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Operation Manual

Product Name

IP Address Setting Software for EtherNet/IP^{TM} Applicable Gateway Unit, LEC-GEN1

Model/ Series/ Product Number

IP Configuration Software

SMC Corporation

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Contents

⚠ IP Configuration Software
1. Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions are categorized into three groups, "Caution", "Warning" and "Danger" depending on the level of hazard and damage, and the degree of emergency. They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC), Japan Industrial Standards (JIS)[*1)] and other safety regulations[*2)].

*1: ISO 4414: Pneumatic fluid power – General rules relating to systems
   ISO 4413: Hydraulic fluid power -- General rules relating to systems
   IEC 60204-1: Safety of machinery -- Electrical equipment of machines (Part 1: General requirements)
   ISO 10218-1992: Manipulating industrial robots -- Safety
   JIS B 8370: General rules for pneumatic equipment.
   JIS B 8361: General rules for hydraulic equipment.
   JIS B 9960-1: Safety of machinery – Electrical equipment for machines. (Part 1: General requirements)
   JIS B 8433-1993: Manipulating industrial robots - Safety, etc.
*2: Labor Safety and Sanitation Law, etc.

⚠ **Caution**	Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
⚠ **Warning**	Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
⚠ **Danger**	Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
   Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.
   The product specified here may become unsafe if handled incorrectly.
   An operator who is appropriately trained and experienced must perform the assembly, operation and maintenance of machines or equipment.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.
   1) The inspection and maintenance of machinery/equipment should only be performed after measures to prevent dropping of driven objects or run-away of machinery/equipment have been confirmed.
   2) When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
   3) Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions:
   1) Conditions and environments outside of the given specifications, or used outdoors or in a location exposed to direct sunlight.
   2) Installation of equipment in conjunction with atomic energy, railways, air navigation, space appliances, shipping, vehicles, military, medical equipment, combustion devices, recreation equipment, or equipment which comes in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or any other applications unsuitable for the standard specifications described in the product catalog.
   3) An application that could have negative effects on people, property, or animals, especially those applications requiring special safety analysis.

4) Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation. Furthermore, Check the product regularly in order to confirm normal operation.

IP Configuration Software Safety Instructions

⚠ Caution

The product is provided for use in manufacturing industries.
The product herein described is basically provided for use in manufacturing industries.
If the product is being considered for use in other industries, consult SMC beforehand and exchange specifications or a contract, if necessary.
If anything is unclear, contact your nearest sales branch.

Limited Warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements". Read and accept them before using the product.

[Limited warranty and Disclaimer]

1. The warranty period of the product is 1 year in service or within 1.5 years after the product is delivered. [*]
  Also, the product may have specified durability, performance distance or replacement parts. Please consult your nearest sales branch.

2. For any failure or damage reported within the warranty period, which is clearly our responsibility, a replacement product or necessary parts will be provided.
  This limited warranty applies only to the SMC product independently, and not to any other damage incurred due to the failure of the product.

3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

> ***: Vacuum pads are excluded from this 1 year warranty.**
> **A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.**
> **Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.**

[Compliance Requirements]

When the product is exported, strictly follow the laws required by the Ministry of Economy, Trade and Industry (Foreign Exchange and Foreign Trade Control Law).

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2. Product Overview

The LEC-GEN1 Gateway unit (hereinafter referred to as "LEC-GEN1"), is applicable to the EtherNet/IP^{TM} network system. The Gateway requires an IP address setting for connection with an EtherNet/IP^{TM} network (hereinafter referred to as "network"). The IP configuration software is a tool for setting the IP address for the LEC-GEN1.

The IP Configuration software is suitable for use with the following OS;

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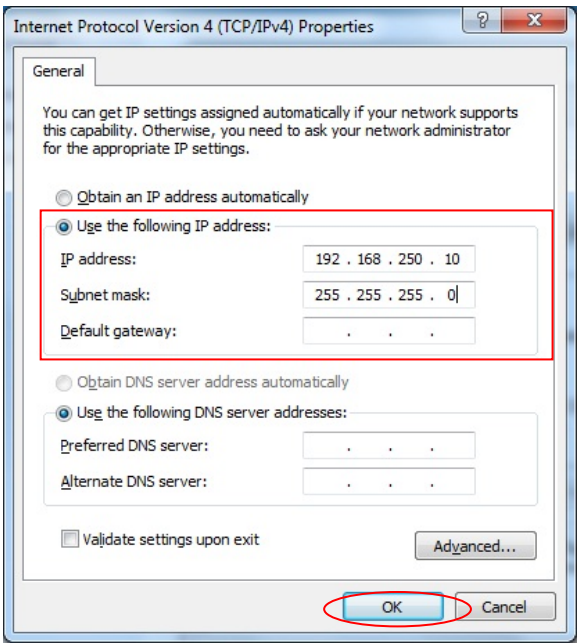Windows®7   (64 bit)
Windows®8   (32 bit)
Windows®8   (64 bit)

3. Network Configuration Example
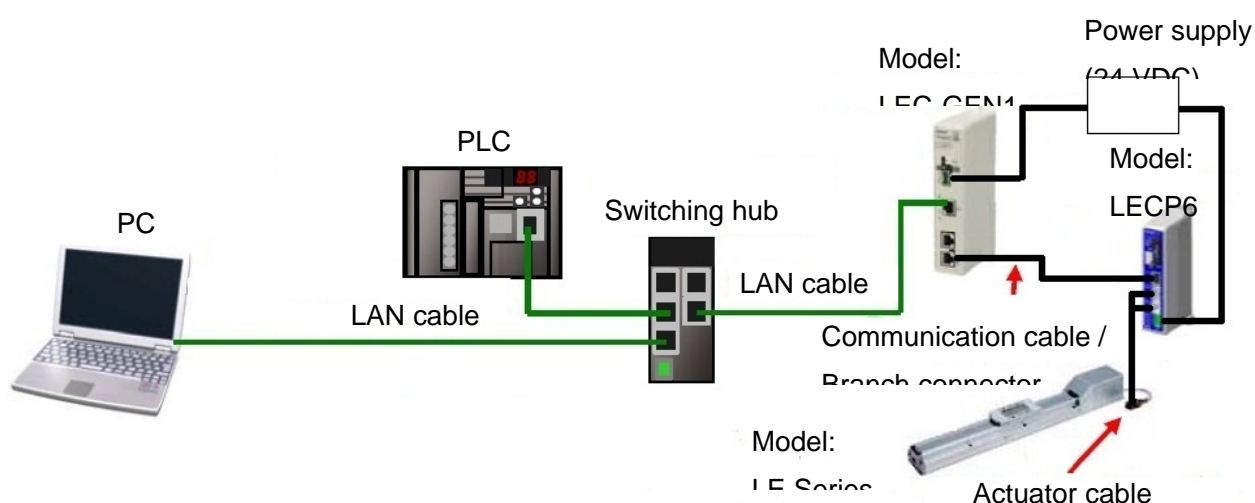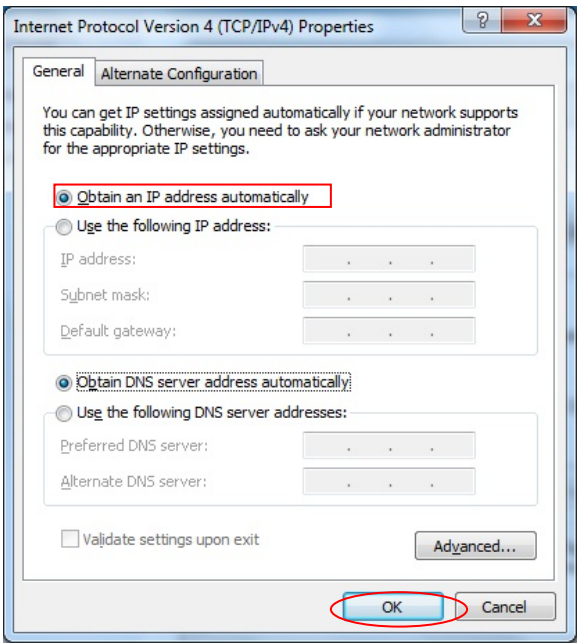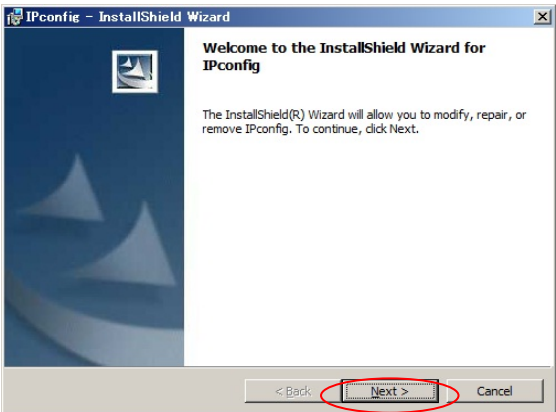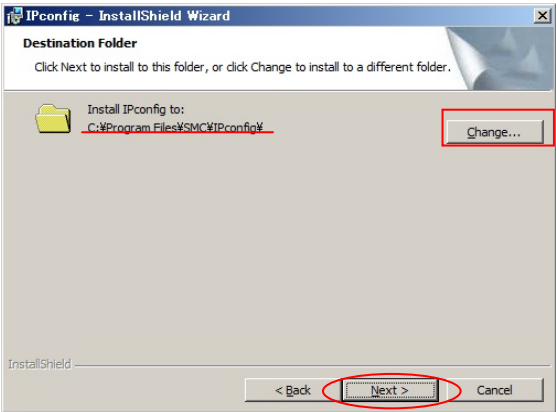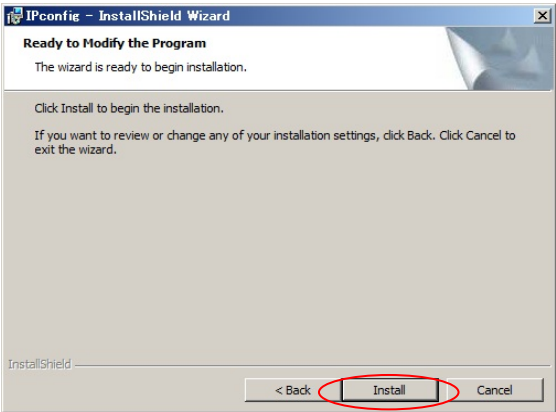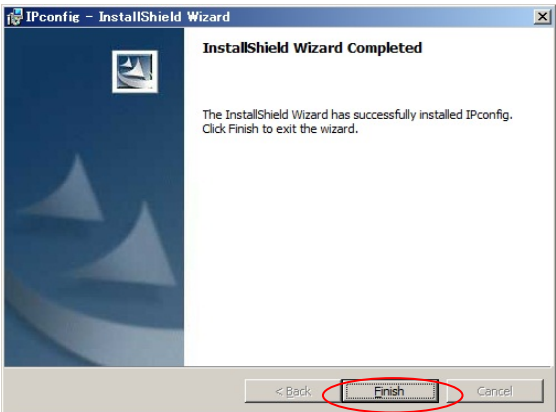

Fig. Network Configuration Example

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4. IP Address Setting for Computer

Set the IP address of the PC according to step 1 or 2 below.

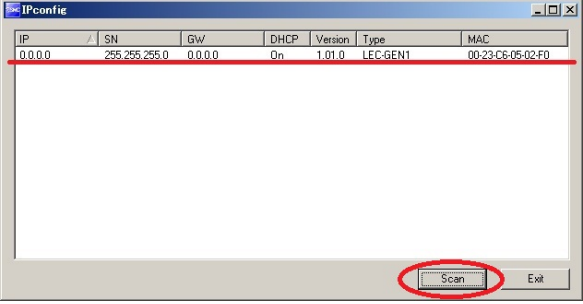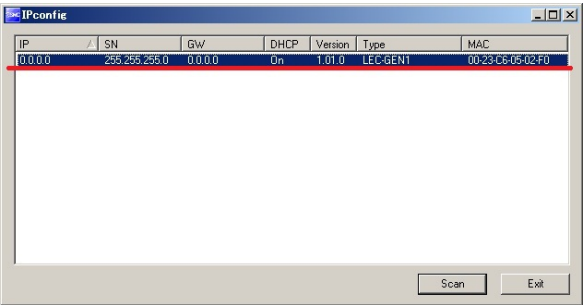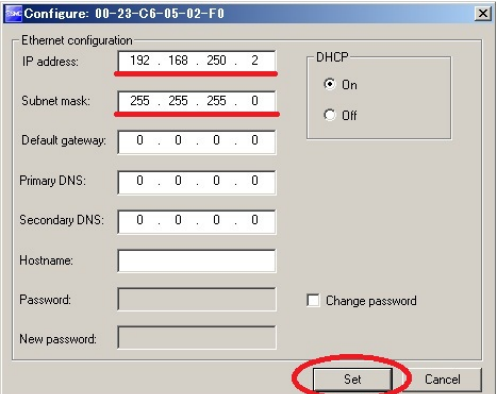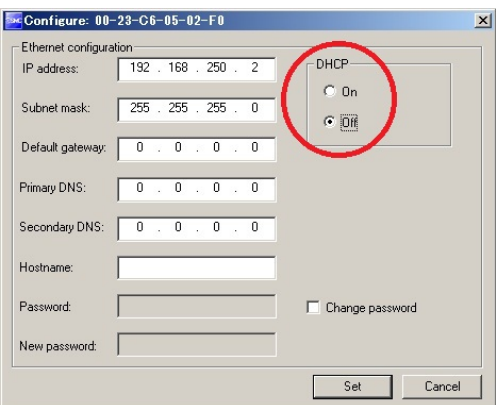| No.	Display	Instructions
1.		[When a DHCP server is installed on the network] To automatically allocate the IP address using a DHCP server, in the "Internet Protocol Version 4 (TCP/IPv4) Properties" screen, in the "General" tab window, select "Obtain an IP address automatically" , and click "OK".
2.		[When a DHCP server is NOT installed on the network] To specify the IP address directly without installing a DHCP server, in the "Internet Protocol Version 4 (TCP/IPv4) Properties" screen, in the "General" tab window, select "Use the following IP address:". Enter values in the "IP address" and "Subnet mask". Then click "OK". The values entered for "IP address" and "Subnet mask" must be set according to the network used. * The display on the left shows an example: IP address = 192.168.250.10 Subnet mask = 255.255.255.0

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5. Installation of IP Configuration Software

Follow steps 3 to 6 below to install the IP configuration software.

No.	Display	Instructions
3.		Start the IP configuration software installer (IPconfig setup.exe), and then click "Next".
4.		Specify the installation location for the IP configuration software. To change the installation location, click the "Change..." button on the display, and specify the new installation location. After specifying the new installation location of the IP configuration software, click "Next".
5.		Press "Install", to start installing the IP configuration software.
6.		When installation of the IP configuration software is complete, a message "Installshield Wizard Completed" will be displayed. Click "Finish" to complete. * If the installation of the IP configuration software fails to complete, return to step 3 and retry.

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6. Setting of the IP Address with IP Configuration Software

Set the IP address of the LEC-GEN1 with the IP configuration software in accordance with steps 7 to 11 below.

No.	Display	Instructions
7.		When the IP configuration software is started after setting the IP address for the PC and installing the IP configuration software, the LEC-GEN1 connected to the network will be shown on the "IP config" screen. When "Scan" is clicked, information displayed on the "IP config" screen will be updated. * If "LEC-GEN1" is not displayed, return to step 1 and retry the procedure from step1 to 6.
8.		Select and double-click the item that shows the same MAC address number as the MAC address number on the LEC-GEN1 product housing, for which the IP address has been set. * The display on the left shows an example: One LEC-GEN1 which has the MAC address "00-23-C6-02-F0" is connected.
9.		Enter the values for "IP address" and "Subnet mask" shown on the display, and click "Set". Values that are entered in "IP address" and "Subnet mask" must be set according to the network used. * The display on the left shows an example: IP address = 192.168.250.2 Subnet mask = 255.255.255.0
10.		Set the DHCP function for the LEC-GEN1 to be enabled (ON) or disabled (OFF). [When a DHCP server is installed on the network] Select "On" for "DHCP", and click "Set". [When a DHCP server is not installed on the network] Select "Off" for "DHCP", and click "Set". * The display shown on the left shows the example when DHCP is set "Off".

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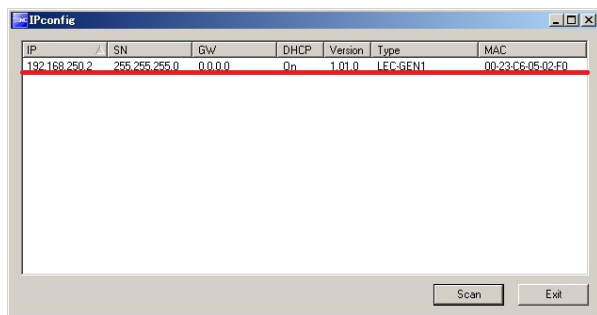
| 11. | | Confirm that the IP address, subnet mask, DHCP function On/Off setting are correctly entered in the boxes for IP, SN and DHCP on the "IP config" screen. Then terminate the IP configuration software.
 * If the data entered in the IP configuration is not displayed correctly, return to step 7 and retry. |

7. DHCP Function of the LEC-GEN1 (Supplementary Explanation)

The time required for the LEC-GEN1 to establish communication with the PLC will be different when a DHCP server is installed on the network and the DHCP function is enabled (ON), from when a DHCP server is not installed and the DHCP function is disabled (OFF).

[When operated with the DHCP function of the LEC-GEN1 ON (enabled)]

Install a DHCP server on the network.

- The LEC-GEN1 with the DHCP function ON (enabled) will automatically obtain an IP address from the DHCP server and will establish communication with the PLC. (The time required before communication with the PLC is established is approximately 7 seconds.)
- An LEC-GEN1 with the DHCP function ON (enabled), when the DHCP server has not been installed, will establish communication with the PLC using the IP address set with the IP configuration software, after the stand by time for the IP address has passed.

(The time required before communication with the PLC is established will be approximately 37 seconds.)

[When operated with the DHCP function of the LEC-GEN1 OFF (disabled)]

There is no need to install a DHCP server on the network.

The LEC-GEN1 will establish communication with the PLC using the IP address set with the IP configuration software.

(The time required before communication with the PLC is established is approximately 7 seconds.)

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8. Definitions and Terminology (Supplementary Explanation)

Term	Definition
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.
IP address	A 32 bit digit sequence which is assigned to identify devices which are connected to the network.
MAC address	A unique number inherent to all devices connected to an EtherNet/IP^{TM} network.
PLC(Programmable controller)	Abbreviation of Programmable Logic Controller, a digital computer used for automation of electromechanical processes.
Subnet mask	Numerical values that define the range of the numerical string within the IP address used on the network.
Switching hub	Device that operates as a relay on the network.

Trademark

The company name, system name, and product name described in this document are registered trademarks of each individual company.

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Revision history
<u>No. LEC-OM08401</u>   First edition: October 2014

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