No.EX※※-OMV1026-B

Operation Manual

PRODUCT NAME

IP Address Setting Tool
(Interactive Type)

MODEL / Series / Product Number

EX9–ZSW–IPC1

SMC Corporation

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Please check the content of this License Agreement, and only use it if you agree to all the terms and conditions herein. You cannot use this software, unless you agree with all the terms and conditions of this Licence Agreement.

Article 1 (Grant of license)

1. This Software is intended for use with the respective SMC EtherNet/IP™ Target product (henceforth referred to as “Target product”) and it can only be used with Target products, in accordance with this licence agreement.
2. This software can only be installed on a PC for the sole purpose specified in the preceding paragraph.

Article 2 (Restrictions)

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3. Modification, translation, adaptation or reverse engineering of this software is not permitted.
4. The user cannot use this software other than with the Target product.
5. This software cannot be used other than with the firmware which SMC provides.

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1. Read the "Safety Instructions", "Precautions", "Specific Product Precautions" and "Specifications" described in the manual for the equipment when using any Target product supported by this Software.
2. This Software and the Target product are subject to change without prior notice.

Article 4 (Exemption of liability)

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1. SMC has the full authority to terminate this agreement without notice and without any compensation in the event that any terms and conditions have been breached.
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1. This Agreement shall be governed by Japanese law.
2. Any dispute arising from this Agreement shall be submitted in the first instance to the exclusive jurisdiction of the Tokyo District Court or the Tokyo Summary Court primarily.

2. Product Outline

To connect an EtherNet/IP™ product to the EtherNet/IP™ network (hereafter referred to as "the network"), it is necessary to set the IP address. The IP Address Setting Tool is a tool for setting the IP address during DHCP mode and Remote control mode.

Operating systems for IP Address Setting Tool are as follows.

Windows®XP (32/64bit)
Windows®7 (32/64bit)
Windows®8 (32/64bit)
Windows®10 (32/64bit)

∗1) Install Microsoft .NET Framework 4 or later before use.

∗2) This tool might not operate correctly depending on the security setting of the PC. In that case, disable the security setting temporarily and try to use it again.

Applicable products are as follows.

EX260-SEN1/2/3/4
EX500-GEN2
EX600-SEN1/2/3/4
EX600-WEN1/2
JXC91/JXC92/JXC93

∗: When the DHCP mode and the remote control mode are set

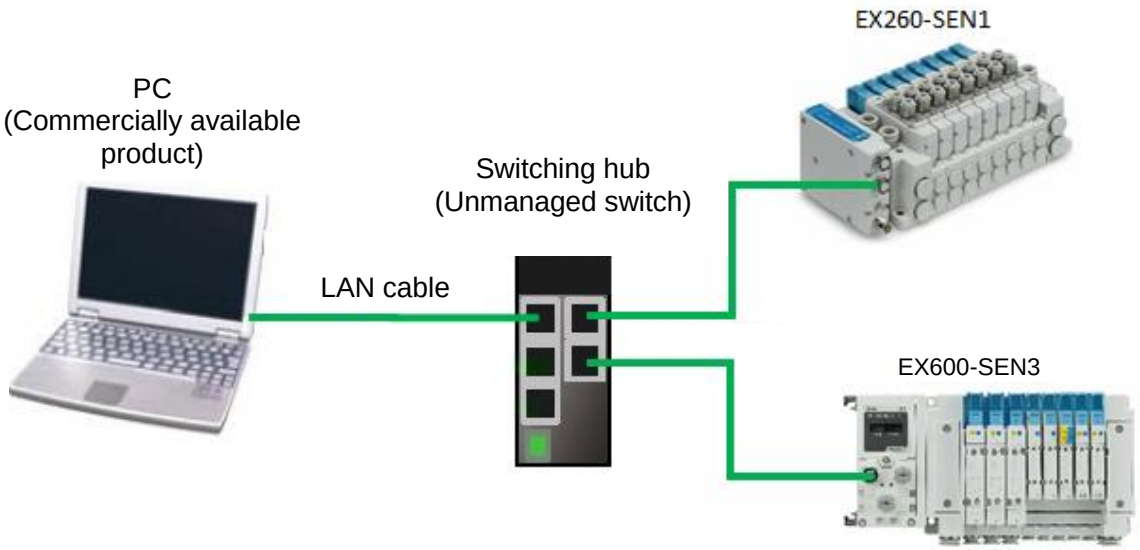
Make sure that all downloaded files are in the same folder as the EX9-ZSW-IPC1.exe file before use.

DhcpServerDll.dll
PacketDotNet.dll (∗3)
SharpPcap.dll (∗3)
Etc.

∗3) This is the open source software.
For details, please refer to "open_source_License" which is located in the folder in which all of the downloaded files are saved.

3. Network Configuration Example

Set the IP address while disconnected from the EtherNet/IP™ module (master).
It is not possible to maintain the IP address while communicating with the EtherNet/IP™ module (based unit).

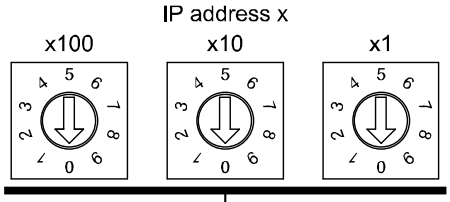


IP address setting (example):

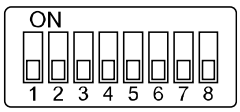
Device	IP address	Subnet mask
PC	192.168.0.253	255.255.255.0
EX260-SEN1	192.168.0.10	
EX600-SEN3	192.168.0.11	

Fig. Network Configuration Example

4. Setting the EtherNet/IP™ Device

<table>
<tr><th>No.</th><th>Display</th><th>Instructions</th></tr>
<tr>
<td>(1)</td>
<td>
< Rotary switch (EX260-SEN#, etc.) >


IP address
192.168. Y .[X]
<table>
<tr><th colspan="3">Setting</th><th rowspan="2">X</th></tr>
<tr><th>x100</th><th>x10</th><th>x1</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>Remote control</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>0</td><td>0</td><td>2</td><td>2</td></tr>
<tr><td>:</td><td>:</td><td>:</td><td>:</td></tr>
<tr><td>2</td><td>5</td><td>4</td><td>254</td></tr>
<tr><td>2</td><td>5</td><td>5</td><td>DHCP mode</td></tr>
</table>
Manual set up of IP address
∗: The values of 256 or more are not used.
∗: Example above: EX260-SEN#

< DIP switch (EX600-SEN#, etc.) >
・IP address setting switches


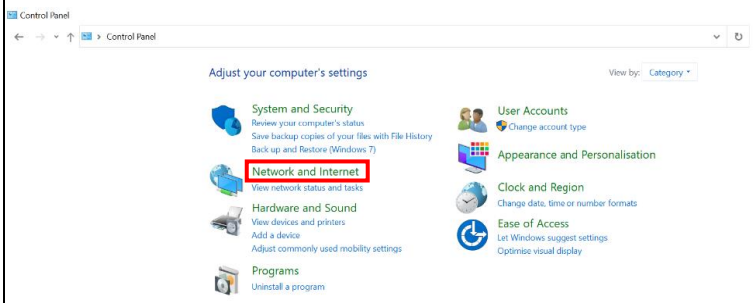
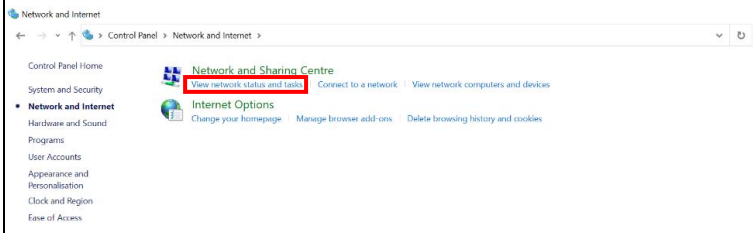
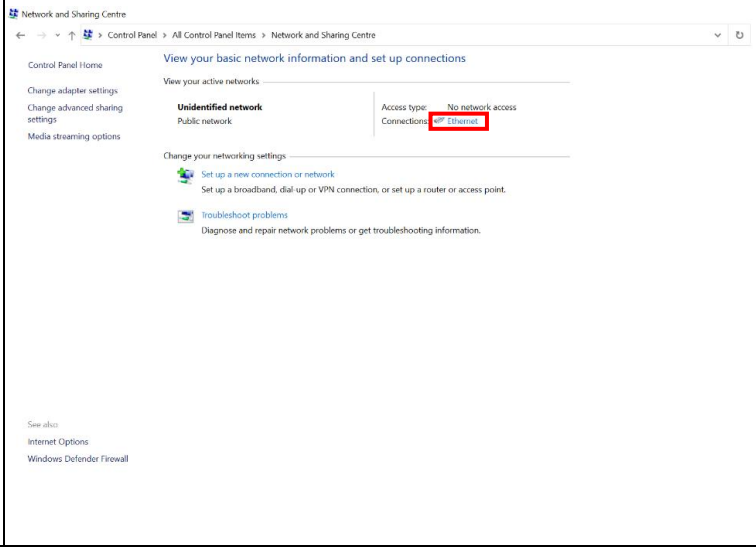
Settings2
<table>
<tr><th colspan="8">Settings2</th><th rowspan="2">IP address</th></tr>
<tr><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th></tr>
<tr><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>192.168.0.1</td></tr>
<tr><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>192.168.0.2</td></tr>
<tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr>
<tr><td>ON</td><td>OFF</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>192.168.0.253</td></tr>
<tr><td>OFF</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>192.168.0.254</td></tr>
<tr><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>192.168.1.1</td></tr>
<tr><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>192.168.1.2</td></tr>
<tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr>
<tr><td>ON</td><td>OFF</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>192.168.1.253</td></tr>
<tr><td>OFF</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>192.168.1.254</td></tr>
<tr><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>DHCP mode</td></tr>
<tr><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Remote Control mode</td></tr>
</table>
∗: Example above: EX600-SEN#

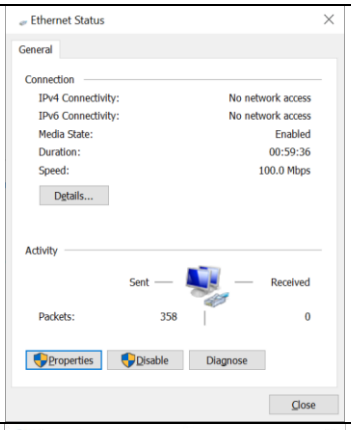
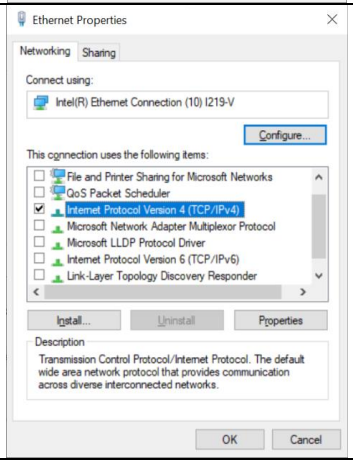
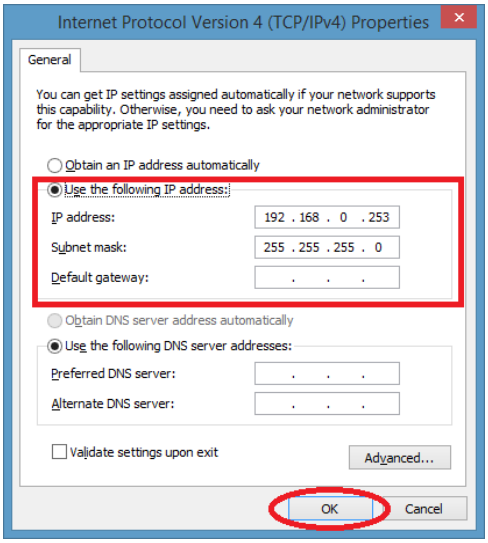
< others (EX600-WEN#, etc.) >
Refer to each operation manual.
</td>
<td>
Set the EtherNet/IP™ device to Remote control mode. Rotary switch: Set the IP address setting switches to “000”.
DIP switch: Set all switches to OFF.
Refer to the operation manual of each EtherNet/IP™ device for further details.

∗: When the NS LED on the EtherNet/IP™ device is ON or flashes, turn on the power with the IP address switch setting set to "255" or all ON (DHCP mode) and initialize the IP address stored in the EtherNet/IP™ device. Then change the IP address switch setting to “000” or turn them all off (Remote control mode) and reset.
⚠: Initialize the IP address with the software closed.
</td>
</tr>
</table>

5. Setting the Computer's IP Address

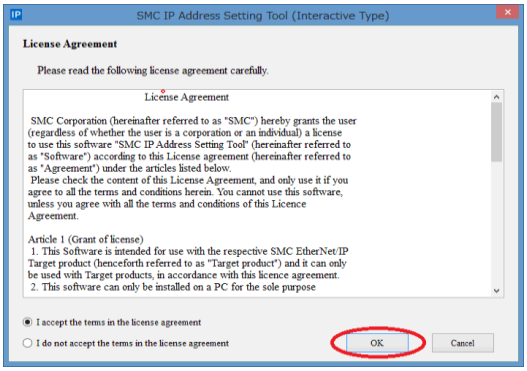
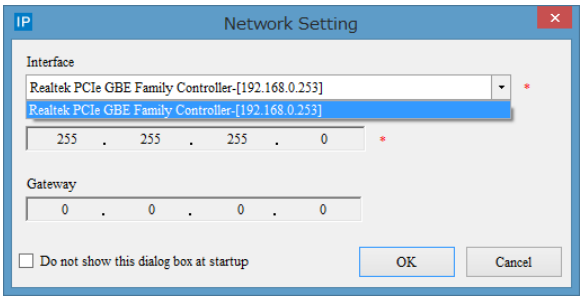
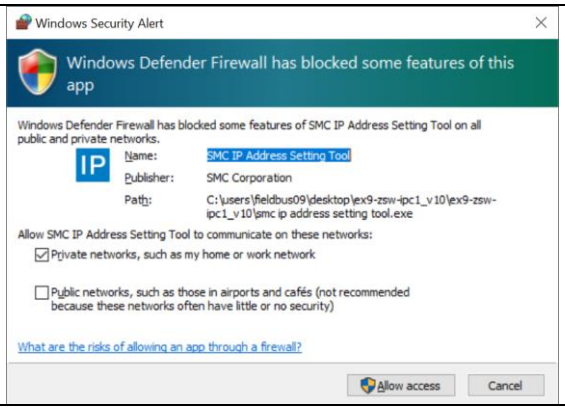
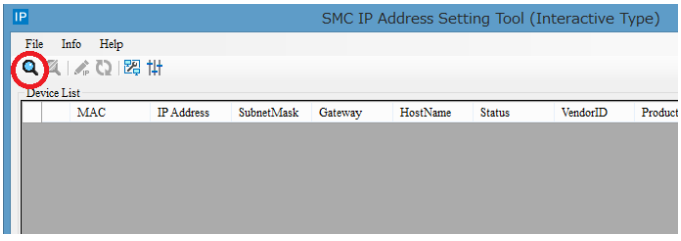
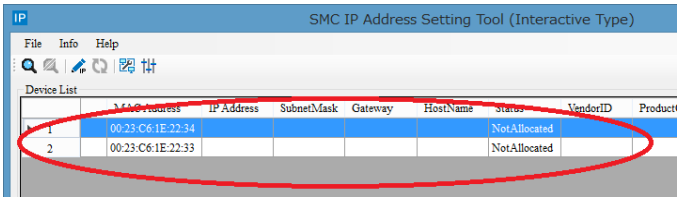
Set the IP address for the Setting the Computer's IP Address following the procedure (2) to (7) below.
The setting procedure is based on Windows10.

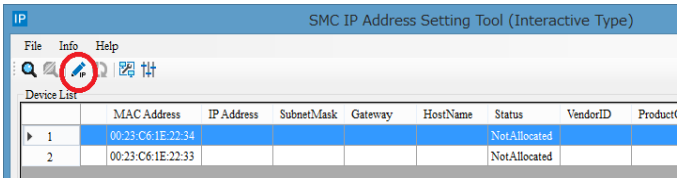
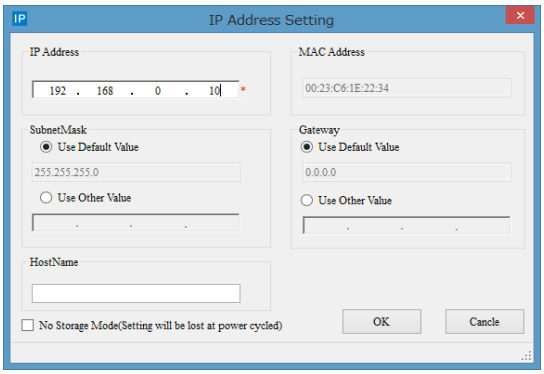
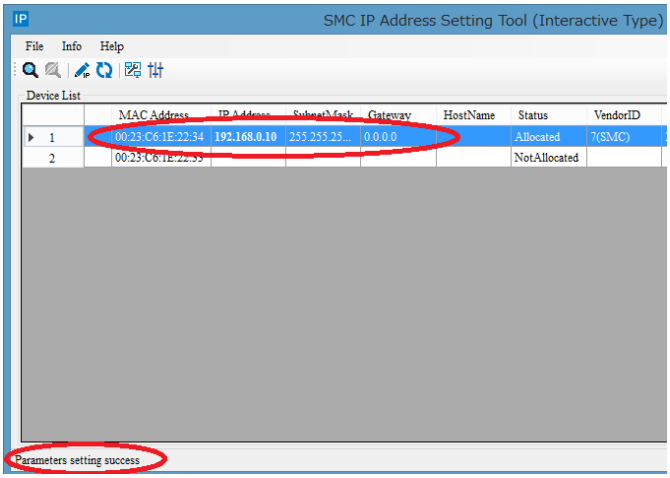
No.	Display	Instructions
(2)		Click "Control Panel" and "Network and Internet".
(3)		Click "Network and Sharing Centre" and "View networks status and tasks".
(4)		Click "View your active networks" and "Connections: Ethernet". ∗: This field is blank when the device is not connected.

(5)		Click "Properties".
(6)		Select the “Internet Protocol Version 4 (TCP/IPv4)” and click "Properties”.
(7)		[When a DHCP server is not installed on the network] To specify the IP address directly without a DHCP server, select "Use the following IP address" on the "Internet Protocol Version 4 (TCP/IPv4) Properties" screen, enter values in "IP address" and "Subnet mask," and then click “OK.” Values that are entered in "IP address" and "Subnet mask" must be set according to the network used. ∗: As an example in the left figure, IP address =192.168.0.253 Subnet mask =255.255.255.0 are entered. In this case, the network address is "192.168.0".

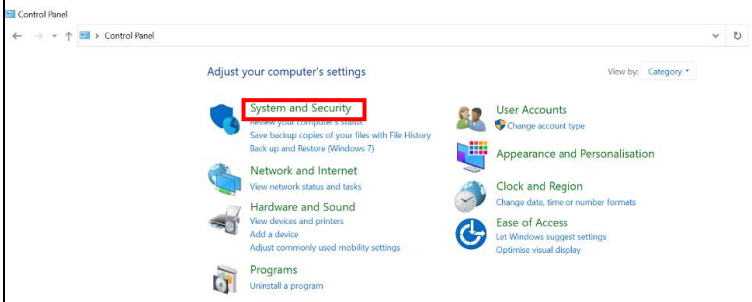
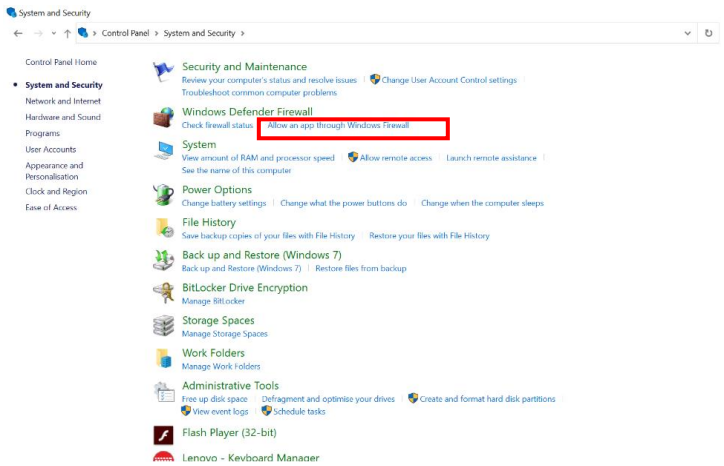
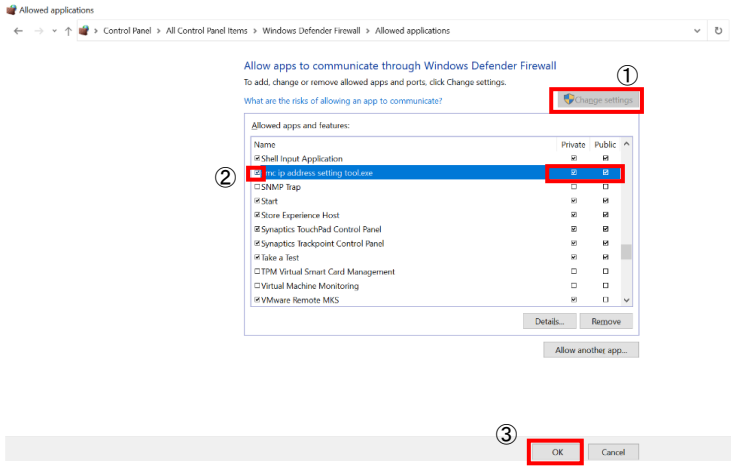
6. IP address setting of the IP Address Setting Tool

Set the IP address for the IP Address Setting Tool following the procedure (8) to (18) below.

No.	Display	Instructions
(8)		When the computer IP address has been set and the IP Address Setting Tool starts, the License agreement screen will appear. If the terms of the agreement are acceptable, select “I accept the terms in the license agreement” and click “OK”.
(9)		The Network Setting screen starts. Select the network interface. If the screen does not need to appear the next time, tick the box for “Do not show this dialog box at startup” After selecting, click the [OK] button.
(10)		On the first boot, “Windows Security Alert” concerning a Firewall may be displayed. In this case, click “Allow access”. ∗: Make sure that the box for the "Private networks” or “Public networks” is checked.
(11)		When the main screen appears, click “Scan” to check the connected unit.
(12)		If the IP address is not set yet, only the MAC address will appear. ∗: When setting the IP address manually or it is not a compatible product, the MAC address will be grayed out.

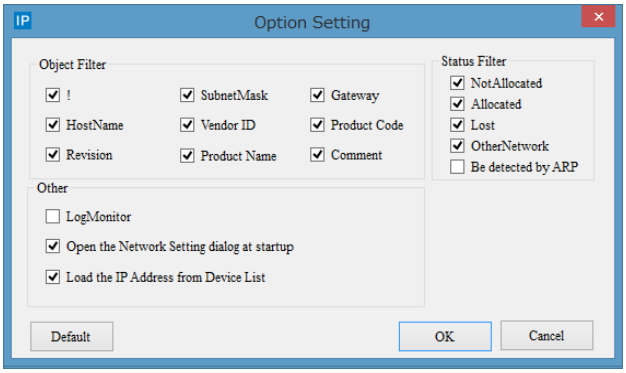
(13)		Select the item icon that shows the same MAC address number on the IP address setting tool as the MAC address on a label attached to the housing of the unit for which the IP address is to be set.
(14)		When the setting screen appears, set the IP address, Subnet mask, and other items. After setting, click the [OK] button. When the IP address is not to be retained in Remote control mode, tick the box for “No storage Mode.”
(15)		When setting is completed, the set values such as the IP address will appear. Also, "Parameters setting success" will appear in the bottom left. ∗: It is not possible to maintain the IP address (Storage Mode, Disable DHCP) while communicating with the EtherNet/IP™ module (master). Set the IP address while disconnected from the EtherNet/IP™ module (master).

Caution)

When “Cancel” is clicked for the Windows Security Alert in step No. (10), the access permission needs to be set following the procedure below.		
(16)		Select “Control panel” and “System and Security”.
(17)		Select “Allow an app through Windows Firewall”.
(18)		(1) Click “Change settings” and select “Allowed apps and features”, then click “smc ip address setting tool.exe”. (2) Check the box for the “smc ip address setting tool.exe” and click “OK” (3). ∗: Make sure that the box for the "Private networks” or “Public networks” is checked.

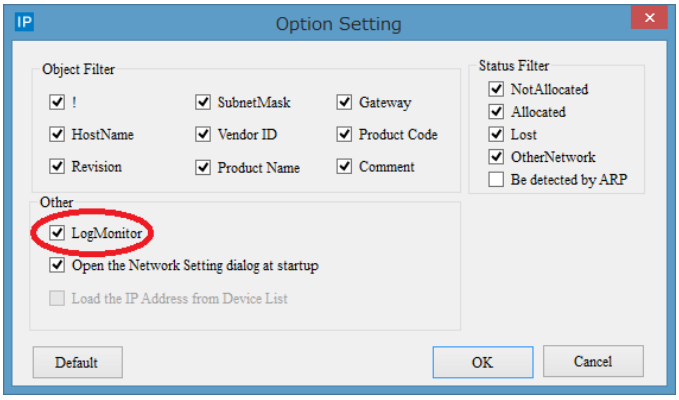
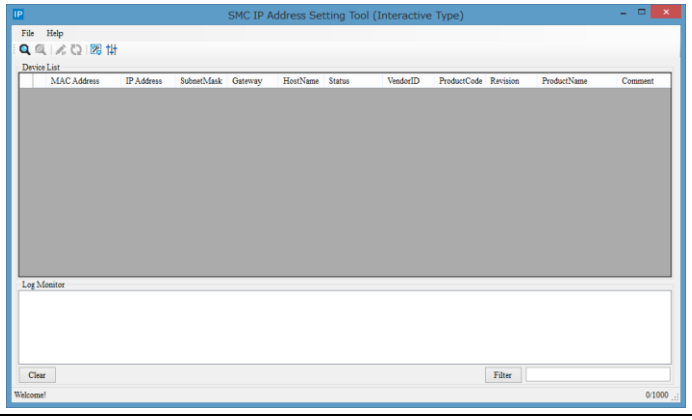
7. Option Setting

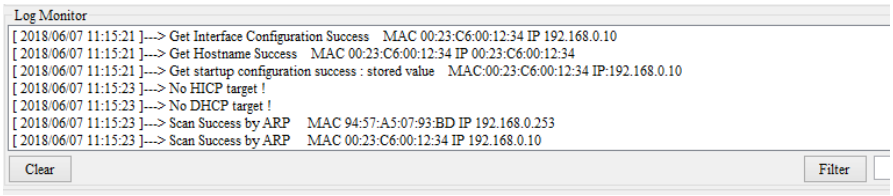
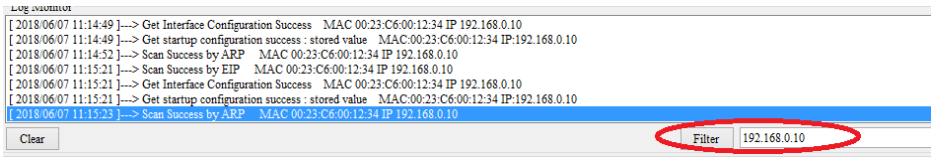
Set the optional function in accordance with steps 19 to 20 below.

(19)		Click “Option” to display the Option Setting screen.
(20)		The “Option Setting” screen is displayed. Items that are checked will function. Uncheck unnecessary items. The setting can be reset by clicking the “Default” button.

8. Log monitor function

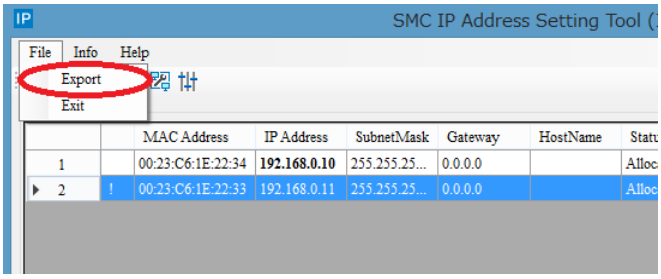
It is possible to monitor the scanned status using this tool.

(21)		Display the option screen and check the LogMonitor.
(22)		The Log Monitor window is displayed on the main screen.

(23)		When scanning or IP address setting is performed, the processed information is displayed as a log.
(24)		Enter a keyword to Filter the log, and click the Filter button. The line in which the entered keyword is shown is displayed.
(25)		To clear the Log Monitor information, click the Clear button. The display will be cleared.

9. Export Function

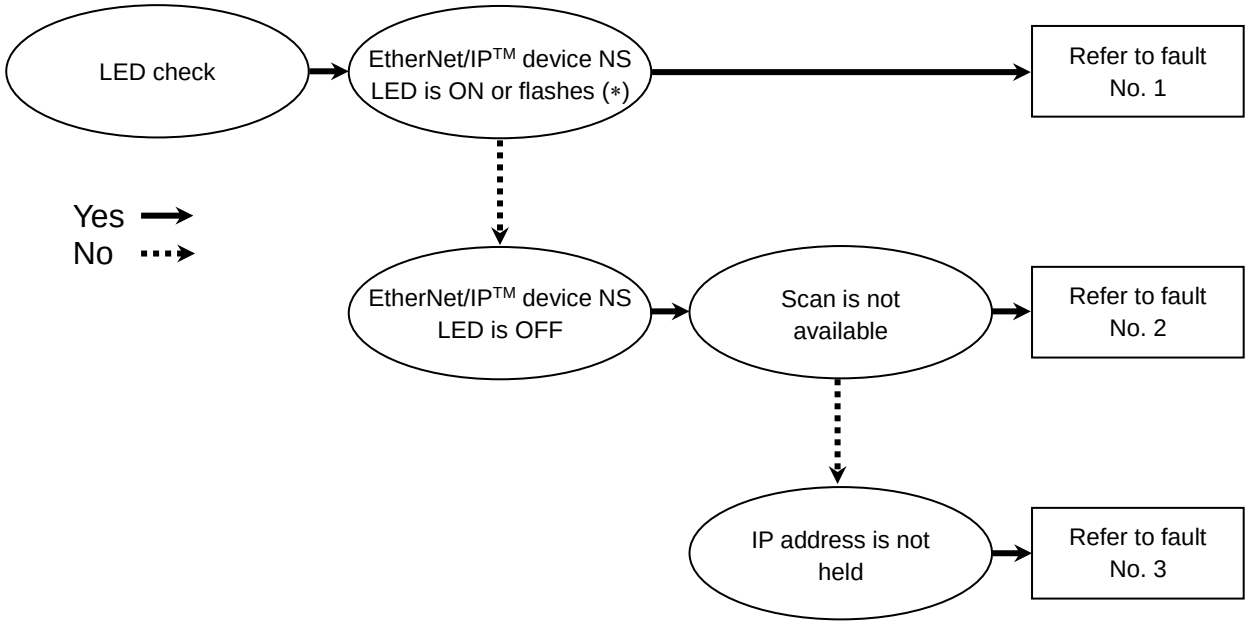
This tool stores the scanned device list as a csv file.

(26)		Click File > Export, and then save the csv file in the folder of your choice. The stored csv file can be used for the IP Setting Tool (presetting type).

10. Troubleshooting

○Troubleshooting flow chart

Perform the following troubleshooting procedure when the IP address setting is not successful.
The MS LED on the EtherNet/IP™ device and the L/A (LINK ACT) LED should be green when the wiring for the power supply and communication connector are normal. Refer to the operation manual of each EtherNet/IP™ device for details.
Note: EX600-SEN1/2 does not have L/A (LINK ACT) installed.



∗ Green ON, Green flashes, Red ON, or Red flashes.

Troubleshooting list

Fault No.1

Problem	Possible cause	Investigation method	Countermeasures
EtherNet/IP™ device NS LED is ON or flashes (Green ON, Green flashes, Red ON, or Red flashes)	EtherNet/IP™ device IP address is set	Check the EtherNet/IP™ device IP address switch setting.	Set the IP address switch setting for the EtherNet/IP™ device to “000” or turn off all switches (Remote control mode).
		IP address stored in the EtherNet/IP™ device is initialized.	When the switch setting of the EtherNet/IP™ device is “255” or all switches are ON (DHCP mode), turn on the power and initialize the IP address stored in the EtherNet/IP™ device. Then change the IP address switch setting to “000” or turn them all off (Remote control mode) to reset. ⚠: Initialize the IP address with the software closed.

Fault No.2

Problem	Possible cause	Investigation method	Countermeasures
Scan is not available (EtherNet/IP™ device NS LED is OFF)	Security setting	Check the security setting including the Windows firewall.	Disable the security setting temporarily or select “Allow remote access” while referring to procedure No. (16) to No. (18) in page 10.

Fault No.3

Problem	Possible cause	Investigation method	Countermeasures
IP address is not held	IP Address setting for computer (PC)	Check the IP Address and the Subnet mask setting for the PC.	Set appropriate IP address of the PC and Subnet mask for the network. Procedure No. (7) on page 7.
	Network Configuration	Check the EtherNet/IP™ module connection.	Disconnect the communication cable for the EtherNet/IP™ module or turn off the device power.
	IP address switch setting	Check the EtherNet/IP™ device IP address switch setting.	Set the IP address switch setting for the EtherNet/IP™ device to “000” or turn off all switches (Remote control mode).
	Setting of the IP Address	Check the IP Address Setting.	Uncheck the box for “No Storage Mode” in the “IP Address Setting”. Procedure No. (14) on page 9.

11. Definitions and Terminology (Supplementary Explanation)

Please refer to the table below for glossary.

	Terminology	Definition
D	DHCP	A protocol that automatically allocates information, necessary to be registered to use the network, such as an IP address, to individual devices connected to the TCP/IP network.
	DHCP mode	Mode to obtain an IP address from the DHCP Server. The IP address will be lost when the power supply is disconnected. Refer to the operation manual for setting the product.
	DHCP server	DHCP is an abbreviation of Dynamic Host Configuration Protocol. It is a server that automatically allocates information, necessary to be registered to use the network, such as an IP address, to individual devices on the network.
I	IP address	A 32 bit digit sequence which is assigned to identify devices which are connected to the network.
M	MAC address	A unique number assigned to all devices connected to an EtherNet/IP™ network.
R	Remote control mode	An IP address obtained via the DHCP server can be held. Refer to the operation manual for the products for setting.
S	Subnet mask	Numerical values that define the range of the numerical string within the IP address used on the network.
	Switching hub	Device that works as a relay in the network.

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