Ethernet Interface Board
MODEL : IF2-ET01
User's Manual

Ver.1.00

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Contents

Read before using

Be sure to read this manual carefully before using the product. After you read it, store it in a safe place so that you can reread it when necessary.

- Contents of this manual may be changed without notice.
- Reproducing and/or copying the contents of this manual by any means without permission are prohibited.
- We will not be responsible for any adverse occurrence that results from the use of this manual, regardless if it contains omissions, errors/misprints, etc.
- Note that we will not be responsible for (a) loss caused by improper operation or mishandling of the device by the user, or (b) loss due to operational environment.
- Data etc., are basically impermanent; long time or permanent storing/saving of data by the device is not possible.
- Note that we will not be responsible for any loss or loss of profits owing to loss of data due to breakdown, repairs, inspections, etc.
- Please contact us if there are omissions, errors, ambiguities, etc. in this manual.
- Refer to this document along with the user manual of the printer.
- This product operates by setting up a wireless connection between itself and other wireless LAN equipment for data transmission. Therefore, other wireless LAN equipment is required to use this product. While we have confirmed the operation of this product with certain wireless LAN equipment, operation with all types of wireless LAN equipment is not guaranteed. Carry out a sufficient evaluation before using this product.

Trademarks

- Microsoft, Windows XP, Windows Vista, Windows 7 and Windows 8 are registered trademarks of Microsoft Corporation U.S.A.
- Other company names and product names mentioned here are trademarks or registered trademarks of those companies.

Safety Instructions

- Before handling the product (removing from packaging, etc.), discharge static electricity by touching metal, etc.
- Do not spill liquid onto the device.
- Do not place the device in a humid place.
- Do not step on, or subject the network cable connected to the device to rough treatment.
- Do not connect a telephone line to the RJ45 connector on the device. Be sure to connect STP cable (category 5 or higher).
- Connect the product only to devices that operate on SELV voltage (safety extra-low voltage).
- Be sure to use the device inserted in the interface board slot of the printer. Do not use the device when it is not inserted in the interface board slot.

Declaration of Conformity

The printers using this WLAN interface board conform to the following Standards:
The Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC, the RoHS Directive 2002/95/EC, and the WEEE Directive 2002/96/EC.

LVD : EN60950-1

EMC: EN55022 Class A
EN61000-3-2
EN61000-3-3
EN55024

This declaration applies only to the 230-V model.

IMPORTANT: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.
CAUTION: Use shielded cable for this equipment.

Sicherheitshinweis

Die Steckdose zum Anschluß dieses Druckers muß nahe dem Gerät angebracht und leicht zugänglich sein.

For Uses in Canada

This Class A digital apparatus complies with Canadian ICES-003.
This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus, as set out in the radio interference regulations of the Canadian department of communications.

Pour L'utilisateurs Canadiens

Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.
Cet appareil numérique ne dépasse pas les limites de carégorie a pour les émissions de bruit radio émanant d'appareils numériques, tel que prévu dans les réglements sur l'interférence radio du départment Canadien des communications.

GENERAL PRECAUTIONS

- Before using this product, be sure to read through this manual. After having read this manual, keep it in a safe, readily accessible place for future reference.
- The information contained herein is subject to change without prior notice.
- Reproduction or transfer of part or all of this document in any means is prohibited without permission from Citizen Systems.
- Note that Citizen Systems is not responsible for any operation results regardless of omissions, errors, or misprints in this manual.
- Note that Citizen Systems is not responsible for any trouble caused as a result of using options or consumables that are not specified in this manual.
- Except explained elsewhere in this manual, do not attempt to service, disassemble, or repair this product.
- Note that Citizen Systems is not responsible for any damage attributable to incorrect operation/handling or improper operating environments that are not specified in this manual.
- Data is basically for temporary use and not stored for an extended period of time or permanently. Please note that Citizen Systems is not responsible for damage or lost profit resulting from the loss of data caused by accidents, repairs, tests or other occurrences.
- If you find omissions, errors, or have questions, please contact your Citizen Systems dealer.
- If you find any pages missing or out of order, contact your Citizen Systems dealer for a replacement.

Important

FCC Radiation Exposure Statement

The radiation exposure from this equipment is within the FCC RF radiation exposure limits for an uncontrolled environment. It is recommended that you install and operate this equipment with a minimum of 20 cm between the radiator and your body.

CE Mark Warning

This equipment is classified as a Class B product and may cause radio interference in a home environment. In such cases, the user is requested to take the necessary countermeasures to resolve the interference.

Restrictions by Country

Frequency range: 2400.0 to 2483.5 MHz

CE

Country	Restrictions	Notes
Bulgaria	None	Outdoor use and public service require general authorization.
France	Outdoor use is limited to 10 mW e.i.r.p. within the band 2,454 to 2,483.5 MHz	Used for military radiolocation. The 2.4 GHz band is being reformed to relax the current regulations. Full implementation is planned by 2012.
Italy	None	Outdoor use requires general authorization.
Luxembourg	None	Network and service supply (not for spectrum) require general authorization.
Norway	Implemented	The geographical area within a radius of 20 km from the center of Ny-Ålesund is excluded from this subsection.
Russian Federation	None	For indoor use only.

Note: Do not use this equipment outdoors in France.

1. Introduction

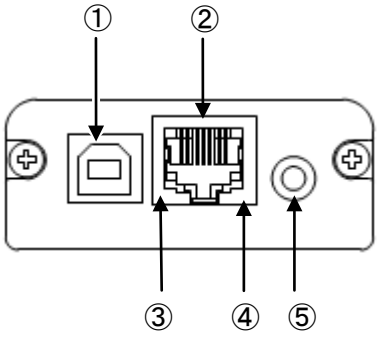
Thank you for purchasing the Citizen IF2-ET01 Ethernet interface board.
IF2-ET01 Ethernet Interface Board is compatible with the Line Thermal Printer CT-S251 series. Connecting the IF2-ET01 to a printer enables you to relay data between a network of multiple computers and the printer. In addition, the computers and printer are able to communicate with each other: the operational status, print settings, and other information about the printer can be checked from computers on the network.

1-1. Specifications

Compatible printers	CT-S251 Series
Operation panel	LED: 2 (RJ45 connector) Button: 1 (on panel)
Network Interface	Auto-Negotiation (100Base-TX/10-Base-T) AUTO-MDIX (Straight/Cross cable auto detection)
Connection to the printer	SPI
IP Version	IPv4
Network protocols	TCP, UDP, HTTP, SNMP, ICMP, DHCP
Port number for printing	TCP 9100 (Default)
Configuration changes from the browser	Yes
Interactive communication	Yes (only when CITIZEN TCP/IP port driver is used)
External dimensions	80 mm (W) x 70 mm (D) x 25 mm (H) (including connector protuberance)
Weight	Approx. 75 g
Operating environment	0 to 40°C, 10 to 90% RH (condensation free)
Storage environment	-20 to 90°C, 10 to 91% RH (condensation free)
Safety standards	VCCI Class B

1-2. Part Names and Functions

Ethernet interface board unit



① USB connector
Works as standard USB connector

② RJ45 connector (compatible with 10Base-T/100Base-TX)
Connection for LAN cable.

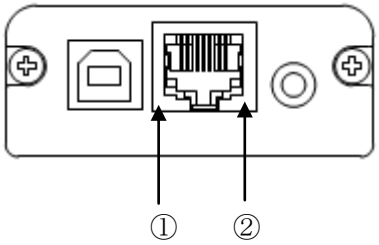
③ Green LED
Shows network transmission speed with steady/blinking light.

④ Yellow LED
Shows network connection status (disconnected, receiving data, etc.)

⑤ Panel button
Used to operate the IF2-ET01.

1-3. LED Functions

The following charts show what each LED indicator indicates.



① Network transmission speed

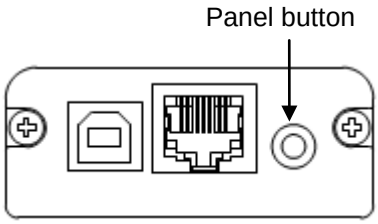
Transmission speed	LED (green)
100 Mbps	On
10 Mbps / disconnected	Off

② Link status with network

Link status	LED (yellow)
Connected	On
Disconnected	Off
Transmitting data	Flashing

1-4. Using the Panel Button

The panel button on the operation panel is used to operate the IF2-ET01. You can use it to print settings information and restore factory default settings.



1-4-1. Printing the Ethernet Interface Board Configuration

Press the panel button to print out the IF2-ET01 configuration.

■ **Configuration items that are printed**

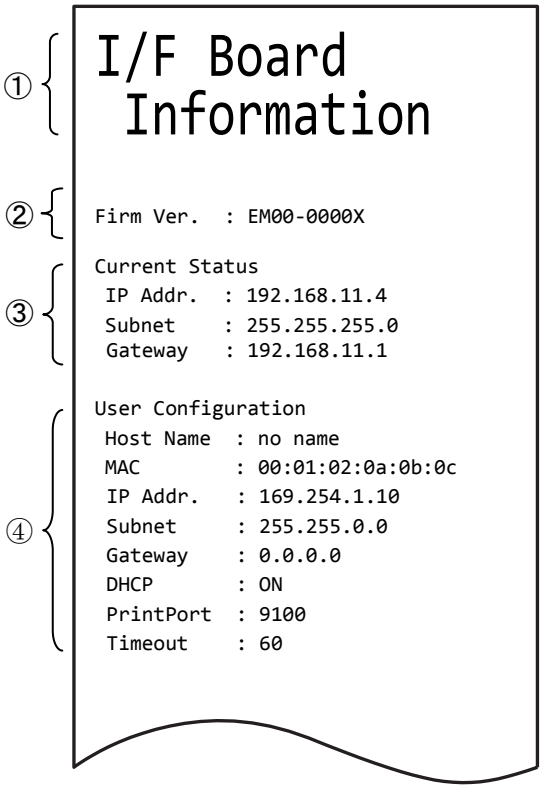
① Title of the printout.

② Firmware version of printer..

③ Network settings such as the IP address currently being used. When the network is not connected, the IP address is “0.0.0.0”.

④ Same data as configuration settings on the Print Server Configuration screen.

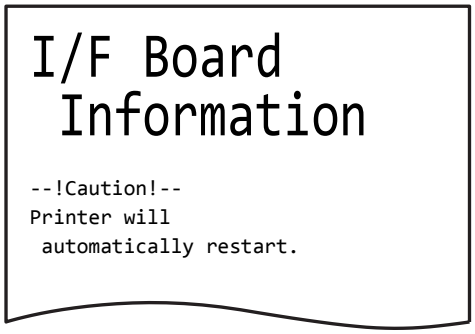
*** If panel button is pressed within 60 seconds after power on with DHCP enabled settings, IP address may not be obtained yet. In such case, IP address is shown as 0.0.0.0.



1-4-2. Returning the Ethernet Interface Board Configuration to Factory Default Settings

1) Press and hold the panel button.
2) When you hear the beep, press and hold the panel button again within 3 seconds.
   The following message is printed, and the IF2-ET01 returns to factory default settings.

]



Warning

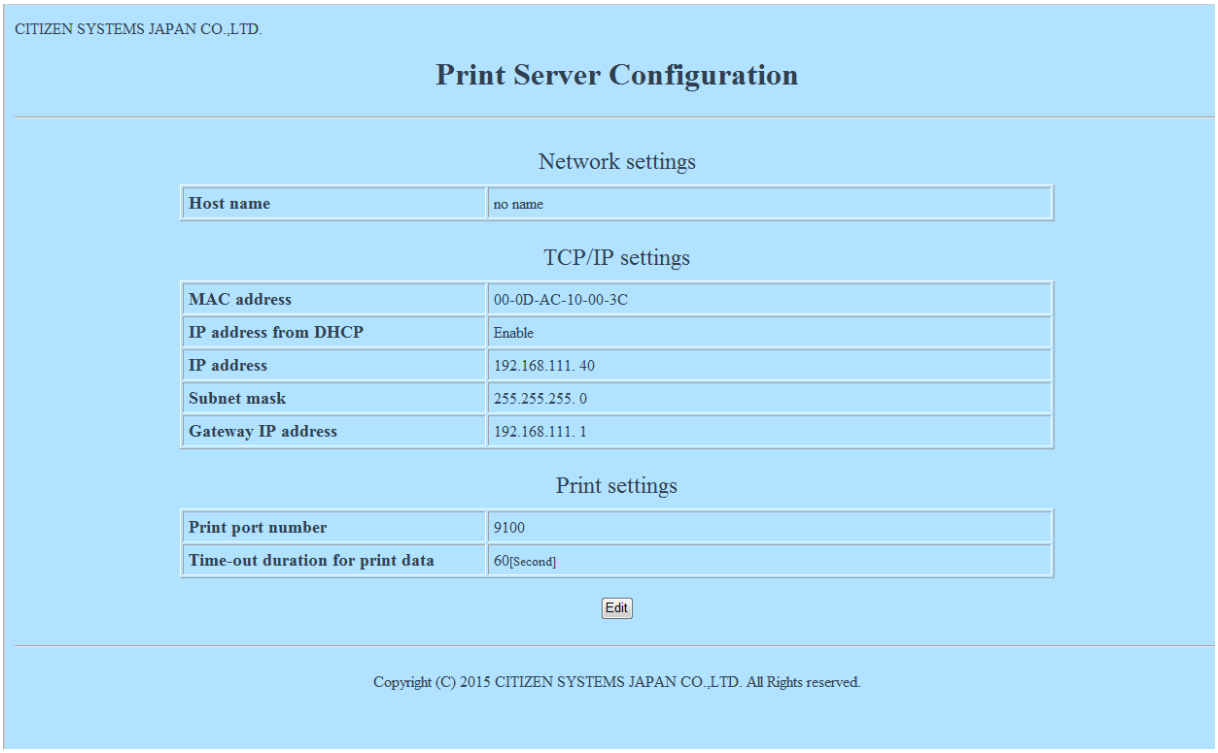
When the operation is complete, the IF2-ET01 restarts automatically.
When the IF2-ET01 is set to automatically obtain the IP address from the DHCP server, the IP address assigned may be different from the previous one.

1-5. Print Server

Using a Web browser, you can go to the Print Server Configuration screen to view or change the network settings.

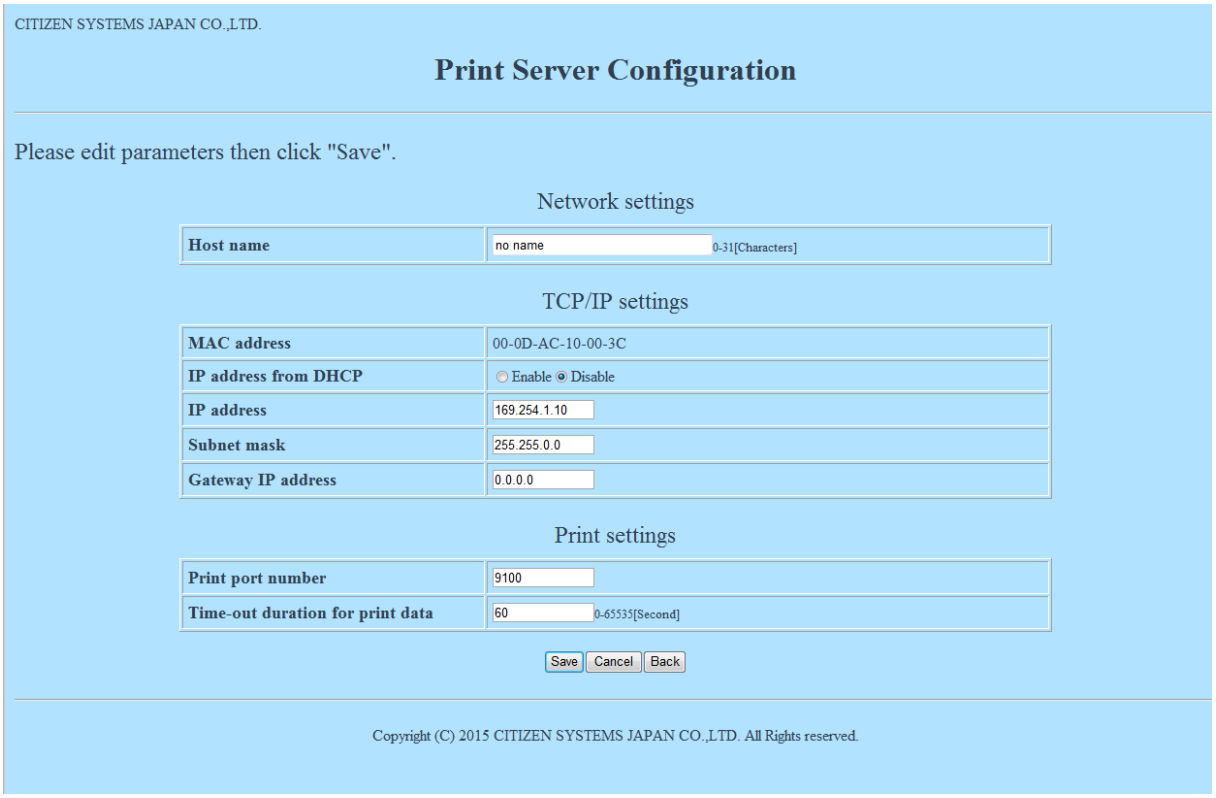
1-5-1. Accessing Print Server Configuration screen

1) Launch your browser and go to the URL of the Print Server Configuration screen.
   For the URL, enter the IP address assigned to the printer.
   (For example, if the IP address is “169.254.1.10”, enter “http://169.254.1.10”.)
2) Print Server Configuration page to show current settings appears.
3) By clicking “Edit” button, screen move to the page to change the settings.



1-5-2. Changing the Print Server Configuration

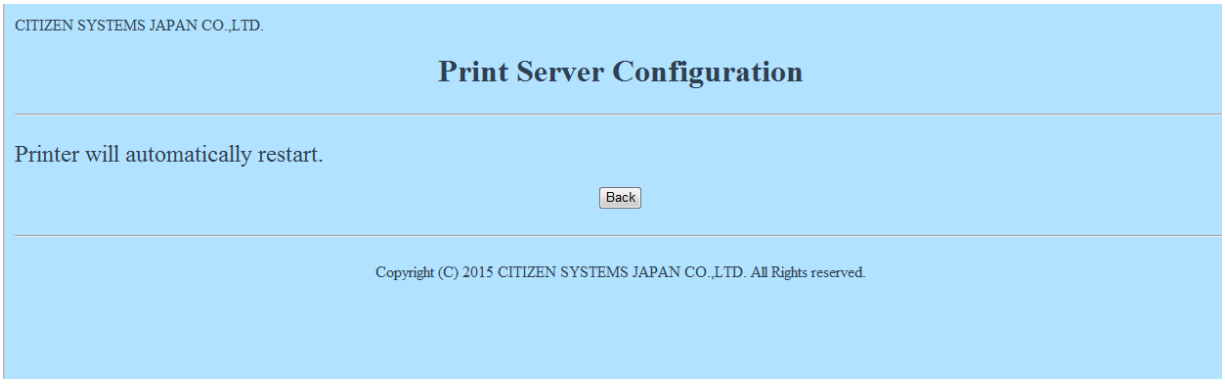
By clicking “Edit” button, screen is changed for the page to change the network settings.



[Back] button: The page moves back to the page to check the current network settings.

[Cancel] button: The entry data on this page is canceled.

[Save] button: The entry data on this page is saved and move the page below then the printer reboots after few seconds.



Warning

When the operation is complete, the IF2-ET01 restarts automatically.
When the IF2-ET01 is set to automatically obtain the IP address from the DHCP server, the IP address assigned may be different from the previous one.

■ List of network setting items

Classification	Item	Description	Changeable
Network setting	Host name	Name to identifying the printer “no name” (factory default) Available character for the host name is ASCII code 0x20 to 0x7E and 0 to 31 characters.	Yes
TCP/IP settings	MAC address	MAC address	No
	IP address from DHCP	Setting to obtain IP address from DHCP server Enable: ON (factory default) Disable: OFF	Yes
	IP address	Static IP address 169.254.1.10 (factory default)	Yes
	Subnet mask	Subnet mask 255.255.0.0 (factory default)	Only when “IP address from DHCP” is “Disable”
	Gateway IP address	Gateway IP address 0.0.0.0 (factory default)	Only when “IP address from DHCP” is “Disable”
Print settings	Print port number	Print port number used for TCP 9100 (factory default)	Yes
	Time out duration for print data	Time-out duration of connection to host machines (0 to 65535 seconds). “0” means no time-out. 60 (factory default) ・We recommend setting the time-out duration for at least 30 seconds.	Yes

2. Network Settings

2-1. Network settings from the browser

2-1-1. Accessing the Print Server configuration screen

The followings are examples of the PC/printer preparation to access the print server.

Example 1: Setting the static IP address from browser on directly connected PC

Press panel button to check IP address of the printer.

Connect the printer and the PC via LAN cable directly.

On the TCP/IP setting of the PC, set the IP address of the same network as the printer.

You can access the print server function from the browser by entering IP address as URL (If IP address of the printer is 169.254.1.10, IP address of PC should be like 169.254.1.11 and URL on the browser should be http://169.254.1.10)

Example 2: Setting static IP address from browser using DHCP server

Connect the printer to the network that DHCP server is working.

As IP address is supposed to be assigned from DHCP sever, check IP address by pressing panel button after 60 seconds.

You can access the print server function from the browser of the PC that is in the same network as the printer by entering printer IP address as URL.

（If IP address assigned to the printer is 192.168.1.100, URL is like http://192.168.1.100）

2-1-2. Setting the IP address

Network communication is based on the IP addresses assigned to each network devices.

IP address setting of this board is either by automatic assignment from DHCP server or by setting static IP address manually. Default setting is automatic assignment by DHCP server.

■ **Setting to get IP address from DHCP server automatically**

1) Using the Web browser, access the Print Server Configuration screen. (Refer to "1-5. Print Server" for the setting screen access method.
2) In "TCP/IP settings" group, set "IP address from DHCP" to "Enable".
3) Click "Save" to save the changes. (Printer will reboot with new network settings.)
4) Switch on the printer.
   After the printer is switched on, the printer automatically obtains the IP address from the DHCP server within 60 seconds. If IP address cannot be obtained in 60 seconds, default IP address（169.254.1.10）will be assigned. (If you check IP address during obtaining IP address, the address will be shown as 0.0.0.0）

■ **Setting the IP address manually**

1) Using the Web browser, access the Print Server Configuration screen. (Refer to "1-5. Print Server" for the setting screen access method.
2) In "TCP/IP settings" group, set "IP address from DHCP" to "Disable" and enter the necessary IP address to the "IP address".
3) Click "Save" to save the changes. (Printer will reboot with new network settings.)

2-1-3. Changing other settings

If necessary, change the other settings than IP address.

The way to change setting is same as IP address settings.

For the details of changeable setting, refer to List of network setting items in section 1-5-2 "Changing Print Server Configuration"

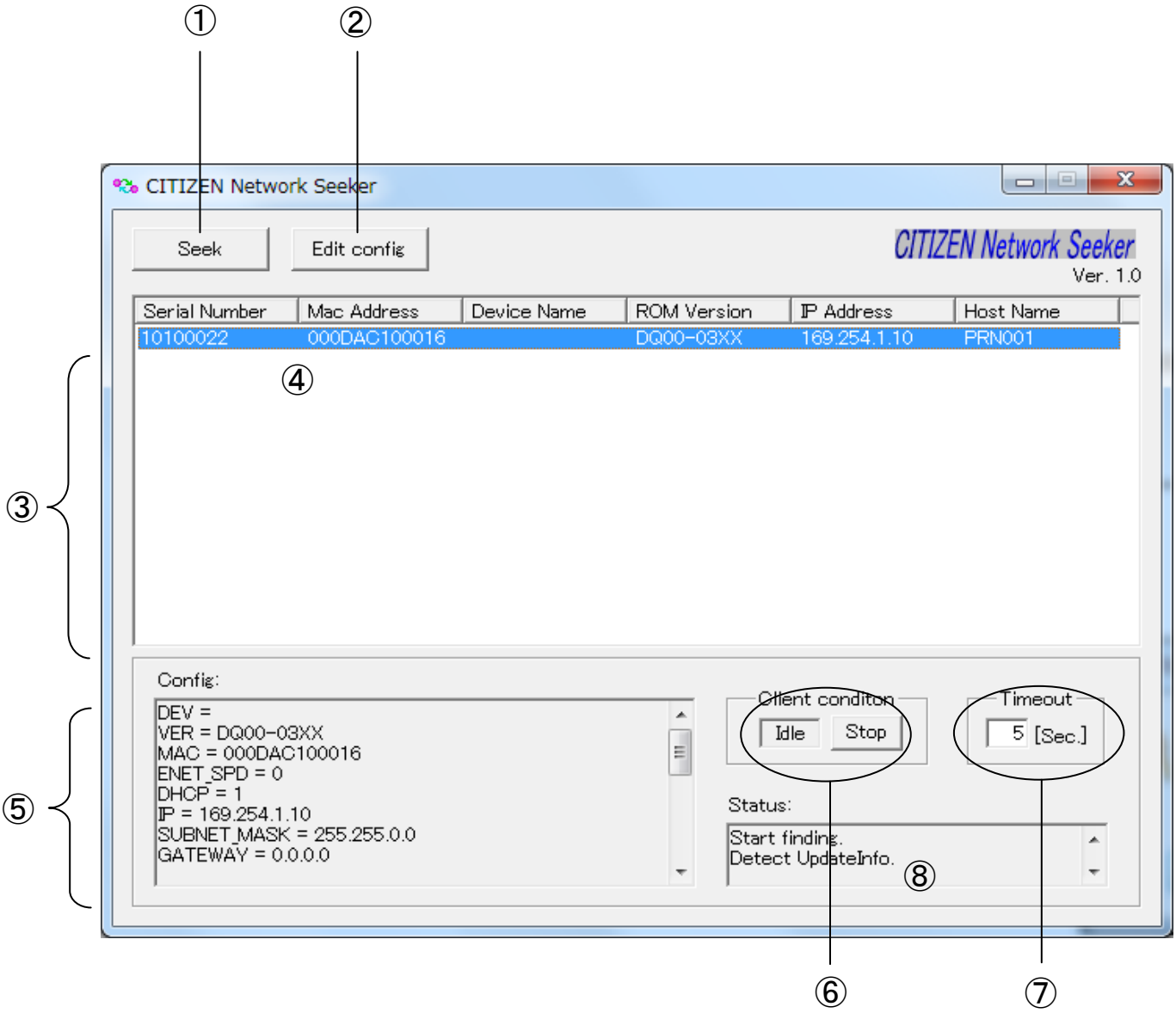
2-2. Network Seeker

By using “CITIZEN Network Seeker”, utility software that runs on Windows, you can check and change the Ethernet interface board settings.

2-2-1. Starting Network Seeker

After obtaining the program “NetSeeker.exe” from the CD-ROM or our website, double click the program. A dialog box appears.

Click “Seek” to start a LAN IF search.



① “Seek” button

Start a search for Ethernet interface boards on the network.

The search function waits for a response for the duration set for ⑦.

② “Edit config” button

Change the settings of the selected board.

③ Board information list

A list of discovered boards.

④ Board information

Single click to select a board and double click to change settings.

⑤ Configuration display section

View the settings of the selected board.

⑥ Client condition display

When “Busy” is displayed, operations to search, change settings, and so on are prohibited.

If you click “Stop”, the “Busy” status is cleared forcibly.

⑦ Communication timeout

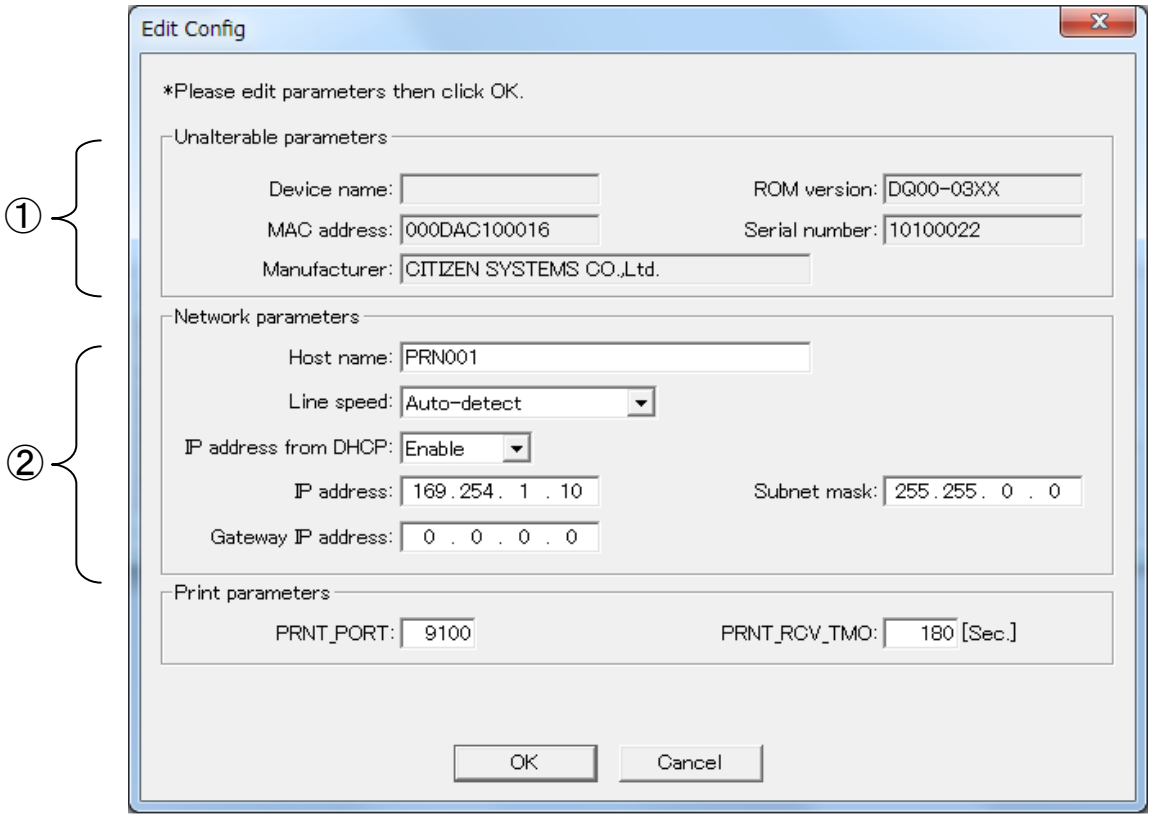
You can configure the time-out duration for searches and other operations.

⑧ Status log

View the status of the utility.

2-2-2. Changing Settings

You can configure an Ethernet interface board by selecting it at the main dialog box, and then clicking “Edit config”.



① These are unalterable parameters. These parameters are for display purposes only.

② These are changeable parameters. Users can change these parameters.

3. Installing Ethernet Interface board and LAN cable

■ Connecting to the Printer

1) Switch off the power and remove the power cord from the printer.

2) If another interface board is installed in the printer, remove it.

3) Insert the IF2-ET01 into the interface slot of the printer.

4) Fix the IF2-ET01 in place with screws.

Warning

- Malfunctions may occur if the IF2-ET01 is removed or re-inserted.
- To install the IF2-ET01, please contact your dealer or service person.
- If you work on your own, consider static electricity and other factors carefully, and then install IF2-ET01 at your own responsibility.

■ Connecting to the Network

Connect the LAN cable to the RJ45 connector.