

# CITIZEN

**Ethernet Interface Board**

**MODEL : IF2-ET01**

**User's Manual**

Ver.1.03

**CITIZEN SYSTEMS JAPAN CO., LTD.**

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## 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, Windows 8 and Windows 10 are registered trademarks of Microsoft Corporation U.S.A.
- Ethernet is a registered trademark of Fuji Xerox Co., Ltd.
- Other company names and product names mentioned here are trademarks or registered trademarks of those companies.

## Safety Instructions

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- 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.

# 1. Introduction

Thank you for purchasing the Citizen IF2-ET01 Ethernet interface board.

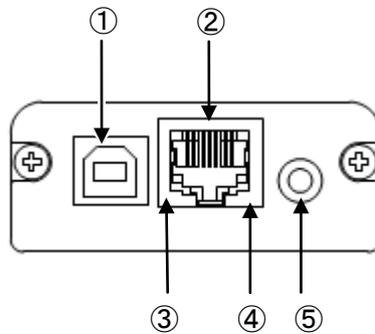
IF2-ET01 Ethernet Interface Board is compatible with the Line Thermal Printer CT-S251 series. Connecting the IF2-ET01 to a printer enables you to relay data between a network of multiple computers and the printer. In addition, the computers and printer are able to communicate with each other: the operational 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 A

## 1-2. Part Names and Functions

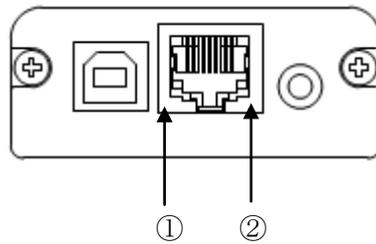
### Ethernet interface board unit



- 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

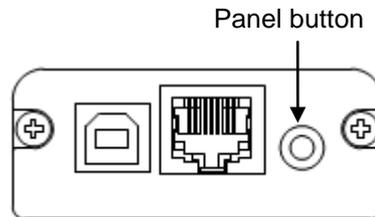
Transmission speed	LED (green)
100 Mbps	On
10 Mbps / disconnected	Off

#### 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.



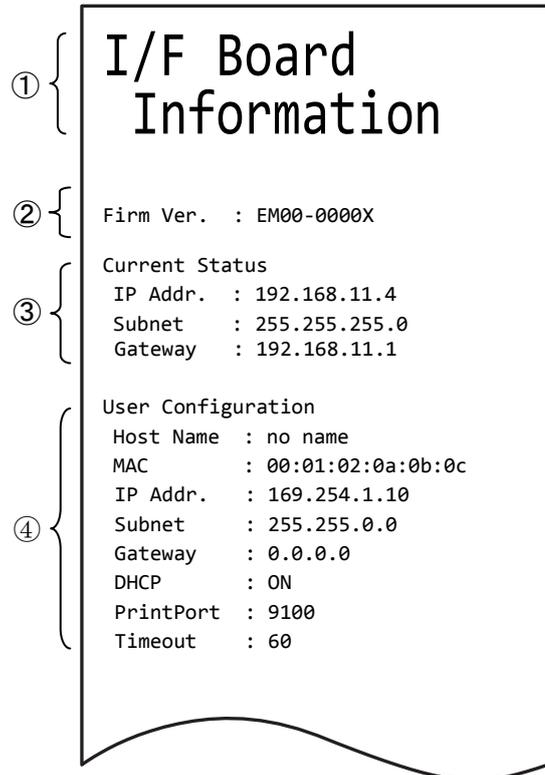
### 1-4-1. Printing the Ethernet Interface Board Configuration

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

#### ■ Configuration items that are printed

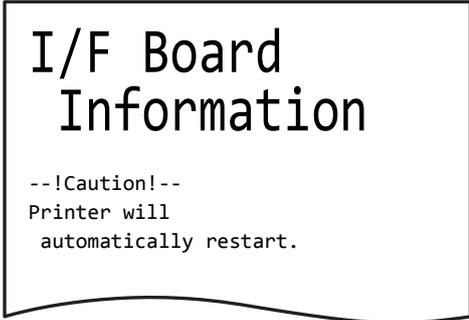
- ① Title of the printout.
- ② Firmware version of printer..
- ③ Network settings such as the IP address currently being used. When the network is not connected, the IP address is "0.0.0.0".
- ④ Same data as configuration settings on the Print Server Configuration screen.

\*\*\* 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.



## I/F Board Information

--!Caution!--  
Printer will  
automatically restart.

### 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.

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### Print Server Configuration

Network settings

Host name	no name
-----------	---------

TCP/IP settings

MAC address	00-0D-AC-10-00-3C
IP address from DHCP	Enable
IP address	192.168.111.40
Subnet mask	255.255.255.0
Gateway IP address	192.168.111.1

Print settings

Print port number	9100
Time-out duration for print data	60[Second]

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## 1-5-2. Changing the Print Server Configuration

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

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### Print Server Configuration

Please edit parameters then click "Save".

Network settings

Host name	no name <small>0-31[Characters]</small>
-----------	---

TCP/IP settings

MAC address	00-0D-AC-10-00-3C
IP address from DHCP	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
IP address	169.254.1.10
Subnet mask	255.255.0.0
Gateway IP address	0.0.0.0

Print settings

Print port number	9100
Time-out duration for print data	60 <small>0-65535[Second]</small>

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[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.

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### Print Server Configuration

Printer will automatically restart.

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### 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"

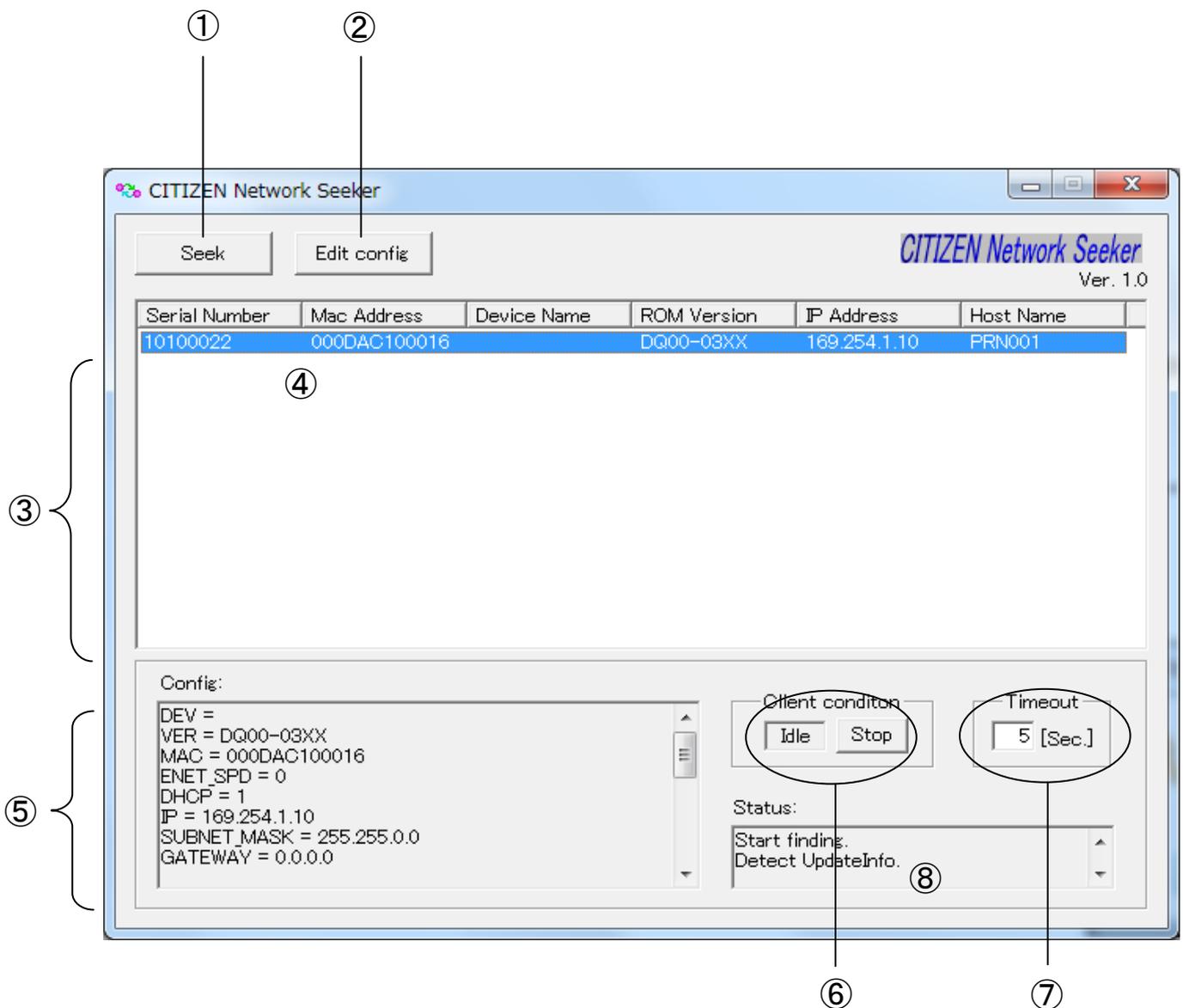
## 2-2. Network setting from “Network Seeker”

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”.

The screenshot shows a dialog box titled "Edit Config" with a close button in the top right corner. The dialog contains the following sections:

- Unalterable parameters:** This section is marked with a circled 1. It contains fields for Device name, ROM version (DQ00-03XX), MAC address (000DAC100016), Serial number (10100022), and Manufacturer (CITIZEN SYSTEMS CO.,Ltd.).
- Network parameters:** This section is marked with a circled 2. It contains fields for Host name (PRN001), Line speed (Auto-detect), IP address from DHCP (Enable), IP address (169.254.1.10), Subnet mask (255.255.0.0), and Gateway IP address (0.0.0.0).
- Print parameters:** This section contains fields for PRNT\_PORT (9100) and PRNT\_RCV\_TMO (180 [Sec.]).

At the bottom of the dialog are "OK" and "Cancel" buttons. A note at the top of the dialog reads: "\*Please edit parameters then click OK."

- 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.

