SX-2600CV Specifications

Operating environment	Temperature : +0˚C to +40˚C , +32˚F to +104˚F Humidity : 5% to 95%RH (Non-condensing)	
Storage environment	Temperature : -20˚C to +50˚C , -4˚F to +122˚F Humidity : 5% to 95%RH (Non-condensing)	
EMI	VCCI Class B / FCC Class B / EN55022 / EN55024	
CPU	32bit RISC CPU	
Memory	RAM : 8MByte FlashROM : 2MByte	
Wired network interface	0BASE-T/100BASE-TX 2 ports. (automatic detection)	
Push Switch	1	
LED	Front side	Power(Orange) LAN Link(Green) TARGET Link(Green)
	Wired connector area	10BASE/100BASE Link(Green) Status(Orange)
Supported devices	Network devices with a network port (RJ-45) on them	
Maximum number of IPv6 devices this product can communicate with	1000	
Recommended Web browsers	Internet Explorer 6 (or higher)	

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.

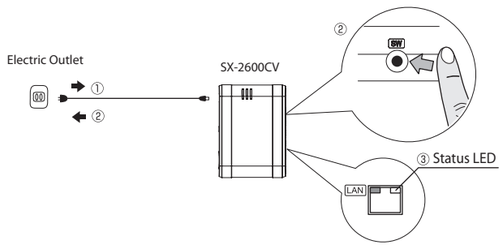
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE EN55022 Class-B
EN55024

Reset to Factory Default

This section explains how to reset the configuration of this product to factory default.

1. Remove the AC plug from the electric outlet(①).
2. Push and hold the push switch while re-inserting the AC plug into the electric outlet (②). Continue holding down the push switch, and resetting to the factory default settings starts.
3. The Status LED (Orange) of LAN network port will light when resetting to factory default settings is complete(③). Release the push switch.



Notes on using this product

● List of compatible protocols

silex assures that this product works without any problems for the following protocols. Other protocols may also be compatible if they are application layer protocols that use the same communication method for IPv4 and IPv6.

TCP: telnet(#23), http(#80), LPR(#515), IPP(#631), RAW mode print(#9100), SMTP(#25)*, POP(#162)*, SMB(#445)*, FTP-Server(#21), FTP-Client(#21)*
UDP: SNMP(#161), SNMP-Trap(#162)*

* When using a protocol marked with "*", the IPv6 address of the destination device needs to be registered in the Conversion Address List.

● List of incompatible protocols

Protocols applicable to the following conditions cannot be used for IPv6 communication via this product.

- Application layer protocols that include an IP address in the communication data (e.g. SIP) *Except for the compatible protocols above
- Protocols that have a different structure for the communication data and method for IPv4 and IPv6 (e.g. DHCP, DNS)

● Number of network devices allowed for IPv6 communication

- Up to 1,000 network devices can be linked to the target device via this product for IPv6 communication.

● Restrictions

- Name resolution functions (address and host name conversion protocols) on the network such as DNS, WINS, Bonjour and NBNS cannot be used. (The communication specification for name resolution is different for IPv4 and IPv6.)
- Software that establishes a communication by combining multiple protocols may not work if one of the protocols is unsupported by this product.

About trademarks

- Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- AirMac, AirPort, Macintosh, Mac OS and Safari are registered trademarks of Apple Inc.
- Other brand or product names are registered trademarks or trademarks of their respective owners.

User registration

After finishing the configuration for this product, please go on to the user registration on our home page. User registration is highly recommended to assure you better support for your product.
For user registration, please visit our web site at:

Global Site;	**http://www.silex.jp/register/**
USA Site;	**http://www.silexamerica.com/us/regist/index.html**
Europe Site;	**https://www.silexeurope.com/euro/regist/index.html**
China Site;	**http://www.silex.com.cn/china/support/regist/index.html**

* For user registration, a "Serial Number" is required.

The last 6-digit number in the Ethernet Address of the LAN network port displayed on this product (12-digits number) is the serial number of this product.
(Refer to "Parts and function" for how to find the Ethernet address on this product.)

Customer Support Center

silex will support you by e-mail and phone to solve your problems.

■ **Customer Support Center information**

	Phone	E-mail
USA ;	**+1-801-748-1199**	**support@silexamerica.com**
Europe;	**+49-(0)2159-6750-0**	**support@silexeurope.com**
China;	**+86-(0)10-6440-3957**	**support@silex.com.cn**
Japan;	**+81-(0)3-3455-5155**	**support@silex.jp**

IPv6-IPv4 Converter SX-2600CV Installation Guidance

Thank you for purchasing IPv6-IPv4 Converter, SX-2600CV (below, "this product").

This product is a protocol converter that allows IPv4 network devices to be used on an IPv6 network. Once you connect an IPv4 network device to the network via this product, the device will be accessible from IPv6 network devices.

This document describes the basic information about this product and the preparation that needs to be completed before it is set up.

① silex technology

Nov, 2007
WA03780XA

Safety instructions

To ensure safe and proper use, please read the following information carefully before using this product. The safety instructions include important information on safe handling of the product and on general safety issues. Cautions regarding the device connected to this product are also included.

[Danger]
"Danger" indicates the existence of a hazard that could result in bodily injury if the safety instruction is not observed.

- Do not allow physical impact: When damaged, unplug this product and the device from power and contact your point of purchase. Failure to take this action could cause fire or an electrical shock.
- If this product becomes hot, or you smell smoke, turn off the device, disconnect the power plug from this product, and then unplug the power cable from electric outlet immediately. If a foreign object (liquid, metal) gets into this product, turn off the device, disconnect the power plug, and then unplug the power cable from electric outlet immediately.
  - Failure to take this action could cause fire or an electrical shock.
  - Contact your point of purchase about repairing this product.
- Keep the cord and cables away from children. They may be injured or receive a shock.
- If the device has a ground wire, it must be used to prevent electrocution and power surges.
- Do not disassemble or modify this product. Contact your point of purchase about repairing this product.
- Do not disassemble or alter the AC adapter bundled with the product.

[Warning]
"Warning" indicates the existence of a hazard that could result in material damage if the safety instruction is not observed.

- When unplugging this product or a device, do not pull on the cord. The cord may break resulting in fire and/or electric shock. Pull only on the plug.
- When moving this product, disconnect the power and device cables. Fire or electric shock may occur.
- Always use the AC adapter bundled with this product. Other AC adapters may cause this product to malfunction.
- Verify all cables are properly and safely before using this product.
- When the product will not be used for an extended time, disconnect and unplug the power cable.
- Do not allow physical impact: When damaged, unplug this product and the device from power and contact your point of purchase. Failure to take this action could cause fire or an electrical shock.
- Do not use or store this product under the following conditions to avoid potential damage to this product.
  [Prohibited]
  - Hard vibrations
  - Tilted or unstable places
  - Exposure to the direct rays of the sun
  - Humid or dusty places
  - Wet place (kitchen or bathroom)
  - Heated places (near stove or heater)
  - Wide temperature change
  - Strong electromagnetic field (near magnet, radio or wireless device)

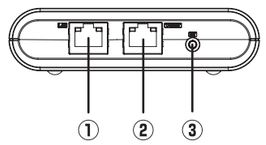
Package contents

Following items are bundled with this product.

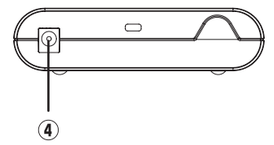
- ☐ IPv6-IPv4 Converter
- ☐ Power supply
- ☐ Installation Guidance (this document.)
- ☐ Setup Guide
- ☐ Warranty booklet

Parts and function

< Front >

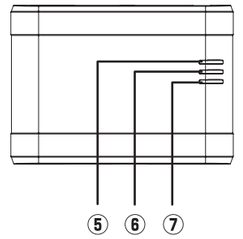


< Back >

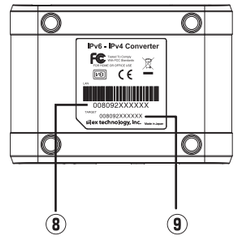


①	LAN network port	Plug in a network cable that is connected to the LAN.
②	TARGET network port	Plug in a network cable that is connected to the target device.
③	Push switch	Push this switch when resetting this product to the factory defaults. (Refer to the backside for details.)
④	Power connector	Connect AC adapter.

< Top >



< Bottom >



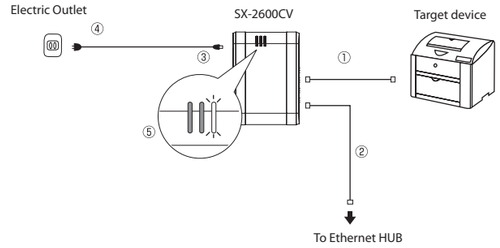
⑤	TARGET Link LED (Green)	Turns on when the TARGET network port has established a link.
⑥	LAN Link LED (Green)	Turns on when the LAN network port has established a link.
⑦	Power LED (Orange)	Turns on when this product is powered on.
⑧	Ethernet Address of the LAN network port	Ethernet Address (MAC Address) of the LAN network port on this product. The last 6 digits are the serial number of this product. Example) If the Ethernet Address is 00:80:92:00:11:22 (noted as 008092001122) then the serial number of this product is 001122.
⑨	Ethernet Address of the TARGET network port	Ethernet Address (MAC Address) of the TARGET network port on this product.

How to Connect

This section explains how to connect this product to the network and target device.

1. Connect the TARGET network port on this product and the network port on the target device using a network cable (①).
2. Connect the LAN network port on this product and the Ethernet HUB using a network cable (②).
3. Connect the power supply to this product (③) and the AC Plug into the electric outlet (④).
   Check that the Power LED (Orange) light is on (⑤).

* Please use the AC adapter bundled with this product. Other AC adapters may cause unexpected damages.



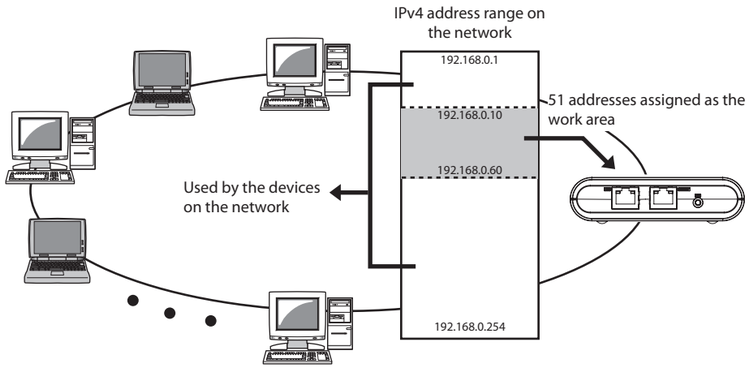
Before using this product c (Check the network environment)

This product maintains a conversion list for IPv6 addresses and IPv4 addresses and automatically converts IPv6 addresses to IPv4 addresses to establish links with the target devices. To utilize this function, a certain address range within the IPv4 address area on the network needs to be exclusively reserved as a work area for this product.

Following are the conditions regarding the IPv4 address range to be registered to this product.

- The addresses should be available on the network to which this product will be connected.
- The addresses should not already be in use on the network to which this product will be connected.
- Enough addresses should be reserved for all IPv6 devices to be communicated with via this product. (One address is used for this product.)
- A contiguous address range should be reserved.

Example: When fifty IPv6 devices are connected to an IPv4 network that uses the address range from 192.168.0.1 to 192.168.0.254 :

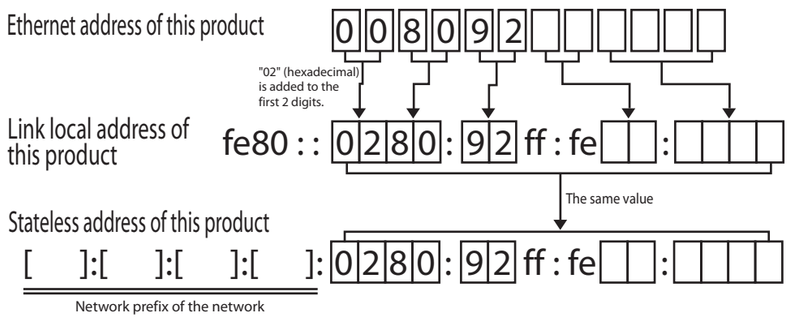


Before configuring the environmental settings of this product, check the IPv4 address range assigned to the network environment where this product is to be connected, and reserve the IPv4 address range to be registered to this product.

* If the IPv4 address range to be registered to this product is not appropriate, the target devices and the IPv6 devices will not be able to communicate properly. Please be sure to perform the above check.

How to check the IPv6 address of this product

The IPv6 address of this product can be confirmed by checking the Ethernet address of the LAN network port displayed on the bottom of this product and applying it to the diagram below.



* The leading zeros in each part of an IPv6 address can be omitted.
  (Example) fe80::0280:92ff:fe01:0001 → fe80::280:92ff:fe01:1

Setup IPv6 environment for PC

The environmental settings for this product can be configured over the IPv6 network by accessing the web page of this product with a Web browser.
The following is an example of how to configure this product using Internet Explorer 6 on Windows XP. Please refer to this example to configure the environmental settings on your PC.
(If you are using Windows Vista, please start from "6". If you are using a different OS or Web browser, the configuration method may vary. Please refer to the help for the OS or Web browser.)

1. Install IPv6

Start the Command Prompt. Enter "**ipv6 install**" and press the Enter key.

(Example)

```
c:\>ipv6 install ↵
```

2. Edit the hosts file

Open the "**hosts**" file stored in <**c:\Windows\system32\drivers\etc**> (<c:\Windows> may vary depending on the installation environment) with Windows Notepad.
Add the IPv6 address and host name of this product to the bottom of the file.

(Example)

```
                :
                :
#
# For example:
#
#      102.54.94.97     rhino.acme.com          # source server
#       38.25.63.10     x.acme.com              # x client host

127.0.0.1       localhost
fe80::280:92ff:fe00:1122   sx2600cv   <-- Add this line
```

IPv6 address of this product / Host name of this product

(If a stateless address is assigned to this product, set the stateless address here. For the host name, any name that is not used by another network device may be set.)

When editing is completed, over write the hosts file and close Windows Notepad.

3. Check the network interface number of the PC.
(Only if the link local address is specified in the hosts file.)

Check the interface number of the network interface connected to this product.
At the Command Prompt, enter "**ipconfig**" and press the ENTER key.
From the information displayed, find the link local address of the network interface to be connected to this product, and check the number following "**%**", indicated **after the link local address**.

(Example)

```
C:\>ipconfig ↵

Windows IP Configuration

Ethernet adapter Local Area Connection:
  Connection-specific DNS Suffix  :
  IP Address. . . . . . . . . . . : xxx.xxx.xxx.xxx
  Subnet Mask . . . . . . . . . . : xxx.xxx.xxx.xxx
  IP Address. . . . . . . . . . . : xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx
  IP Address. . . . . . . . . . . : xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx
  IP Address. . . . . . . . . . . : fe80::2xx:xxff:fexx:xxxx%4
                                    Take notes of this number
  Default Gateway . . . . . . . . : xxx.xxx.xxx.xxx
                                    fe80::2xx:xxff:fexx:xxxx%4
                :
                :
```

4. Set the IPv6 route
(Only if the link local address is specified in the hosts file.)

At the Command Prompt, use the "**ipv6**" command to associate the destination of the link local address with the network interface you have checked at "**3**".

(Example)

```
c:\>ipv6 rtu fe80::/64  4 ↵
                        Specify the number you checked at "3"
```

5. Communication check

At the Command Prompt, use the "**ping**" command to verify that a link has been properly established with this product.

(Example)

```
c:\>ping sx2600cv ↵

Pinging sx2600cv [fe80::280:92ff:fexx:xxxx] with 32 bytes of data:
(When there is reply)
Reply from fe80::280:92ff:fexx:xxxx: time=2ms
Reply from fe80::280:92ff:fexx:xxxx: time<1ms
Reply from fe80::280:92ff:fexx:xxxx: time<1ms
Reply from fe80::280:92ff:fexx:xxxx: time<1ms

(When there is no reply)
Request timed out.
Request timed out.
Request timed out.
Request timed out.
```

6. Access the Web page of this product using a Web browser

Access the Web page of this product using a Web browser.
To perform the initial configuration of this product, please use Internet Explorer 6 or 7 on Windows XP. If a different OS or browser is used, the method to access the Web page via IPv6 may vary.

This product uses **TCP port #60000** to allow access to the Web page for configuration. To access the Web page, enter the host name (the one registered in the hosts file) followed by "**:60000**" into the address bar of the Web browser.

(Example)
http://sx2600cv:60000/

To access the Web page of this product when using Windows Vista, enter the **IPv6 address enclosed in "[ ]"** and followed by "**:60000**" into the address bar of the Web browser.

(Example)
http://[fe80::280:92ff:fe00:1122]:60000/

* If your Web browser is configured to use a proxy server, add the IPv6 Address of this product to the exception list (Avoid communicating with this product via the proxy server.)

➡ For information on how to configure this product, please refer to the Setup Guide.

IPv6-IPv4 Converter SX-2600CV Setup Guide

This Setup Guide describes how to setup the IPv6-IPv4 Converter, SX-2600CV (this product).
Please refer to the "Installation Guidance" before starting the setup.

② silex technology

Nov, 2007

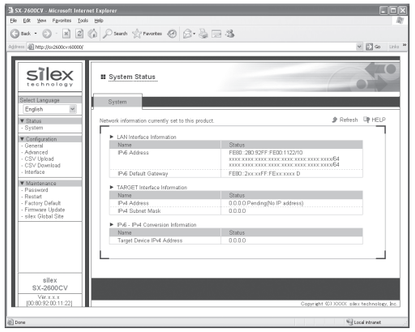
WA03790XA

Access the Web page and configure the general settings

This product can be configured from its Web page by using a Web browser. The following explains how to access the Web page and view each configuration page.

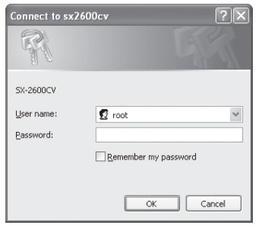
1. Access the Web page of this product using a Web browser.

(Example) http://sx2600cv:60000/



2. Click the item you wish to configure from the configuration items displayed in the Web page.

3. A password entry screen will be displayed.
Enter **root** for the user name and the password set for this product to the password. Click **OK** when completed.
(As factory default, no password is set for this product. In this case, enter **root** for the user name and then leave the password blank and click **OK**.)

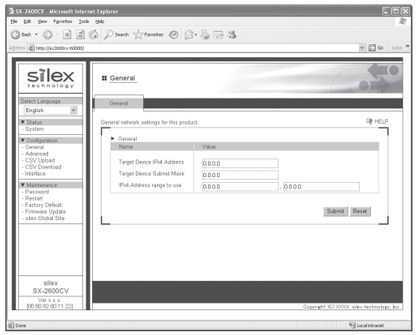


4. Once user authentication has succeeded, the configuration page you have selected will be displayed.

1.General Configuration

Configure the general settings of this product. To use this product, these settings must be configured.

1. Click **General** on the left pane.



2. In the page displayed, enter the value for each configuration item.

Target Device IPv4 Address	Enter the IPv4 address set for the target device (Not the IPv4 address of this product). If the IPv4 address is automatically assigned by DHCP, leave this field as "0.0.0.0".
Target Device Subnet Mask	Configure the subnet mask for the target device to run on an IPv4 network. * This value must be entered even if the IP address is automatically assigned.
IPv4 Address range to use	Set the Start Address and End Address of the IPv4 address range you reserved for this product in **Before using this product....** * Please make sure that the IPv4 address of the target device is not included in this range.

3. Click **Submit**.
A message will appear and ask whether to reboot this product or not. Click **OK**.
This product will automatically reboot itself and finish the configuration.

The general configuration has been completed.
Now, the target device can be accessed from the IPv6 network via this product.
By using the IPv6 address of this product, IPv6 devices can communicate to the target device via the IPv6 network.

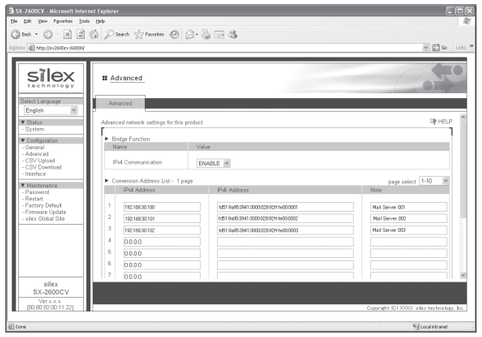
Protocols enabled by completing the general configuration (example).
TCP: telnet(#23), http(#80), LPR(#515), IPP(#631), RAW mode print(#9100), FTP-Server(#21)
UDP: SNMP(#161)

* This product transparently forwards protocols other than IPv6. Communication to the target device using IPv4 or other protocols (e.g. Netware, AppleTalk) can be carried out as usual.

2.Configuration for accessing IPv6 devices from the target device

When communicating from the target device to an IPv6 network such as when sending/receiving an email or transferring a file, the IPv4 address sent out from the target device needs to be converted to an IPv6 address.
This product converts IPv4 addresses to IPv6 addresses by mapping IPv4 addresses to IPv6 addresses in the **Conversion Address List**.

1. Click **Advanced** on the left pane.



2. On the page displayed, enter the addresses into the **Conversion Address List**.
Up to **128 addresses** can be set to the **Conversion Address List**.

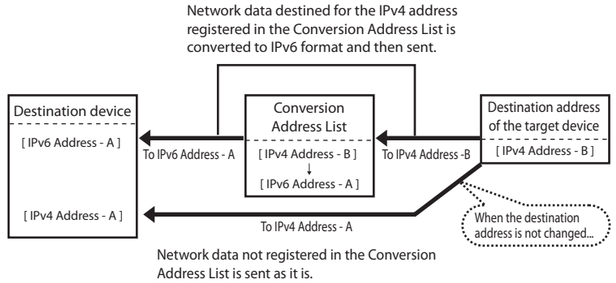
IPv4 Address	Set the IPv4 address of the destination device to be set to the target device. The IPv4 address configured here is not the IPv4 address actually used by the device that the target device communicates with. It is the address used for the target device and this product to communicate with each other. The value must be an address within the **IPv4 Address range to use** which you set during the general configuration. However, do not use the first address in the range. * Do not enter the IPv4 address of the target device into this field.
IPv6 Address	Set the IPv6 address of the destination device.
Note	Enter a comment describing the destination device if desirable (Up to 15 characters).

3. Click **Submit**.
A message will appear and ask whether to reboot this product or not. Click **OK**.
This product will automatically reboot itself and finish the configuration.

Change the target device settings

Convert the IP address of the destination device set to the target device to the **IPv4 address** registered in the **Conversion Address List**.

* This product looks at the IP address in the network data sent from the target device, and converts only the network data destined to IPv4 addresses (registered in the Conversion Address List) to IPv6 network data and then sends it.
If the IP address in the network data sent by the target device is not registered in the Conversion Address List, the network data is sent without being converted to IPv6 format. Please do not forget to change the IP address of the destination device set to the target device.



Communication from the target device to the IPv6 network has been enabled.

Protocols enabled by making use of the Conversion Address List. (Example)
TCP: SMTP(#25), POP(#162), SMB(#445), FTP-Server(#21)
UDP: SNMP-Trap(#162)

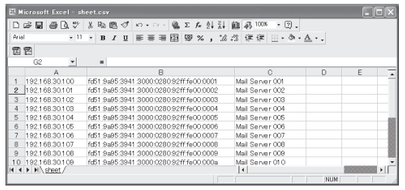
➡ Go on to the backside

3.How to register IPv4/IPv6 addresses to the Conversion Address List by creating a CSV file

The **Conversion Address List** can be edited as a **CSV file** and then **uploaded** to this product. This function is convenient when using the same Conversion Address List for two or more of this product.
The following explains how to register IPv4/IPv6 addresses to the Conversion Address List using a CSV file.

1. Start a software application that can edit CSV files, such as Excel.

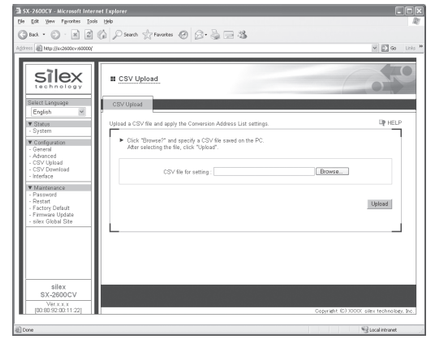
2. Enter the address information into the CSV file in the order of [**IPv4 Address**] -> [**IPv6 Address**] -> [**Note**]. Up to 128 addresses can be registered to the Conversion Address List.



* Please enter correct values for the IPv4/IPv6 addresses. If characters that cannot be recognized as an address are included, they will not be used for the address conversion.
* Do not enter the IPv4 address of the target device.
* Up to **15** characters can be entered into the [**Note**] field. However, a **comma (,)** cannot be entered.

3. When finished editing, save the file in CSV format.
* If using Excel, click **File** -> **Save As...**. On the dialog displayed, select "**CSV(Comma delimited) (*.csv)** " for **Save as type** and click **Save**.

4. Access the Web page of this product via a Web browser and click **CSV Upload** on the left pane.



5. On the page displayed, click **Browse** and select the CSV file that you have saved.

6. Click **Upload**.
* The information contained in the CSV file will be uploaded to the **Conversion Address List**.

A message will appear and ask whether to reboot this product or not. Click **OK**.
This product will automatically reboot itself and finish the configuration.

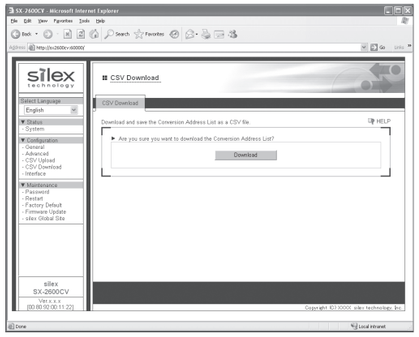
To use the same Conversion Address List for two or more of this product, repeat the process described in 4-6 for each one.

* If you have mistakenly uploaded a CSV file that includes the IPv4 address of the target device, click **Advanced** - **Address Conversion List** and delete the address information of the target device manually.

4. How to save the Address Conversion List to a CSV file

The Address Conversion List currently stored in this product can be saved to your PC as a CSV file.
The following describes how to save the Address Conversion List:

1. Click **CSV Download** on the left pane.



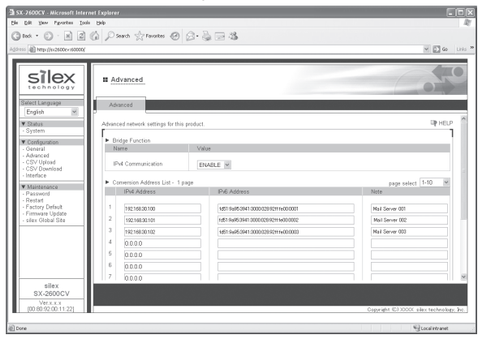
2. Click **Download**. In the screen displayed, specify a file name and save the file.

The Address Conversion List has been saved.

5.How to block IPv4 communication by the target device

This product can be configured not to send any network packets including an IPv4 address. Please utilize this function when establishing a network environment where only IPv6 addresses are sent/received.

1. Click **Advanced** on the left pane.



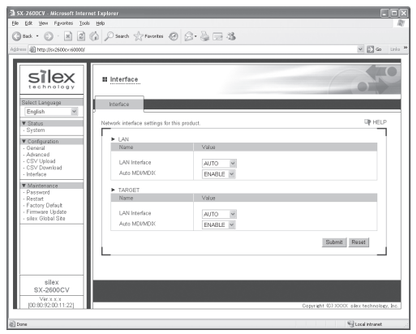
2. On the page displayed, select **DISABLE** for **IPv4 Communication**.

3. Click **Submit**.
A message will appear and ask whether to reboot this product or not. Click **OK**.
This product will automatically reboot itself and finish the configuration.

6.Network port settings

Detailed communication settings can be configured for the network port of this product.
Usually these communication settings do not need to be changed, but when this product does not link up (when the Link LED does not turn on even though this product is powered on), modify these settings.

1. Click **Interface** on the left pane.



2. In the page displayed, change each configuration.

LAN Interface	Set the physical transfer speed of the LAN. Select the value that matches the communication type of the device connected to each network port. In most cases, it is recommended to use **AUTO**.
Auto MDI/MDIX	Either a straight cable or cross cable can be used with this product. However, depending on the device connected to each network port, this auto-detect function may not work properly. In such a case, select DISABLE for this setting.

3. Click **Submit**.
A message will appear and ask whether to reboot this product or not. Click **OK**.
This product will automatically reboot itself and finish the configuration.