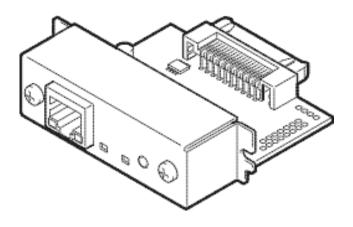


Ethernet Interface Board

MODEL: IF1-ET01

User's Manual



CITIZEN SYSTEMS JAPAN CO., LTD.

6-1-12, Tanashi-cho, Nishi-Tokyo-shi, Tokyo,

188-8511, Japan

TEL: +81-424-68-4608

sales-op@systems.citizen.co.jp

http://www.citizen-systems.co.jp/english/

Contents

Conte	ents	2
Read	before using	3
Safety	y Instructions	4
1. In	troduction	9
1-1.	Checking the Package	9
1-2.	Specifications	10
1-3.	Part Names and Functions	11
2. Pr	eparing the IF1-ET01	12
2-1.	Installing the Ethernet Interface Board Unit and Connecting to the Network	12
2-2.	Using the Panel Button	14
2-3.	LED Functions	15
2-4.	Printing the Ethernet Interface Board Configuration	16
2-5.	Returning the Ethernet Interface Board Configuration to Factory Default Settings	16
3. Us	sing the Ethernet Interface Board Setting Screen	17
3-1.	Connecting the Ethernet Interface Board	17
3-2.	Checking or Changing Ethernet Interface Board Configuration	18
3-3.	Checking the Operational Status of Printer	21
3-4.	Checking the Ethernet Interface Board Version Information	22
4. Se	etting the IP Address	23
5. Ne	etwork Seeker	24
5-1.	Starting Network Seeker	24
5-2.	Changing Settings	26

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



Country	Restrictions	Notes
Bulgaria	None	Outdoor use and public service
		require general authorization.
France	Outdoor use is limited to	Used for military radiolocation.
	10 mW e.i.r.p. within the	The 2.4 GHz band is being
	band 2,454 to 2,483.5 MHz	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 IF1-ET01 Ethernet interface board.

The IF1-ET01 Ethernet Interface Board is compatible with, for example, the Line Thermal Printer CT-S801 series and the CT-S601 series. Connecting the IF1-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.

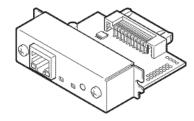
1-1. Checking the Package

Please check to see if the Ethernet interface board unit and accessories mentioned below are all included.

If anything is missing, contact your Citizen Systems dealer.

When the printer comes with the Ethernet interface board unit already installed, the package contains only the Quick-start Guide and CD-ROM.

· Ethernet interface board unit



Quick-start Guide



· CD-ROM



User manual (this document)

Port driver installer

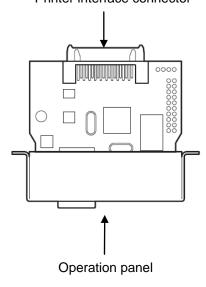
Port driver installation manual

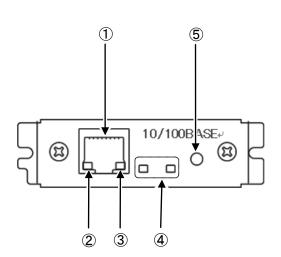
1-2. Specifications

Compatible printers	CT-S801 Series, CT-S601 Series, CL-S400DT, CL-S6621,		
Compando printoro	etc.		
	(CT-S2000/310/300, etc. are not compatible)		
Power supply	DC 5 V ± 5%		
Power consumption	Approx. 1 W		
Hardware	CPU: NXP LPC2458		
	ROM: 512 kb CPU internal flash		
	RAM: 8Mbytes SDRAM		
Operation panel	LED: 4 (2 on panel, 2 on RJ45 connector)		
	Button: 1 (on panel)		
Network I/F	Auto-Negotiation (100Base-TX/10-Base-T)		
	Automatic distinguishing of straight/crossover cables (AUTO-		
	MDIX)		
Connection to the printer	Printer Class		
	USB 2.0 FULL SPEED (however, CT-S801 side currently is		
	USB 1.1)		
IP Version	IPv4		
Network protocols	TCP, UDP, HTTP, ICMP, DHCP		
Port number for printing	TCP 9100 (initial value)		
Configuration changes	Yes		
from the Ethernet interface			
from the Ethernet interface board setting screen			
	Yes (only when CITIZEN TCP/IP port driver is used)		
board setting screen	Yes (only when CITIZEN TCP/IP port driver is used) Yes (using the Ethernet interface board setting screen)		
board setting screen Interactive communication			
board setting screen Interactive communication Firmware upgrade	Yes (using the Ethernet interface board setting screen)		
board setting screen Interactive communication Firmware upgrade	Yes (using the Ethernet interface board setting screen) 80 mm (W) x 70 mm (D) x 25 mm (H) (including connector		
board setting screen Interactive communication Firmware upgrade External dimensions	Yes (using the Ethernet interface board setting screen) 80 mm (W) x 70 mm (D) x 25 mm (H) (including connector protuberance)		
board setting screen Interactive communication Firmware upgrade External dimensions Weight	Yes (using the Ethernet interface board setting screen) 80 mm (W) x 70 mm (D) x 25 mm (H) (including connector protuberance) Approx. 75 g		
board setting screen Interactive communication Firmware upgrade External dimensions Weight Operating temperature	Yes (using the Ethernet interface board setting screen) 80 mm (W) x 70 mm (D) x 25 mm (H) (including connector protuberance) Approx. 75 g		
board setting screen Interactive communication Firmware upgrade External dimensions Weight Operating temperature and humidity ranges	Yes (using the Ethernet interface board setting screen) 80 mm (W) x 70 mm (D) x 25 mm (H) (including connector protuberance) Approx. 75 g 0 to 40°C, 10 to 90% RH (condensation free)		

1-3. Part Names and Functions Ethernet interface board unit

Printer interface connector





- ① RJ45 connector (compatible with 10Base-T/100Base-TX) Connection for LAN cable.
- 2 Network transmission speed indicator*¹
 Shows network transmission speed with steady/blinking light. (Green)
- ③ Network status indicator*1
 Shows network connection status (disconnected, receiving data, etc.). (Yellow)
- 4 Board status indicator*1 Shows operational status of the IF1-ET01 with combinations of steady and blinking lights. (Red/green)
- ⑤ Panel button*2Used to operate the IF1-ET01.
- *1 For indicator details, see "2-3. LED Functions" (page 15).
- *2 For panel button operations, see "2-2. Using the Panel Button" (page 14).

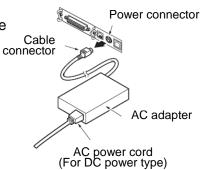
2. Preparing the IF1-ET01

2-1. Installing the Ethernet Interface Board Unit and Connecting to the Network

If the Ethernet interface board unit is already installed in the printer, proceed to "
Connecting to the Network" (page 13).

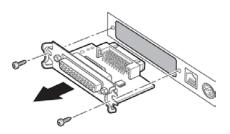
Warning

- Malfunctions may occur if the IF1-ET01 is removed or re-inserted.
- To install the IF1-ET01, please contact your dealer or service person.
- If you work on your own, consider static electricity and other factors carefully, and then install IF1-ET01 at your own responsibility.
- Connecting to the Printer
- Switch off the power and remove the power cord from the printer.

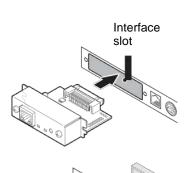


<Back side of the Printer>

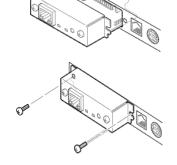
If another interface board is installed in the printer, remove it.



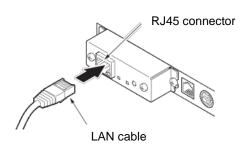
3) Insert the IF1-ET01 into the interface slot of the printer.



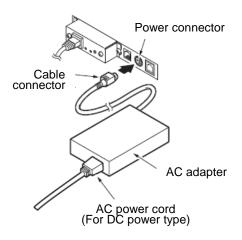
- Connect the interface connector of the IF1-ET01 to the interface connector inside the printer.
- 5) Fix the IF1-ET01 in place with screws.



- Connecting to the Network
- Connect the LAN cable to the RJ45 connector of the IF1-ET01.



2) Connect the power cord to the printer.



Setting the IP address

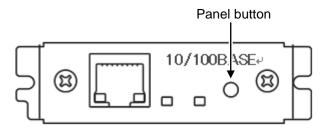
Set the IP address for the printer in order to connect it to the network.

- 3) Switch on the printer.
 - After the printer is switched on, the IF1-ET01 automatically obtains an IP address from the DHCP server within 60 seconds. If an IP address cannot be obtained automatically, the static IP address (169.254.1.10) that had been set in the IF1-ET01 before it left the factory is applied.
- Press the panel button.
 The IP address and other settings are printed.

I/F Board Information Print Server:DQ00-01XX Jan 20 2010/14:30:51 Configuration MAC Address : 00 : 01 : 02 : 03 : 04 : 05 Ethernet : Auto Network Ethernet : Auto Negotiation 100BaseTX/Full IP Address : 169.254.1.10 DHCP Server :192.168.1.10 Gateway :192.168.1.10 DNS1 0.0.0.0 DNS2 0.0.0.0

2-2. Using the Panel Button

The panel button on the operation panel is used to operate the IF1-ET01. You can use it to print settings information and restore factory default settings.



■ Starting the Ethernet Interface Board

Switch on the printer. The IF1-ET01 starts along with the printer.

■ Printing the Ethernet Interface Board Configuration

Press the panel button. For details, see "2-4. Printing the Ethernet Interface Board Configuration" (page 16).

■ Switching to Setting Mode

Press and hold the panel button. The buzzer* sounds once, signaling a switch to setting mode.

- Setting mode enables the reading of the factory default settings and printing of the firmware information.
- If there is no activity for 3 seconds in the setting mode, the buzzer* sounds once, signaling a return to normal mode.
- * Note that the buzzer will not sound if the printer's buzzer is disabled.

■ Restoring to the Factory Default Settings

Switch to setting mode, then press and hold the panel button. The IF1-ET01 returns to the factory default settings.

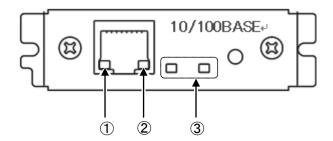
Warning

When the operation is complete, the IF1-ET01 restarts automatically.

When the IF1-ET01 is set to automatically obtain the IP address from the DHCP server, the IP address assigned may be different from the previous one.

2-3. 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

3 Ethernet interface board status

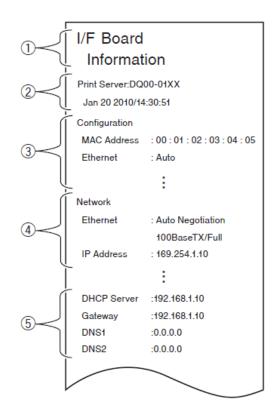
Display content	LED (green)	LED (red)	Description
Printer:	Off	-	Not connected to printer
disconnected			
Printer: connected	On	ı	Connected to printer
Network:	-	Off	Not connected to network
disconnected			
Seeking IP	-	Flashing	Seeking IP address from DHCP
address		(0.5 second	server
		cycle)	
Network:	-	On	Network setting is complete
connected			
Resource error	Alternating blinking (0.5 second		The IF1-ET01 is malfunctioning
	cycle)		
System error	Alternating blinking (0.1 second		The IF1-ET01 is malfunctioning
	cycle)		

2-4. Printing the Ethernet Interface Board Configuration

Press the panel button to print out the IF1-ET01 configuration.

Configuration items that are printed

- 1 Title of the printout.
- ② Firmware version of the IF1-ET01. Same as noted on the Ethernet interface board setting screen.
- ③ Configuration programmed in the IF1-ET01. Same as noted on the Ethernet interface board setting screen.
- 4 Network settings such as the IP address currently being used by the IF1-ET01. When the network is not connected, the IP address is "0.0.0.0".
- ⑤ Displayed only when "IP address from DHCP" is "Enable".



2-5. Returning the Ethernet Interface Board Configuration to Factory Default Settings

- 1) Press and hold the panel button to switch to setting mode.
- 2) After the IF1-ET01 has switched to setting mode, press and hold the panel button again within 3 seconds.

The following message is printed, and the IF1-ET01 returns to factory default settings.

I/F Board Information --!Caution!--Print Server will automatically restart.

Warning

When the operation is complete, the IF1-ET01 restarts automatically.

When the IF1-ET01 is set to automatically obtain the IP address from the DHCP server, the IP address assigned may be different from the previous one.

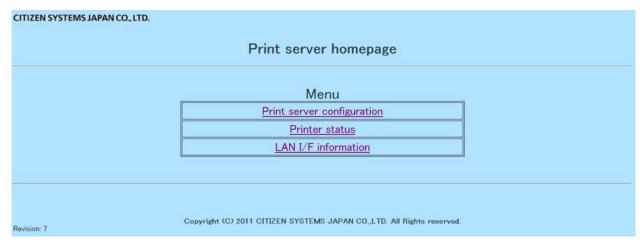
3. Using the Ethernet Interface Board Setting Screen

3-1. Connecting the Ethernet Interface Board

Using a Web browser, you can go to the Ethernet interface board setting screen to check or change the settings of the IF1-ET01 or to check the operational status of the printer.

■ Accessing the Ethernet Interface Board Setting Screen

- 1) Launch your browser and go to the URL of the Ethernet interface board setting 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) The Ethernet interface board setting screen appears.



3-2. Checking or Changing Ethernet Interface Board Configuration

You can check or change the settings of the IF1-ET01 from "Print server configuration" page of the Ethernet interface board setting screen.

■ Checking the Ethernet Interface Board Configuration

On the menu page of the Ethernet interface board setting screen, click "Print server configuration". The "Print server configuration" page appears.

	Printer information
Manufacturer	CITIZEN
Model	CT-8801
	Network settings
Host name	PRN001
Line speed	Auto-detect
	TCP/IP settings
MAC address	00-0D-AC-10-00-16
IP address from DHCP	Enable
IP address	169 254, 1, 10
Subnet mask	255 255. 0. 0
Gateway IP address	0. 0. 0. 0
SNMP port number	161
	Print settings
Print port number	9100
Time-out duration for print data	180[Second]
	Edit

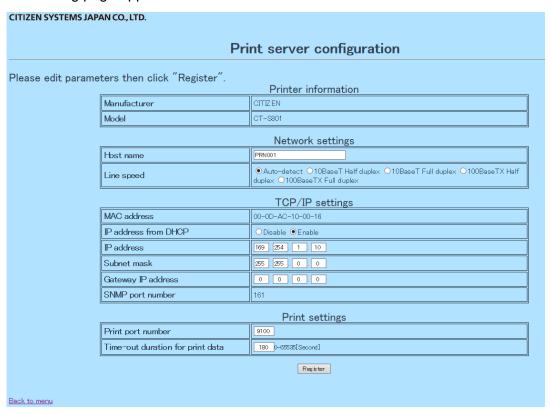
■ Ethernet interface board setting items

Classification	Item	Description	Changeable
Printer information	Manufacturer	Obtains information from the printer about the manufacturer of the printer to which the IF1-ET01 is connected	No
	Model	Obtains information from the printer about the model of the printer to which the IF1-ET01 is connected	No
Network	Host name	IF1-ET01 host name	Yes
setting	Line speed	Line speed Auto-detect (factory default) 10BaseT Half duplex 10BaseT Full duplex 100BaseTX Half duplex 100BaseTX Full duplex	Yes
TCP/IP	MAC address	MAC address	No
settings	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 255.255.255.0 (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"
	SNMP port number	Port number used by SNMP agents	No
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. 180 (factory default) • We recommend setting the time-out duration for at least 30 seconds.	Yes

■ Changing the Ethernet Interface Board Configuration

- 1) On the menu page of the Ethernet interface board setting screen, click "Print server configuration". The "Print server configuration" page appears.
- 2) Click "Edit."

The editing page appears.



3) After changing the settings, click "Register." The "Please wait" page appears, and the changes are saved.



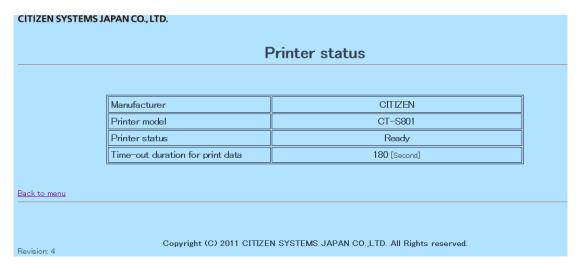
Warning

When the operation is complete, the IF1-ET01 restarts automatically.

When the IF1-ET01 is set to automatically obtain the IP address from the DHCP server, the IP address assigned may be different from the previous one.

3-3. Checking the Operational Status of Printer

- 1) On the menu page of the Ethernet interface board setting screen, click "Printer status". The "Printer status" page appears.
- 2) On the "Printer status" page beside "Printer status", check the operational status of the printer. The information is updated every 5 seconds.



■ "Printer status" display items

Item	Description
Manufacturer	Information about the manufacturer of the printer to
	which the IF1-ET01 is connected.
Model	Information about the model of the printer to which
	the IF1-ET01 is connected.
Printer status	Operational status of the printer.
	Ready: Ready to print
	Offline: Not ready to print
	Paper Empty: Out of paper
Time-out duration for print data	Time-out duration of connection to host machines.

3-4. Checking the Ethernet Interface Board Version Information

The IF1-ET01 host name, serial number, and firmware version can be checked on the "LAN I/F information" page of the Ethernet interface board setting screen.

To view the "LAN I/F information" page, open the menu page of the Ethernet interface board setting screen, and then click "LAN I/F information".



■ "LAN I/F information" display items

Item	Description
Host name	IF1-ET01 host name
Serial number	IF1-ET01 serial number
Firmware version	IF1-ET01 firmware version

Updating the firmware

- 1) Click "Firmware update".
- 2) Click "Browse", select the firmware file, and then click "Update". The firmware is updated.



4. Setting the IP Address

The IP address that is used to connect the printer to the network can be automatically obtained from the DHCP server or it can be manually set. When it leaves the factory, the IF1-ET01 is programmed to obtain the IP address from the DHCP server automatically. To change the IP address, enter it manually.

■ IP address when connecting to the network for the first time

After the printer is switched on, the IF1-ET01 automatically obtains the IP address from the DHCP server within 60 seconds. If an IP address cannot be obtained automatically, the static IP address (169.254.1.10) that had been set in the IF1-ET01 before it left the factory is applied.

■ Setting the IP address manually

- 1) Using your Web browser, access the Ethernet interface board setting screen. For the setting screen access method, see "3. Using the Ethernet Interface Board Setting Screen" (p.17).
- 2) Open the "Print server configuration" page and click "Edit."
- 3) In "TCP/IP settings" group, set "IP address from DHCP" to "Disable". The IP address will no longer be obtained from DHCP server automatically.
- 4) In "TCP/IP settings" group, set "IP address" to the IP address.
- 5) Click "Register" to save the changes.

Setting the IP address automatically

- 1) Using your Web browser, access the Ethernet interface board setting screen. For the setting screen access method, see "3. Using the Ethernet Interface Board Setting Screen" (p.17).
- Open the "Print server configuration" page and click "Edit."
- 3) In "TCP/IP settings" group, set "IP address from DHCP" to "Enable". The IP address will be obtained from the DHCP server automatically.
- 4) Click "Register" to save the changes. The "Please wait" page appears, and the changes are saved.
- 5) Switch on the printer.
 - After the printer is switched on, the IF1-ET01 automatically obtains the IP address from the DHCP server within 60 seconds.

■ Checking the IP address

To check, print the settings information. For details, see "2-4. Printing the Ethernet Interface Board Configuration" (page 16).

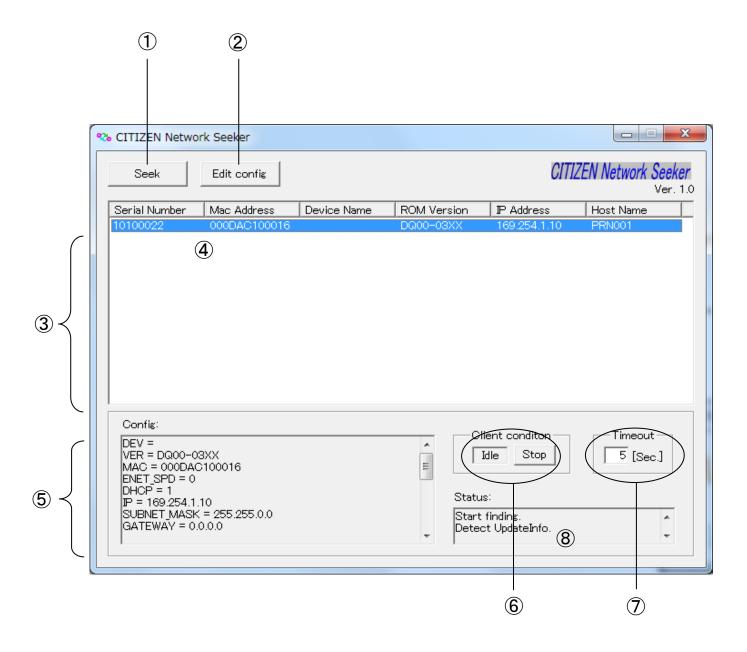
5. Network Seeker

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

5-1. 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 \Im .

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

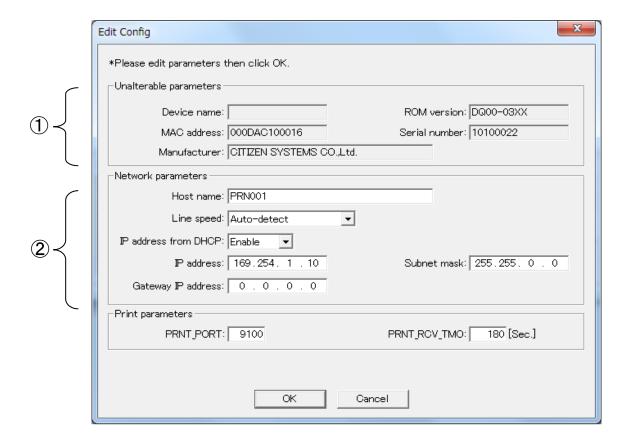
You can configure the time-out duration for searches and other operations.

8 Status log

View the status of the utility.

5-2. 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.