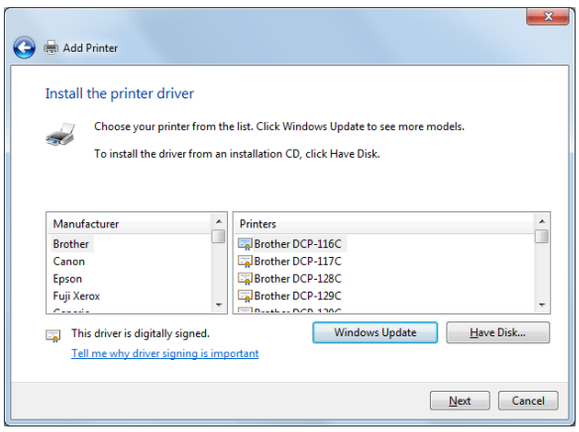
5. Select **TCP/IP Device** for **Device type** and enter the IP address assigned to DS-700 for **Hostname or IP address**.
Clear **Query the printer and automatically select the driver to use** check box and click **Next**.



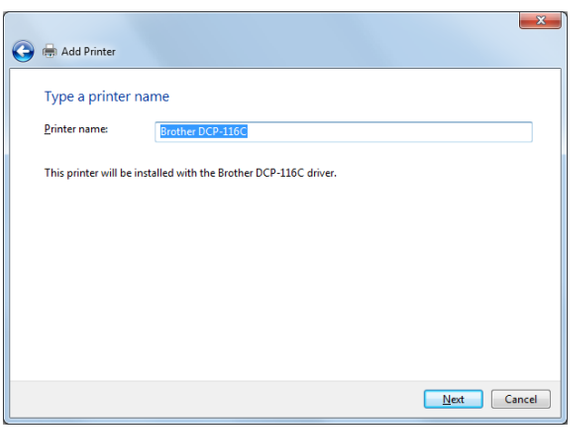
Note

- In most cases, the default port name is used. If you wish to change the port name, enter a unique name that is not used for other ports.

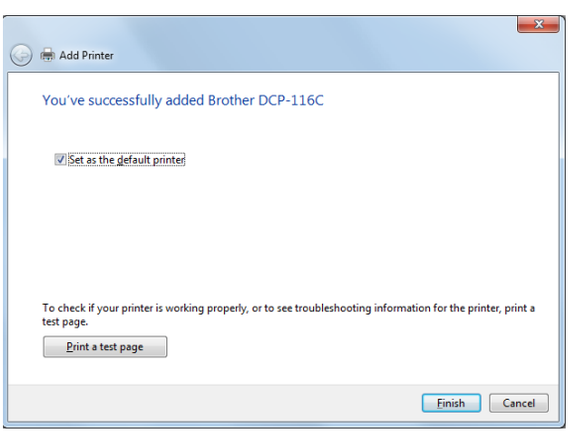
6. Select a printer driver.
Select the printer driver you want to use and click **Next**.



7. Enter a printer name and click **Next**.



8. Click **Print a test page** and see the result of printing. If the print result is OK, click **Finish**.
The print setting has been completed.



Note

- If you are going to use the Raw port printing, click **Finish** without printing a test page.

8-2-4. Printing Using the LPR Port on Windows 8/8.1/10 or Newer

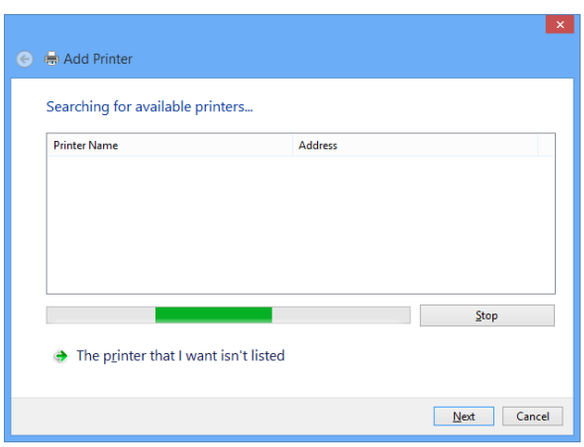
This page explains how to configure the settings to print on Windows 8/8.1/10 or newer using the LPR port.

TIP

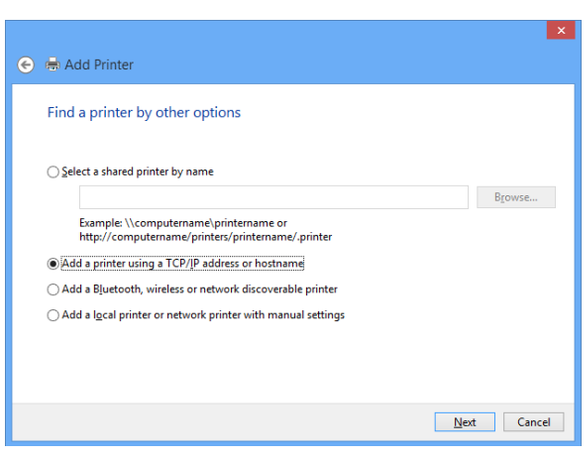
- When standard Windows printing is used, it is impossible to get printer status using the status monitor software that came with the printer or MFP.
  Also, if the printer supports bi-directional printing only, standard Windows printing cannot be used.
- When using standard Windows printing, only one printer can be used at a time. To connect 2 or more printers, SX Virtual Link must be used.
- It is impossible to print to printers or MFPs connected to other PCs via SX Virtual Link. Also, when printers or MFPs are busy with standard Windows printing, they cannot be connected via SX Virtual Link.
- In this page, sample screens captured from Windows 8.1 are used.

1. Click **Start - Control Panel - View devices and printers - Add a printer**.

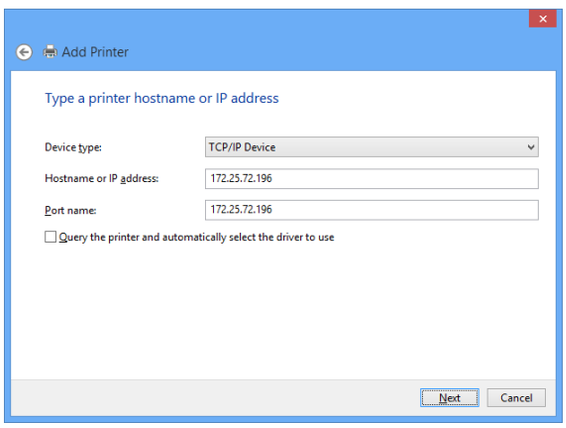
2. Click **The printer that I want isn't listed**.



3. Select the method to add a printer.
Select **Add a printer using a TCP/IP address or hostname** and click **Next**.



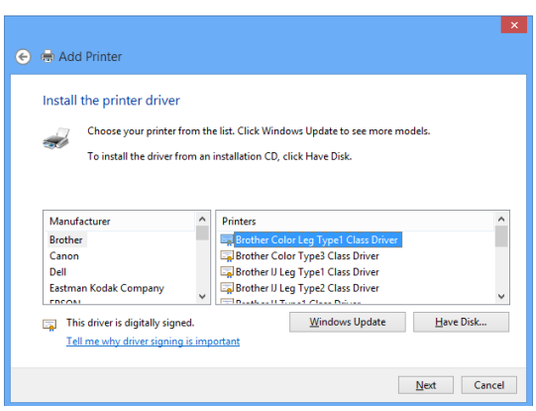
4. Select **TCP/IP Device** for **Device type** and enter the IP address assigned to DS-700 for **Hostname or IP address**.
Clear **Query the printer and automatically select the driver to use** check box and click **Next**.



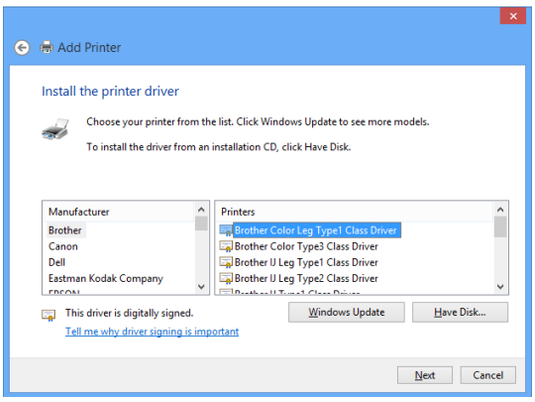
Note

- In most cases, the default port name is used. If you wish to change the port name, enter a unique name that is not used for other ports.

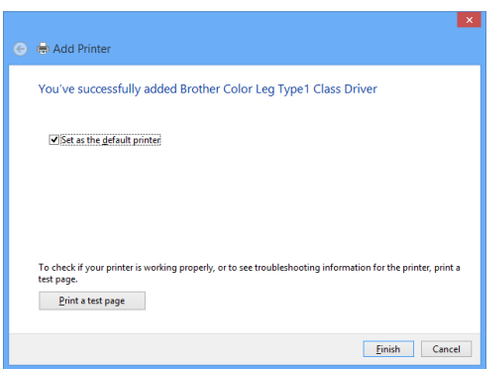
5. Select a printer driver.
Select the printer driver you want to use and click **Next**.



6. Enter a printer name and click **Next**.



7. Click **Print a test page** and see the result of printing. If the print result is OK, click **Finish**. The print setting has been completed.



Note

- If you are going to use the Raw port printing, click **Finish** without printing a test page.

8-2-5. Printing Using the Raw Port on Windows 7 or Newer

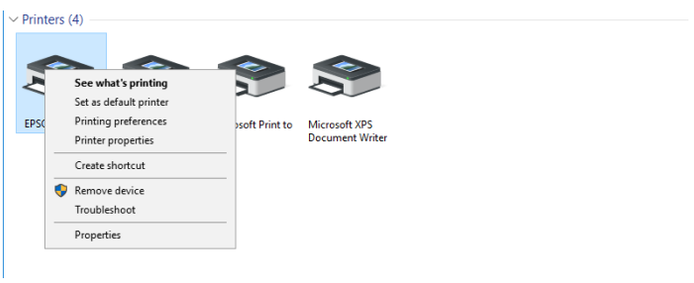
This page explains how to configure the settings to print on Windows 7 or newer using the Raw port.

TIP

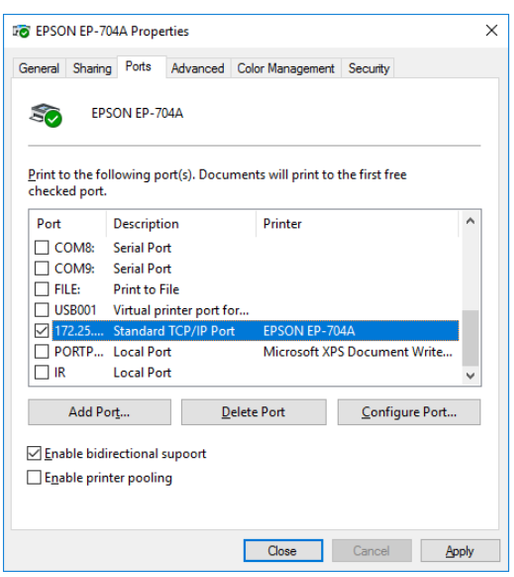
- When standard Windows printing is used, it is impossible to get printer status using the status monitor software that came with the printer or MFP.
  Also, if the printer supports bi-directional printing only, standard Windows printing cannot be used.
- When using standard Windows printing, only one printer can be used at a time. To connect 2 or more printers, SX Virtual Link must be used.
- It is impossible to print to printers or MFPs connected to other PCs via SX Virtual Link. Also, when printers or MFPs are busy with standard Windows printing, they cannot be connected via SX Virtual Link.
- In this page, sample screens captured from Windows 10 are used.

1. Create the standard Windows LPR port according to the instructions at **8-2-3. Printing Using the LPR Port on Windows 7** or **8-2-4. Printing Using the LPR Port on Windows 8/8.1/10 or Newer**.

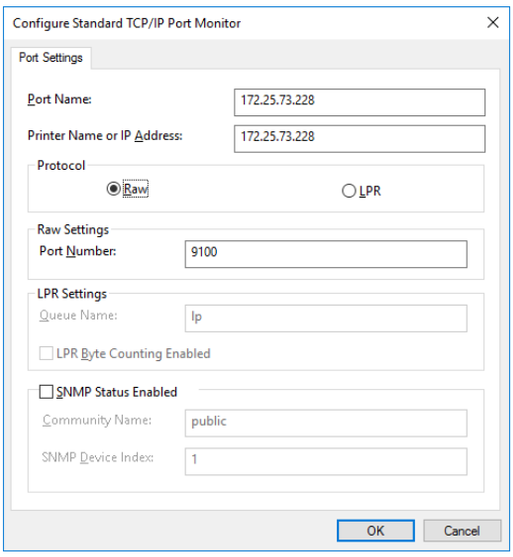
2. Click **Start** - **Control Panel** - **View devices and printers**. Right-click on the printer you have added, and select **Printer properties**.



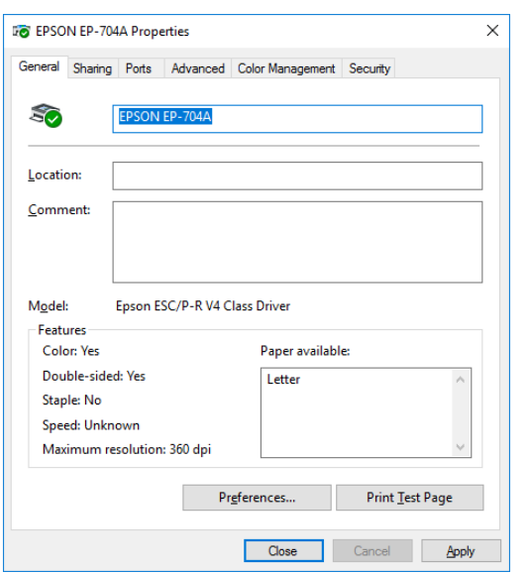
3. Click the **Port** tab, select the port that you have created, and click **Configure Port**.



4. Select **Raw** for **Protocol**, enter the port number (the one displayed on the Web page) for **Port Number**, and click **OK**.



5. Click the **General** tab.
Click **Print Test Page**, confirm that the test print is output correctly, and click **OK**.



8-3. Security Feature

This page explains how to configure the access control setting. For each configuration page, the password entry will be required.

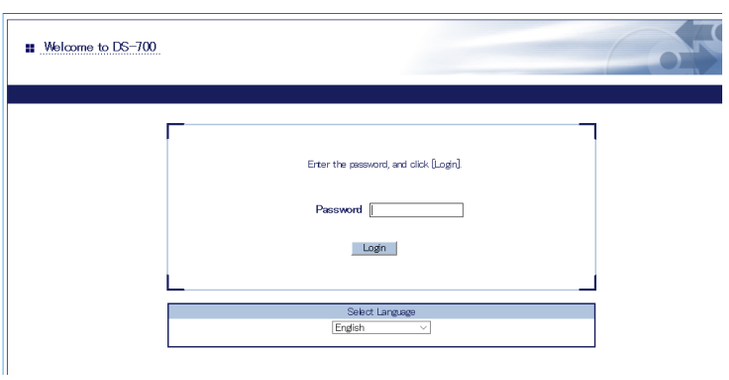
8-3-1. USB Port Setting

1. Access the Web page of DS-700.

Note

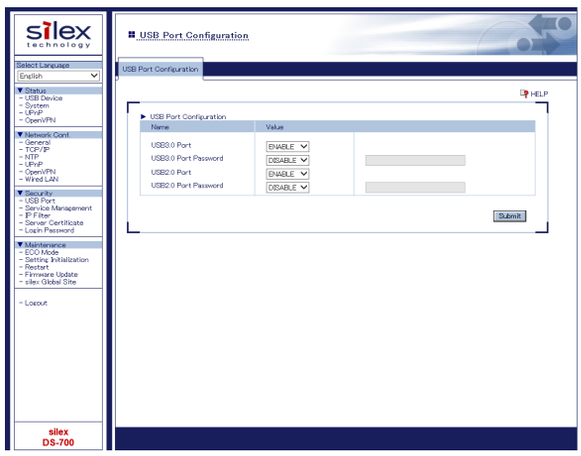
- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Security - USB Port**.

4. The USB Port Configuration page is displayed.
Configure each setting and click **Submit.**



< USB Port Configuration >

Name	Details	Default
USB3.0 Port	Enable/Disable USB3.0 port	Enable
USB3.0 Port Password	Restrict the USB device access by configuring a password to USB3.0 port when the USB device server feature is used. When ENABLE is selected, the configured password is activated and the password authentication performs when a device connected to USB3.0 port is used over a network.	Disable
USB2.0 Port	Enable/Disable USB2.0 port	Enable
USB2.0 Port Password	Restrict the USB device access by configuring a password to USB2.0 port when the USB device server feature is used. When ENABLE is selected, the configured password is activated and the password authentication performs when a device connected to USB2.0 port is used over a network.	Disable

TIP

- The USB3.0 port of DS-700 does not support connection with a USB HUB, USB HUB embedded device and USB video converter.
- The USB3.0 port of DS-700 does not support the devices with more than 16 endpoints.

5. The Restart page is displayed. Click **Restart** to restart DS-700.
The changes will take effect after restart.

6. When the login page is displayed, the reboot is completed.
Finish the Web browser.

8-3-2. Using Service Management Configuration

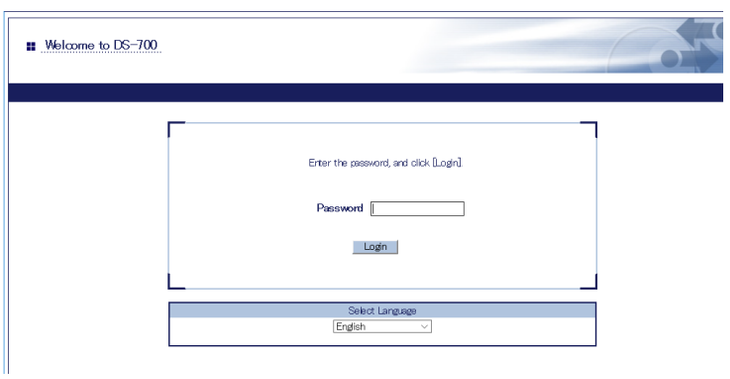
This page explains how to stop unused services in order not to open unnecessary ports.

1. Access the Web page of DS-700.

Note

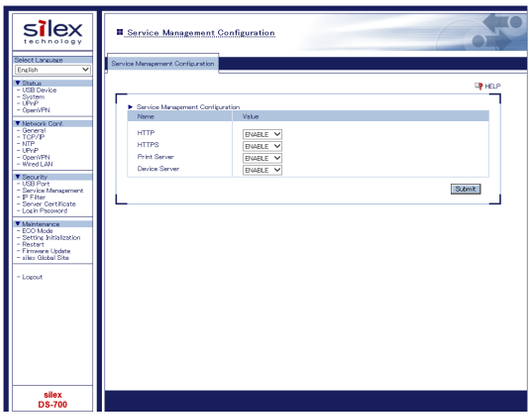
- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Security** - **Service Management**.

4. The Service Management Configuration page is displayed.
Configure each setting and click **Submit**.



< Service Management Configuration >

Name	Details	Default
HTTP	Enable/Disable access to DS-700 using HTTP. If **ENABLE** is selected, access to DS-700 is allowed, and if **DISABLE** is selected, it is denied. * If this setting is disabled, you will not be able to access the Web page unless DS-700 is reset to factory defaults.	ENABLE
HTTPS	Enable/Disable access to DS-700 using HTTPS. If **ENABLE** is selected, access to DS-700 is allowed, and if **DISABLE** is selected, it is denied. * If this setting is disabled, you will not be able to access the Web page unless DS-700 is reset to factory defaults.	ENABLE
Print Server	Enable/Disable access to DS-700 when the print server feature is used. If **ENABLE** is selected, access to DS-700 is allowed, and if **DISABLE** is selected, it is denied.	ENABLE
Device Server	Enable/Disable access to DS-700 when the device server feature is used. If **ENABLE** is selected, access to DS-700 is allowed, and if **DISABLE** is selected, it is denied.	ENABLE

5. The Restart page is displayed. Click **Restart** to restart DS-700.
The changes will take effect after restart.

6. When the login page is displayed, the reboot is completed.
Finish the Web browser.

8-3-3. Filtering Accesses from a Particular PC

This page explains how to restrict access from particular PCs using an IP filter function.

TIP

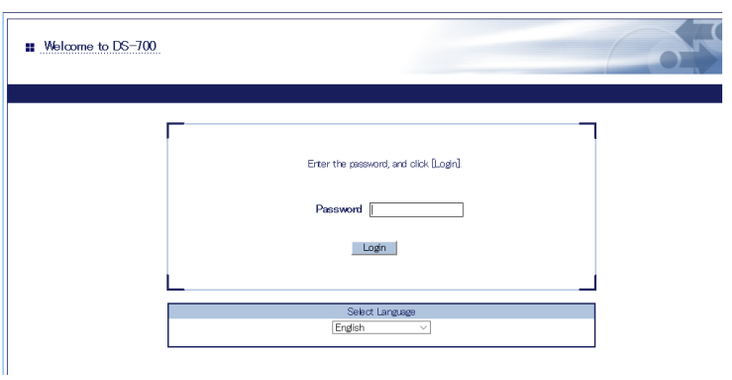
- If this function is used, the communication speed may decrease since network communication is monitored.

1. Access the Web page of DS-700.

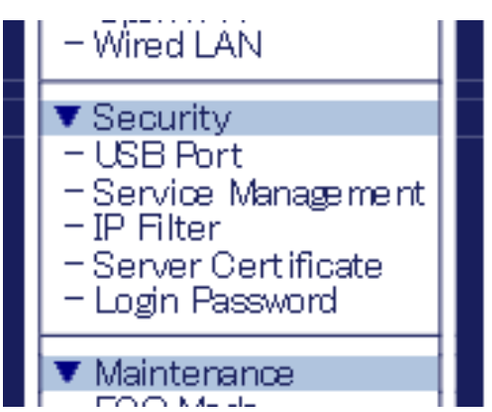
Note

- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

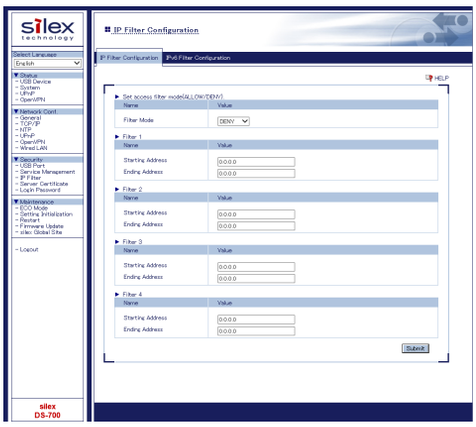
2. The login page is displayed.
Enter the password for DS-700 and click **Login**.

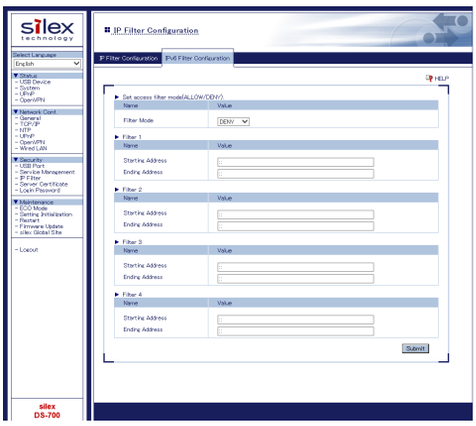


3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Security** - **IP Filter**.



4. The IP Filter Configuration page is displayed. Configure each setting and click **Submit**.
To configure the IPv6 filter, click the **IPv6 Filter Configuration** tab.





Name	Details	Default
Filter Mode	Set an IP address access filter (ALLOW/DENY). When **ALLOW** is set, only access from the registered IP address range is allowed, and when **DENY** is set, access from the registered IP address range is denied.	DENY
Starting Address/ Ending Address	Set start/end addresses to specify the range of access filter. Example: Not configured: 0.0.0.0/0.0.0.0 Access from 192.168.0.0-192.168.0.255 is allowed/denied. 192.168.0.0/192.168.0.255 Access only from the specified host is allowed/denied. 192.168.0.1/192.168.0.1 Any access is allowed/denied. 0.0.0.0/255.255.255.255	0.0.0.0 / 0.0.0.0
Starting IP Address/ Ending IP Address(IPv6 Filter Configuration)	Set start/end addresses to specify the range of access filter. Example: Not configured: ::/:: 2001::/2001::ffff is allowed/denied. 2001::/2001::ffff Access only from the specified host is allowed/denied. 2001::1/2001::1 Any access is allowed/denied. ::/ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff	::/::

5. The Restart page is displayed. Click **Restart** to restart DS-700.
The changes will take effect after restart.

6. When the login page is displayed, the reboot is completed.
Finish the Web browser.

8-3-4. Server Certificate

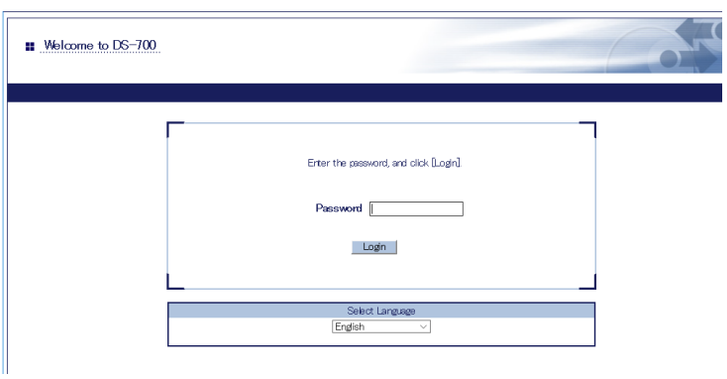
This page explains how to set a self-signed certificate on Web page in order to enable configuration via HTTPS.

1. Access the Web page of DS-700.

Note

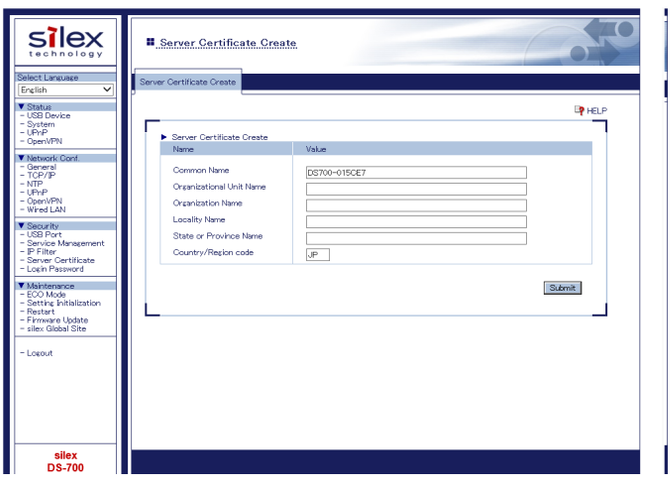
- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Security** - **Server Certificate**.

4. The Server Certificate Create page is displayed.
Configure each setting and click **Submit**.



< Server Certificate Create >

Name	Details	Default
Common Name	Set a server name for the server certificate(1 to 64 alphanumeric characters). * The following symbols and spaces can be used. ,.-&	DS700-xxxxxx (xxxxxx is the last 6 digits of the Ethernet Address)
Organizational Unit Name	Set an organization unit name for the server certificate(0 to 64 alphanumeric characters). * The following symbols and spaces can be used. ,.-&	-
Organization Name	Set an organization name for the server certificate(0 to 64 alphanumeric characters). * The following symbols and spaces can be used. ,.-&	-
Locality Name	Set a city/locality for the server certificate(0 to 128 alphanumeric characters). * The following symbols and spaces can be used. ,.-&	-
State or Province Name	Set a state/province for the server certificate(0 to 128 alphanumeric characters). * The following symbols and spaces can be used. ,.-&	-
Country/Region code	Set a country/region for the server certificate.	JP

Note

- Validity period of certificate is set to 2037/12/31.

5. The Restart page is displayed. Click **Restart** to restart DS-700.
The changes will take effect after restart.

6. When the login page is displayed, the reboot is completed.
Finish the Web browser.

8-3-5. Changing Root Password

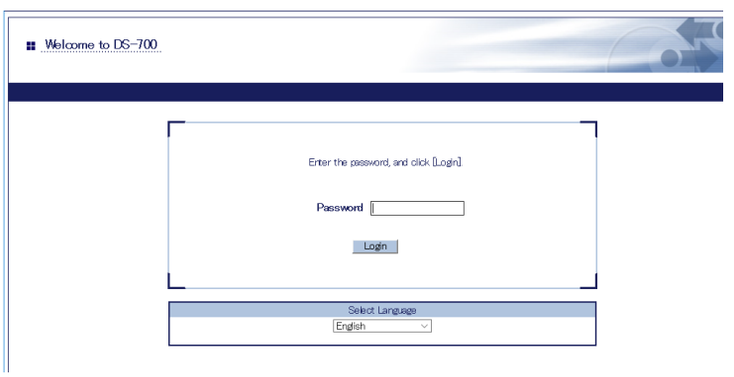
This page explains how to change the password for DS-700.

1. Access the Web page of DS-700.

Note

- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

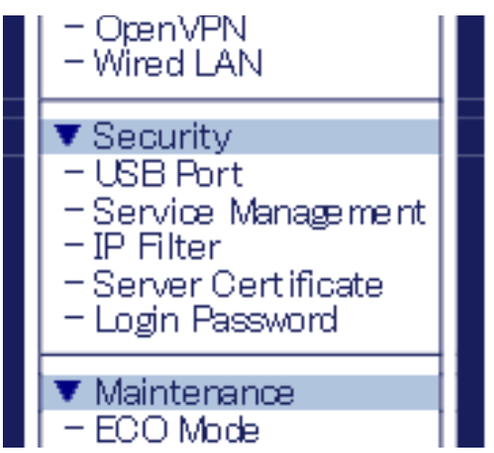
2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



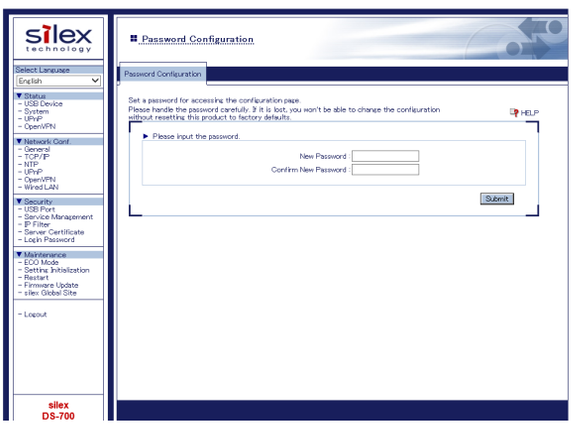
Note

- By default, no password is configured to DS-700

3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Security** - **Login Password**.



4. The Password Configuration page is displayed.
Enter the password to both **New Password** and **Confirm New Password** and click **Submit**.



< Please input the password. >

Name	Details	Default
New Password	Set the administrative password in ASCII string (up to 8 characters). This password is used as authentication password for changing the settings from the Web page.	Blank
Confirm New Password	Enter the same password for confirmation.	Blank

TIP

- Please handle the password carefully. If the password is lost, you will not be able to change the settings unless DS-700 is reset to the factory default setting.

5. The Restart page is displayed. Click **Restart** to restart DS-700.
The changes will take effect after restart.

6. When the login page is displayed, the reboot is completed.
Finish the Web browser.

8-4. Maintenance Feature

8-4-1. About ECO Mode

This page explains ECO Mode, a power-saving mode for DS-700.

About ECO Mode

ECO Mode is a power-saving mode that DS-700 switches to when it has been idle for a specified period of time. When in ECO Mode, USB Bus power is switched off to save power.
With ECO Mode enabled, you can save power for DS-700 and the connected USB devices.

Turning on ECO Mode setting

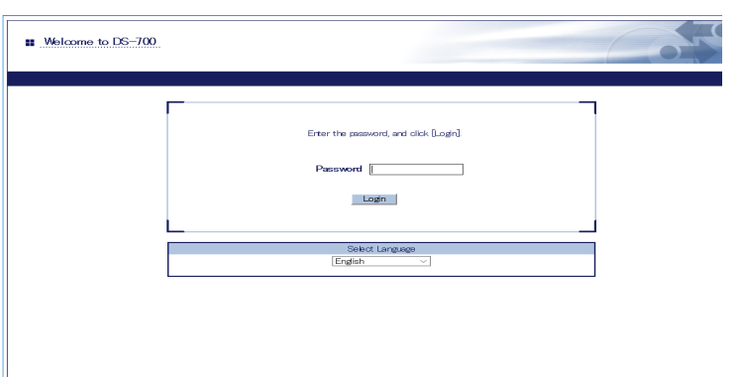
ECO Mode can be enabled or disabled. Also, the amount of time before switching to ECO Mode can be specified.

1. Access the Web page of DS-700.

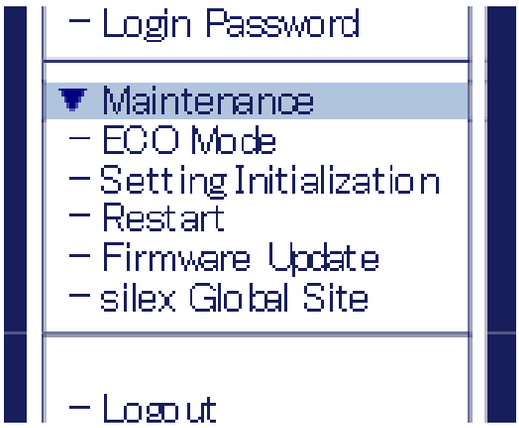
Note

- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

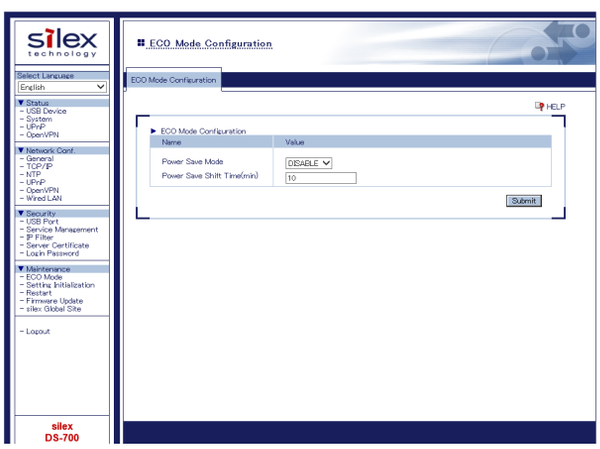
2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Maintenance** - **ECO Mode**.



4. The ECO Mode Configuration page is displayed.
Configure each setting and click **Submit**.



< ECO Mode Configuration >

Name	Details	Default
Power Save Mode	If DS-700 is idle for the specified amount of time, it will automatically switch into ECO mode. When the USB device connection utility is started or DS-700 is accessed for a particular purpose, DS-700 will automatically wake up from ECO mode.	DISABLE
Power Save Shift Time(min)	Specify the amount of time until DS-700 switches into ECO mode, when the ECO mode setting is enabled. (3-60 integer value)	10

5. The Restart page is displayed. Click **Restart** to restart DS-700.
The changes will take effect after restart.

6. When the login page is displayed, the reboot is completed.
Finish the Web browser.

Conditions to start ECO Mode

DS-700 will switch to ECO Mode when it is idle for a certain period of time specified by Power Save Shift Time (minutes) and the following conditions are met:

- **Power Save Mode** is set to **ENABLE**
- SX Virtual Link is not running on the network DS-700 is connected to.
- Printing using the print server feature is not performed.

Note

- Because SX Virtual Link regularly communicates with DS-700, DS-700 will not switch to ECO Mode if SX Virtual Link is running. To start ECO Mode, shut down all PCs with SX Virtual Link installed or close SX Virtual Link on each PC.
- If printing using the print server feature is performed, DS-700 will wake up from ECO Mode.

Conditions to finish ECO Mode

ECO Mode will finish in the following conditions.
Once ECO Mode is finished, the USB Bus power will automatically be enabled on DS-700.

- SX Virtual Link is running on the network DS-700 is connected to.
- Printing using the print server feature is performed.

8-4-2. Resetting to Factory Defaults

This page explains how to reset DS-700 to the factory default settings.
If DS-700 has been used in a particular network and you wish to change the settings to use it for another network, please initialize DS-700 first according to the instructions below:

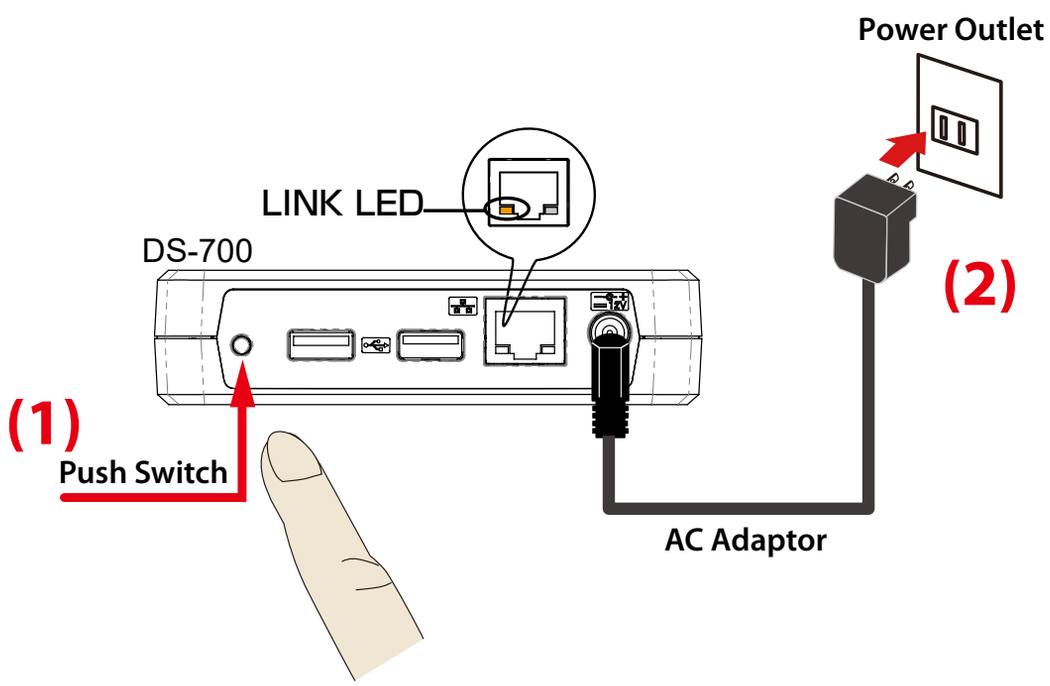
TIP

- It is recommended to take notes of the current settings. You cannot restore it once the factory default configuration is complete.
- Before you start, please make sure that no PCs are currently linked.
- Do not turn off DS-700 while resetting to factory default.
- Do not press the push switch when DS-700 is turned on again after it was reset to the factory default settings.

Resetting using the push switch on DS-700

1. Remove the AC plug from the electric outlet.

2. Push and hold the push switch(1) while inserting the AC plug back into the power outlet (2). Continue holding.
When the LINK LED(orange) turns on, the factory default configuration begins.



TIP

- Do not release the push switch until the LINK LED(orange) turns off.

3. Release the push switch when the LINK LED(orange) turns off.
The factory default configuration is completed.

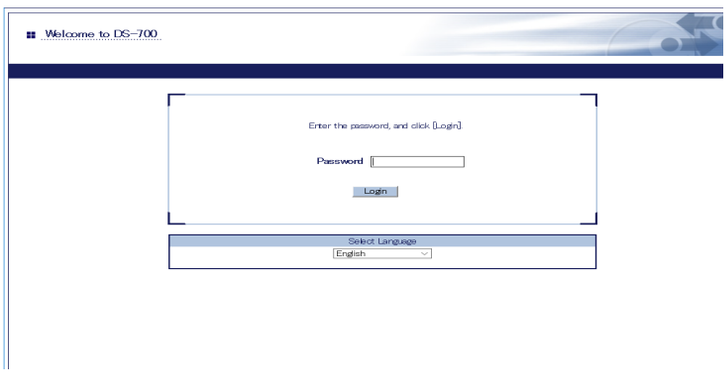
Resetting from the Web page

1. Access the Web page of DS-700.

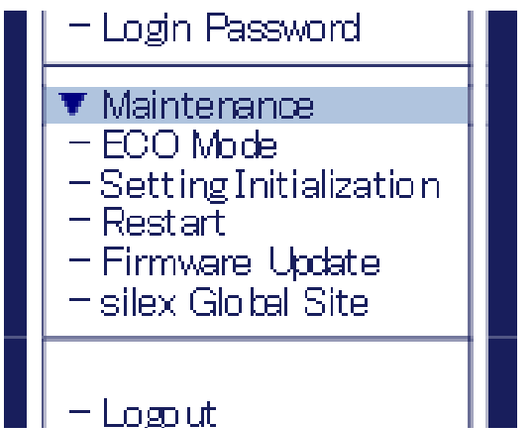
Note

- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

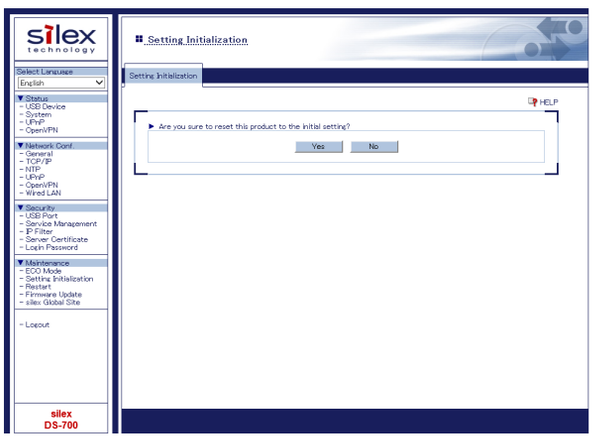
2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



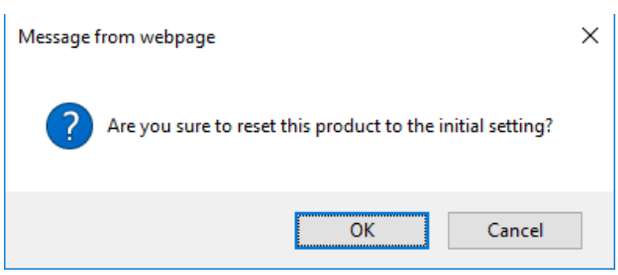
3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Maintenance** - **Setting Initialization**.



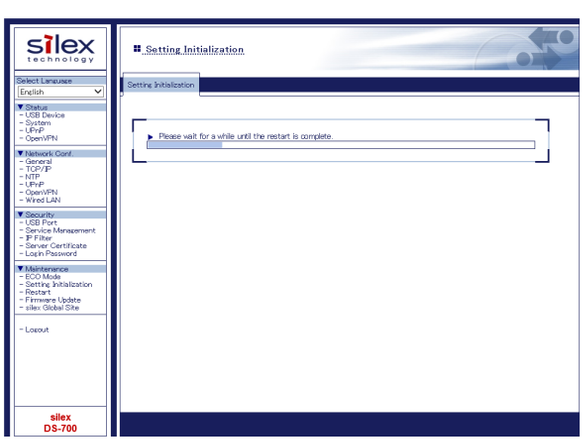
4. The factory default configuration page is displayed.
Click **Yes**.



5. A confirmation message is displayed. Click **OK**.



6. The factory default configuration will begin.



7. When the login page is displayed, the factory default configuration is completed.
Finish the Web browser.

8-4-3. Rebooting DS-700

This page explains how to reboot DS-700.

TIP

- Before you start, please make sure that no PCs are currently linked.

Manual reboot at the unit side

1. Unplug the AC plug of DS-700 from the power outlet.

2. Insert the AC plug back into the power outlet again.

3. The reboot will be complete in 30 seconds.

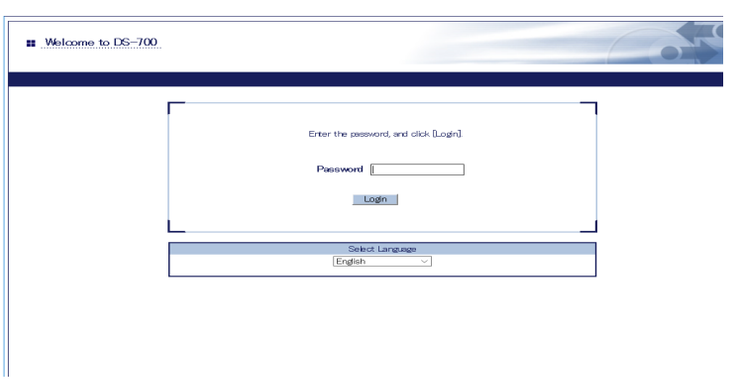
Remote reboot from the Web page

1. Access the Web page of DS-700.

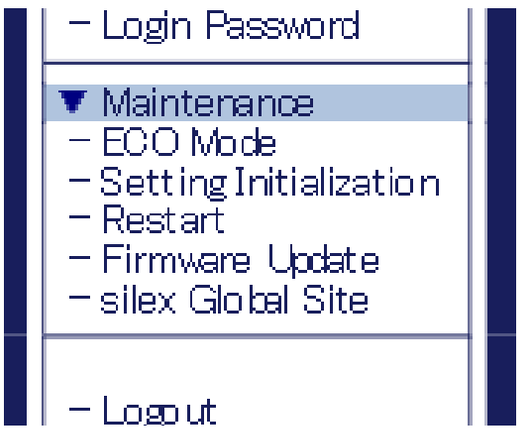
Note

- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

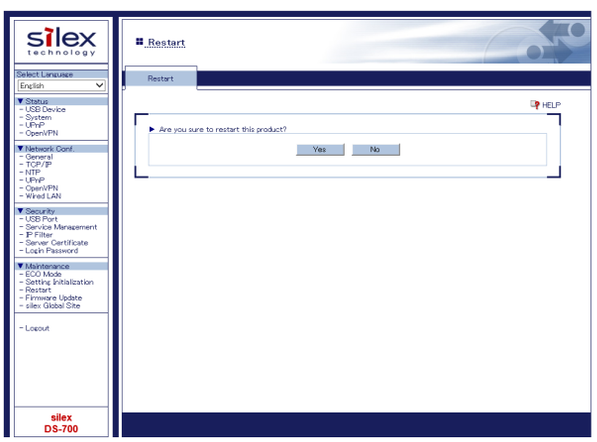
2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



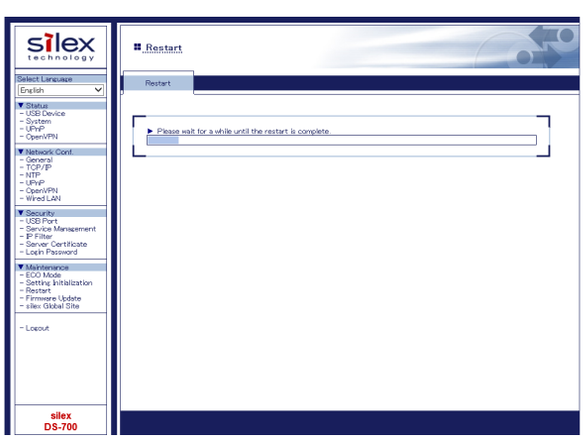
3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Maintenance** - **Restart**.



4. The Restart page is displayed.
Click **Yes**.



5. The reboot will be complete in 30 seconds.



6. When the login page is displayed, the reboot is completed.
Finish the Web browser.

8-4-4. Updating Firmware

This page explains how to update the DS-700 firmware.

Downloading the latest firmware file

Please download the latest firmware file from our website.
For how to download the firmware file, refer to **4-2. Downloading the Utilities**.

Updating the firmware

TIP

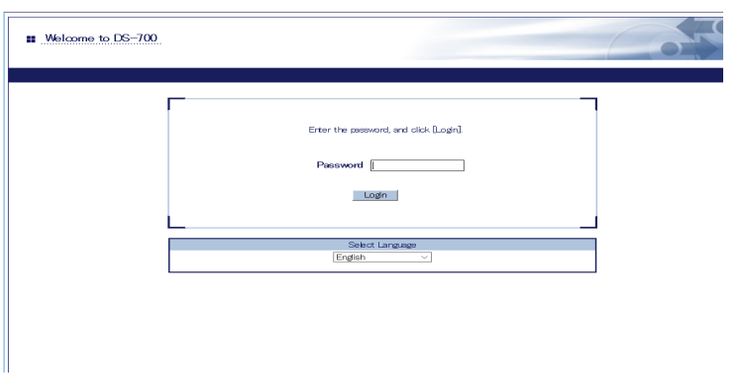
- Before you start, please make sure that no PCs are currently linked.
- Do not turn off DS-700 while the firmware update is in process.

1. Access the Web page of DS-700.

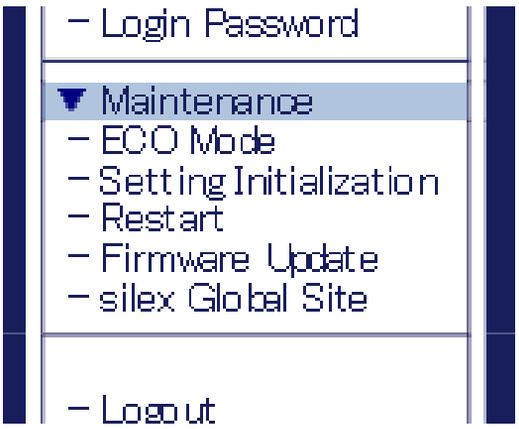
Note

- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

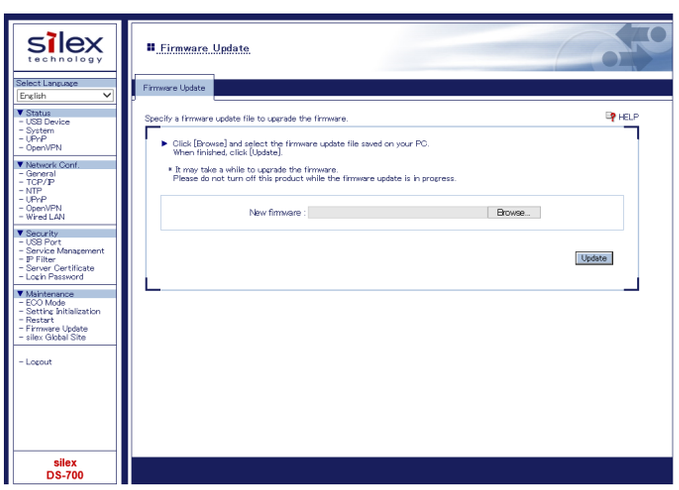
2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



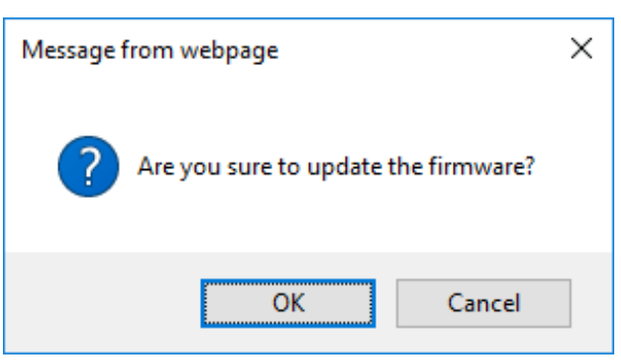
3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Maintenance** - **Firmware Update**.



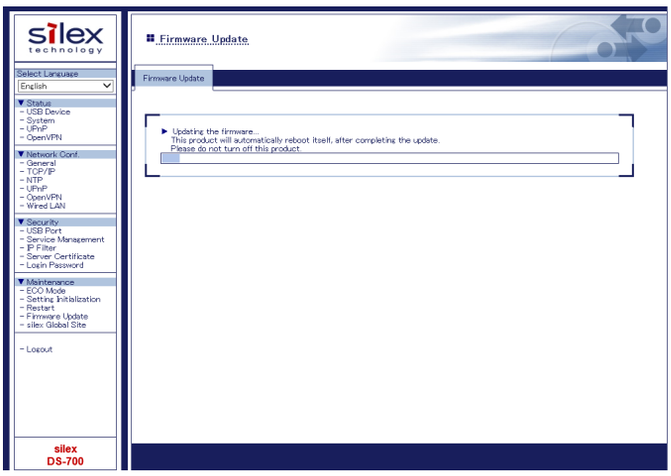
4. The Firmware Update page is displayed.
Click **Browse** to select the firmware file to be loaded to DS-700.
Check that the file name is displayed in **New firmware** field and click **Update**.



5. A confirmation message is displayed. Click **OK**.



6. The firmware update will begin.

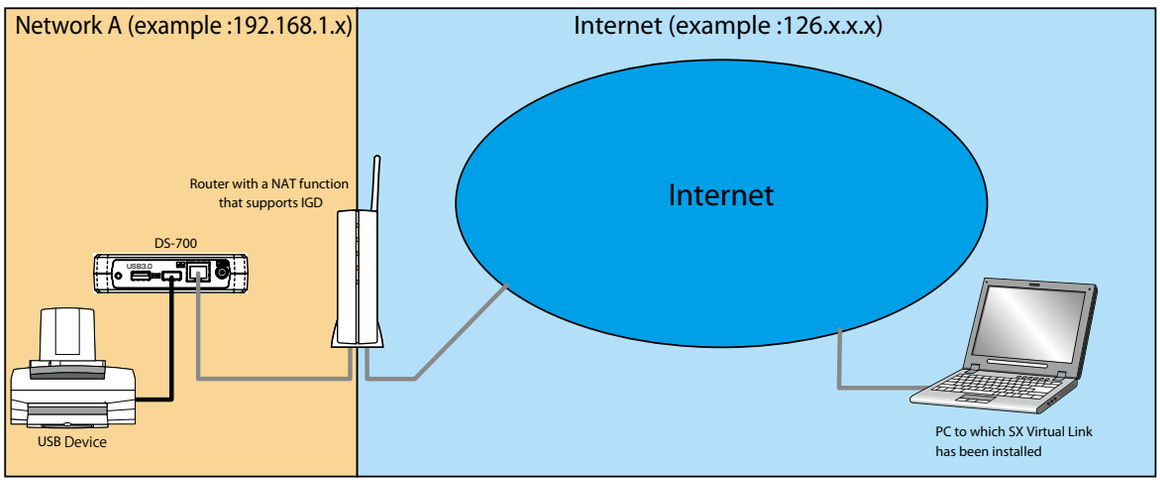


7. When the login page is displayed, the firmware update is completed.
See the bottom left of the login page and check the version information is changed.

8. Finish the Web browser.

8-5. Using USB Devices over the Internet

By using a router that has NAT function, the USB devices can be used via the Internet.



The following devices and information are required to use the USB devices via the Internet.
- A router with a NAT function that supports UPnP Internet Gateway Device
- A host name that has been set for Dynamic DNS
- Router port forwarding setting

TIP

- To use USB devices via the Internet, the DS-700 firmware version must be 1.1.0 or higher, and the SX Virtual Link version must be 5.1.0 or higher.

Note

- If your router does not support UPnP, a rule of port forwarding to DS-700 needs to be manually set.
- For the Dynamic DNS settings, refer to the operating manual that comes with your router.

8-5-1. Using USB Devices over the Internet

To use USB devices via the Internet, the DS-700 and SX Virtual Link settings need to be configured. The following describes how to use the UPnP client function.

TIP

- It is impossible to access the Web page of DS-700 via the Internet.
- **UPnP Control** is set to **ENABLE** by default.

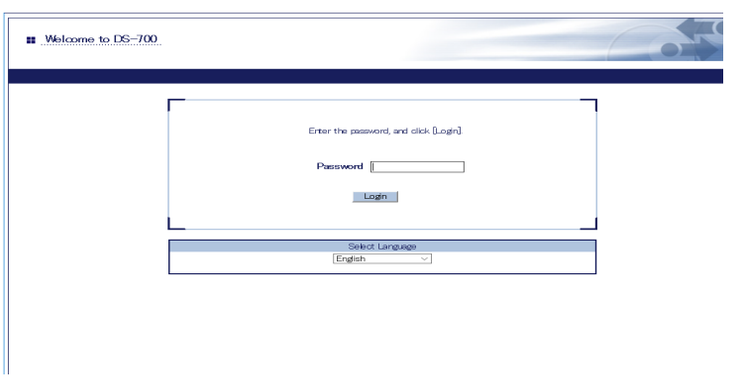
UPnP function setting

1. Access the Web page of DS-700.

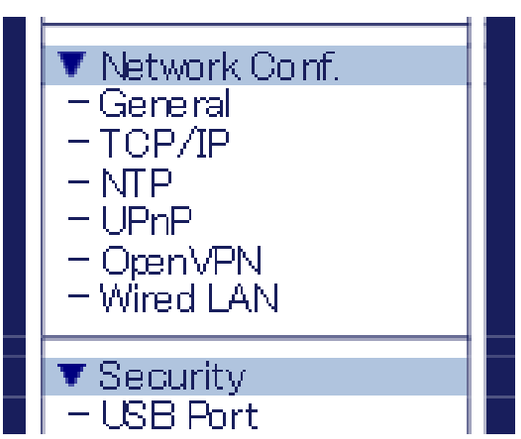
Note

- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

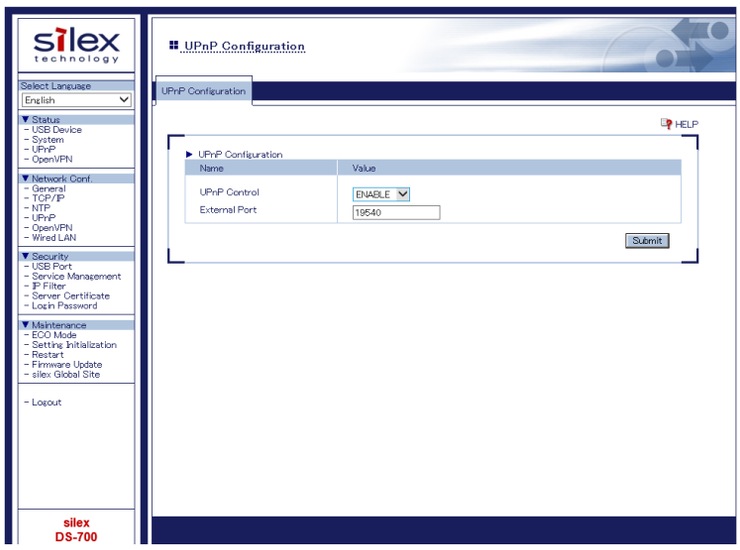
2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Network Conf.** - **UPnP**.



4. UPnP Configuration page is displayed.
Select **ENABLE** for **UPnp Control** and click **Submit**.

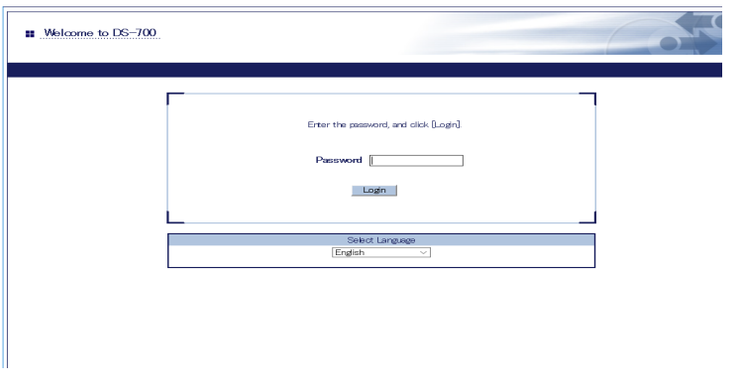


Note - DS-700 uses the **External Port** number to set the external port for a port forwarding function. If this port number has already been used for another device, or when there are multiple DS-700 units, it needs to be changed.

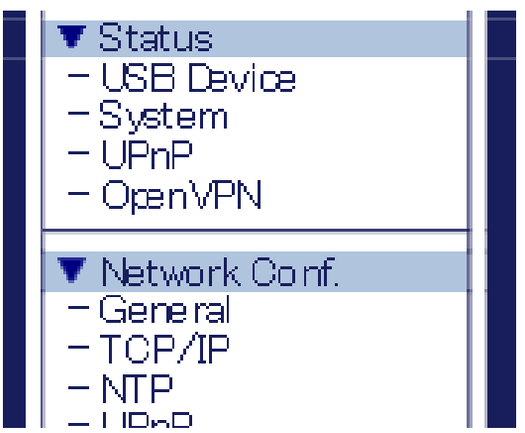
5. The Restart page is displayed. Click **Restart** to restart DS-700.
The changes will take effect after restart.

6. When the login page is displayed, the reboot is completed.

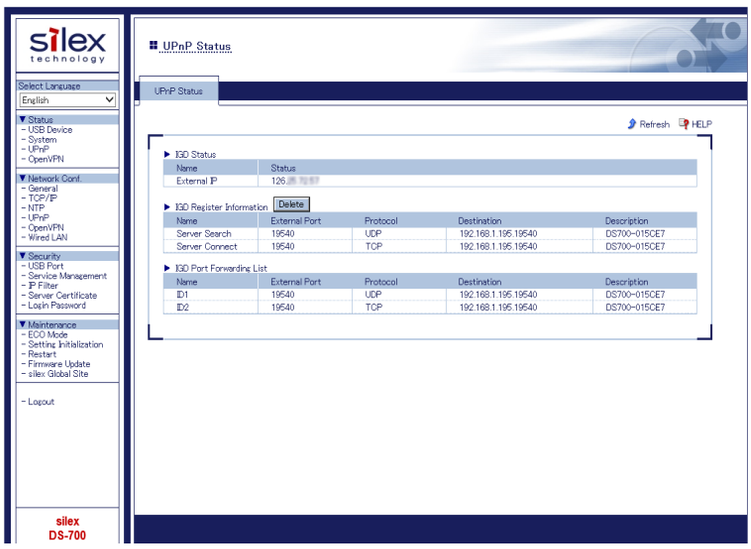
7. Enter the password for DS-700 and click **Login**.



8. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Status** - **UPnP**.

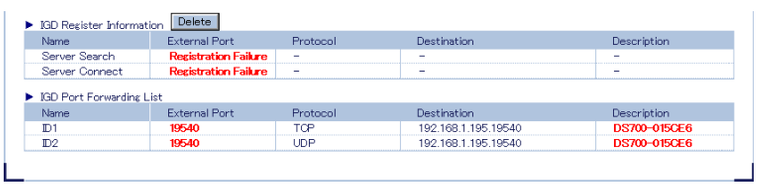


9. UPnP Status page is displayed.
Check the value at **External Port** under **IGD Register Information**.



Note

- If the status of **IGD Register Information** is "**Registration Failure**", it is impossible to connect to DS-700 via NAT.
- The reason of "**Registration Failure**" might be the followings.
  - The external port is already in use.
  - The destination IP address is already in use.



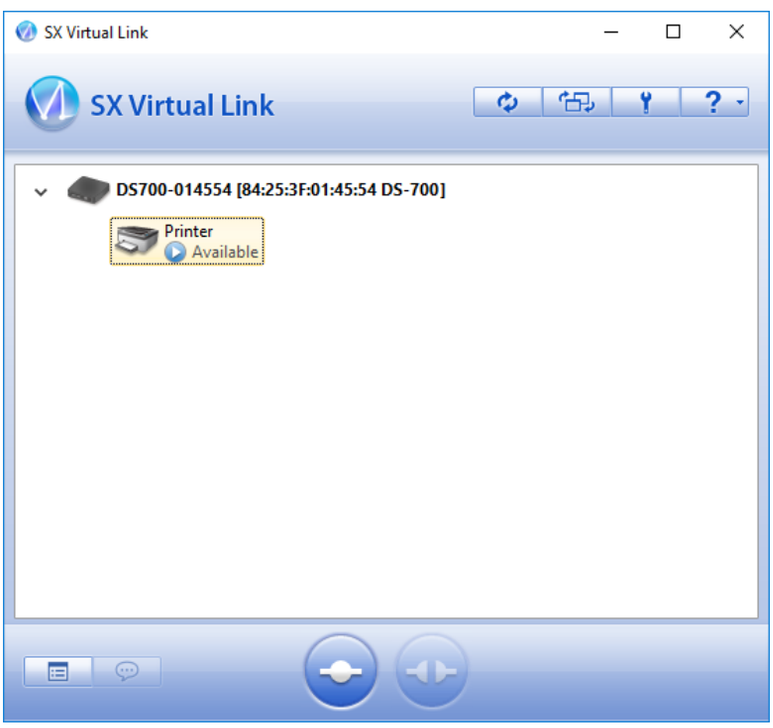
SX Virtual Link Setting

1. Start SX Virtual Link.

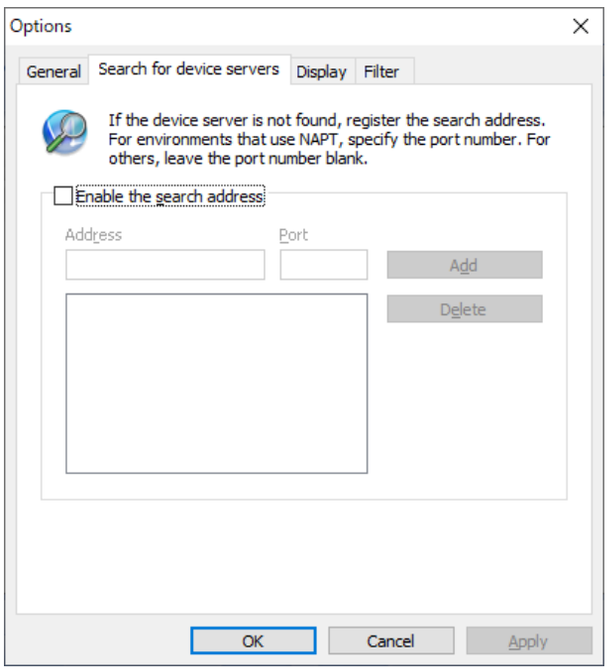
Note

- For how to start SX Virtual Link, refer to **7. Using USB Devices Connected to DS-700**.

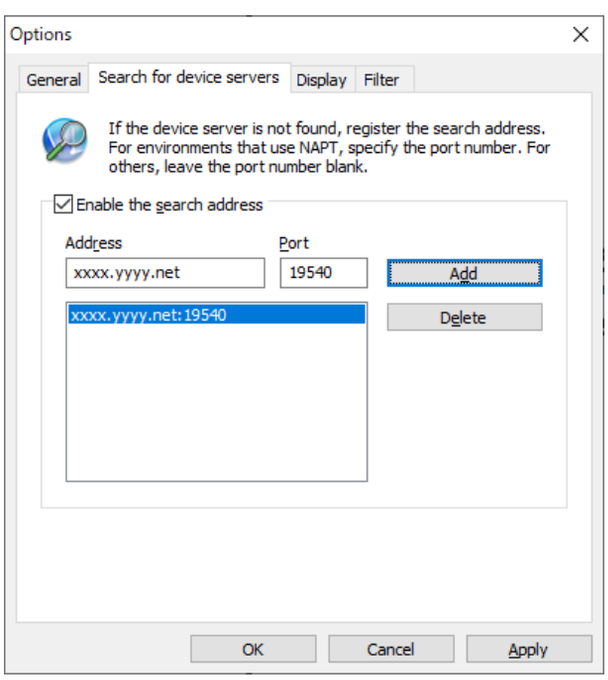
2. In SX Virtual Link's main window, click the **Options** button ( ).



3. The **Options** window is displayed.
Click the **Search for device servers** tab.



4. Check the check box of the **Enable the search address**.
Enter the host name (the one registered to Dynamic DNS) for **Address**, and the port number you have checked at step 9 of **UPnP function setting** for **Port**, and click **OK**.



Note

- For **Address**, the external IP address of DS-700 can be set. However, please note that the IP address changes automatically when DS-700 is in use.
- When the **External Port** of DS-700 is "**19540**", the **Port** setting can be skipped. However, if "**19540**" is already in use, the **Port** setting needs to be entered.
- For details on Dynamic DNS, refer to the operating manual that comes with your router.

8-5-2. Deleting Port Forwarding Setting

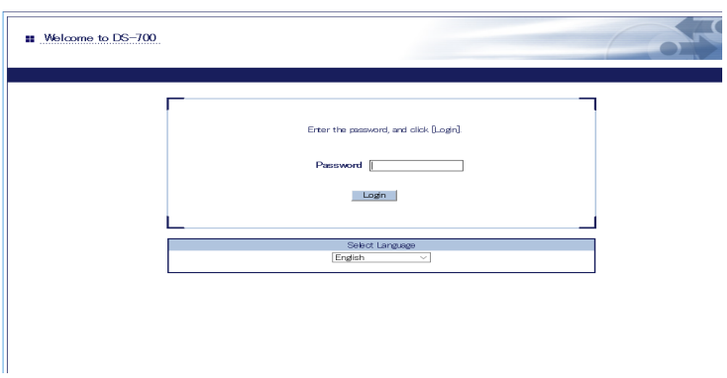
Before removing DS-700 from network after using the USB device via the Internet, it is recommended to delete the port forwarding setting on DS-700.
The following explains how to delete the port forwarding setting.

TIP
- The Web page of DS-700 cannot be accessed via the Internet.
- If the deletion fails, the registered IGD information will not be deleted.

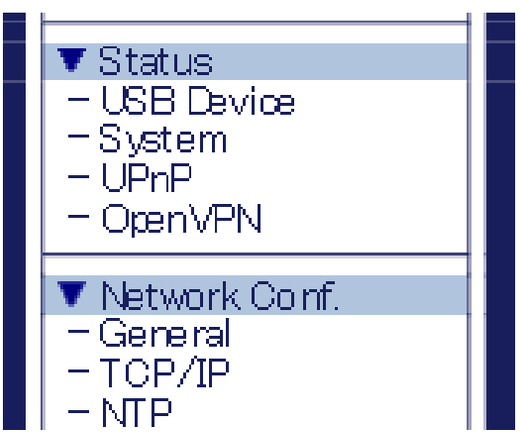
1. Access the Web page of DS-700.

Note
- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

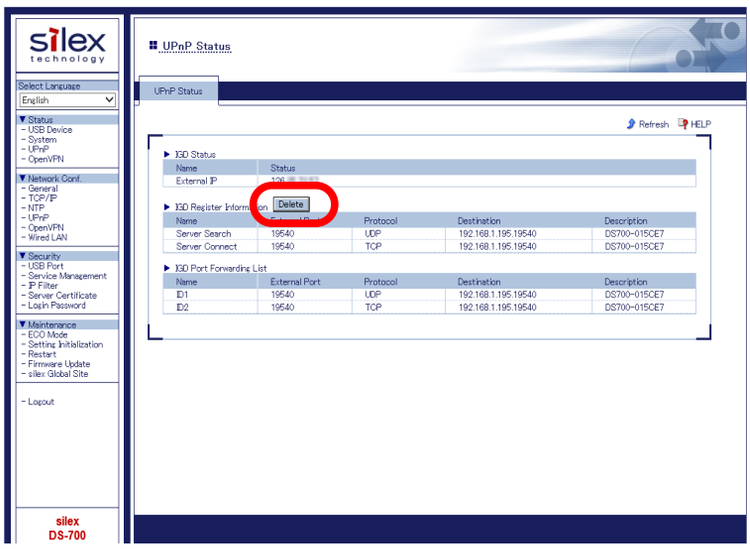
2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Status** - **UPnP**.

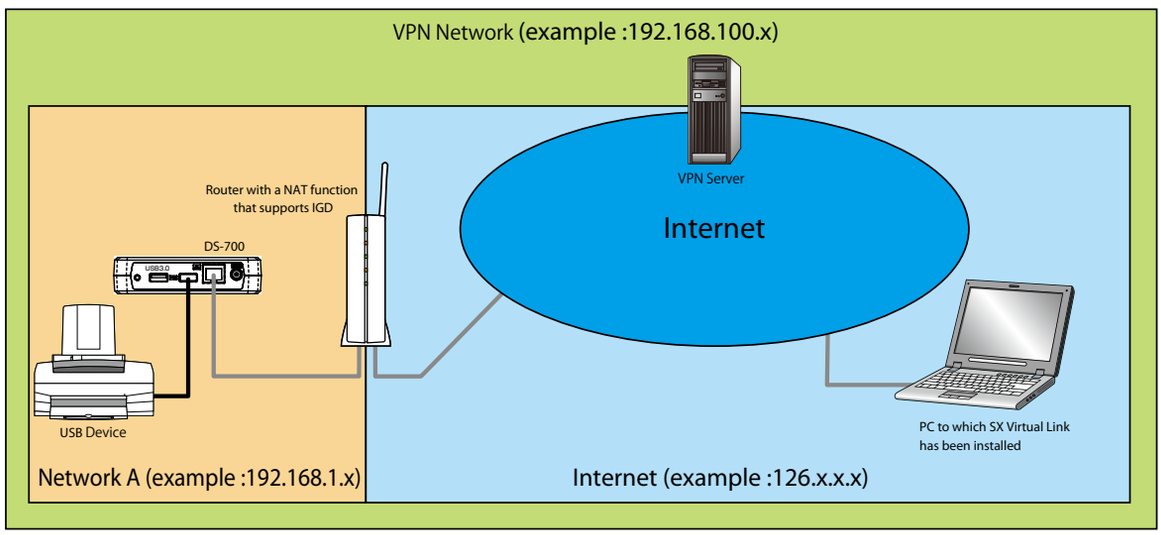


4. UPnP Status page is displayed.
Click **Delete**.



8-5-3. Using OpenVPN Client Function

DS-700 supports the OpenVPN Client function. If this function is enabled, it is possible to connect to the VPN server configured for OpenVPN Client to establish VPN communication.



TIP

- VPN server is updated by vendors for purposes of functional expansion and security enhancement. When the update runs, it may not be possible to communicate with the VPN server since the client function of DS-700 cannot meet the updated requirements on communication/encryption.
- VPN network environment needs to be established.
- You may need to pay for a VPN environment that includes Azure VPN Gateway. Please confirm the details of each service.

Note

- The functional operation has been confirmed with the following VPN server(s).
  Azure VPN Gateway configured for OpenVPN Client
- The configuration file of OpenVPN can be downloaded from the Azure's portal. Create a CA certificate to register for VPN Gateway and a certificate to describe in the configuration file of OpenVPN. It needs to be reflected in the configuration file of OpenVPN in advance.
- Multicast and broadcast are not allowed for Azure VNET. To search for DS-700 via Azure VPN Gateway, it is necessary to set the DS-700's IP address of VPN to the device server search address of SX Virtual Link.

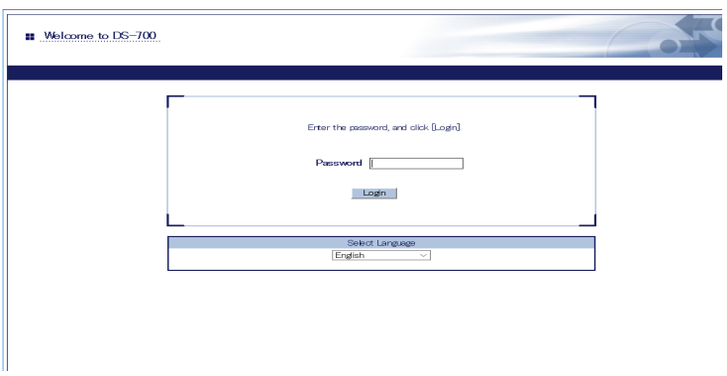
OpenVPN Client function setting

1. Access the Web page of DS-700.

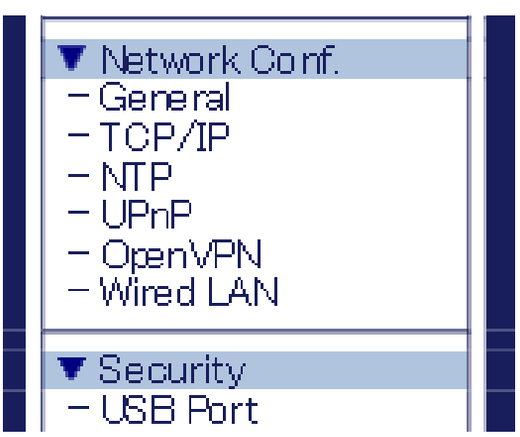
Note

- For how to display the Web page of DS-700, refer to **8-1-1. Displaying the Web page of DS-700**.

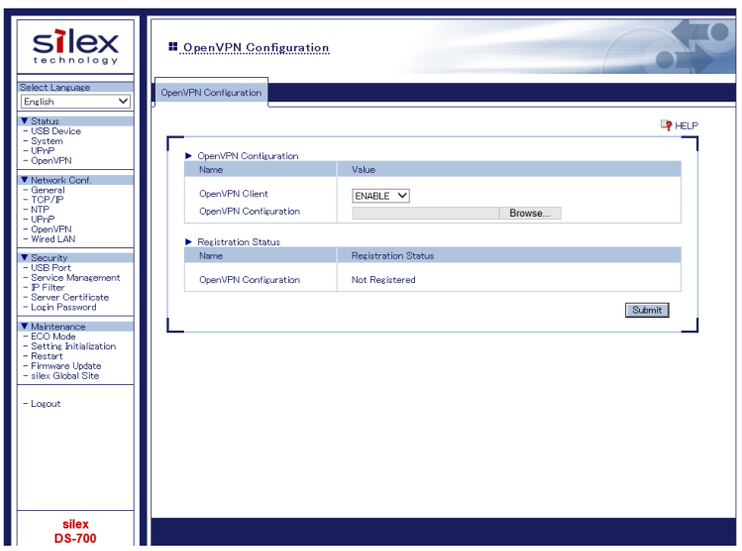
2. The login page is displayed.
Enter the password for DS-700 and click **Login**.



3. The Web page of DS-700 is displayed.
From the left menu on the Web page, click **Network Conf.** - **OpenVPN**.



4. OpenVPN Configuration page is displayed.
Select **ENABLE** for **OpenVPN Client**.
Click **Browse**, select the OpenVPN configuration file and click **Submit**.



5. The Restart page is displayed. Click **Restart** to restart DS-700.
The changes will take effect after restart.

6. When the login page is displayed, the reboot is completed.
Finish the Web browser.

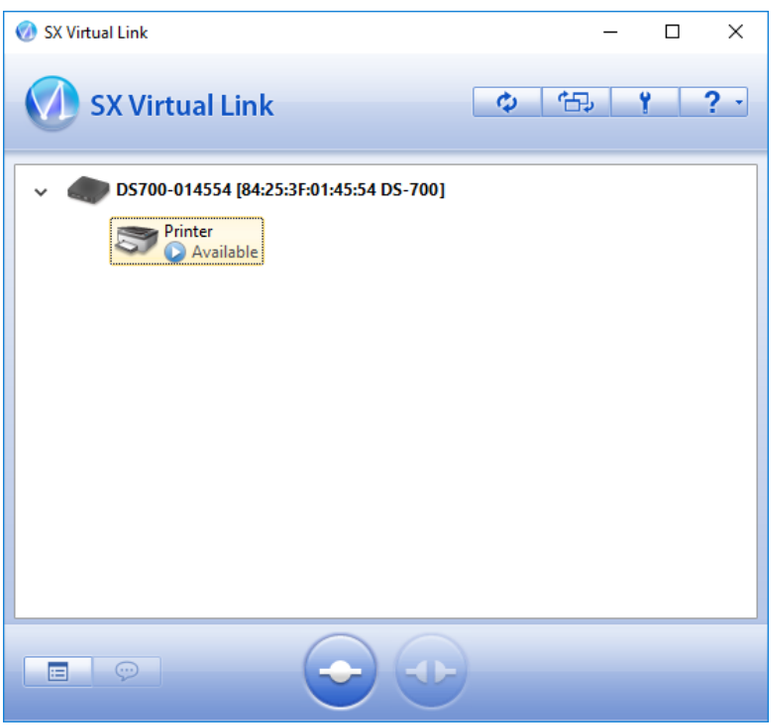
SX Virtual Link Setting

1. Start SX Virtual Link.

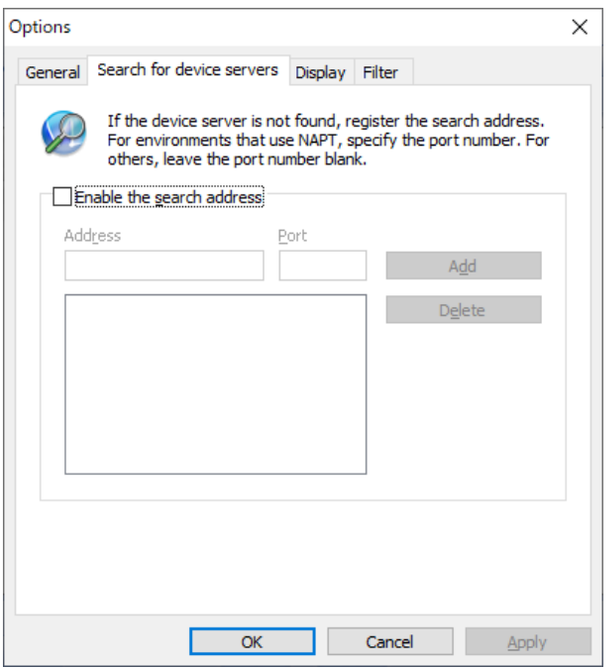
Note

- For how to start SX Virtual Link, refer to **7. Using USB Devices Connected to DS-700**.

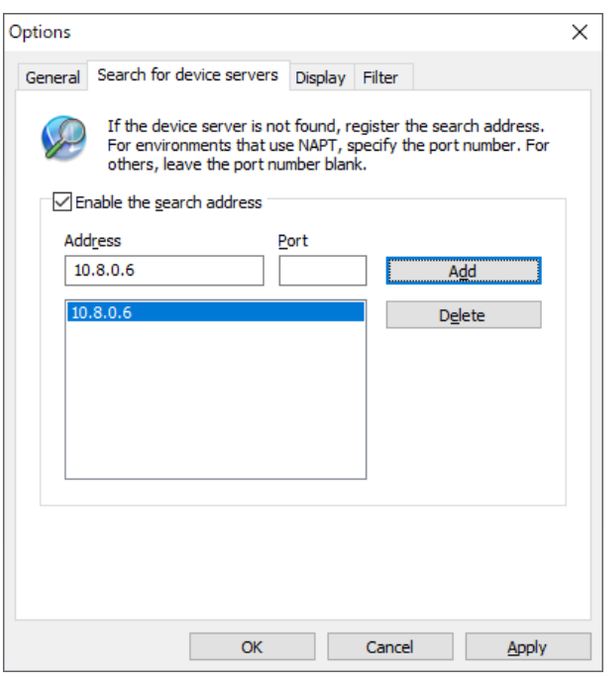
2. In SX Virtual Link's main window, click the **Options** button ( ).



3. The **Options** window is displayed.
Click the **Search for device servers** tab.



4. Check the check box of **Enable the search address**, enter the DS-700's IP address of VPN for **Address** and click **OK**.



8-6. Using SX Virtual Link Lite

8-6-1. What is SX Virtual Link Lite?

This page explains the USB device connection service "SX Virtual Link Lite" to use DS-700

SX Virtual Link Lite is a utility that runs as Windows service.

Difference from SX Virtual Link

USB device is automatically connected when PC is turned on

By registering USB device at SX Virtual Link Lite Setting, it can automatically be connected when the PC is powered on.
You will not have to start SX Virtual Link to connect the USB device.

PC logon is not necessary

USB device can be connected just by turning on PC. Logon is not necessary then.

Auto connection recovery

When the USB device connection is lost as the device server is turned off, etc., it will be reconnected automatically when the device server is turned on again.

TIP

- When SX Virtual Link Lite fails to connect the USB device, reconnection does not perform. Also, error message is not displayed then.
- As long as the USB device is connected by SX Virtual Link Lite, it is impossible to connect such device by other utility such as SX Virtual Link.

8-6-2. Installing SX Virtual Link Lite

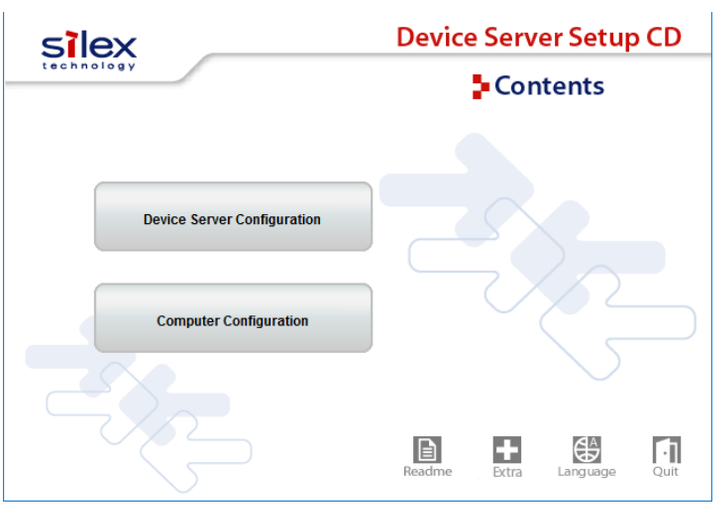
This page explains how to install the USB device connection utility "SX Virtual Link Lite" on your PC.

1. Extract the downloaded "Device Server Setup" file on your desktop.
Double-click "**Dssetup.exe**" contained in the "Device Server Setup" folder to start the "Device Server Setup" installer.

TIP

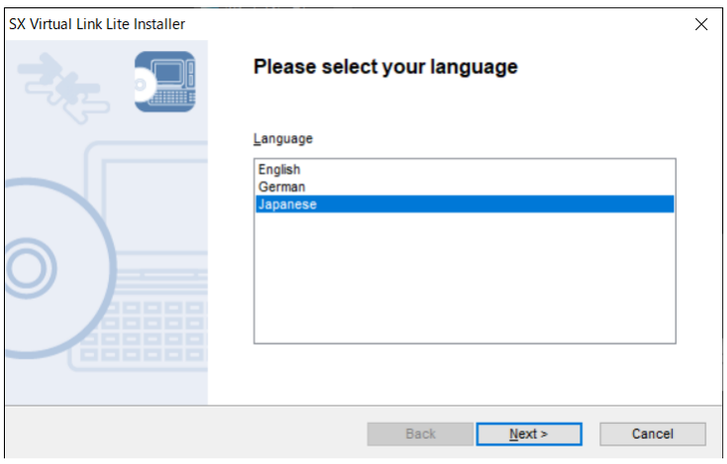
- In Windows 7 or Newer, the User Account Control screen is displayed. Click **Yes**.

2. Click **Extra** in the menu window below.

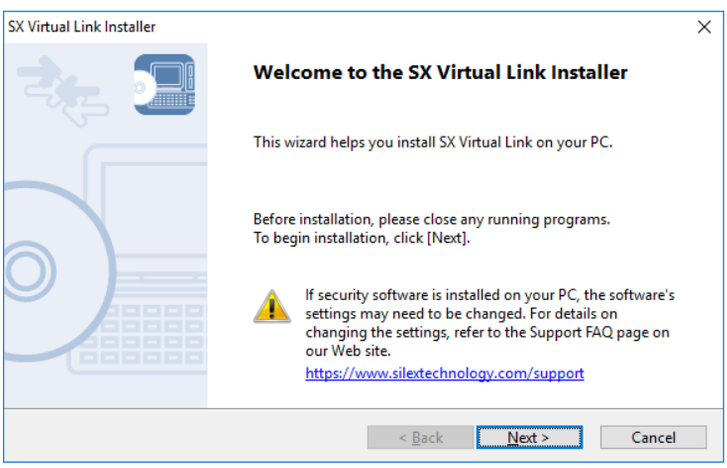


3. Double-click "**Cosetup.exe**" contained in the "SX Virtual Link Lite" to start the "**SX Virtual Link Lite**" installer.

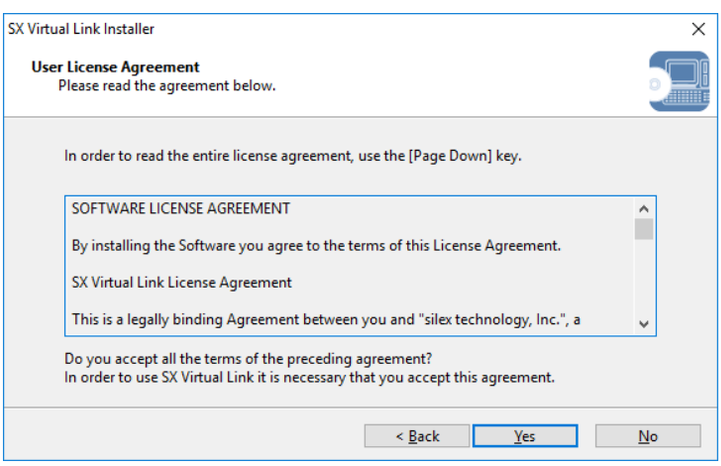
4. Select your language and click **Next**.



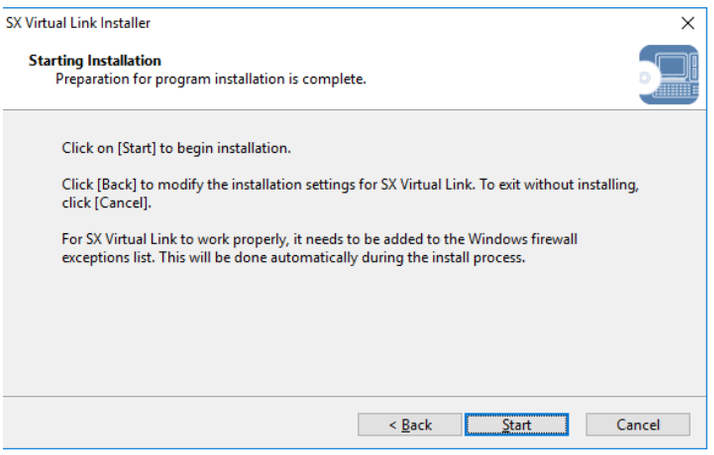
5. SX Virtual Link Lite installation wizard is displayed. Click **Next**.



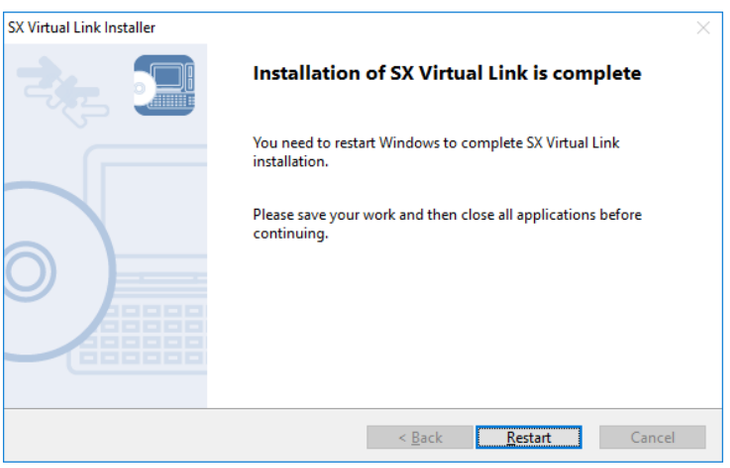
6. Read the **SOFTWARE LICENSE AGREEMENT** and click **Yes**.



7. Click **Start** to begin the installation.



8. SX Virtual Link Lite has been installed. Click **Finish**.



8-6-3. SX Virtual Link Lite Setting

This page explains on "SX Virtual Link Lite Setting" that is used to configure the SX Virtual Link Lite settings.

Using SX Virtual Link Lite

SX Virtual Link Lite Setting is used to configure the SX Virtual Link Lite settings.
Follow the instructions below to start it.

1. SX Virtual Link Lite Setting starts automatically after it is installed.

Note

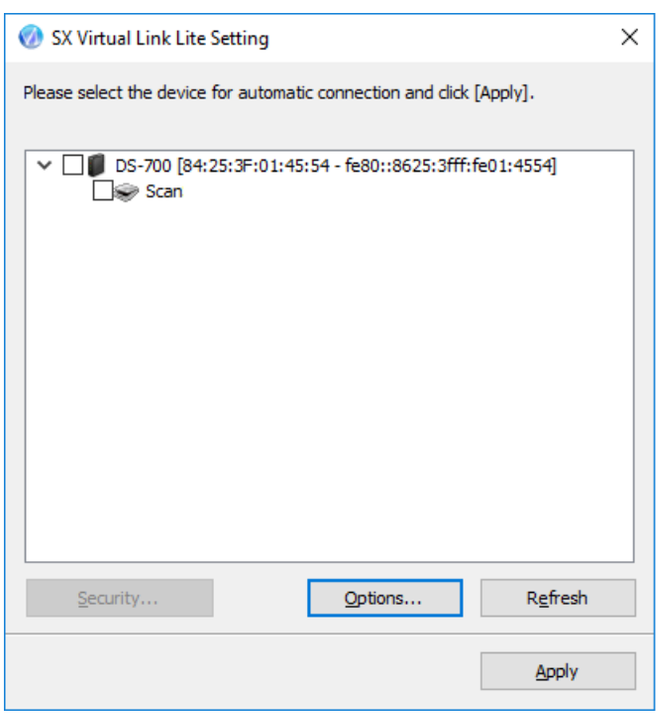
- Follow the instructions below to start SX Virtual Link Lite Setting manually.

<For Windows 10>
Click **Start** - **(All) Programs** - **silex Tools** - **SX Virtual Link Lite Setting**.

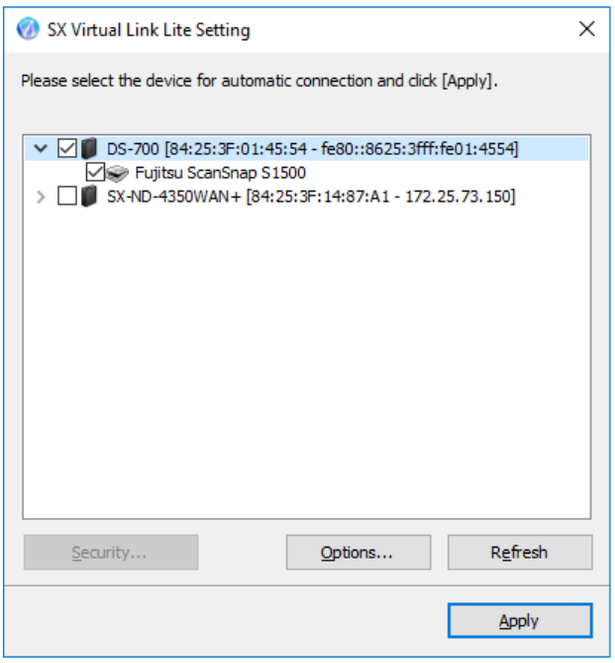
<For Windows 8/8.1>
Display the **app** view from **start** screen and click **SX Virtual Link Lite Setting**.

<For Windows 7>
Click **Start** - **(All) Programs** - **silex Tools** - **SX Virtual Link Lite** - **SX Virtual Link Lite Setting**.

2. SX Virtual Link Lite Setting's main window appears and device servers and USB devices are shown on it.

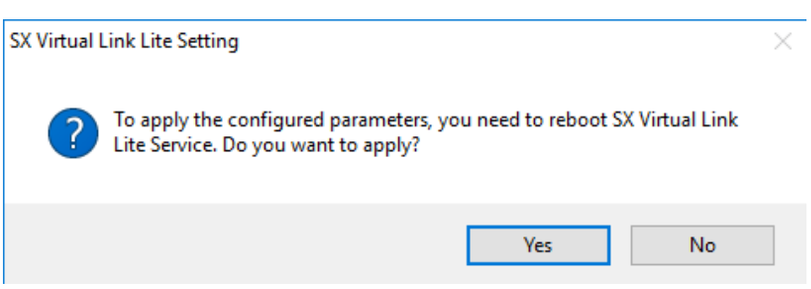


3 . Check the check box of the device to connect automatically.

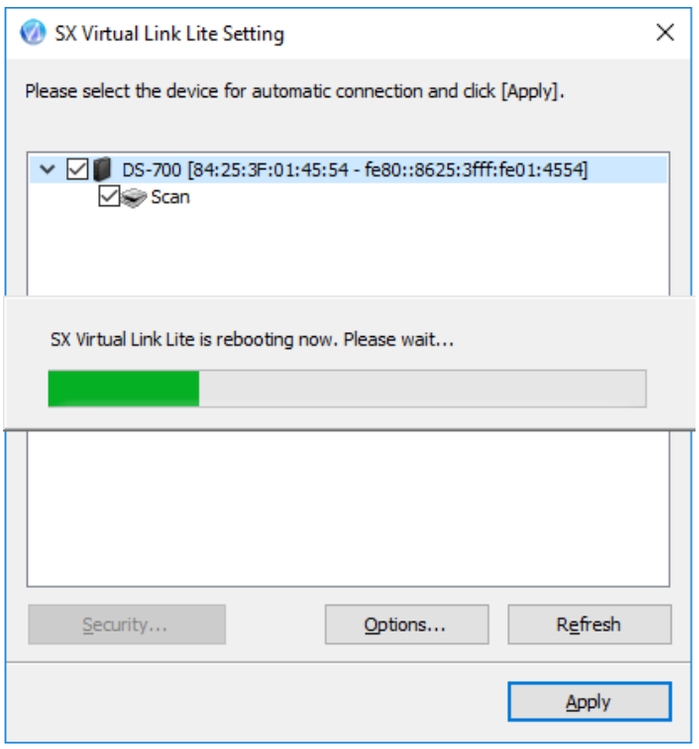


4 . Click **Apply**.

5 . Click **Yes** in the message below.



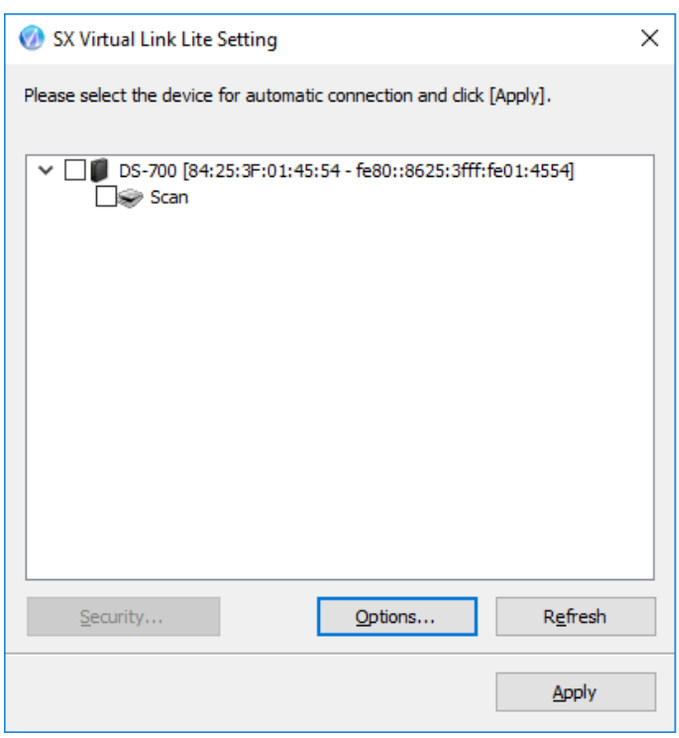
6. The setting will take effect on SX Virtual Link Lite.
When it is finished, SX Virtual Link Lite Setting will be closed and the selected USB devices will automatically be connected.



SX Virtual Link Lite Setting's Window

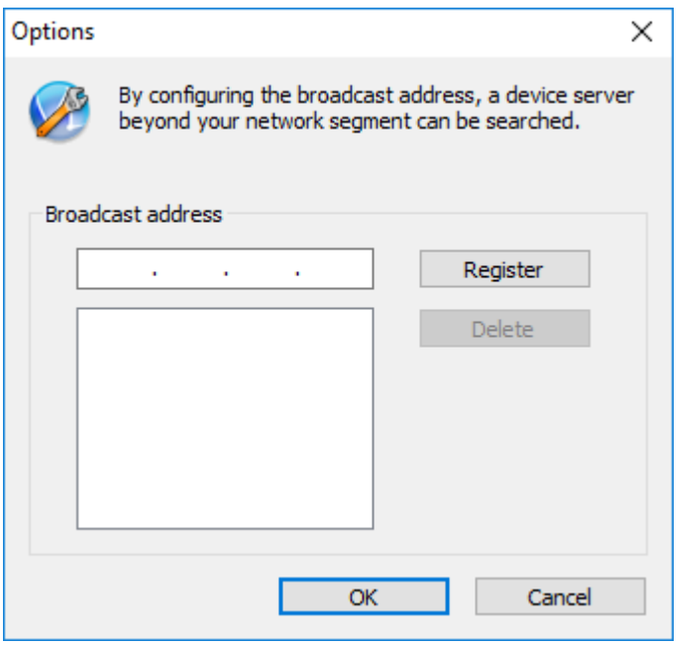
SX Virtual Link Lite Setting has following windows.

<Main window>



Security	Opens the security dialog. The button is enabled only when the device server supports the USB connection password or encrypted connection.
Options	Opens the option dialog window. Broadcast address can be configured on this window.
Refresh	Refreshes the main window by searching the device servers and the connected devices on network.
Apply	Applies the setting (information of device chosen by user) to SX Virtual Link Lite.

<Options window>



Register	Adds an address to search. Enter the broadcast address to the address field and click **Register** (up to 16 addresses can be registered). The broadcast address needs to be registered in case you want to search for networks beyond the router. If no broadcast addresses are specified, only device servers in a local segment (network separated by the router) will be searched.
Delete	Removes a registered address. Select the address to remove and click **Delete**.

8-7. Uninstalling Application on Windows

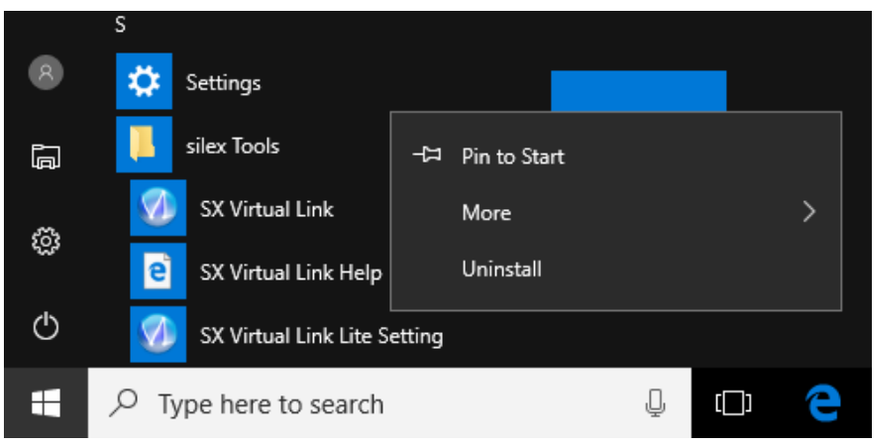
This page explains how to uninstall SX Virtual Link and SX Virtual Link Lite on Windows.

8-7-1. Uninstalling SX Virtual Link

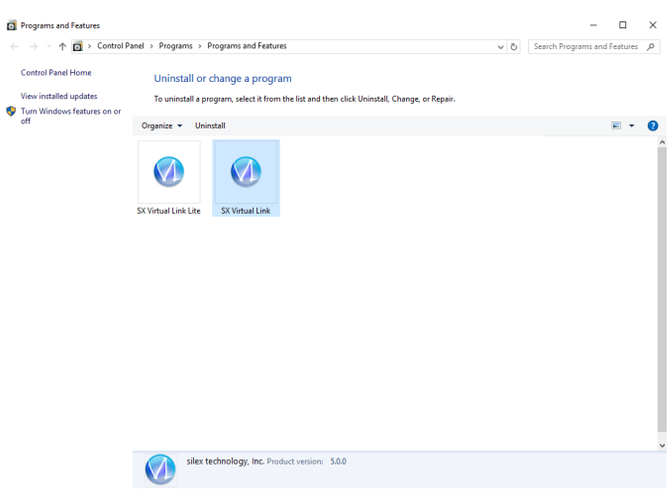
SX Virtual Link can be uninstalled from **Uninstall a program** in the **Control Panel**.
How to uninstall SX Virtual Link:

TIP - To uninstall SX Virtual Link, administrator privilege is required.

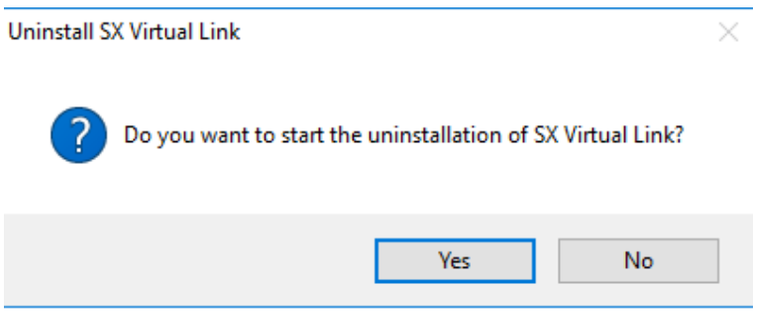
1. Click **Start** - **Control Panel** - **silex Toos**.



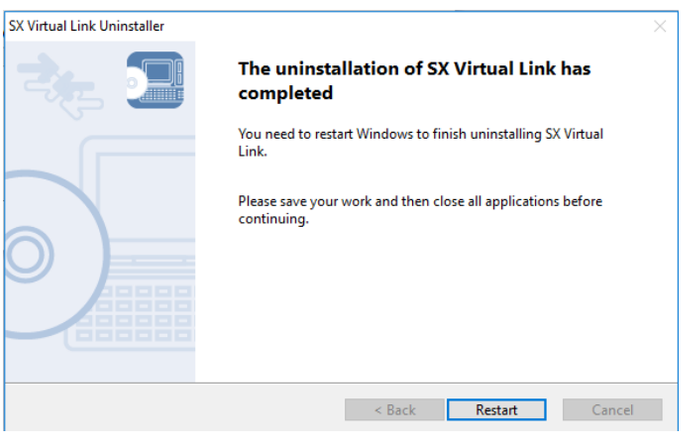
2. Select **SX Virtual Link** from the list and click **Uninstall**.



3. A confirmation message is displayed. Click **Yes** to start the uninstallation.



4. When a screen below is displayed, click **Restart**.



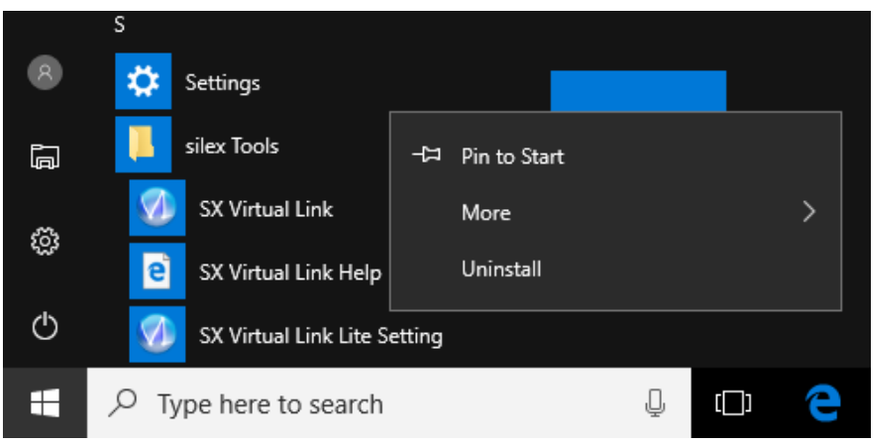
8-7-2. Uninstalling SX Virtual Link Lite

SX Virtual Link Lite can be uninstalled from **Uninstall a program** in the **Control Panel**.
How to uninstall SX Virtual Link Lite:

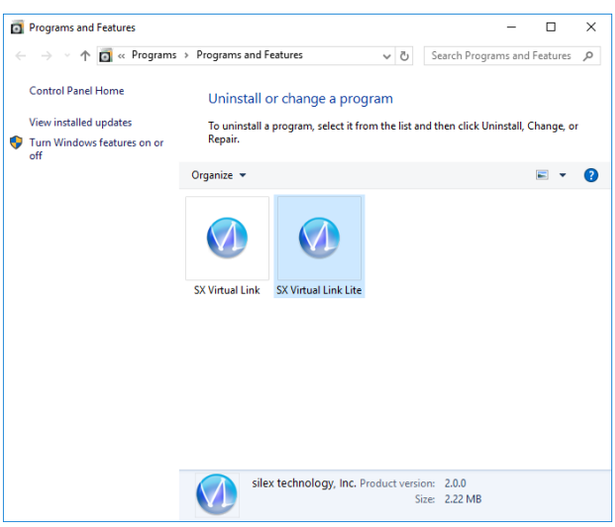
TIP

- To uninstall SX Virtual Link Lite, administrator privilege is required.

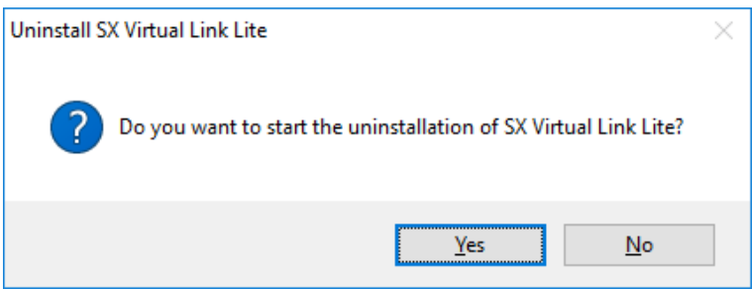
1. Click **Start** - **Control Panel** - **silex Toos**.



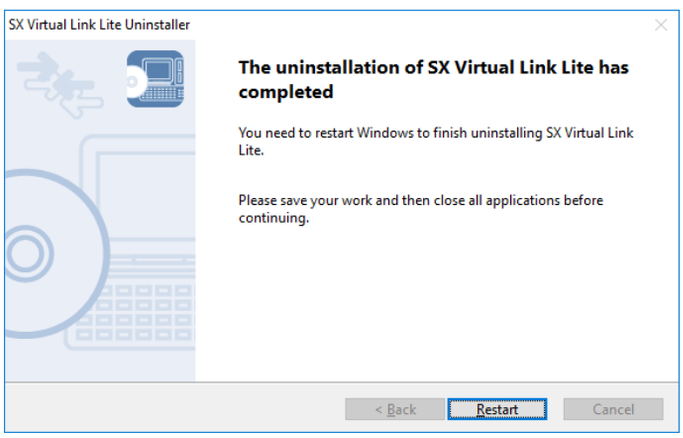
2. Select **SX Virtual Link Lite** from the list and click **Uninstall**.



3. A confirmation message is displayed. Click **Yes** to start the uninstallation.



4. When a screen below is displayed, click **Restart**.



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9. Troubleshooting

9-1. Useful Information

This page contains useful information that can answer your possible questions.

How can I remove a USB device connected to DS-700?

First of all, confirm that the USB device is not currently connected by looking at SX Virtual Link's main window, and then unplug it from DS-700. Unplugging the USB device while it is being used might lead to data corruption.
For details on SX Virtual Link, see Using USB Devices Connected to DS-700.

Also, if the connected USB device is a printer, confirm that there are no print jobs being performed. Please remember that the printer may be intended for use with the print server feature, not only by SX Virtual Link.

Is there anything I should do before connecting a USB device to DS-700?

If the driver of the USB device that you wish to use with DS-700 is not yet installed to your PC, install it first.
For details on how to install the driver, refer to the operating manual of the USB device.

If the USB device requires an external power source, power on the USB device after connecting it to DS-700.

How can I use two or more USB devices?

Two or more USB devices can be connected to DS-700 by using a USB HUB.
For the maximum number of connectable devices, refer to **2-3-2. Software Specifications**.
However, please note that when two or more USB devices are connected, data transfer speed will decrease.

How can I see if DS-700 is running in ECO Mode or not?

To see if DS-700 is running in ECO Mode or not, refer to **8-4-1. About ECO Mode**.

How can I get my PC ready to use DS-700?

If the driver of the USB device that you wish to use with DS-700 is not yet installed on your PC, install it first.
For details on how to install the driver, refer to the operating manual of the USB device.

Second, install the necessary application on your PC.
For details, refer to **6. Installing the Application to PC**.

If the setting to restrict a particular PC is enabled on DS-700, your PC may not be able to access it. Please confirm that your PC is not included as a restriction target.
For details on the restriction setting, refer to **2-3-2. Software Specifications**.

How can I change the DS-700's settings?

There are two ways to change the DS-700's settings as follows:

- Use "Device Server Setup CD"
  By using the "Device Server Setup" you have downloaded from our website, the settings can be changed as you did during the initial configuration.
  For details on configuration method, refer to **5. Configuration**.

- Use the Web page of DS-700
  The settings can also be changed from the Web page.
  For details on the Web page of DS-700, refer to **8-1. Using the Web Configuration Page**.

How can I initialize DS-700?

There are two ways to initialize DS-700 as follows:

- Use the push switch on the unit
  By using the push switch on the DS-700 unit, you can reset DS-700 to its factory default settings.
  For the detailed process, refer to **8-4-2. Resetting to Factory Defaults**.
- Use the Web page of DS-700
  DS-700 can also be reset to its factory default settings from the Web page.
  For details on the Web page of DS-700, refer to **8-4-2. Resetting to Factory Defaults**.

What if I use a DS-700 that has been used in other networks?

If your DS-700 has been used in other networks, it may contain settings that do not match your new environment.

To use DS-700 in your new environment, initialize it first and then install and configure it according to the following procedures:
Step 1. Resetting to Factory Default
Step 2. Configuration

How can I use the print server feature?

For the print server feature, refer to **8-2. About the Print Server Feature** at Other Features.

- If the IP address of DS-700 changes while the print server feature (standard Windows printing feature) is used, please also change the printer port setting on Windows, otherwise printing will become unavailable.
- To avoid this, it is recommended that you set a static IP address to DS-700 or set your DHCP server to always assign a static address to DS-700.

How can I uninstall the application from my PC?

To uninstall the application from your PC, refer to **8-7. Uninstalling Application on Windows**

9-2. Q&A

9-2-1. Problems During Setup

This page explains the troubleshooting procedures to resolve problems you may experience while installing DS-700.

DS-700 is not displayed in the search result of the Device Server Setup

When DS-700 is not displayed in the search result of Device Server Setup, the cause need to be determined from the installation status, network environment, and status of PC used for the configuration of DS-700.

DS-700 or the Ethernet Hub DS-700 is connected to may have a problem regarding connection, power transmission, or operation.	
Solution	Please check the LED status of DS-700 and the Ethernet Hub DS-700 is connected to. If the LED indicates improper status, replace the AC plug and other cables, and reboot the connected devices.

The startup of DS-700 may not have been completed.	
Solution	It takes up to 30sec for DS-700 to get ready after it is powered on. Please wait until DS-700 becomes ready and then click the Search in the Device Server Setup.

DS-700 may not be in the same network segment (environment without a router) as your PC.	
Solution	During the initial configuration, place DS-700 and PC in the same network segment.

If DS-700 has been used in another network, it may have the settings not allowing the communication with your PC.	
Solution	Please reset DS-700 to the factory default setting. Refer to **8-4-2. Resetting to Factory Defaults** for details.

Security software such as firewall may be interrupting the communication with DS-700.	
Solution	Please abort your security software. Refer to FAQ in our website (https://www.silextechnology.com/) for details on how to abort security software.

Communication error occurs when configuring with Device Server Setup.

When a communication error occurs during Device Server Setup, the cause needs to be determined from the settings of the PC used for the configuration.

DS-700 may not be in the same network segment (environment without a router) as your PC.	
Solution	During the initial configuration, place DS-700 and PC in the same network segment.

In the environment where there is DHCP server, the DHCP server may have configured the IP address of the different segment to a PC.	
Solution	Please select Obtain an IP address automatically at Internet Protocol (TCP/IP) Properties of the PC. Otherwise connect the PC and DS-700 with a crossover cable or to the standalone Ethernet Hub and see how it works.

If DS-700 has been used in another network, it may have the settings not allowing the communication with your PC.	
Solution	Please reset DS-700 to the factory default setting. Refer to **8-4-2. Resetting to Factory Defaults** for details.

How should I determine the way to assign an IP address to DS-700?

There are two ways to assign an IP address to DS-700; one is to Get IP address automatically from DHCP server and the other is to Assign IP address manually. Choose the way to assign an IP address according to your environment.

When there is a DHCP server in the network environment	
Solution	You can use Get IP address automatically from DHCP server. As DS-700 is set by default to Get IP address automatically, DS-700 will obtain an IP address appropriate to your network environment from the DHCP server just by powering up DS-700. Refer to **8-4-2. Resetting to Factory Defaults** for details on how to reset DS-700 to the factory default settings.

<table>
<tr><td colspan="2">When there is no DHCP server in the network environment, or when you do not prefer getting an IP address from DHCP server</td></tr>
<tr><td>Solution</td><td>
Please use DHCP Server feature of DS-700 or Assign IP address manually. Keep in mind of the following points regarding the IP address to assign to DS-700.

- Assign an IP address unique in the network.
- Assign an IP address that has the same address class as the PC that will use DS-700.
e.g. When an IP address of the PC is "192.168.0.xx", assign an address such as "192.168.0.100" that is not used by other network devices.
- When the DHCP Server feature of DS-700 is used, the IP address of DS-700 is automatically set to "192.168.0.1".

(Tips about the IP address)

- An IP address is a unique number for identifying network devices. An IP address is indicated with four numbers divided by a period (.), for example "192.168.0.1". The integer from 0-255 is used for each number.
- An IP address is, depending on the number assigned, categorized to 3 classes below.
- Numbers making up the IP address are either network numbers indicating network, or host numbers indicating each network device; each number indicates the different meaning based on the IP address class. Each class is categorized as the following diagram which is indicating a network number as n, and a host number as u. An IP address with the same network number must be assigned to the network devices in the same network segment.
- There is an address range in the IP address called the private address that could be used freely. In the LAN environment not directly connected to the internet, an IP address is assigned within the range of the private address.

<table>
<tr><th>First 1 digits in IP address</th><th>Class</th><th>Definition of IP address
n: network number
u: host number</th><th>Size of the network to be used</th><th>Private address</th></tr>
<tr><td>0 - 127</td><td>A</td><td>n.u.u.u</td><td>Large network</td><td>10.0.0.0 - 10.255.255.255</td></tr>
<tr><td>128 - 191</td><td>B</td><td>n.n.u.u</td><td>Mid-size network</td><td>172.16.0.0 - 172.31.255.255</td></tr>
<tr><td>192 - 223</td><td>C</td><td>n.n.n.u</td><td>Small network</td><td>192.168.0.0 - 192.168.255.255</td></tr>
</table>
</td></tr>
</table>

9-2-2. Problems While Using DS-700

This page explains the troubleshooting procedures to resolve problems you may experience while using DS-700.

The USB device is not displayed in SX Virtual Link.

If the USB device is not displayed in SX Virtual Link, you need to check the cable connection as well as the network settings between DS-700 and your PC.

DS-700 or the Ethernet Hub DS-700 is connected to may have a problem regarding connection, power transmission, or operation.	
Solution	Please check the LED status of DS-700 and the Ethernet Hub DS-700 is connected to. If the LED indicates improper status, replace the AC plug and other cables, and reboot the connected devices.

The startup of DS-700 may not have been completed.	
Solution	It takes up to 30sec for DS-700 to get ready after it is powered on. Please wait until DS-700 becomes ready and then click the **Refresh** button in SX Virtual Link again.

Security software such as firewall may be interrupting the communication with DS-700.	
Solution	Please add SX Virtual Link to the exception list in your security software. Please refer to the FAQ on our website (https://www.silextechnology.com/) for details on adding an application to the exception list.

An IP address unable to communicate with your PC may be assigned to DS-700.	
Solution	First, check the IP Address of your PC. To check the IP Address, use the Windows Command Prompt. 1. Select **Start** - **All Programs** - **Windows System** - **Command Prompt**. 2. When the Command Prompt is started, execute the **ipconfig** command. Example of executing the ipconfig command Microsoft Windows [Version 6.1.7601] (C) Copyright (c) 2009 Microsoft Corporation. All right reserved. C:¥Users¥username>ipconfig (Press Enter) Windows IP Configuration Ethernet adapter Local Area Connection: Connection-specific DNS Suffix . . . : IPv6 Address . . . . . : 2001:db8::x:x:x:x Temporary IPv6 Address. . . . . : 2001:db8::z:z:z:z Link-local IPv6 Address. . . . . : fe80::x:x:x:x%4 IPv4 Address . . . . . : 192.168.0.10 (IP address of PC) Subnet Mask . . . . . : 255.255.255.0 Default Gateway . . . . . : fe80::x%4 192.168.0.254 Check that the IP Address of the PC is a proper address for communicating with the IP Address of DS-700. If the PC and DS-700 are in the same network segment but use a different network number in their addresses, you need to change either the address of the PC or DS-700. Also, if there is a router between the PC and DS-700, check that the default gateway address is properly configured.

The IP address assigned to the DS-700 may be in use by another network device.	
Solution	First, turn off DS-700 and open the Windows Command Prompt. Ping the IP address of DS-700. 1. Select **Start** - **All Programs** - **Windows System** - **Command Prompt**. 2. When the Command Prompt is started, execute the **ipconfig** command. Example of executing the ping command when the IP address of DS-700 is 192.168.0.20 Microsoft Windows [Version 6.1.7601] (C) Copyright (c) 2009 Microsoft Corporation. All right reserved. C:¥Users¥username>ping 192.168.0.20 (Press Enter) Pinging 192.168.0.20 with 32 bytes of data: (When there is reply) Reply from 192.168.0.20: bytes=32 time<1ms TTL=128 Reply from 192.168.0.20: bytes=32 time<1ms TTL=128 Reply from 192.168.0.20: bytes=32 time<1ms TTL=128 Reply from 192.168.0.20: bytes=32 time<1ms TTL=128 (When there is no reply) Reply from 192.168.0.10: Destination host unreachable Reply from 192.168.0.10: Destination host unreachable Reply from 192.168.0.10: Destination host unreachable Reply from 192.168.0.10: Destination host unreachable If there is a reply while DS-700 is turned off, it means there is another network device using the same IP address as DS-700. In such a case, change the IP address of either DS-700 or the other network device.

The USB device connected to DS-700 may not be powered on.	
Solution	Check the LEDs on the USB device to see if it is powered on. If the USB device is not powered on, confirm the AC adaptor is connected properly. Also, if the USB device is a bus-powered device, it may require power exceeding the maximum power capability of DS-700 (e.g. HDD drive, etc.). In that case, please use the AC adaptor bundled with the USB device.

Power supply to the USB port may have been cut off due to an overcurrent detected by the overcurrent protection feature.	
Solution	Please see the Web page of DS-700. If the message "An over-current was detected and the USB port shut down. Please reboot the device server." is displayed, Bus power has been cut off. In such a case, unplug all USB devices from DS-700 and reboot it. If you are using USB devices that run on USB Bus power, it is recommended to avoid using two or more devices at once, so that the total power used does not exceed the maximum power capability of DS-700.

A USB cable used to connect DS-700 and USB devices may not be plugged in correctly.	
Solution	Please confirm the proper cable connection between DS-700 and the USB devices. If there is a spare USB cable, replace the cable and see how it works.

An error occurs after USB device is connected using SX Virtual Link.

When USB devices are properly displayed in SX Virtual Link but an error occurs when they are connected, you need to check the USB device specification as well as the PC settings.

Software required to work the USB device (device driver) may not have been installed correctly.	
Solution	Please connect the USB device directly to your PC and see how it works. If the USB device still does not work properly, the device driver may not have been installed to your PC correctly. See the operation manual that came with the USB device and re-install the device driver again.

DS-700 does not switch to ECO Mode even though the specified time period has passed.

ECO Mode may not be enabled.	
Solution	Please make sure that the "Power Save Mode " setting is set to **ENABLE**. For details on the ECO Mode setting, refer to **8-4-1. About ECO Mode**.

SX Virtual Link may be running on the network DS-700 is connected to.	
Solution	Because SX Virtual Link regularly communicates with DS-700, DS-700 will not switch to ECO Mode if SX Virtual Link is running. To allow DS-700 to switch to ECO Mode, shut down all PCs with SX Virtual Link installed or close SX Virtual Link on each PC. For details, refer to **8-4-1. About ECO Mode**.

Printing using the print server feature does not function.

The IP address of DS-700 may have changed.	
Solution	When the IP address of DS-700 changes, please also change the corresponding printer port setting on Windows. When using the print server feature, it is recommended that you set a static IP address to DS-700 or set your DHCP server to always assign a static address to DS-700.

The USB port your printer is connected to may have been changed while DS-700 is running in ECO Mode.	
Solution	Please restart DS-700 if you have changed the USB port your printer is connected to while in ECO Mode.

Frame dropping or sound skipping occurs when I use a Web camera or USB speaker.

The USB device may not be directly connected to DS-700.	
Solution	When you use isochronous devices such as Web camera, USB speaker, etc, please connect them directly to DS-700.

You may be using DS-700 on a 100BASE-TX/10BASE-T network.	
Solution	For isochronous devices such as Web cameras or USB speakers, etc, it is recommended to use a Gigabit Ethernet network.