BIXOLON®

Network Connection Manual

XT / XD7 Series

Ver. 2.02

www.bixolon.com

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1. Introduction

This Network manual provides information on the connection of network with the Industrial Label printer. We at BIXOLON maintain ongoing efforts to enhance and upgrade the functions and quality of all our products. In following, product specifications and/or user manual content may be changed without prior notice.

2. Precaution

1) The printer has to be within 100m(Outdoor) from AP(Access point) to connect WLAN. Although 35m is able to communicate in door, WLAN could be affected by environment to be shorten. The wireless LAN signal strength can be checked by LCD Display.

Icon	Status	Description
	ON	Disconnected to the AP(Access Point)
	OFF	No WLAN Interface
	ON	Connect to an AP. Signal strength : 4
	ON	Connect to an AP. Signal strength : 3
	ON	Connect to an AP. Signal strength : 2
	ON	Connect to an AP. Signal strength : 1

2) The maximum separating distance may be shortened if transmission obstacles, such as cement walls, are present

3) If a device (such as a microwave oven, wireless LAN, etc.) that uses the same frequency is present, transmission may be interrupted. Separate the printer and Bluetooth-enabled device from such interrupting devices by a distance of at least 5m.

3. How to Connect

Both Ethernet and WLAN can be configured through the printer's LCD Display, USB, Ethernet or WLAN interface.

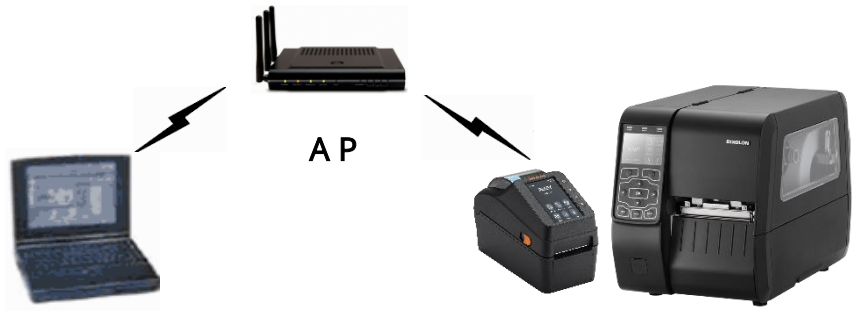
When you want to change the Ethernet or WLAN of the printer, the network settings of the host(PC, PDA, etc) and Ethernet or WLAN of the printer must configured properly configured so that communication can be established.

3-1 Connecting Printer

1) USB
Connect the USB cable to the printer

2) Ethernet
Connect the LAN cable to the printer
A direct cable or cross cable can be connected to the Hub or Host for use.

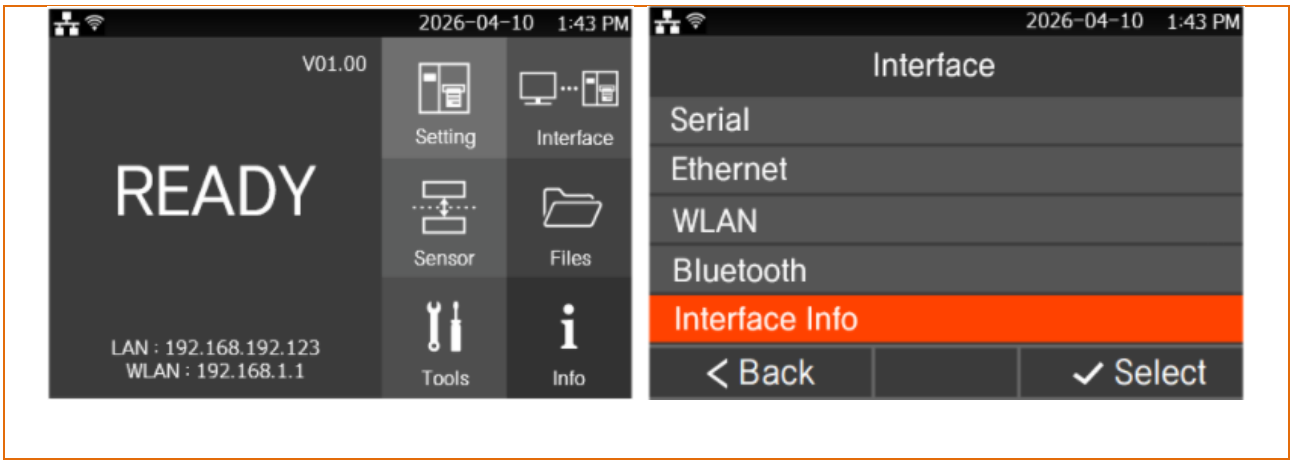
3) WLAN
Connect to the AP(Access Point) configured in Infrastructure mode in order to connect to the Wireless network.



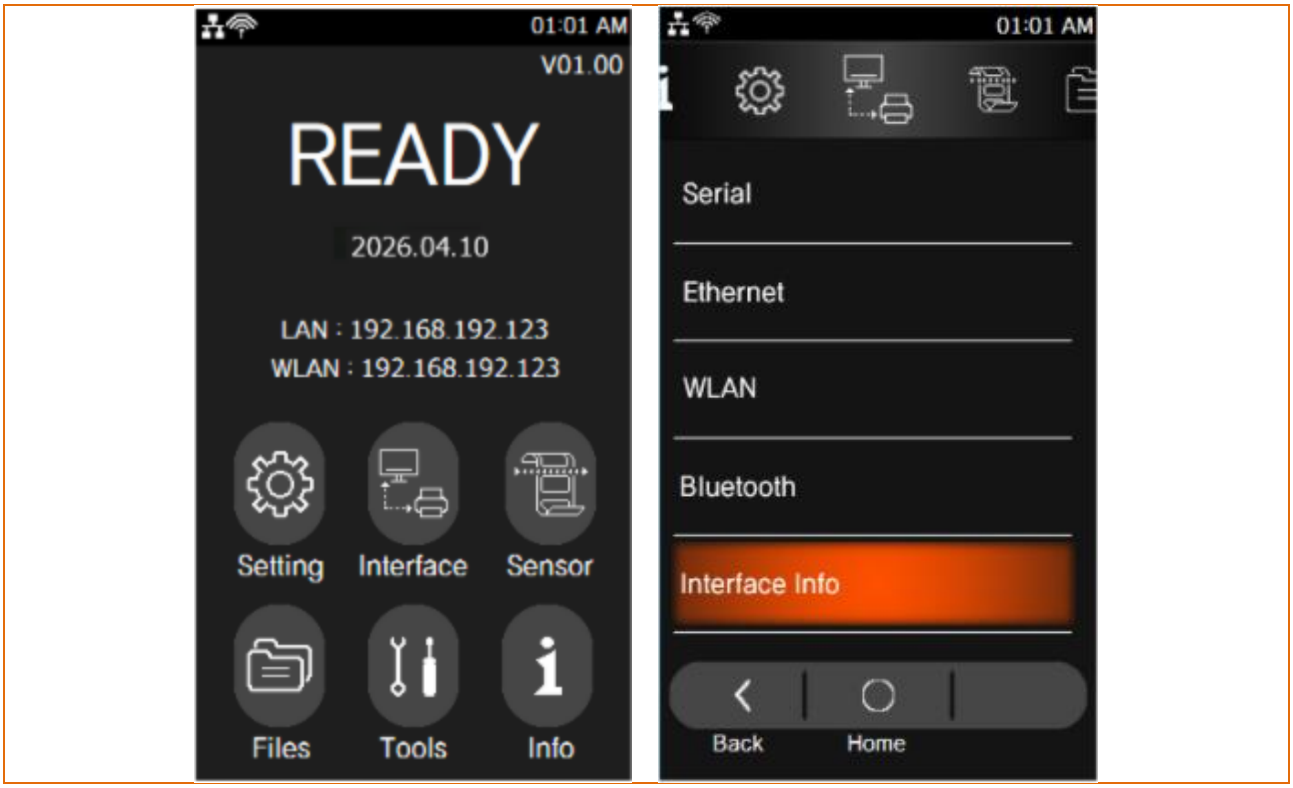
Infrastructure mode

3-2 Check Network Setting

Setting information can be checked by selecting [Interface] – [Ethernet] or [WLAN] in the initial menu of LCD or the information can be printed out by selecting [Interface] – [Interface Info]



[Standard LCD Model]

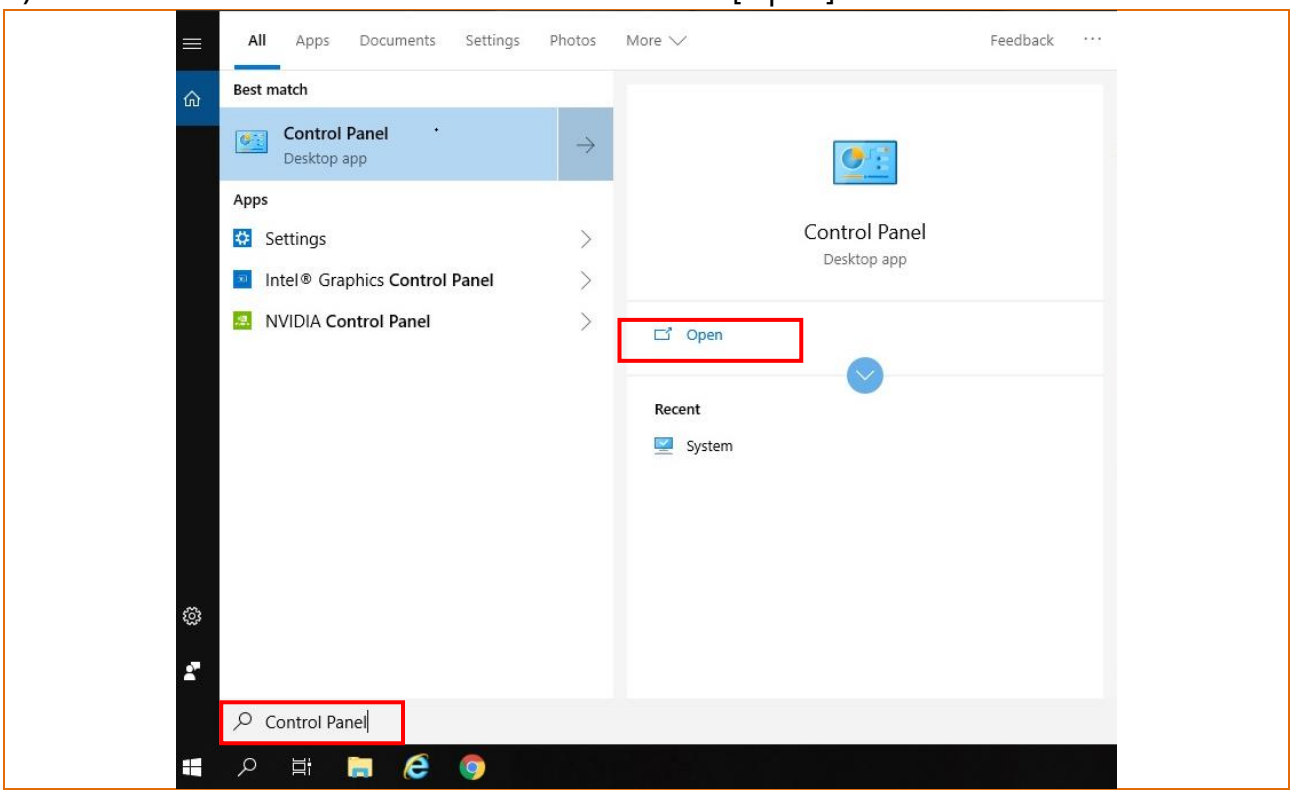


[Touch LCD Model]

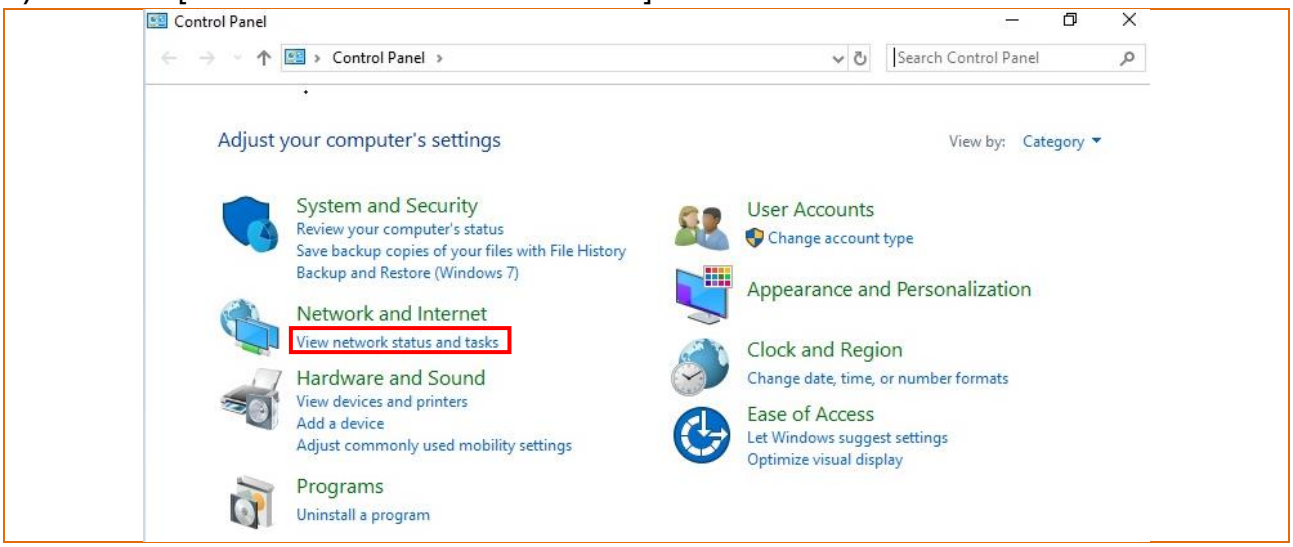
3-3 Initial Wireless LAN Connection(for Windows 10/11)

If a wireless LAN utility program is installed, set it using the program or exit the wireless program and set it in the following orders.

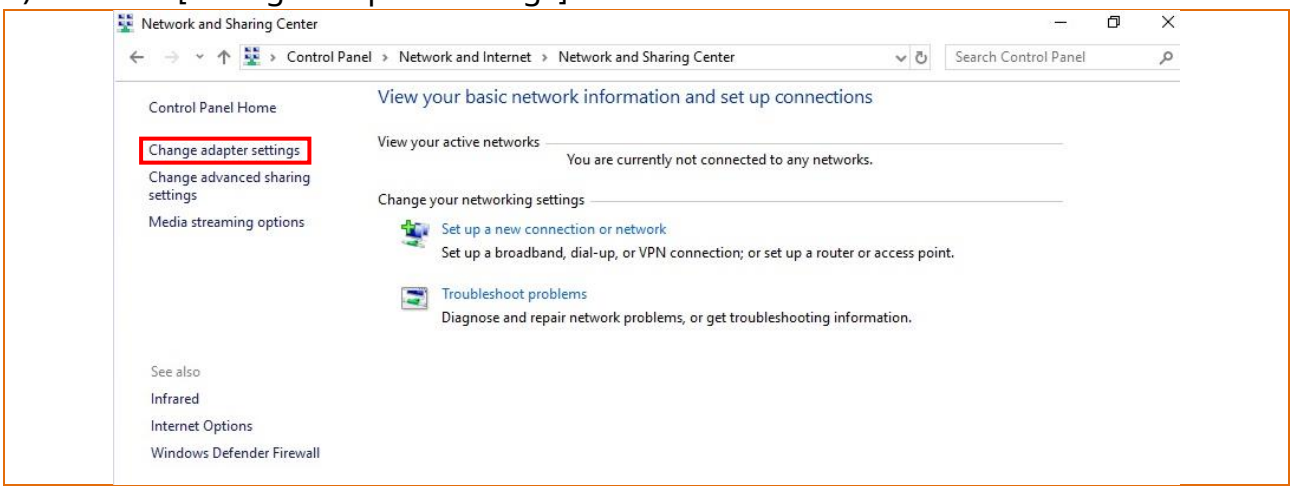
1) Search the “Control Panel” and then Click the [Open].



2) Click the [View network status and tasks].

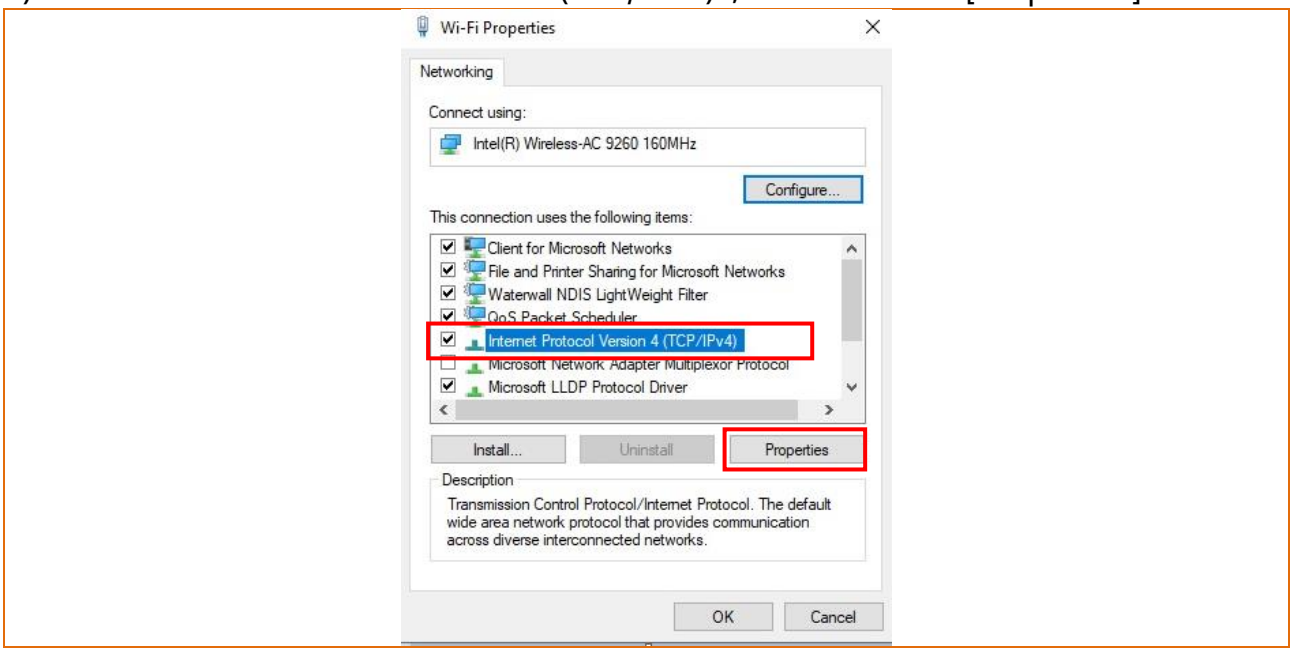


3) Click the [Change adapter settings].

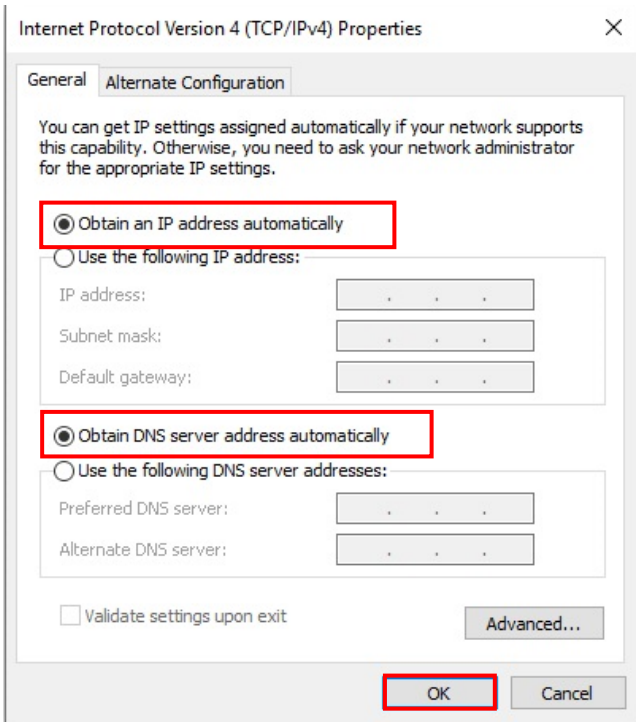


Click the “WiFi Properties”.

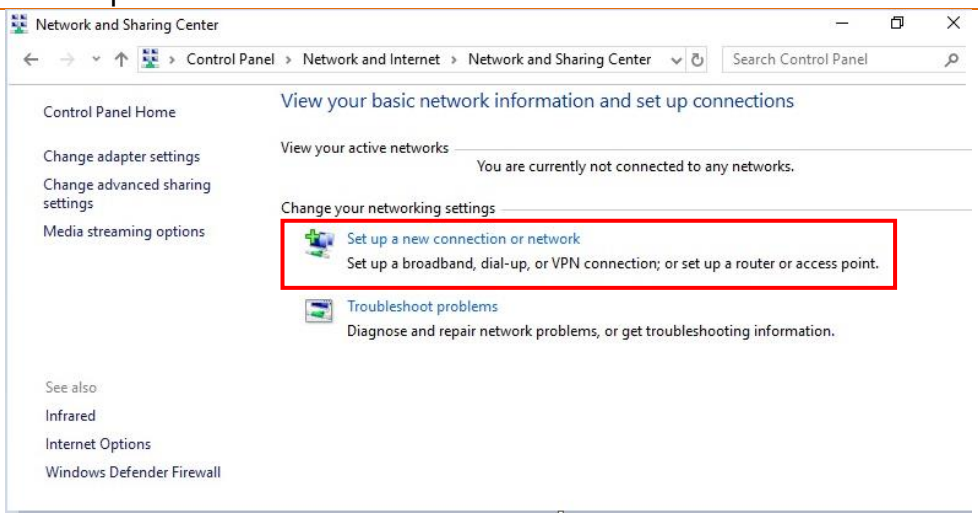
4) Select “Internet Protocol Version 4(TCP/IPv4)”, and then click [Properties].



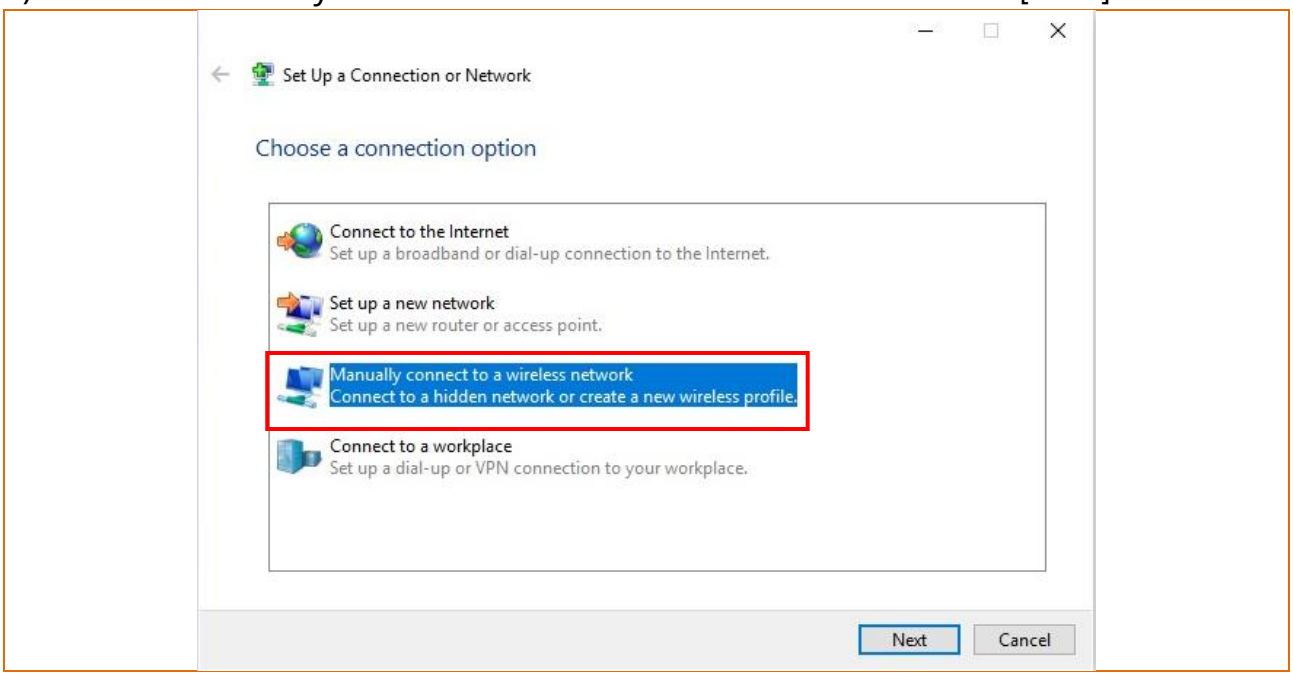
5) Set the IP settings as shown below, and then click [OK].



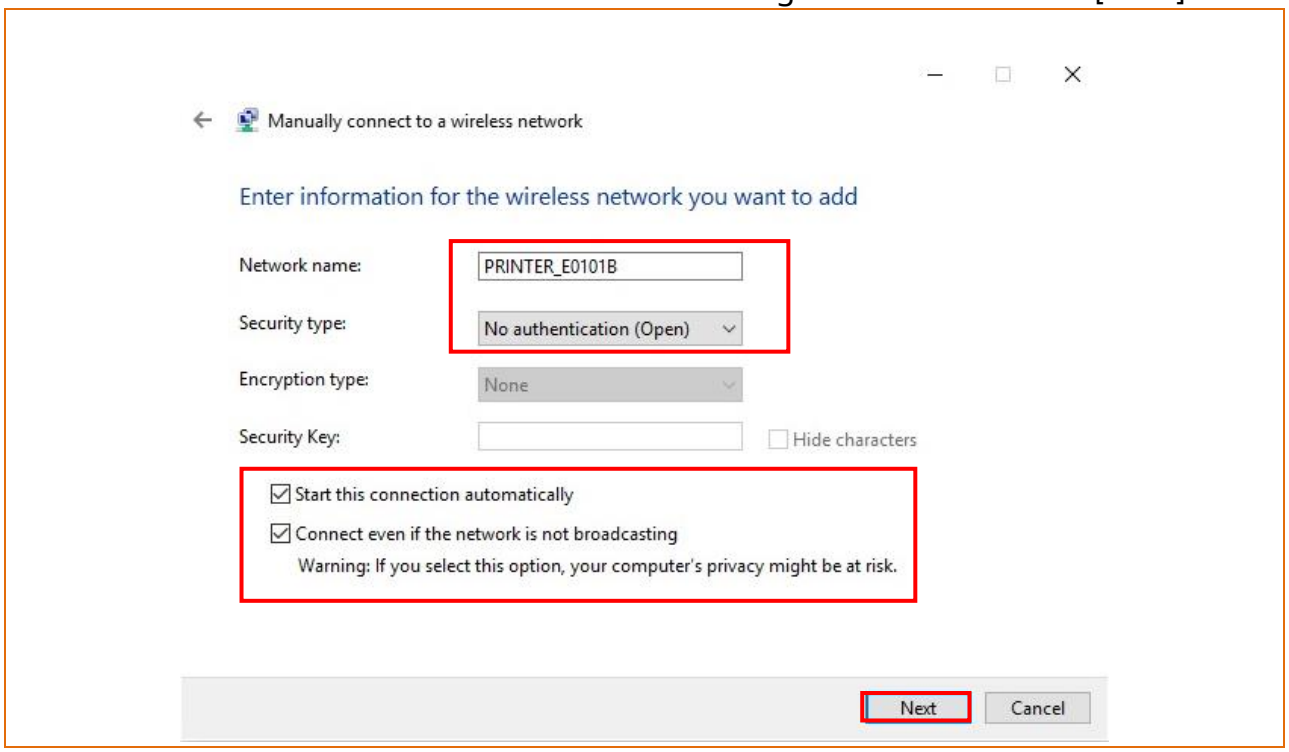
6) Click the “Set up a new connection or network”.



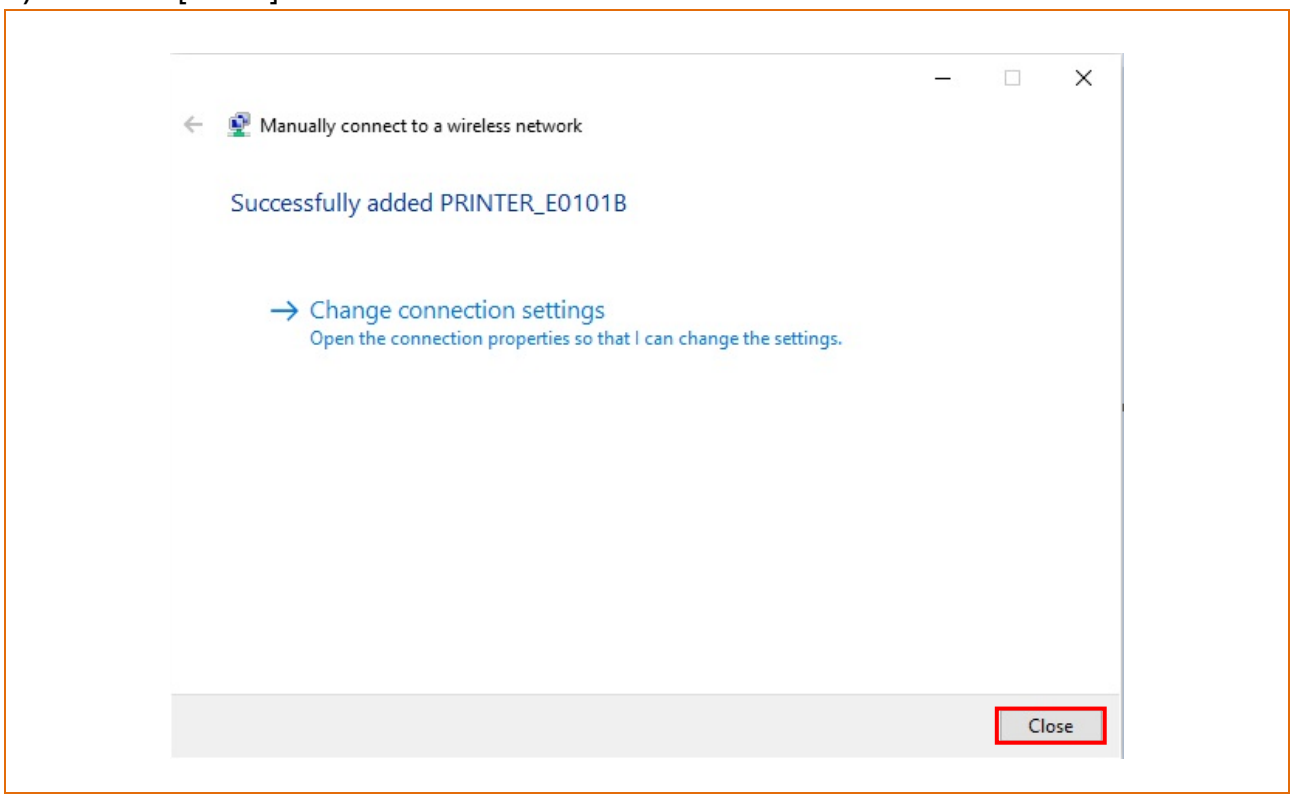
7) Click the “Manually create a wireless network” and then click the [Next].



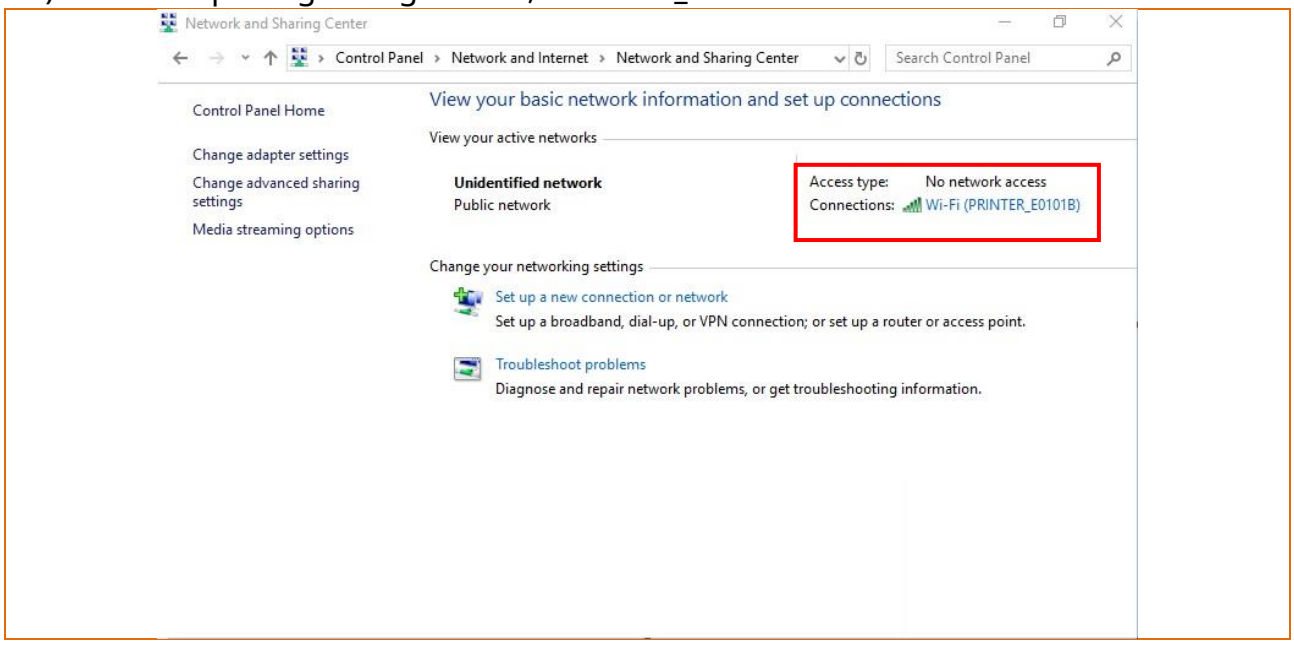
8) “Network name” = PRINTER_XXXXXX
“Security type” = Open,
Check “Start this connection automatically”,
“Connect even if the network is not broadcasting” and then click the [Next].



9) Click the [Close].



10) After completing configuration, PRINTER_XXXXXX network will be created.

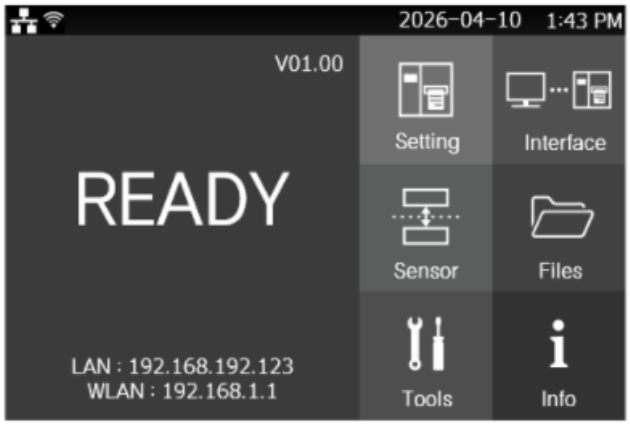


When the printer is set to the default value(Soft-AP mode, SSID: PRINTER_XXXXXX), it will automatically connect.

4. Configuration

4-1 LCD Display

Ethernet / WLAN settings can be configured by selecting [Interface] in printer LCD Display menu.



[Standard LCD Model]

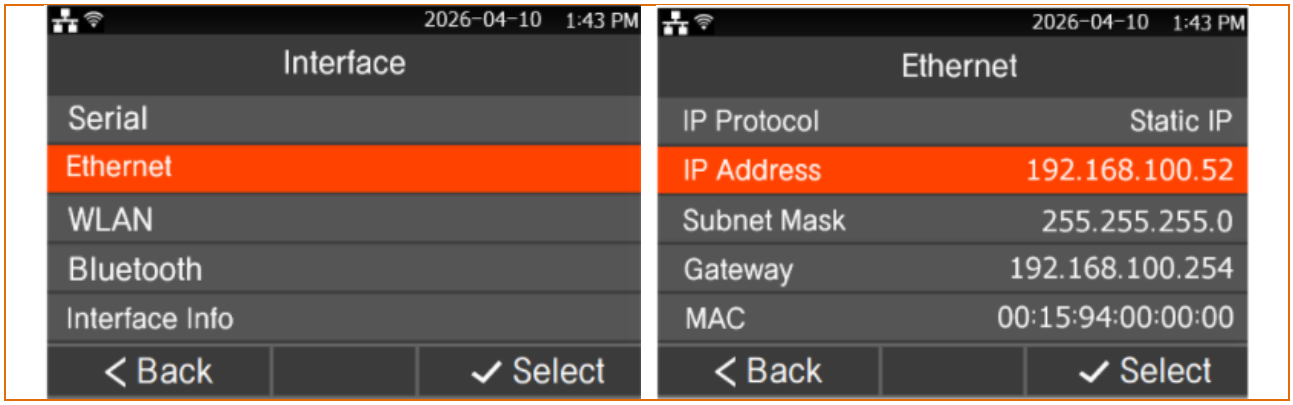


[Touch LCD Model]

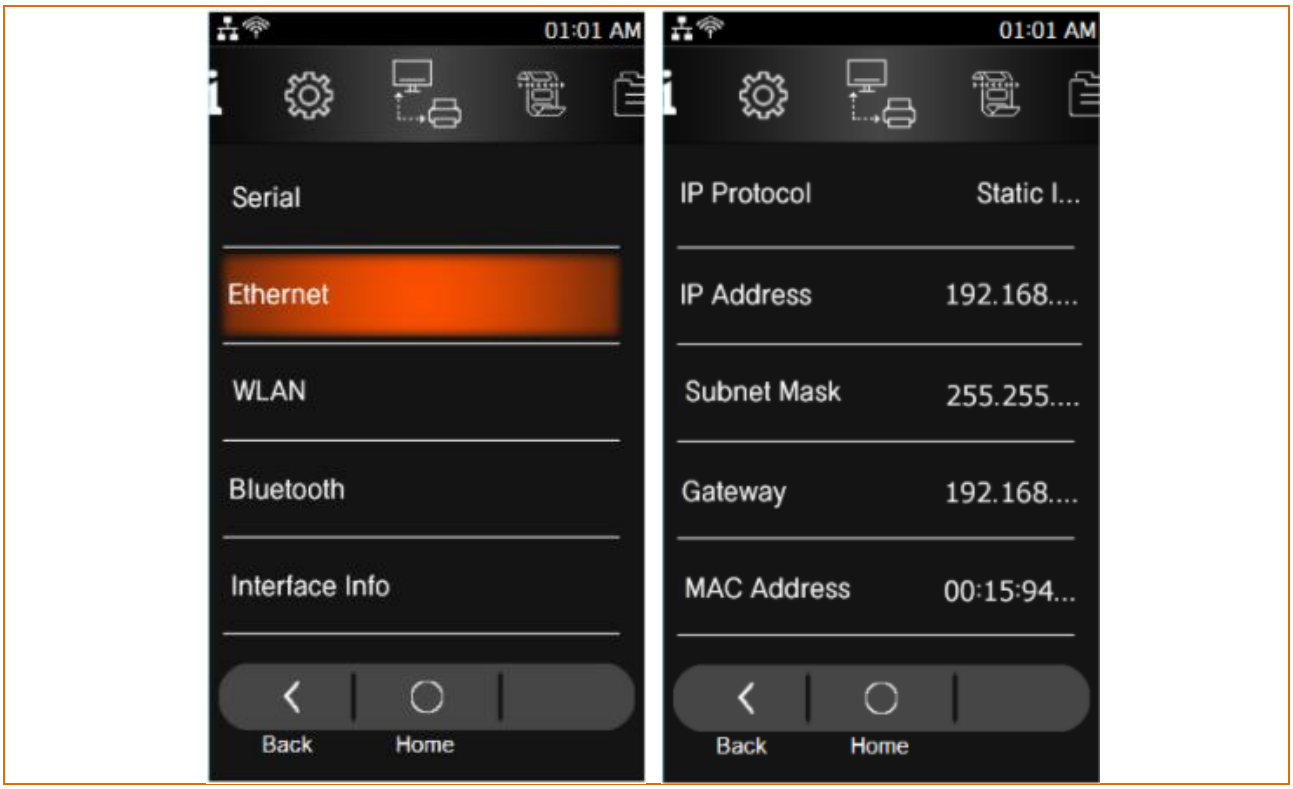
4-1-1 Ethernet Configuration

Ethernet settings can be configured by selecting [Ethernet] in printer LCD Display menu.

After inputting appropriate [IP address], [Subnet Mask] and [Gateway] for network environment in use, select [Select] button to save the configuration.



[Standard LCD Model]

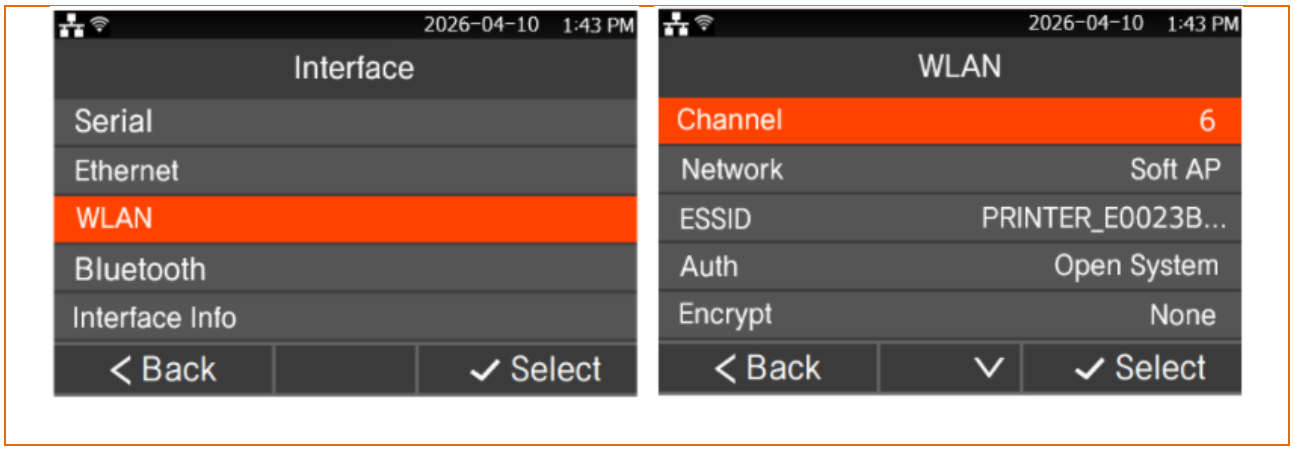


[Touch LCD Model]

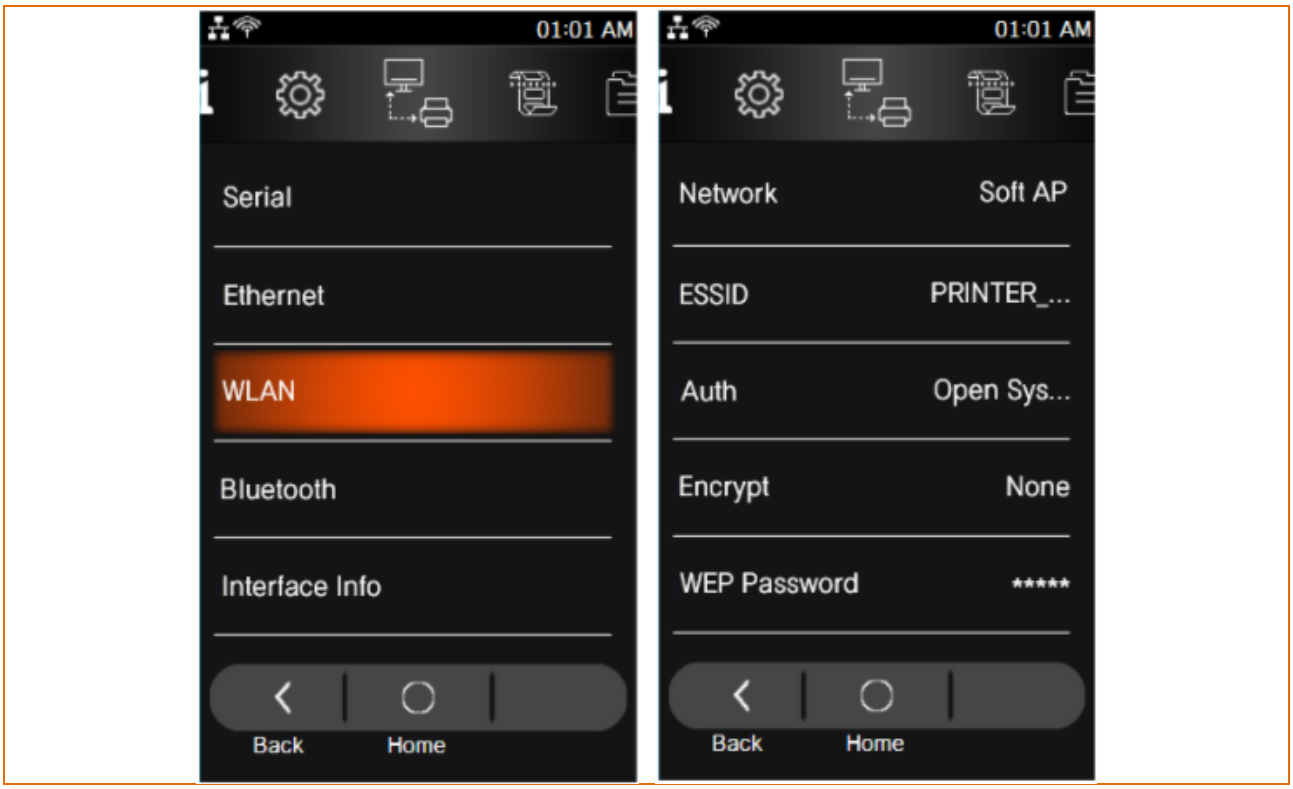
4-1-2 WLAN Configuration

[WLAN] settings can be configured by selecting [WLAN in printer LCD Display menu.

After inputting appropriate [IP address], [Subnet Mask] and [Gateway]
for network(WLAN) environment in use, select [Select] to save the configuration.



[Standard LCD Model]



[Touch LCD Model]

4-2 Ethernet/WLAN Setting Tool

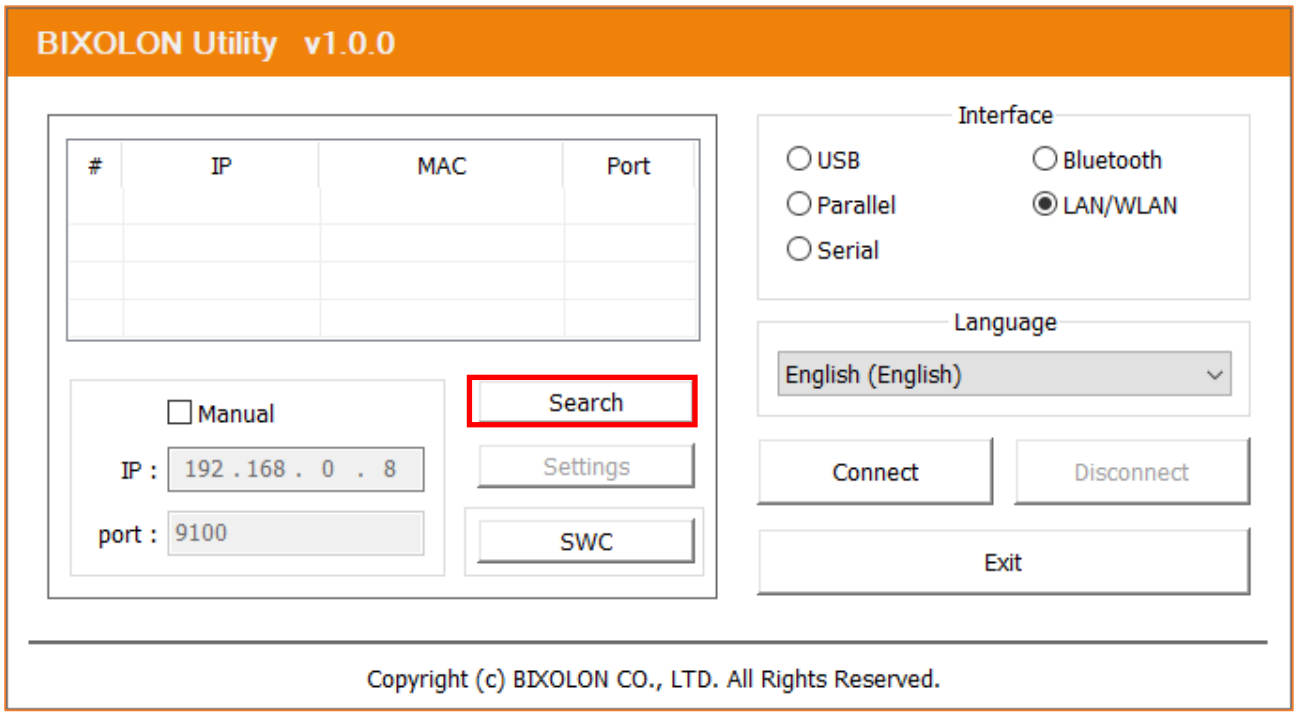
• Install Software Windows BIXOLON Utility and execute.
• To configure the **Network settings**, the Ethernet cable should be connected to the Printer while the host (PC) and printer are connected to the same network.

You can download from our home page the Software Windows BIXOLON Utility. (www.bixolon.com)

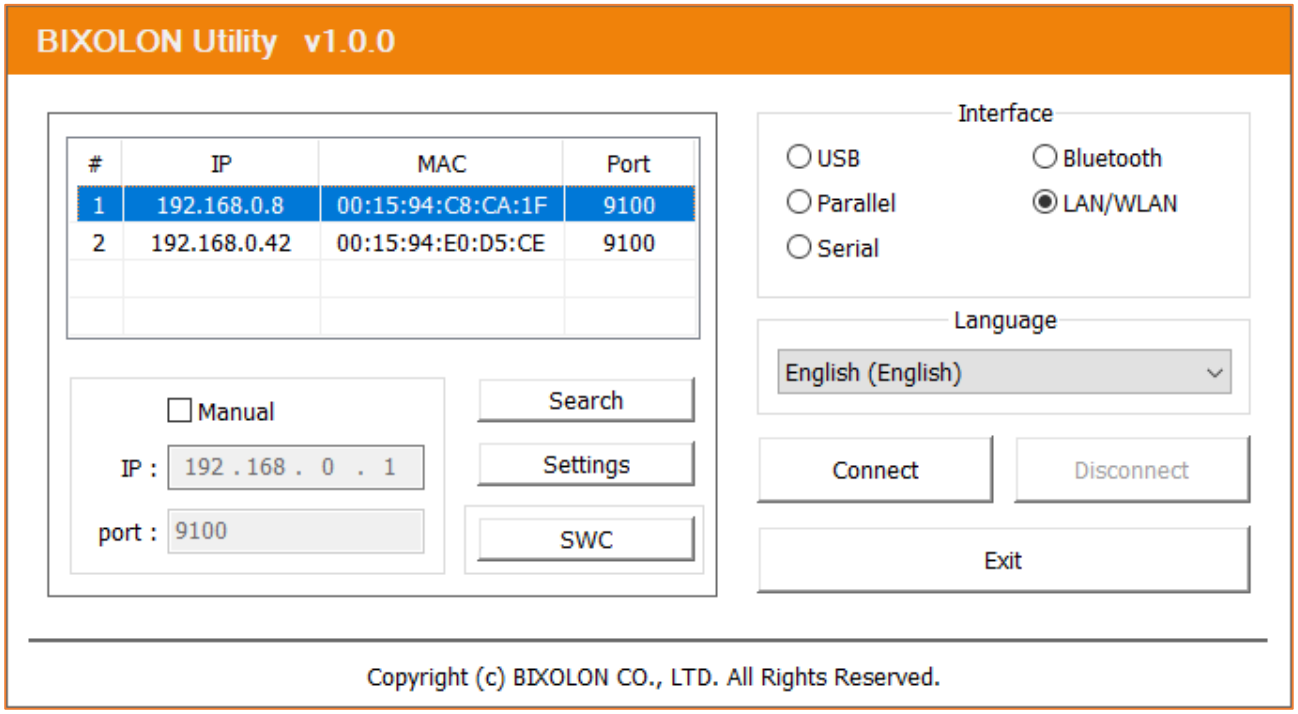
4-2-1 LAN/WLAN Setting

Network required for communication by searching for printers connected to the same wired/wireless network as the host You can set the information.

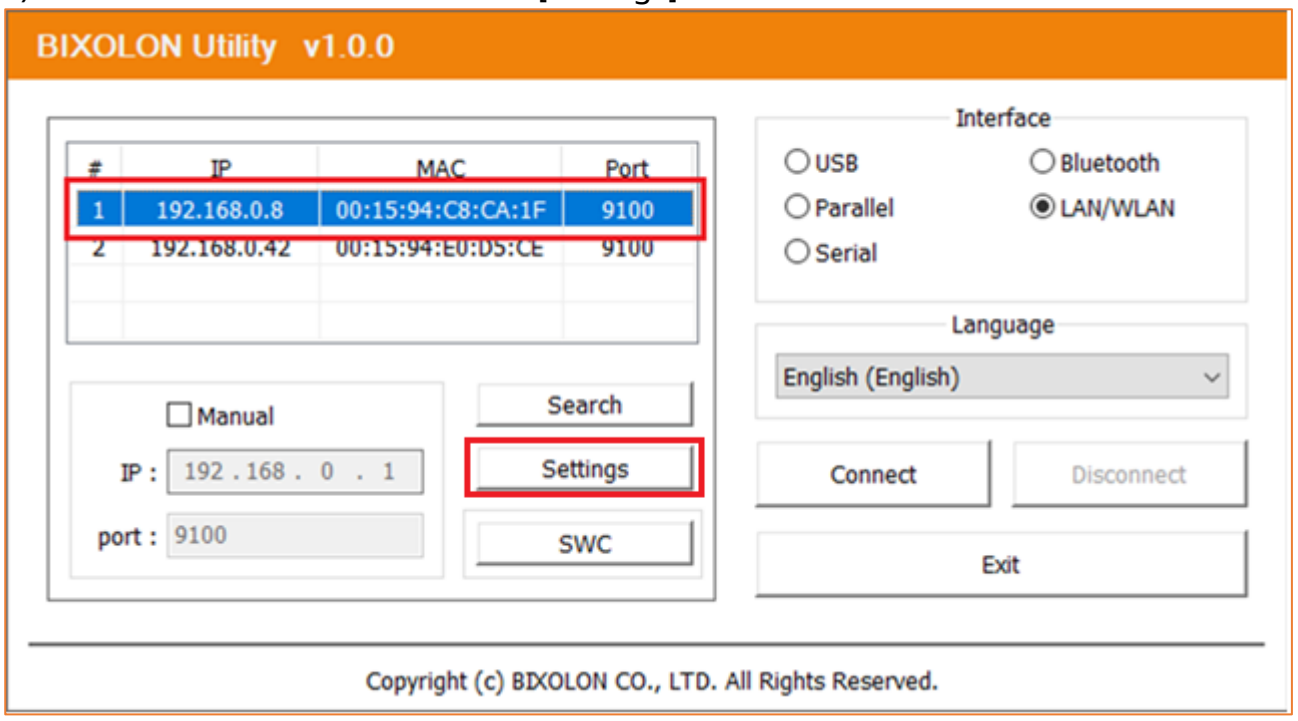
1) Please click the [Search] button.



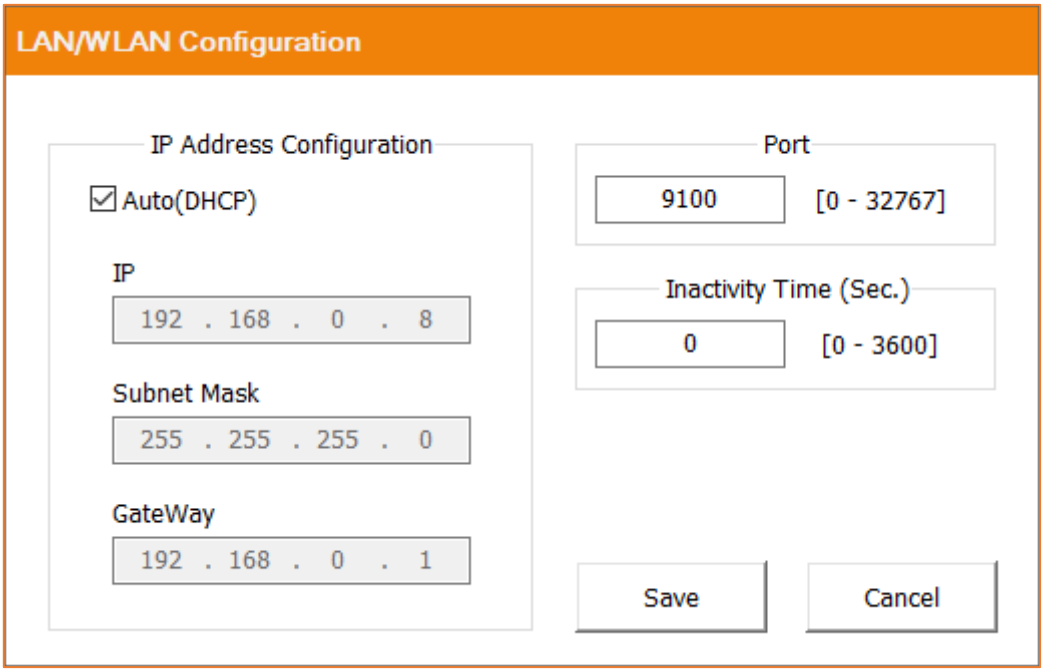
2) The printer(s) that uses the same network at the host is displayed.



3) Double-click the item or click the [settings] button.



4) Click the [save] button after set the options.



If DHCP server is not supported, you have to assign IP address manually. Contact your network administrator for the assignable IP address.

4-2-2 Ethernet Setting Item

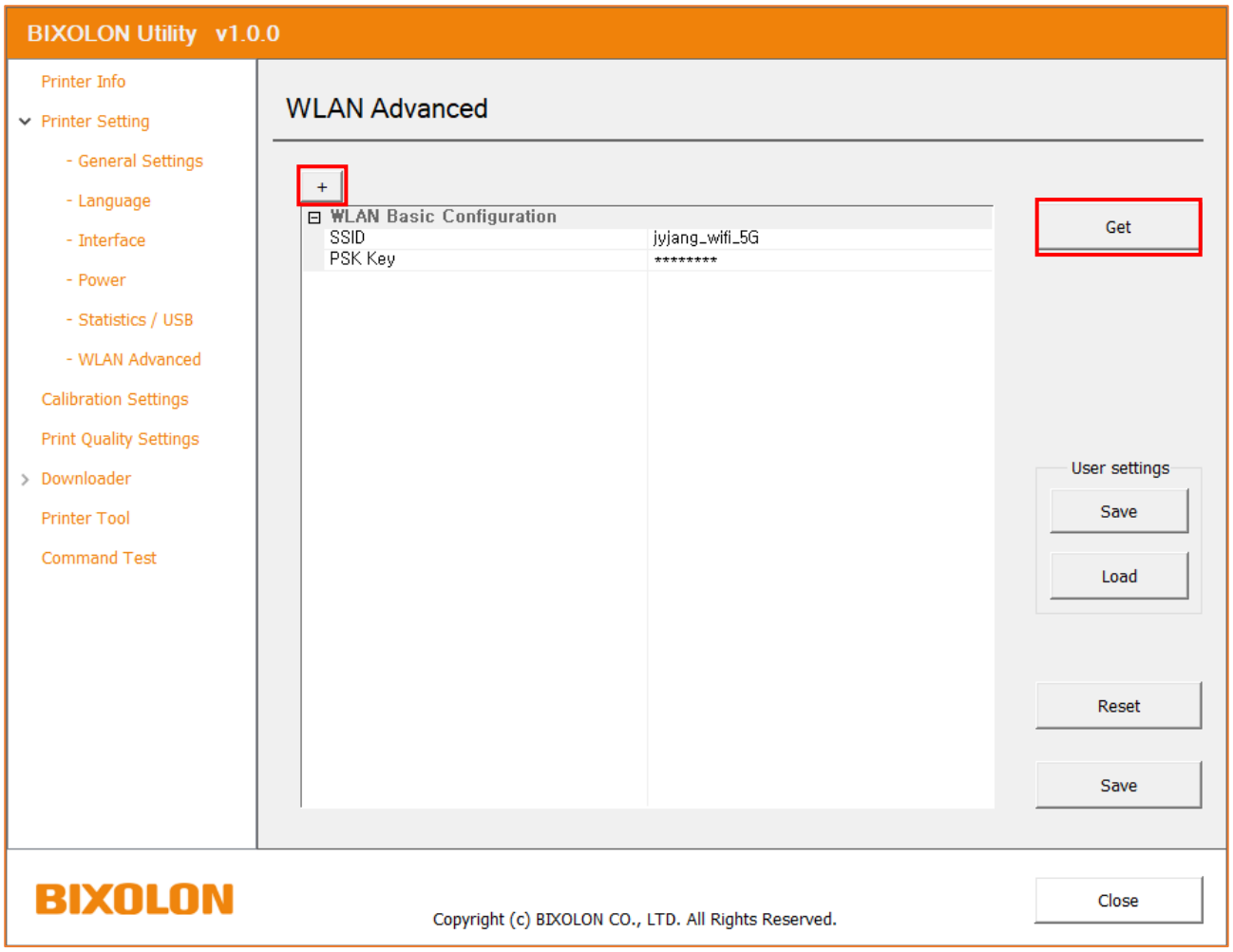
<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>IP Address Assignment Method</td><td>Assign IP address manually or automatically through DHCP.
If the network does not support DHCP, you must assign the IP address manually.</td></tr>
<tr><td>IP Address
Subnet Mask
Gateway
Port Number</td><td>This information is required for LAN/WLAN communication and a unique IP address must be entered.
<table>
<tr><th>Port Number</th><th>Description</th><th>TCP/UDP</th><th>Notes</th></tr>
<tr><td>9100</td><td>Printing</td><td>TCP</td><td>Used for printing</td></tr>
</table></td></tr>
<tr><td>Inactivity Time</td><td>If there is no communication between the host and printer during the set period of time, the connection will be closed automatically. If set to 0, this function is disabled.</td></tr>
</table>

4-4-3 WLAN Configuration

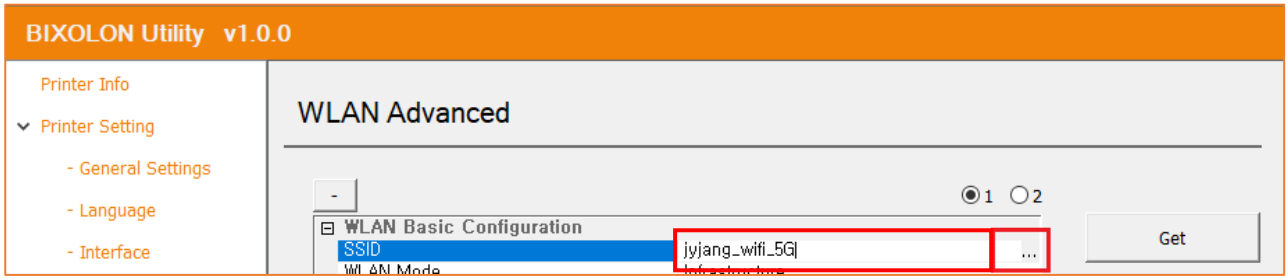
Configure the information required for the printer's wireless network communication.

This menu is available only when the printer is connected to USB.

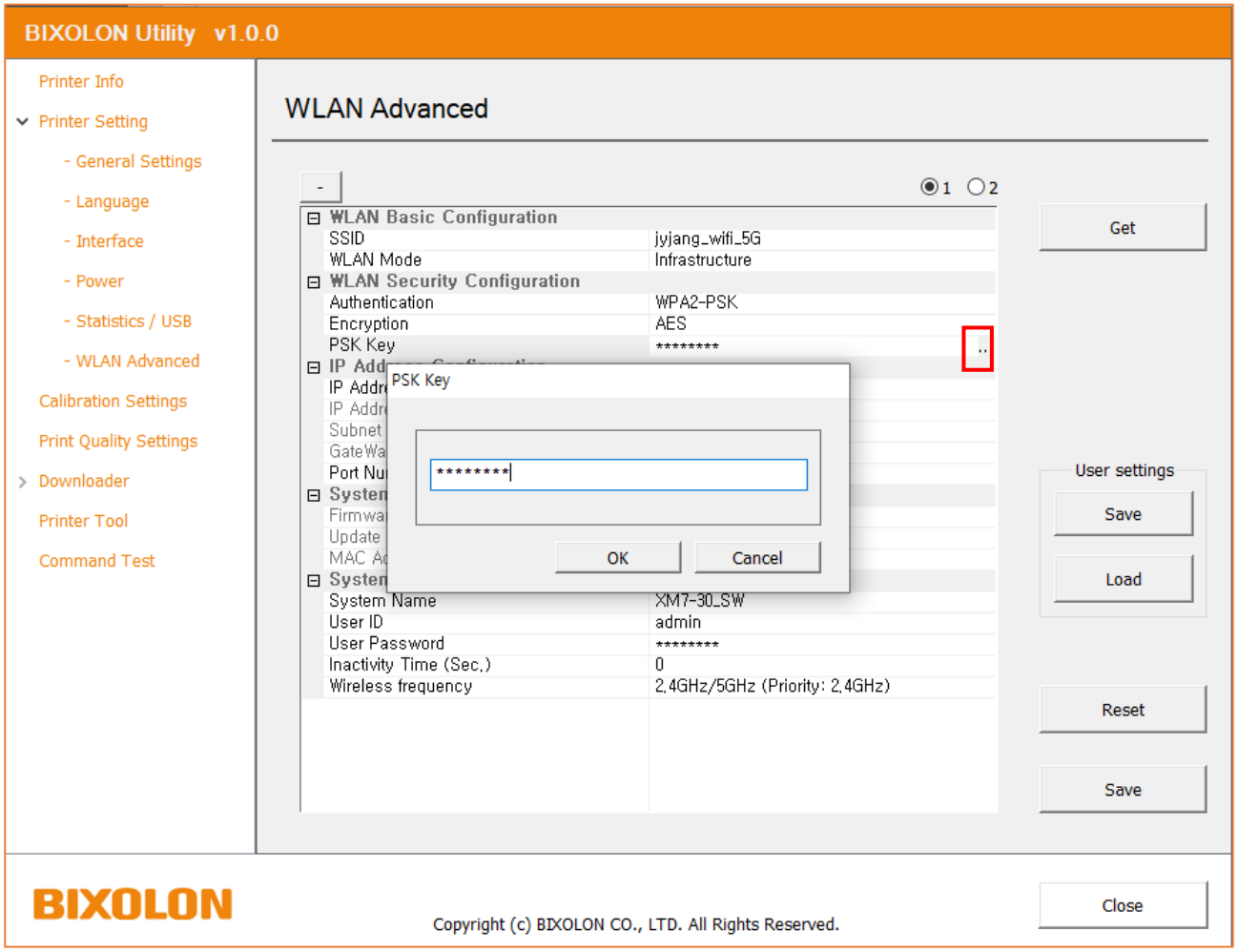
1) Click the [Get] and [+] buttons to load WLAN information.



2) Click the button[···] and choice the SSID what you want.



3) Click the button [···] and input the SSID Password.



4) Please click the save button after option setting.

5) You can save or load the current settings as a file.

4-2-4 WLAN Setting Item

1) WLAN Basic Configuration

Item	Description
SSID (Service Set Identifier)	A unique identifier that is included in all data header sent via WLAN. A maximum of 32 characters can be entered.
WLAN Mode	Choose one of the following WLAN connection methods: - Infrastructure - Ad-Hoc - Wi-Fi Direct - Soft AP (Access Point) ※ Certain models do not support Wi-Fi Direct and Soft AP.

2) WLAN Security

Item	Description
Authentication	Choose one of the following authentication methods: - Open System - Shared Key - WPA-PSK - WPA2-PSK - WPA-EAP - WPA2-EAP
Encryption	Choose one of the following encryption methods: - None - WEP-64 - WEP-128 - TKIP - AES - AES + TKIP
WEP-64 Key	Enter 5-letter key or 10-digit hexadecimal number. ※ Only characters that can be entered on the ASCII code table are allowed.
WEP-128 Key	Enter 13-letter key or 26-digit hexadecimal number. ※ Only characters that can be entered on the ASCII code table are allowed.
PSK Key	Enter at least 8-letter key. ※ Only characters that can be entered on the ASCII code table are allowed. A maximum of 63 characters can be entered.

EAP Mode	Choose one of the following EAP Modes: - EAP-PEAP - EAP-TTLS - EAP-TLS - EAP-LEAP - EAP-FAST
EAP ID	Enter a maximum of 32 characters for EAP ID.
EAP Password	Enter a maximum of 32 characters for EAP password.

3) IP Address Configuration

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>IP Address Assignment</td><td>Assign the IP address manually or automatically through DHCP. If the network does not support DHCP, you have to assign IP address manually.</td></tr>
<tr><td>IP Address
Subnet mask
Gateway
Port Number</td><td>This information is required for LAN/WLAN communication and a unique IP address must be entered. The communication port is set to 9100 by default. You have to change the port number via reference below table to use another port.
<table>
<tr><th>Port Number</th><th>Description</th><th>TCP/UDP</th><th>Notes</th></tr>
<tr><td>9100</td><td>Printing</td><td>TCP</td><td>Used for printing</td></tr>
</table></td></tr>
</table>

4) System Configuration

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>System Name</td><td>This string indicates the WLAN printer. A maximum of 64 characters can be entered.
※ This string may not be shown in certain printers.</td></tr>
<tr><td>User ID
User Password</td><td>User ID and Password are used to access a printer from a web browser. A maximum of 32 characters can be entered.</td></tr>
<tr><td>Inactivity Time</td><td>If there is no communication between the host and printer during the set period of time, the connection will be closed automatically. The value can be set between 0 and 3600 seconds (1 hour) by a unit of second. If set to 0, this function is disabled.</td></tr>
<tr><td>Wireless Frequency</td><td>
<table>
<tr><td>2.4GHz</td><td>2.4GHz is used for frequency.</td></tr>
<tr><td>5.0GHz</td><td>5.0GHz is used for frequency.</td></tr>
<tr><td>2.4GHz/5.0GHz
(Priority: 2.4GHz)</td><td>Both 2.4GHz/5.0GHz are used.
(2.4GHz has a higher priority.)</td></tr>
<tr><td>2.4GHz/5.0GHz
(Priority: 5.0GHz)</td><td>Both 2.4GHz/5.0GHz are used.
(5.0GHz has a higher priority.)</td></tr>
</table></td></tr>
</table>

5) Protocol

Item	Description
HTTPS	HTTPS (Hypertext Transfer Protocol over Secure Socket Layer) is a security enhanced version of HTTP. You can configure WLAN settings using the HTTPS protocol on a web browser. ※ This may not be supported by certain printers.
TELNET	Using the TELNET protocol, you can configure WLAN settings by TELNET interaction. ※ This may not be supported by certain printers.
FTP	Using the FTP protocol, you can configure WLAN settings by editing the file related to WLAN information. ※ This may not be supported by certain printers.
SNMP	MIB-2 (management information base-2) information can be read and written. ※ This may not be supported by certain printers.

6) SNMP

Item	Description
SNMP Community Name (Read)	This string indicates the name for trap reading.
SNMP Community Name (Write)	This string indicates the name for trap writing.
SNMP Trap Community	This string indicates the name for trap community.
SNMP Trap IP Address	This string indicates IP address for trap Server.

7) Certificate Upload

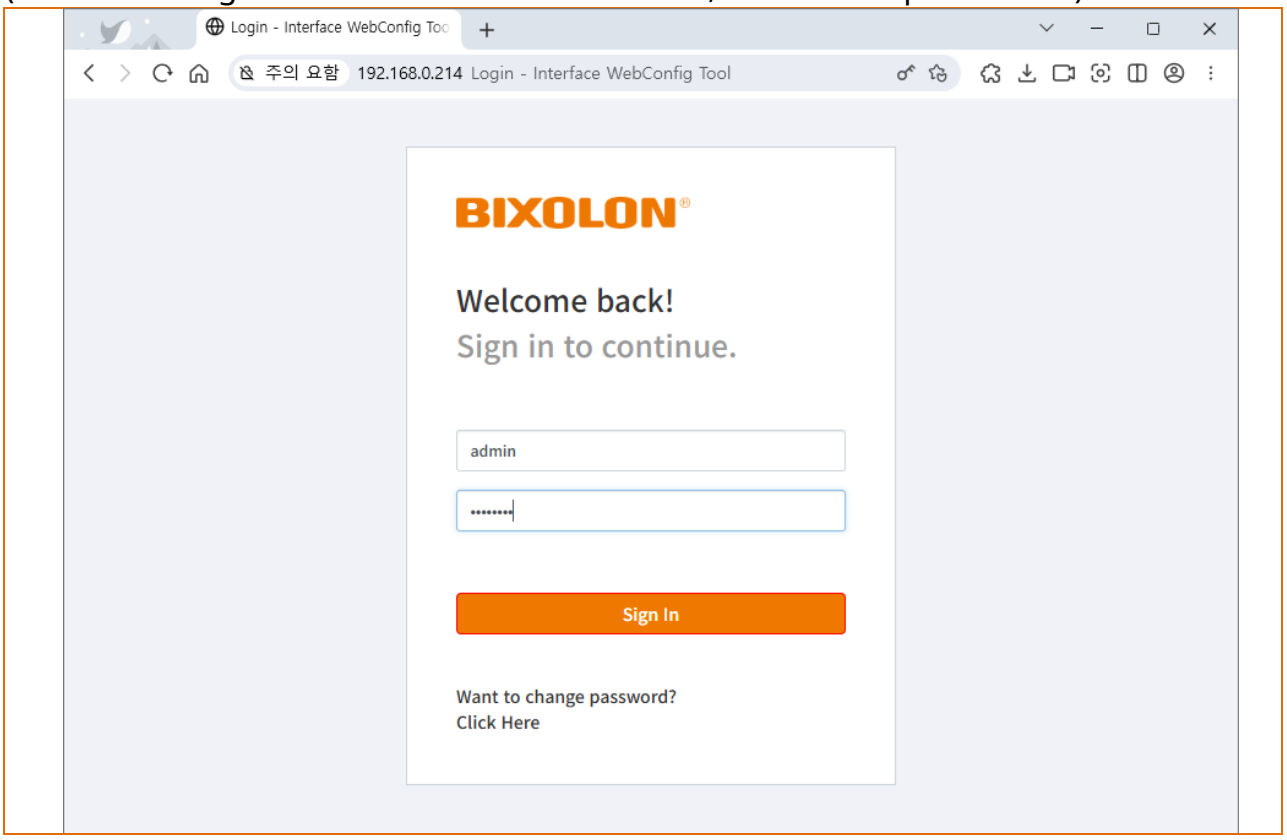
Item	Description
Certificate Type	Select the type of certificate to download to the printer. - CA (Certificate Authority) - Client Key - Client PEM
Certificate File	Start downloading by selecting the type of certificate to download to the printer.

8) Certificate Name

Item	Description
CA	A string representing the name of each downloaded certificate. Each certificate name is a file name used to download the certificate.
Client Key	
Client PEM	

4-3 Web Browser

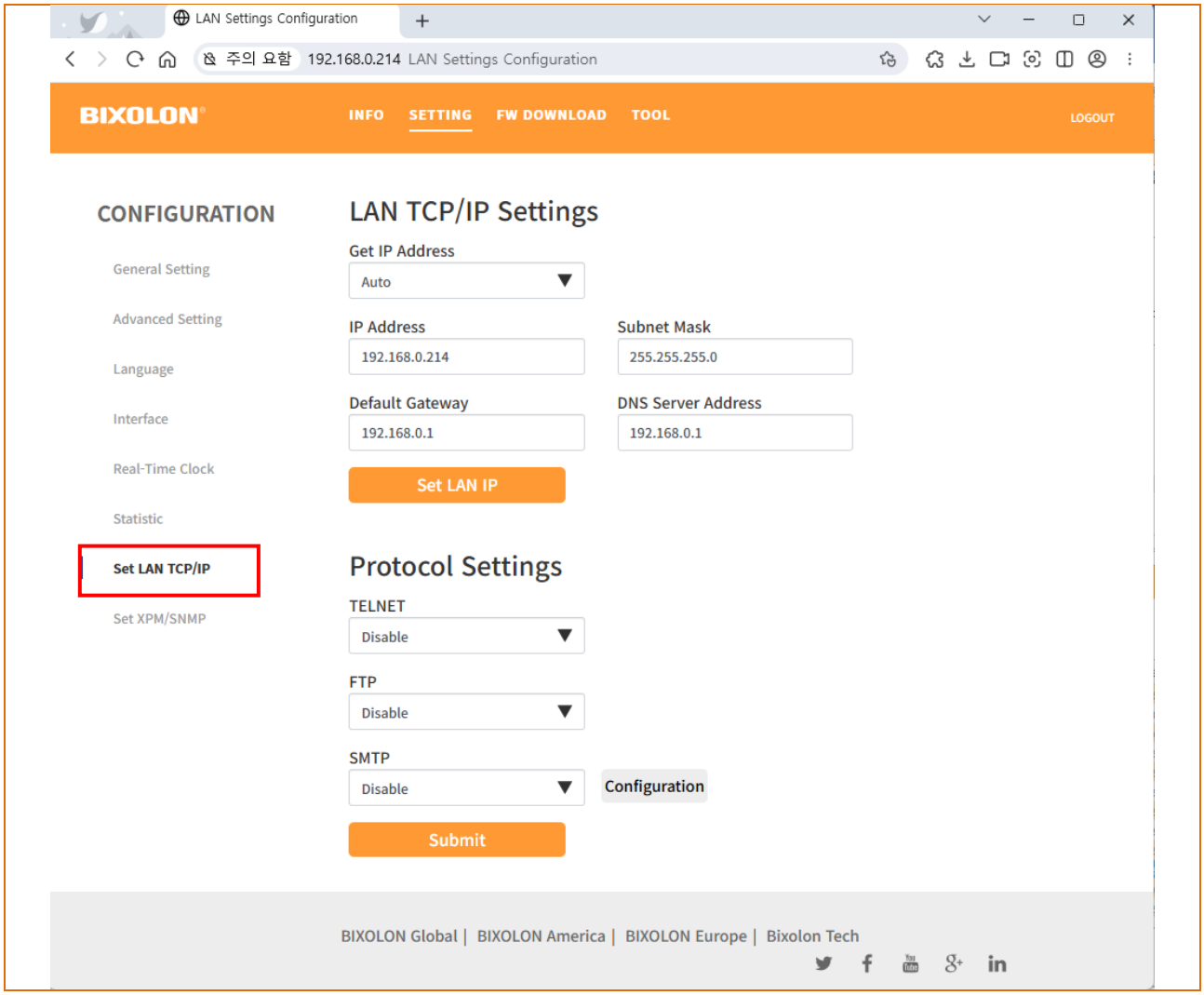
Enter the IP address of the printer in the address bar, and the following login window will pop up. Enter the Username and Password set for the printer.
(Default setting values are Username: “admin”, Password: “password”.)



When the Username and Password match the ones registered in the printer, the following window will be opened.

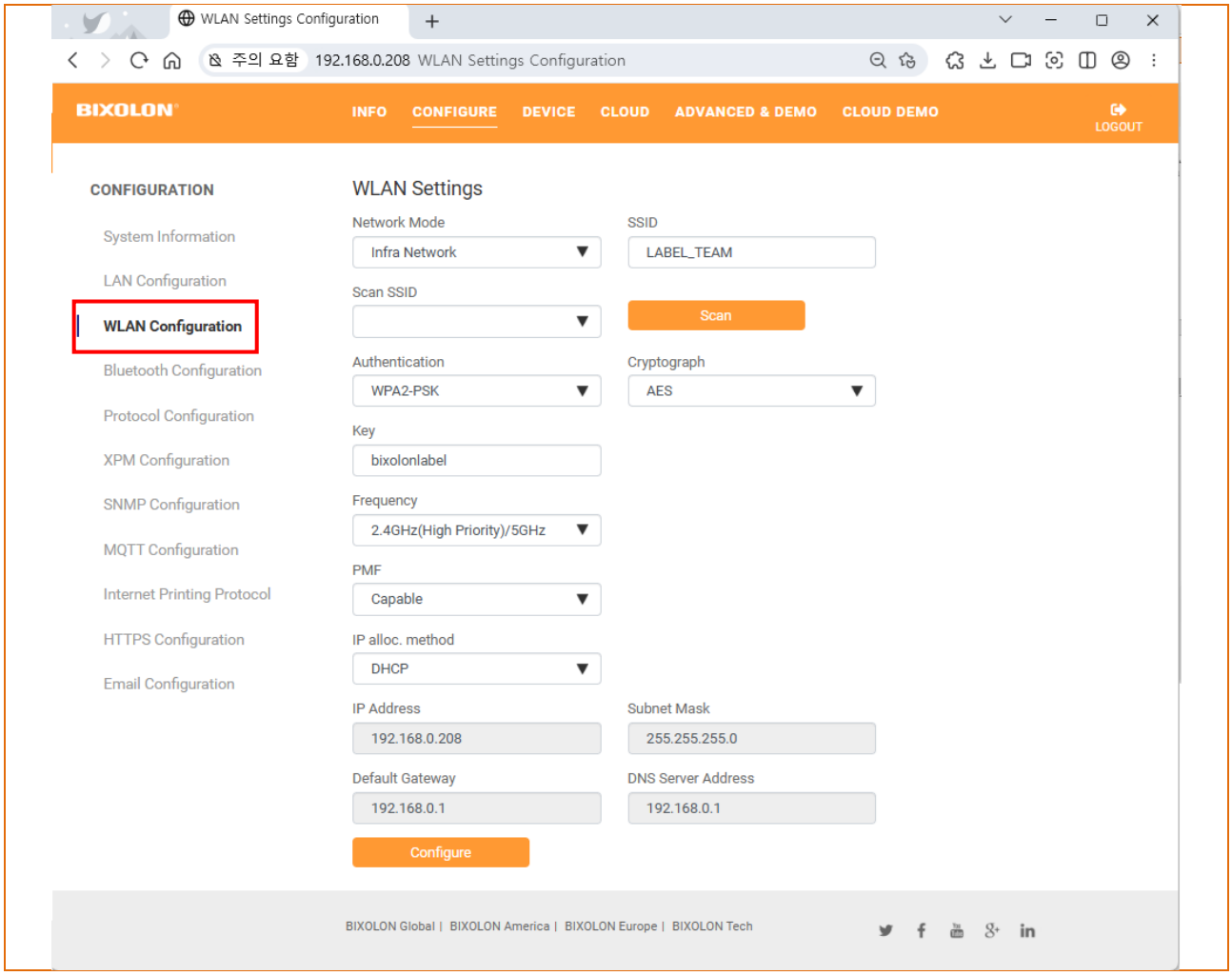
4-3-1 Ethernet Configuration Selection

Settings related to LAN, Protocol can be configured in this window.



4-3-2 Wireless LAN Selection

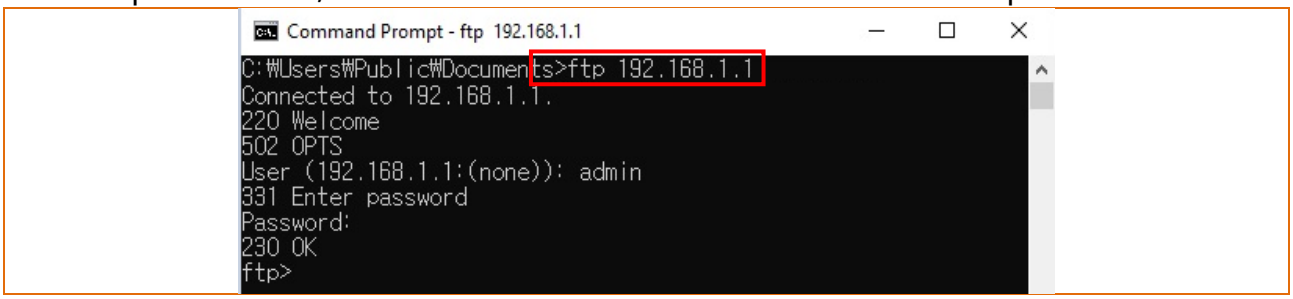
Settings related to WLAN can be configured in this window.



4-4 FTP

The configuration files will be downloaded and uploaded to and from the current path. In the following case, the current path is “C:\Users\Public\Documents”.

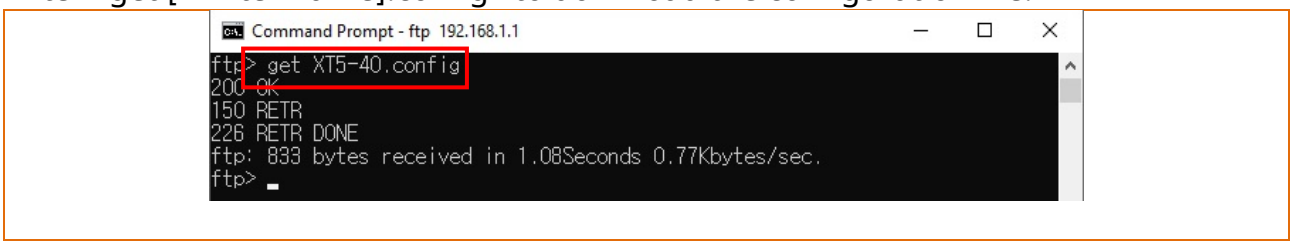
Enter “ftp Printer IP”, and enter the User and Password set for the printer.



Enter the “ls” command to check the file name to download.

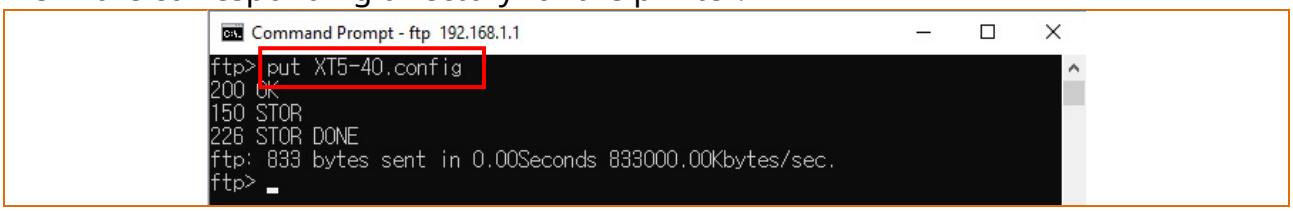


Enter “get [Printer name].config” to download the configuration file.

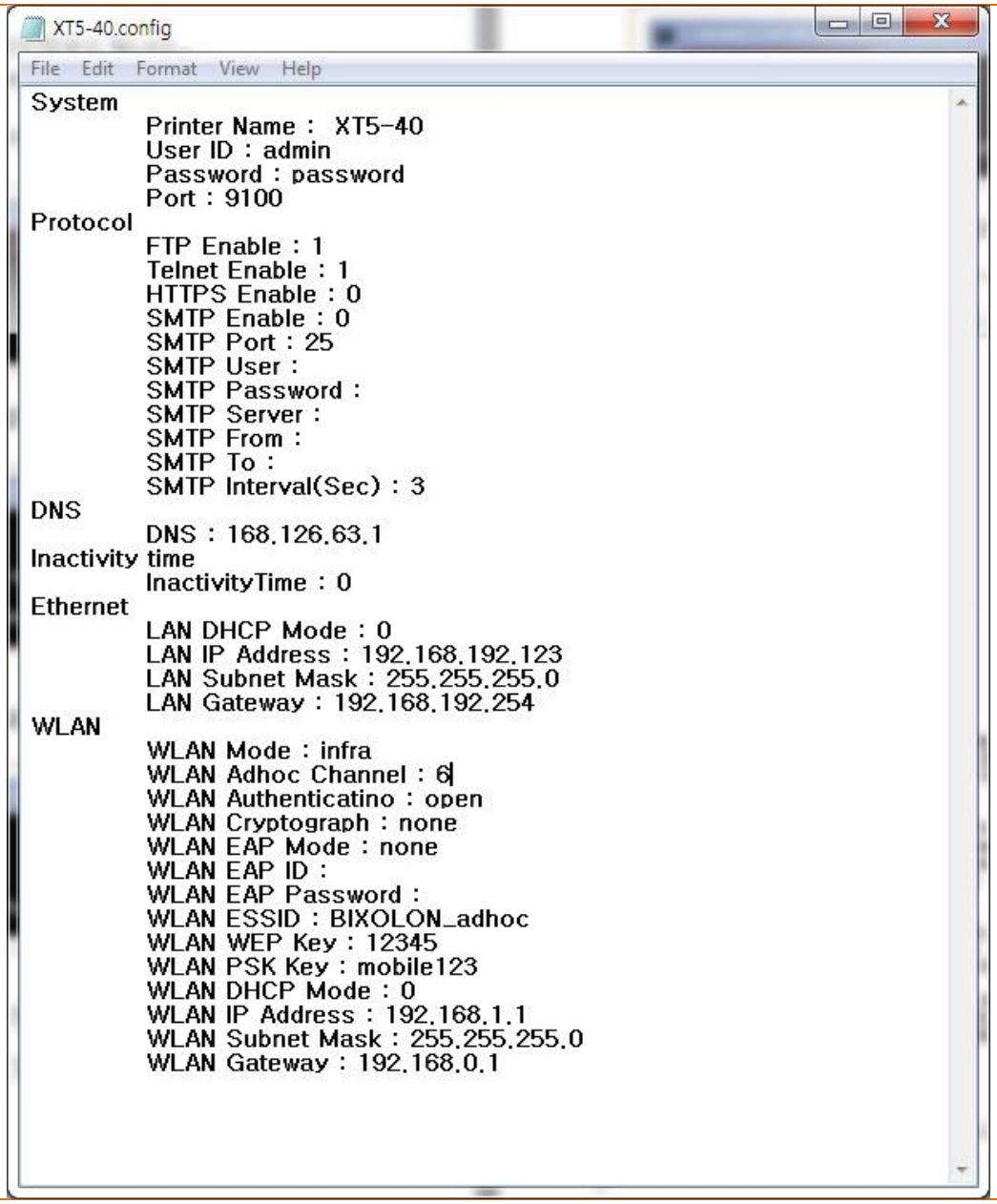


You can see that the “[Printer name].config” file is created in the corresponding directory.

Enter “put [Printer name].config” command if you want to upload the configuration file in the corresponding directory for the printer.



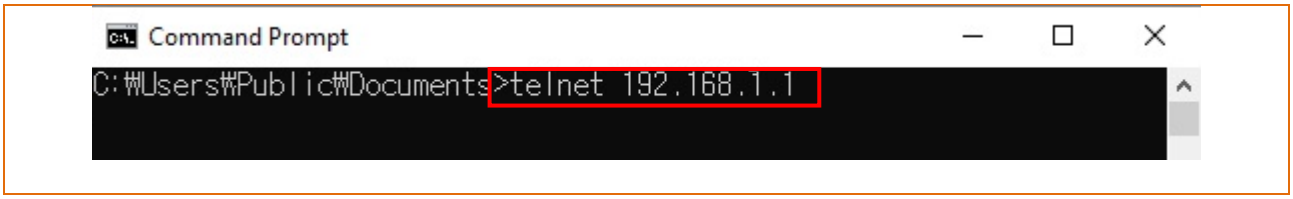
The contents of the [Printer name].config file are as follows.



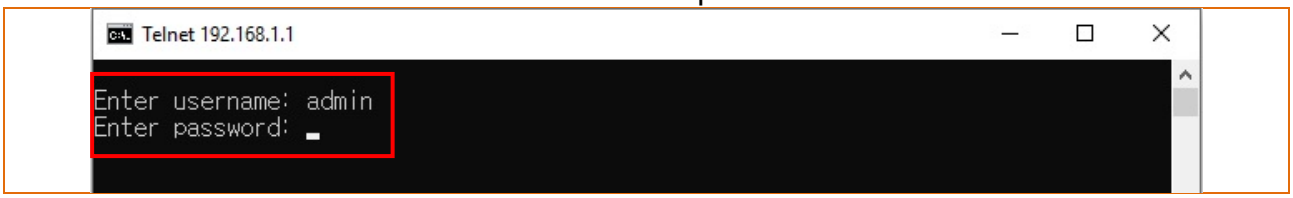
* The format of the configuration file is “Configuration item: Setting value”. Uploading a file that doesn’t have the format shown above will not change the setting values.

4-5 Telnet

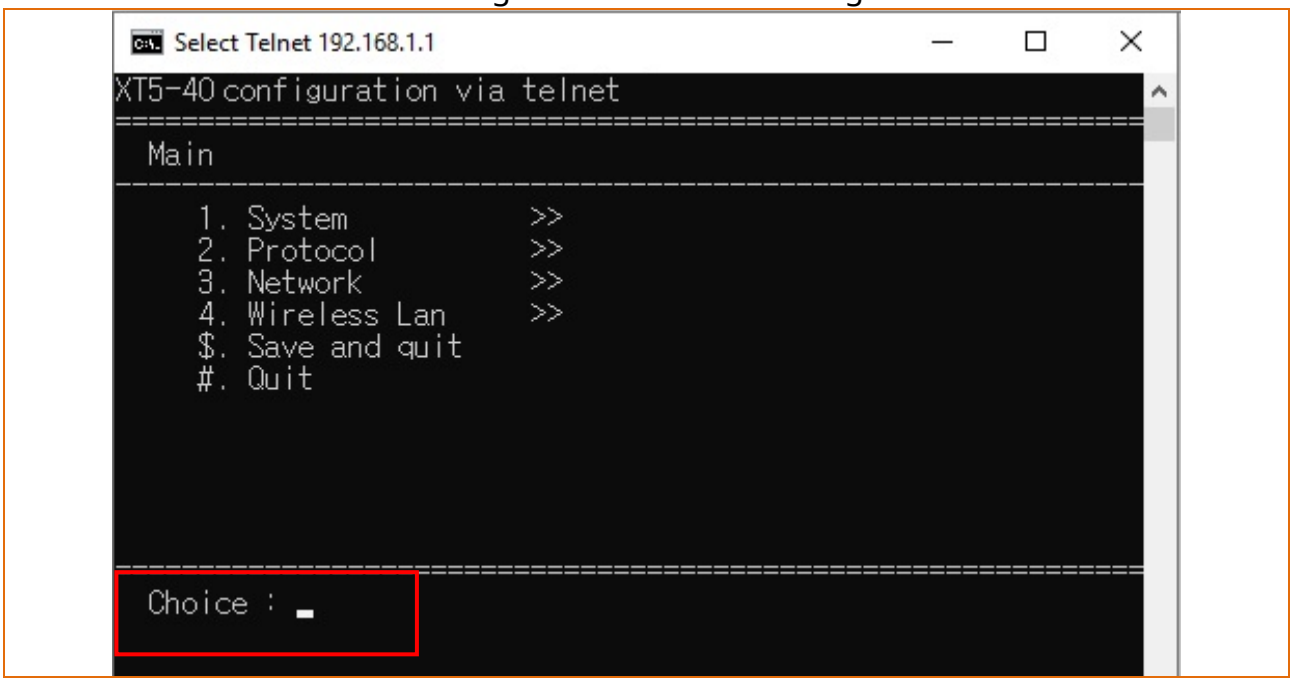
Enter “telnet Printer IP”.



Enter the Username and Password set for the printer.



The screen related to the network configuration will then be displayed.
You can select the menu to configure and edit the settings.

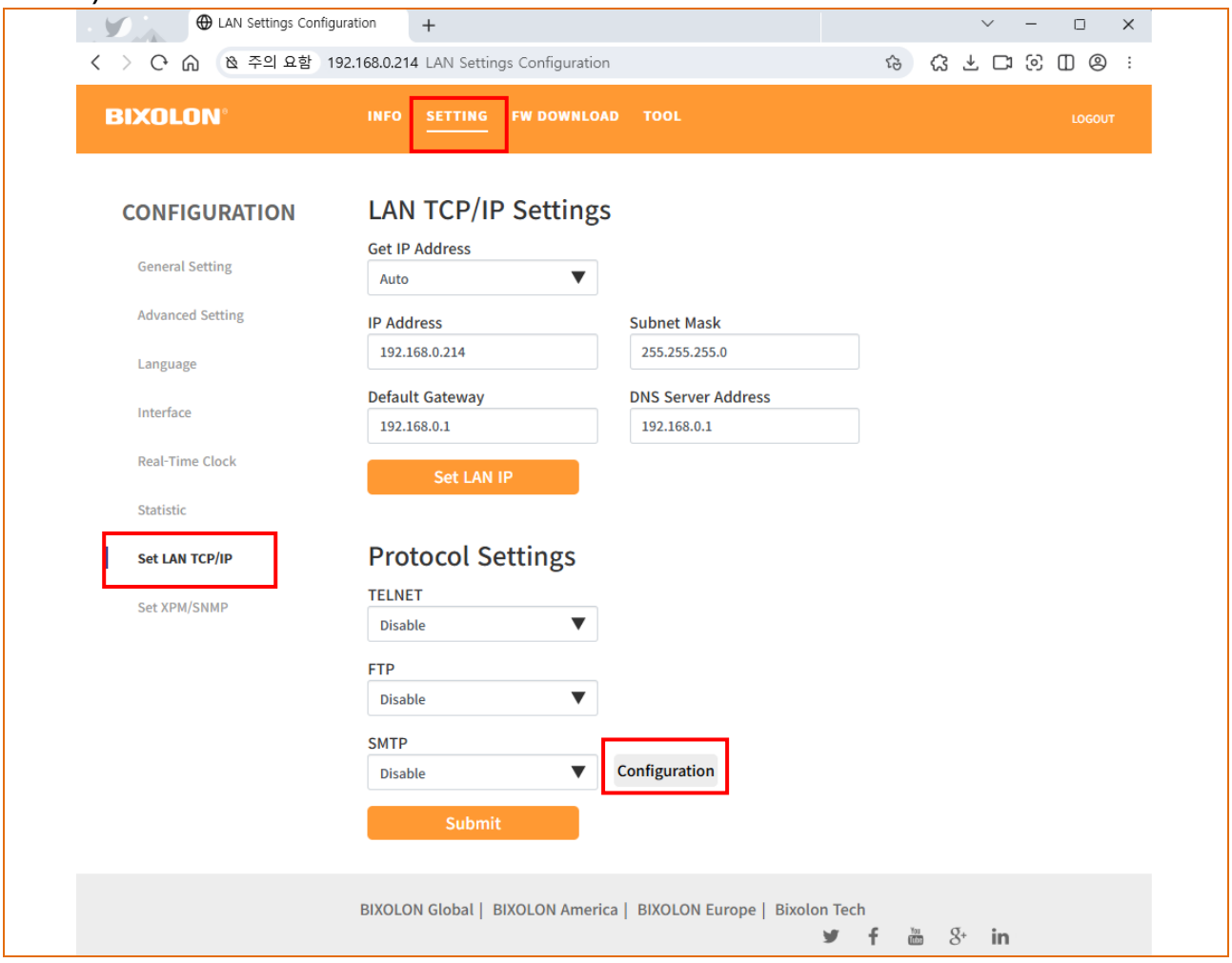


4-6 SMTP

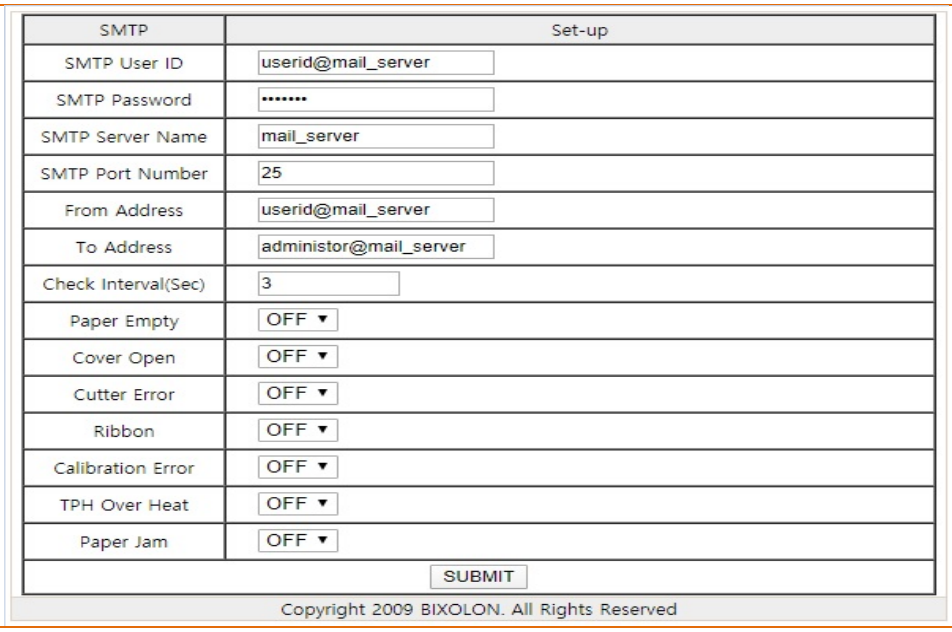
The changes of the status of the printer are monitored, and a notification e-mail is sent to the registered administrators.

SMTP must be enabled to use the SMTP function.
You can use the web browser, telnet, or ftp to enable the SMTP.

1) Configuration Using a Web Browser
Connect to the printer web-server.(Enter the IP address of the printer in the address bar.)



Select [Set LAN TCP/IP], then click the [Configuration] button on the “Protocol Settings” tab to display the following window



Check the SMTP setting values

Item	Description
SMTP User ID	Check the ID registered to the mail server
SMTP Password	Enter the password for the corresponding User ID
SMTP Server Name	Enter the mail server(Example: Domain or mail server IP) * Check DNS settings when entering domain
SMTP Port Number	Enter SMTP port Default value of the SMTP Port is 25
From Address	Enter the e-mail address to be shown at the mail receiver
To Address	Enter the e-mail address to receive
Check Interval	Enter the period to check the printer status Entered value will be effective in second unit
Paper Empty	ON – E-mail is sent out when there is no paper OFF – Paper empty status is not checked
Cover Open	ON – E-mail is sent out when the printer cover is open OFF – Printer cover status is not checked
Cutter Error	ON – E-mail is sent out when there is error in the auto cutter OFF – Auto cutter error is not checked
Near End	ON – E-mail is sent out when the printer is almost out of paper OFF – Paper remaining status is not checked
Ribbon	ON – E-mail is sent out when there is no ribbon OFF – Paper empty status is not checked
Calibration Error	ON – E-mail is sent out when calibration is failed OFF – Doesn’t check auto paper setting errors
TPH Over Heat	ON – Check TPH when overheated OFF – Doesn’t check TPH overheat

Paper Jam	ON – E-mail is sent out when paper is jammed OFF – Doesn't check paper jam

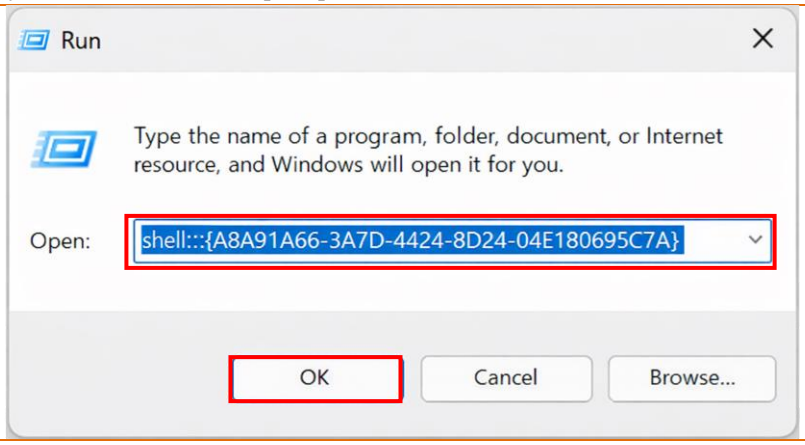
5. Ethernet / WLAN Test(for Windows 10/11)

You can use the Windows printer driver as shown below when there is no test program.

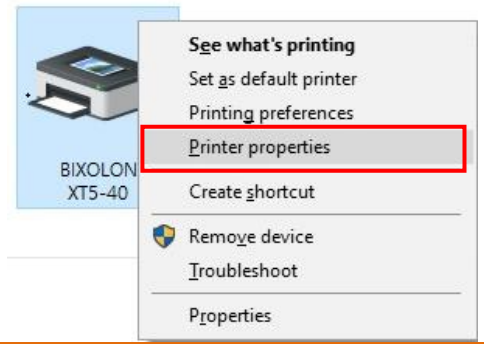
1) Install the Windows printer driver.

> You can download from our home page the Windows driver.
> (www.bixolon.com)

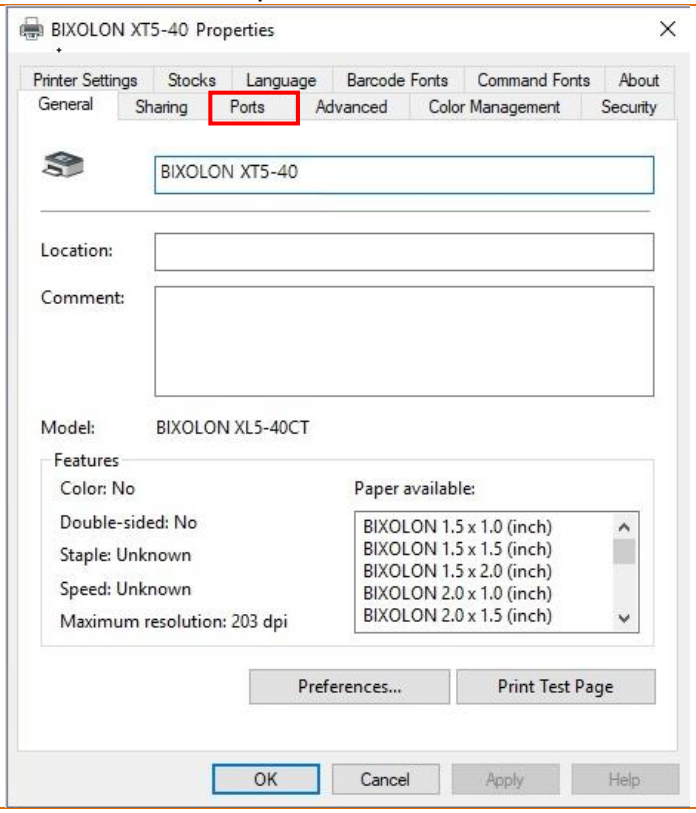
2) Press “Win + R”, enter “explorer.exe shell:::{A8A91A66-3A7D-4424-8D24-04E180695C7A}” and then click [OK].



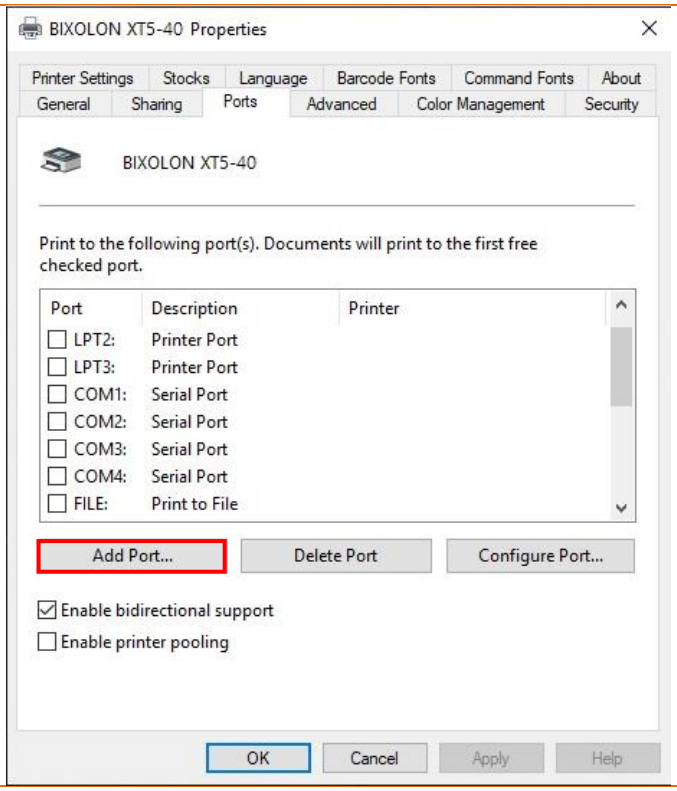
3) Select and right click on the corresponding model, and then select [Printer properties.]



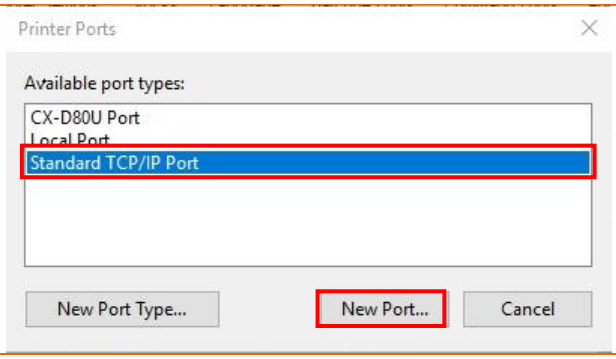
4) Select the [Ports] tab from the Properties window.



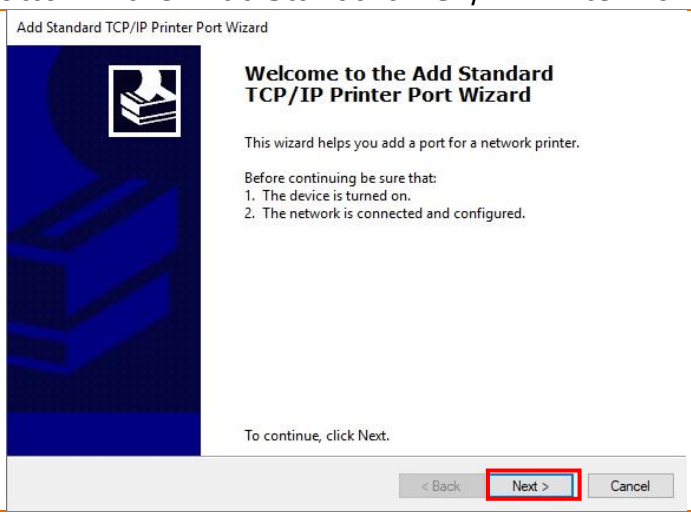
5) Click [Add Port...]



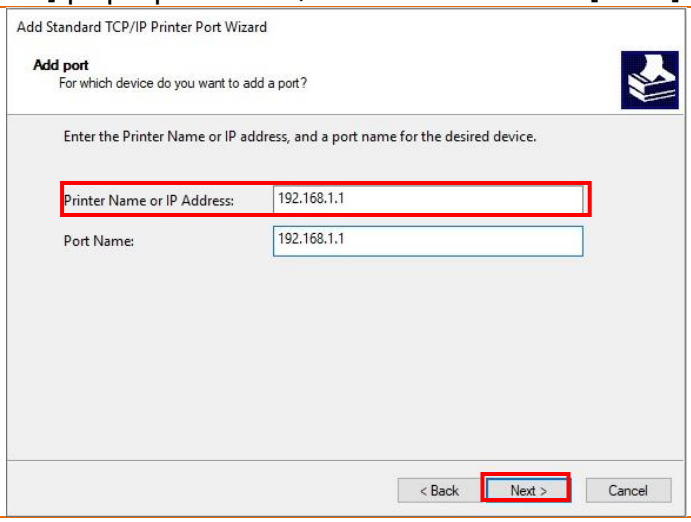
6) Select [Standard TCP/IP Port] and click [New Port...]



7) Click the [Next] button in the “Add Standard TCP/IP Printer Port Wizard” window.

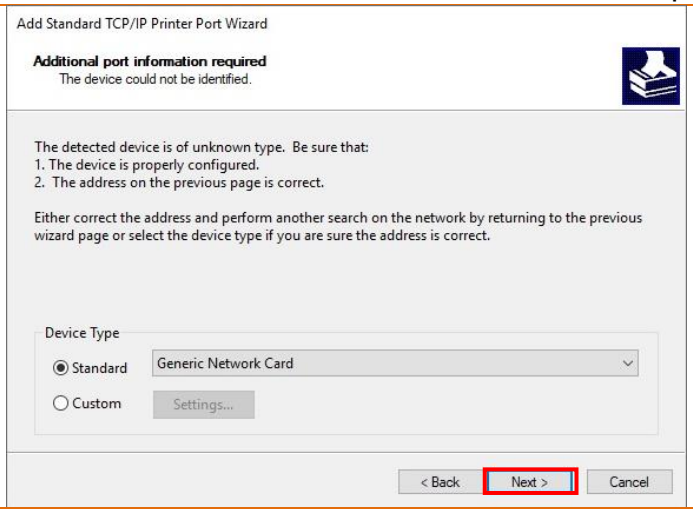


8) Enter the IP address assigned to the printer in the “Printer Name or IP Address” field in the [Add Port] pop up window, and then click the [Next] button.



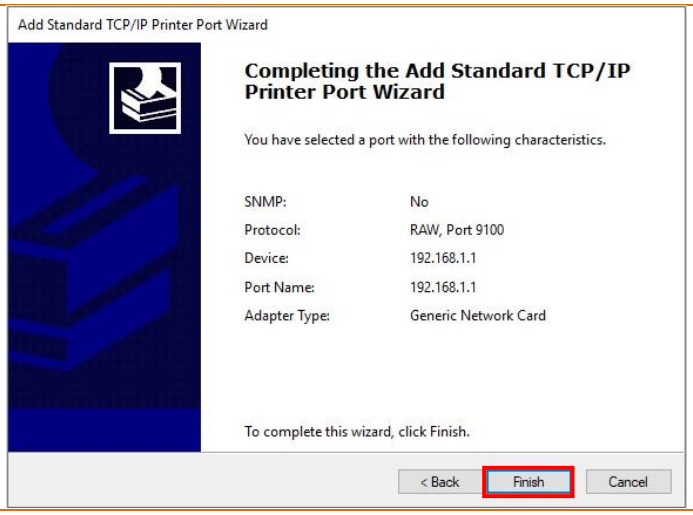
Enter the same IP address entered during the installation of the interface card. Only enter the “Printer name or IP address.”

9) Click the [Next] button in the “Additional Port Information Required” window.

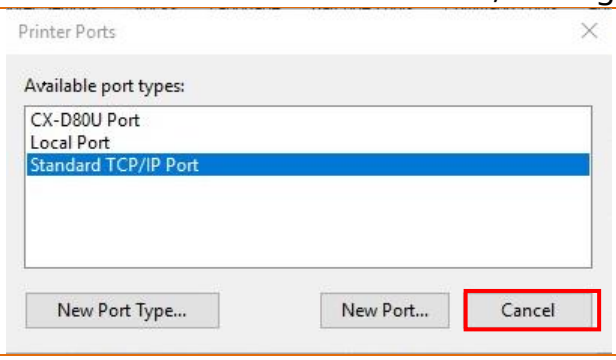


Click the [Next] button to proceed without any changes.

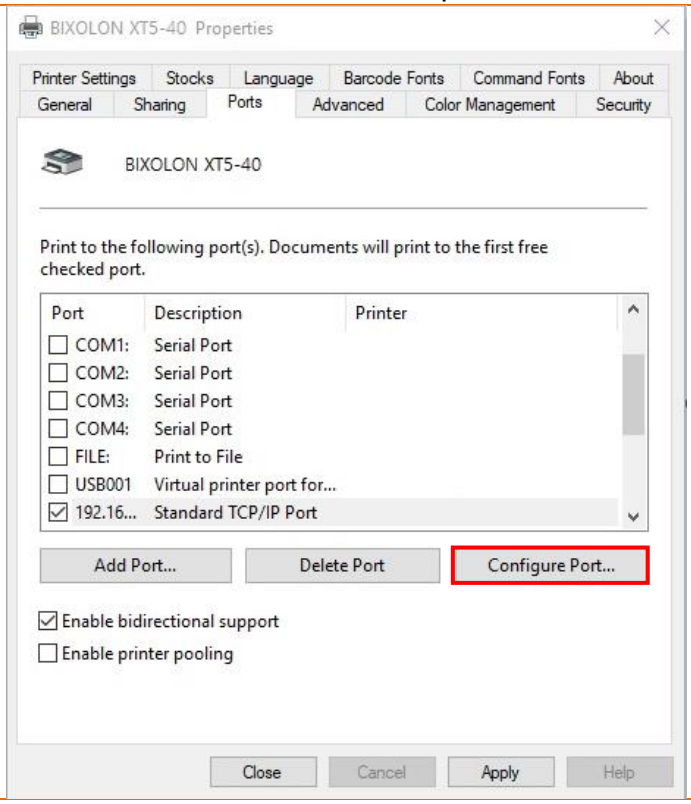
10) Click the [Finish] button at the “Completing the Add Standard TCP/IP Printer Port Wizard” window.



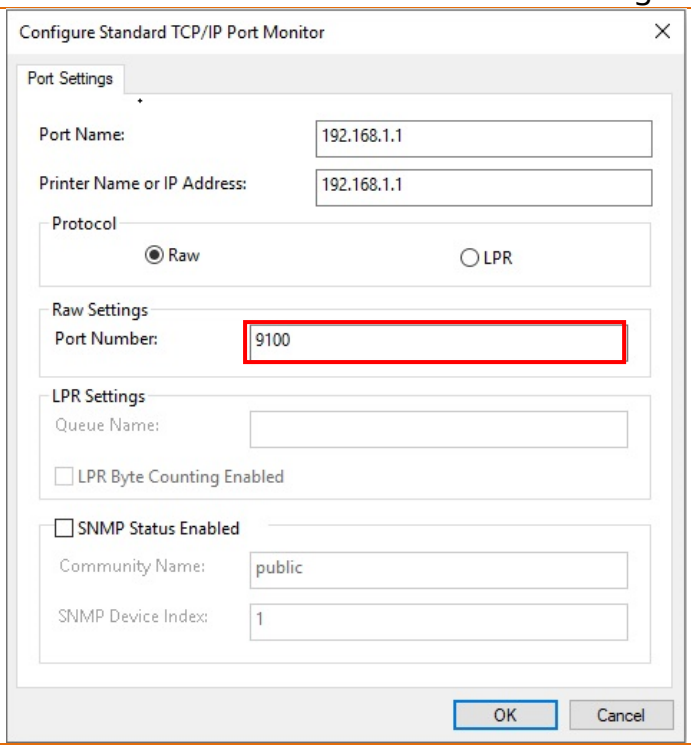
11) Click the [Cancel] button in the Printer Port window, closing the window.



12) Click the [Configure Port...] button in the [Properties] window.

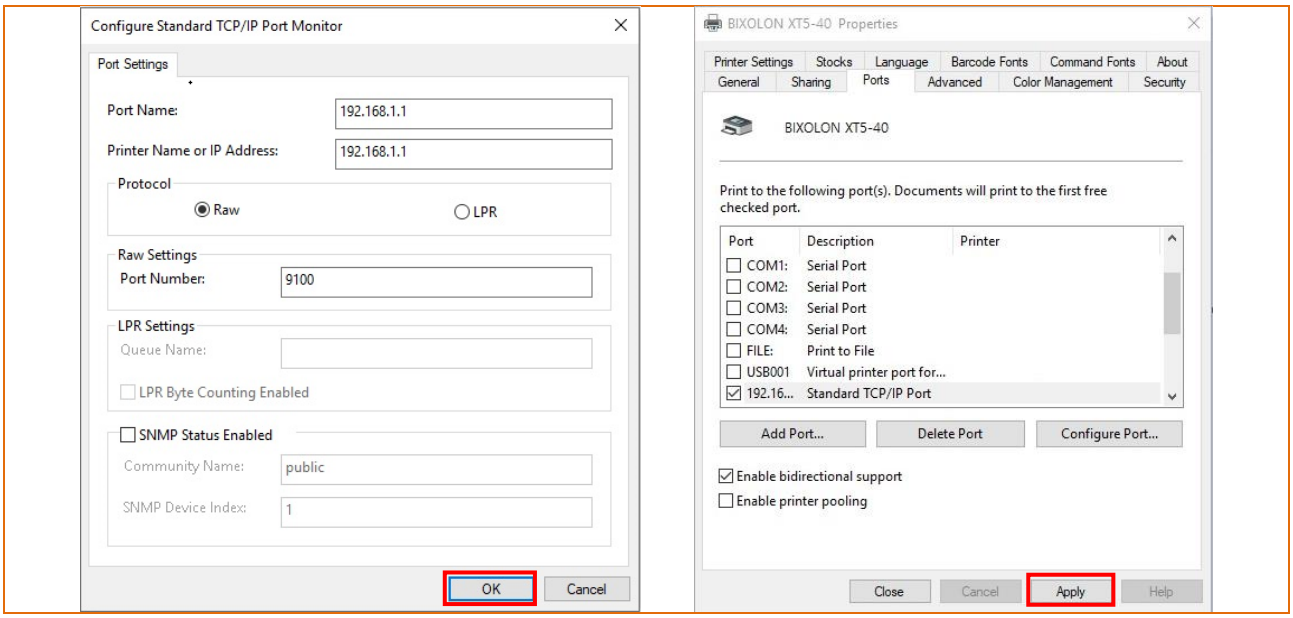


13) Enter the same number as the local port number set during the installation of the interface card in the “Port Number” field in the Raw Settings.

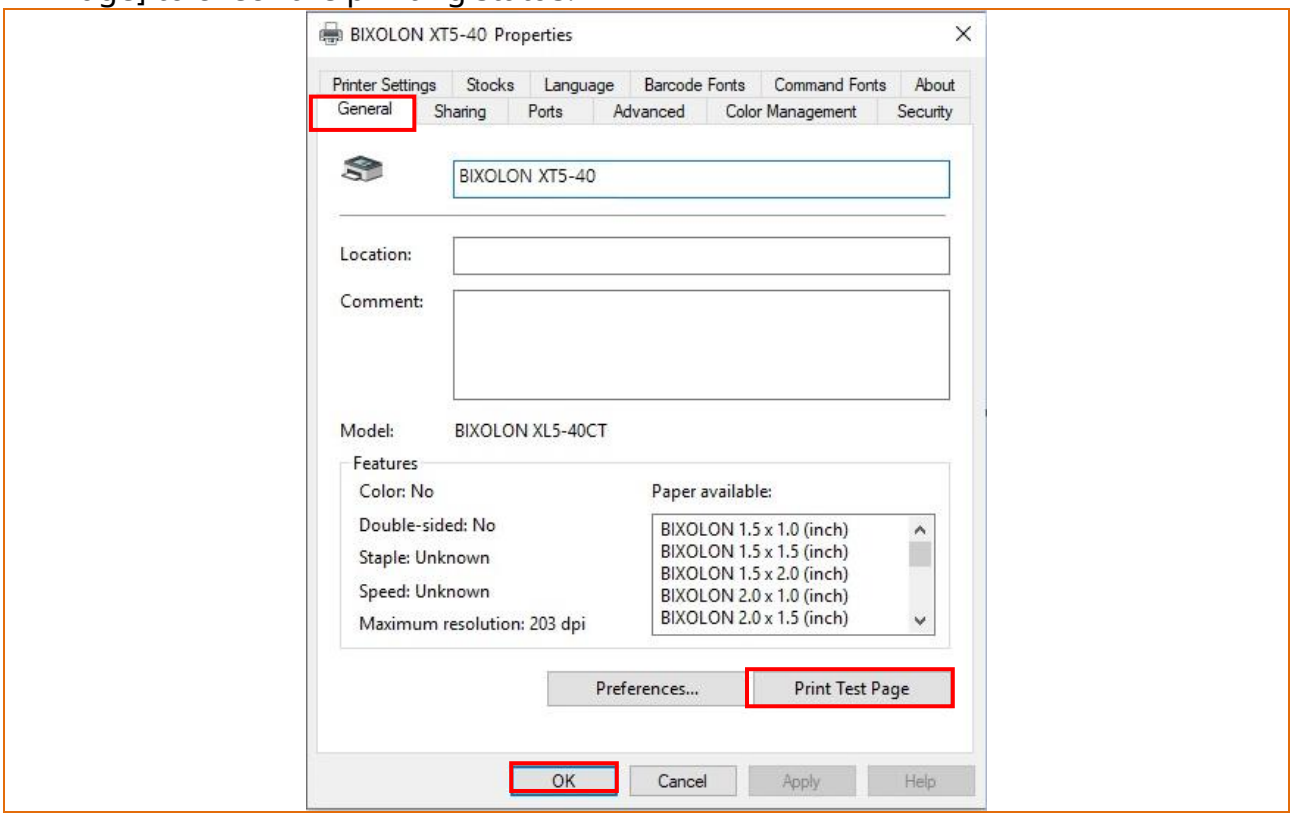


Do not change any other items except the RAW Settings.

14) Click [OK] when you finish entering the required values, and then click the [Apply] button.



15) Select the [General] tab in the Properties window, and then select the [Print Test Page] to check the printing status.



6. Factory Reset

This function changes the Ethernet and WLAN settings of the printer to the initial factory settings.
- SSID of WLAN will be reset as Default(Soft AP)

6-1 Initializing Ethernet Setting

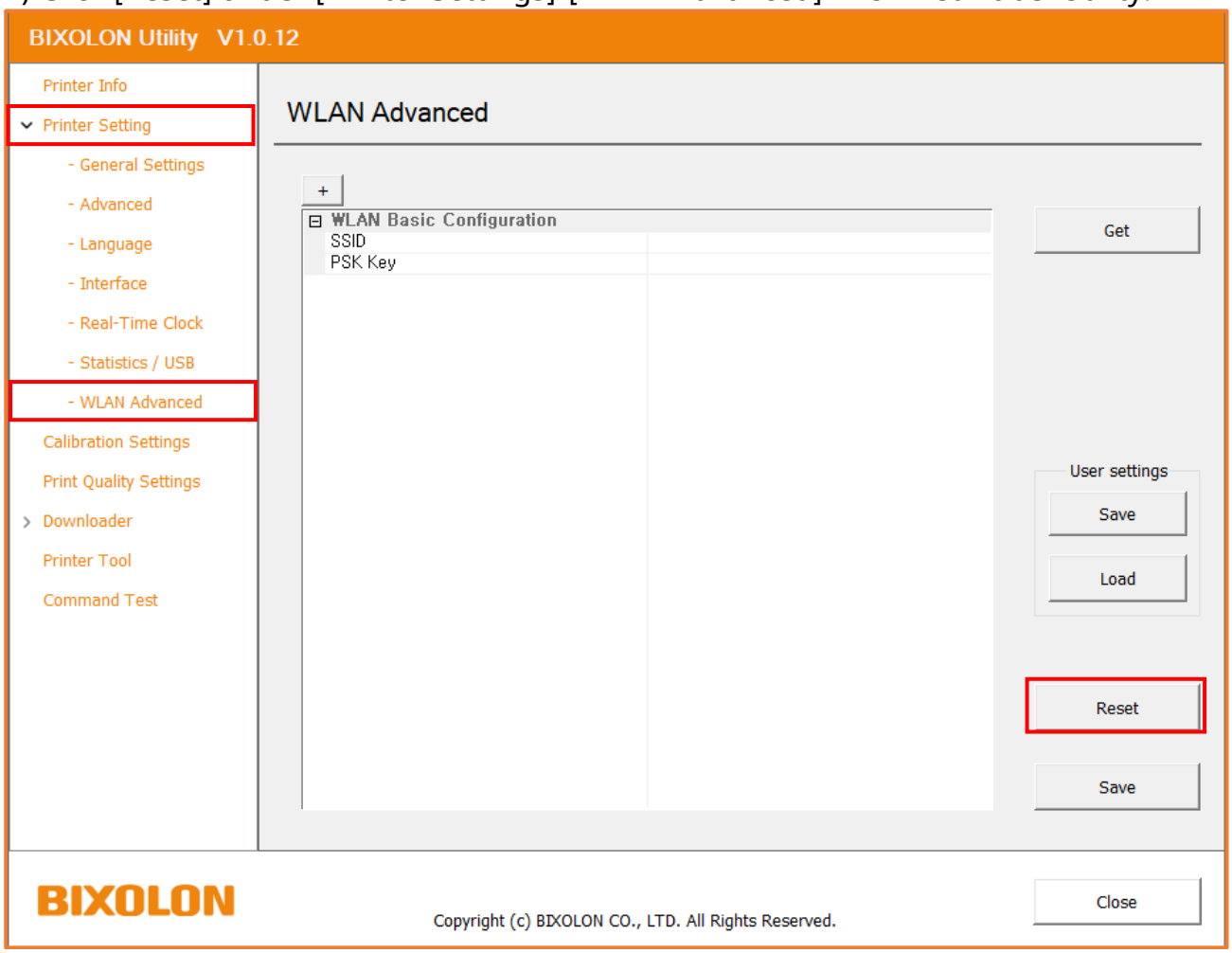
Send the ethernet_factory_reset.bin file to the printer via Unified Label Utility.

6-2 Initializing WLAN Setting

There are 2ways to make the printer LAN reset

1) Send the wlan_factory_reset.bin file to the printer via Unified Label Utility.

2) Click [Reset] under [Printer Settings]-[WLAN Advanced] in Unified Label Utility.



7. Troubleshooting

If printing does not work, check the network settings below.

7-1 When using Ethernet

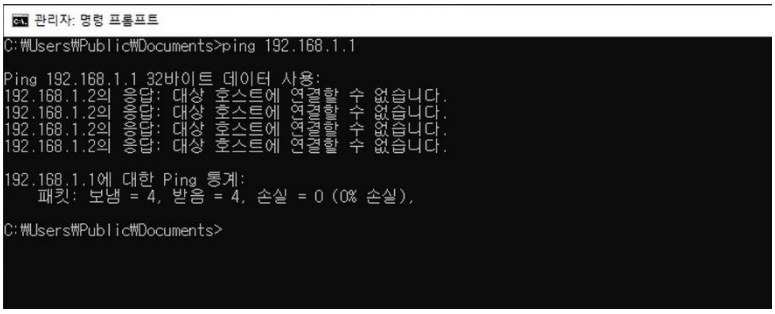
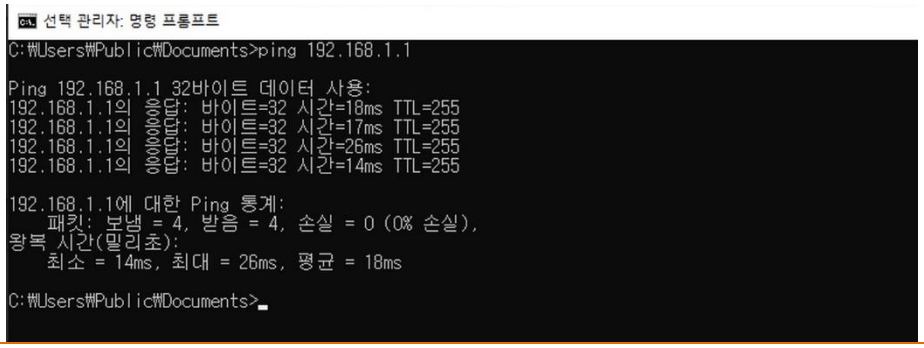
Item	Description
IP Address	- Check whether the IP Address band of the printer rand the AP(or wireless terminals) are the same. - The first three digits of the four digit value in the IP Address must be the same.
Subnet Mask	- Check whether the subnet mask of the printer matches with the one in AP(or wireless terminal).
Port	- Check whether the port configured in the printer and the host(PC, PDA) are the same.

7-2 When using WLAN

Check the wireless network setting of the AP and the printer.
(Refer to Configuration for checking/changing the printer settings)

Item	Description
SSID	- Check whether the SSID of the printer matches with the one in AP(or wireless terminal)
802.11 mode	- Check whether AP supports 802.11a, 802.11b or 802.11g.
Network mode	- Check the network mode of the printer. - Network mode must be set to “Infrastructure” to connect to AP.
IP Address	- Check the band of the IP Address. - Check whether the band of the printer and the AP(or wireless terminals) are the same. - The first three digits of the four digit value of the IP address must be the same.
Subnet Mask	- Check whether the subnet mask of the printer matches the one in AP(or wireless terminal).
Port	- Check whether the port configured in the printer and the host(PC, PDA) are the same.
Authentication /Encryption	- Check the authentication/encryption setting status. - Check whether the settings of the printer and the AP(wireless terminals) are the same.

7-3 Check PING

Item	Description
Checking IP collision	- When entering IP address manually without using DHCP, you must check whether the corresponding IP address is used by other equipment. The printer may not work normally when there is a collision in the IP address. - When the printer is turned off, carry out the Ping Test to the printer IP.
Ping TEST	- Turn off the printer. - Search “cmd” and then click “Open”. - Enter “ARP –d {printer IP}” and delete ARP table. - Enter “ping {printer IP}”. - ARP –d, ping {IP address}   - When you see “Destination host unreachable.” as shown below, it means that there is no collision. The corresponding IP can be used. - On the other hand, if there is a reply as shown below, then the corresponding IP is used by another network terminal and it cannot be used for the printer IP. 

7-4 Check Cable(When using Ethernet)

In order to check whether the problem is due to the LAN cable, connect the cable connected to the printer to other terminals or the PC to confirm whether its operation is normal.

7-5 Default Values

Item		Description
Printer Name	Printer Name	XT5-40/XT5-43/XT5-46 XT3-40/XT3-43 XD7-20d/XD7-23d XT6-40/XT6-43/XT6-46 XT6-60/XT6-63
	Printer Port Num	9100
	User ID	admin
	User Password	password
Protocol	FTP	Disable
	TELNET	Disable
	SMTP	Disable
		SMTP Server Name: ""
		SMTP Port Number: 25
		From Address: ""
		To Address: ""
		Check Interval(Sec): 10
		Paper Empty: OFF
		Cover Open: OFF
		Cutter Error: OFF
		Near End: OFF
Authentication	Open System	None
	Shared key	None
LAN	IP Assignment Method	DHCP
WLAN	Network Mode	Soft-AP
	SSID	PRINTER_XXXXXX
	IP Assignment Method	DHCP

Revision History

Ver.	Date	Description
1.00	10-01-2018	New.
2.00	01-22-2020	- Change image to Win10 - Delete contents Win10 under
2.01	01-05-2022	- Change image to XT series - Change XT series Network Connection Manual
2.02	06-30-2026	- Updated LCD screen images - Removed content due to lack of support for the Net Configuration Tool - Added Ethernet/WLAN configuration methods using the Windows BIXOLON Utility software