



Network Connection Manual

XD / XL Series

Ver. 2.00

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 be configured properly so that communication can be established.

3-1 Connecting Printer

1) USB

Connect the USB cable to the printer.

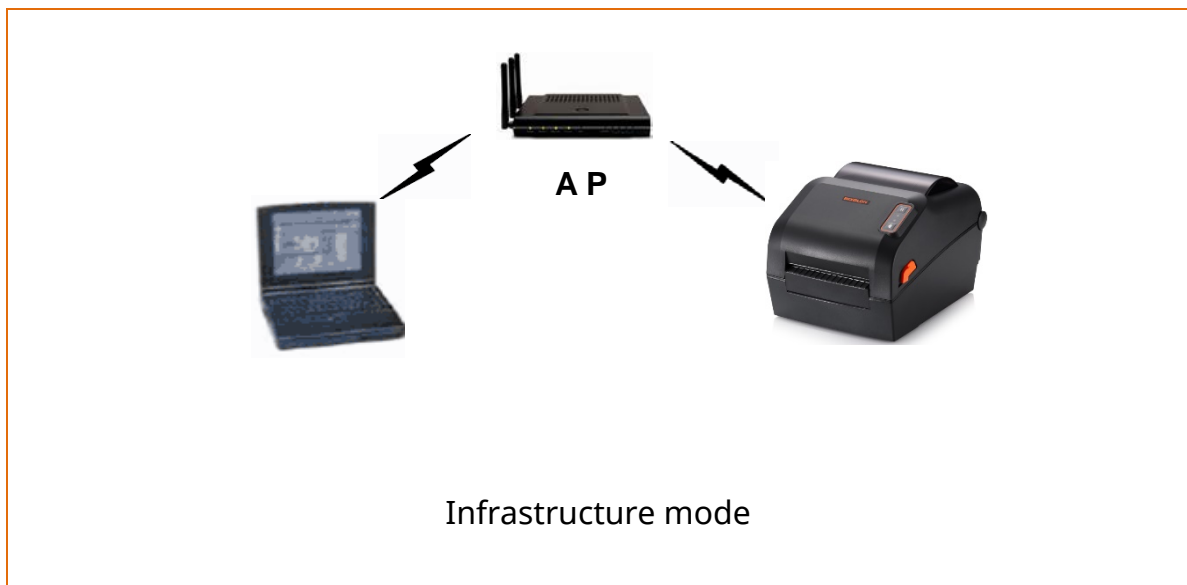
2) Ethernet

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

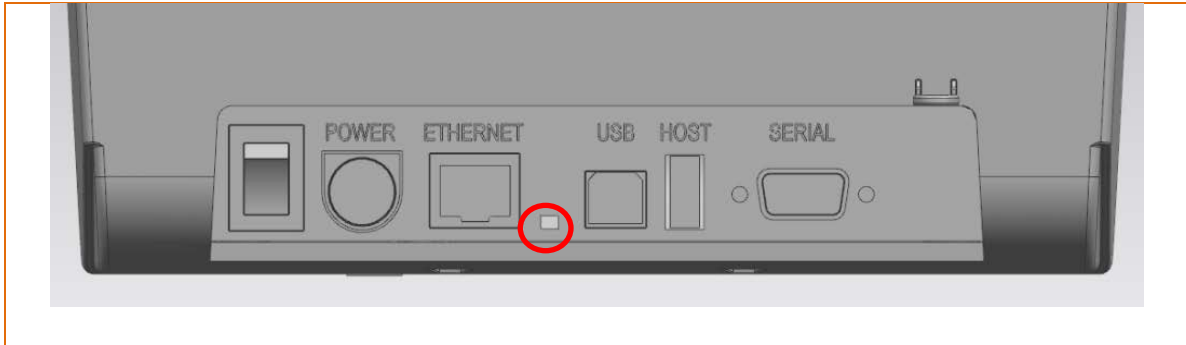
Connect to the AP(Access Point) configured in Infrastructure mode in order to connect to the Wireless network.



3-2 Check Network Setting

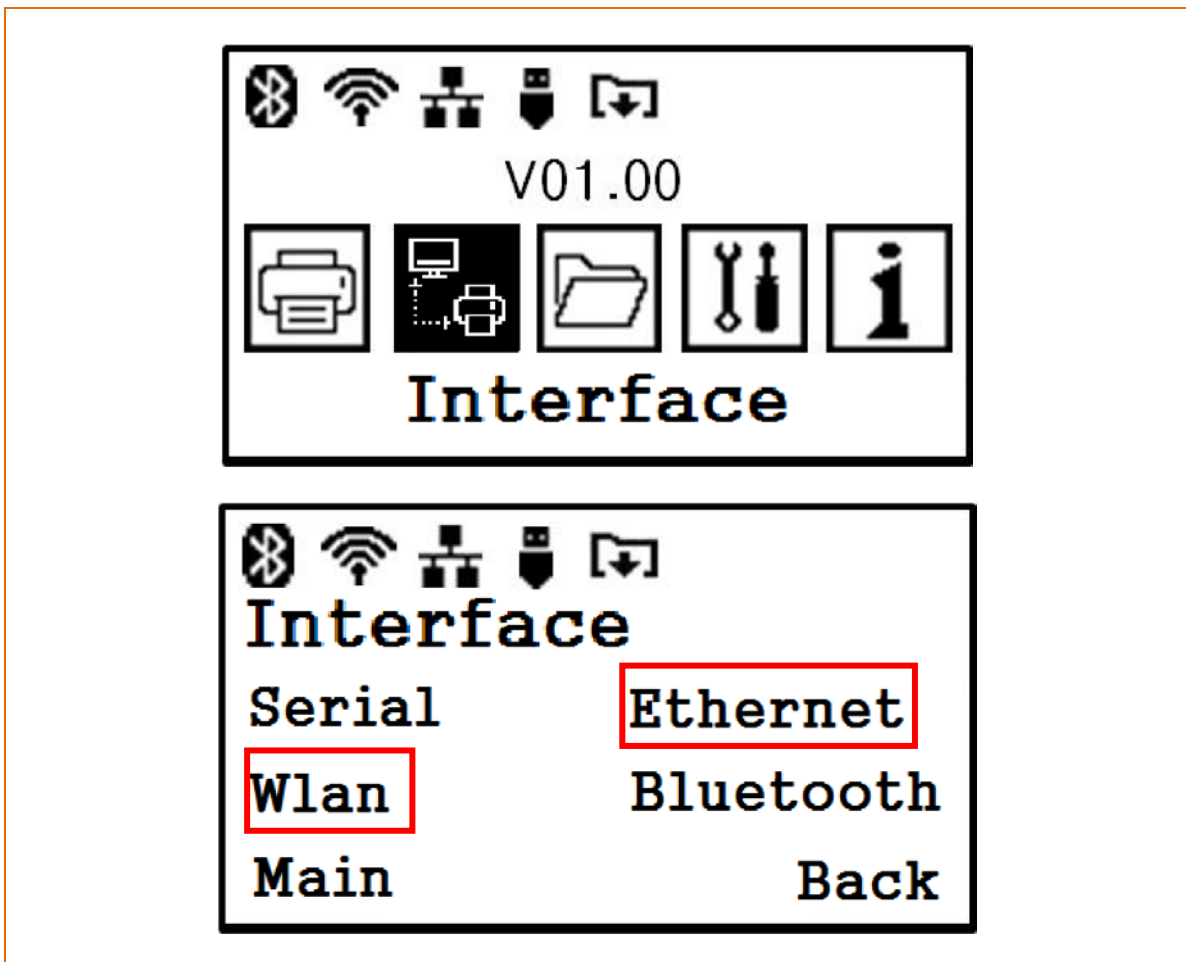
1) LED Model

Push the below reset button to check the Ethernet information.



2) LCD Model

THE LCD Model can show Network Setting information by selecting [Interface] – [Ethernet] or [WLAN] in the menu, or same way as LED Model.

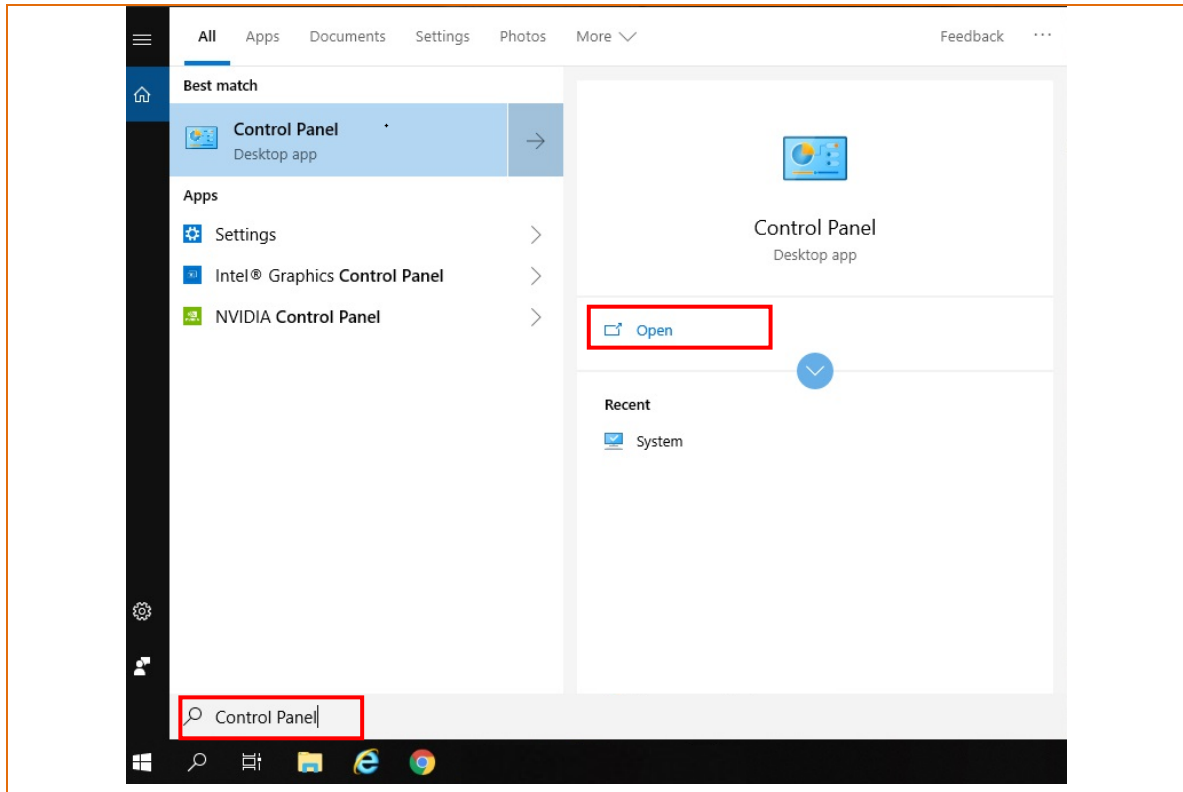


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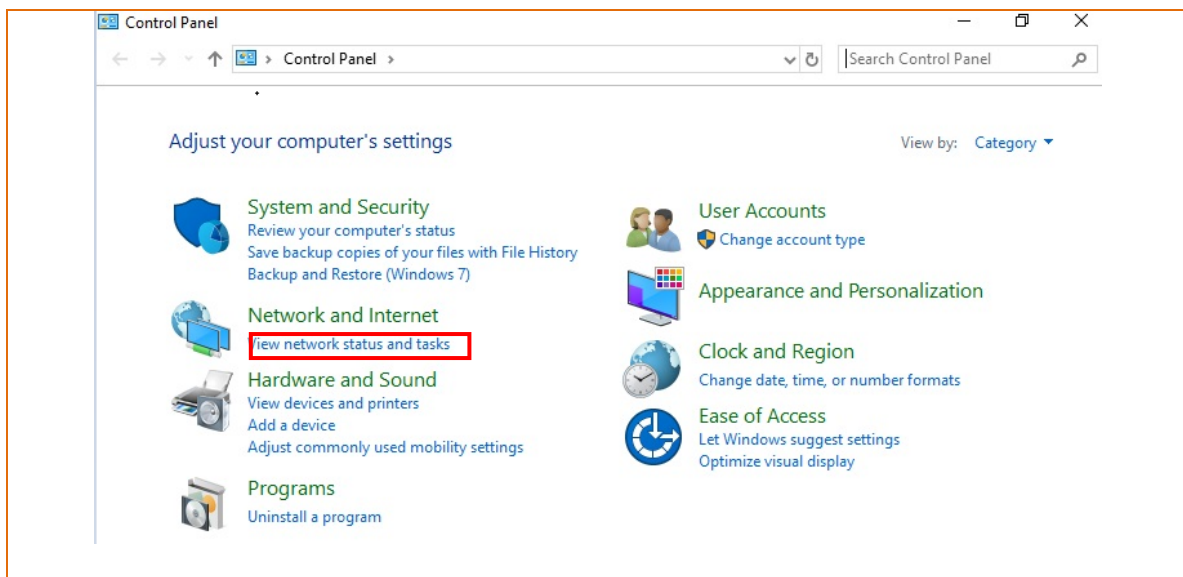
3-3 Initial Wireless LAN Connection (Windows 10)

- 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”.

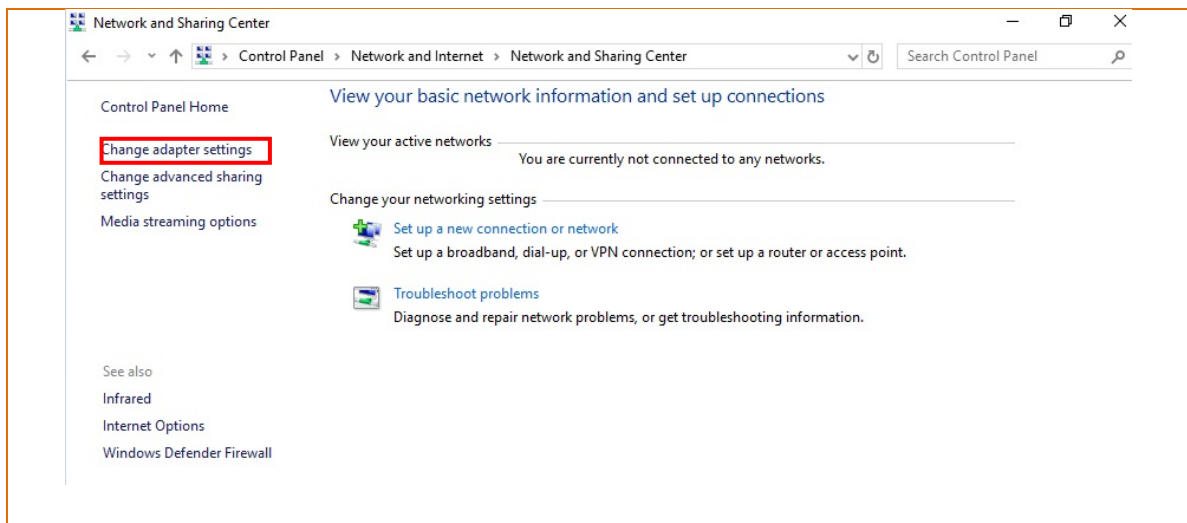


2) Click the “View network status and tasks”.



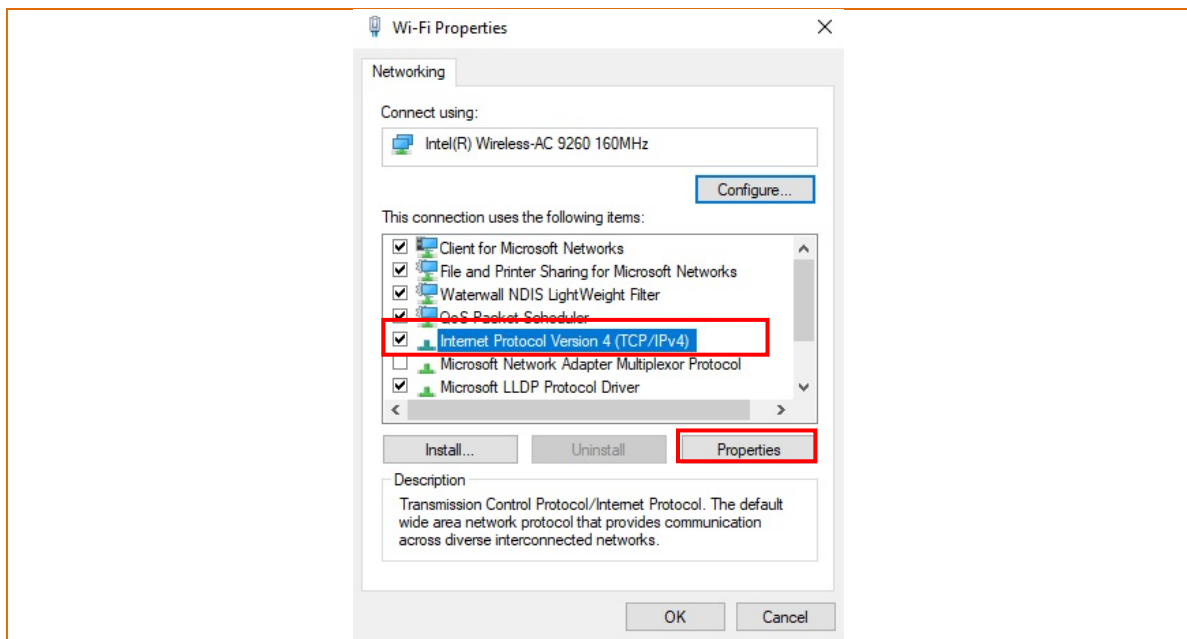
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3) Click the “Change adapter settings”.



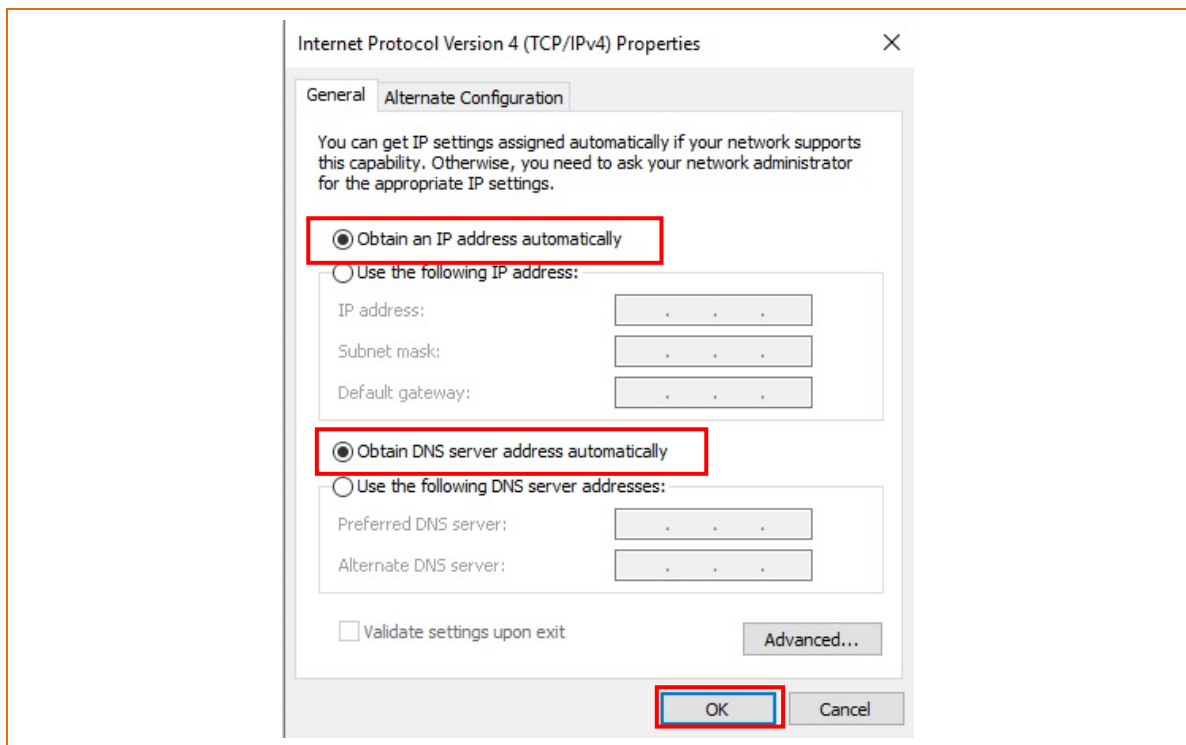
Click the “WiFi Properties”.

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

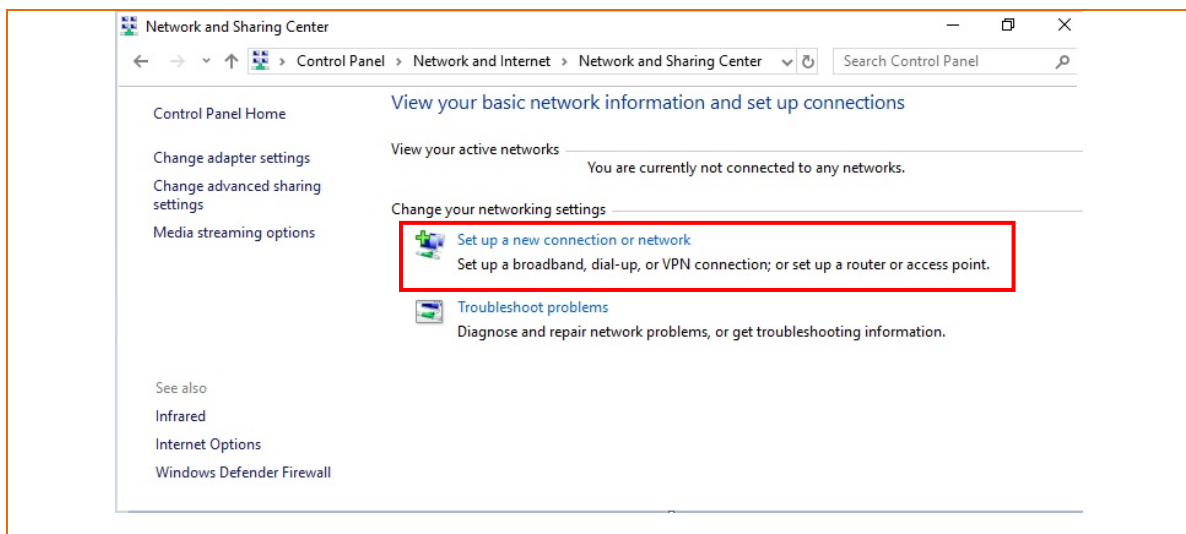


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5) Set the IP settings as shown below, and then click OK.

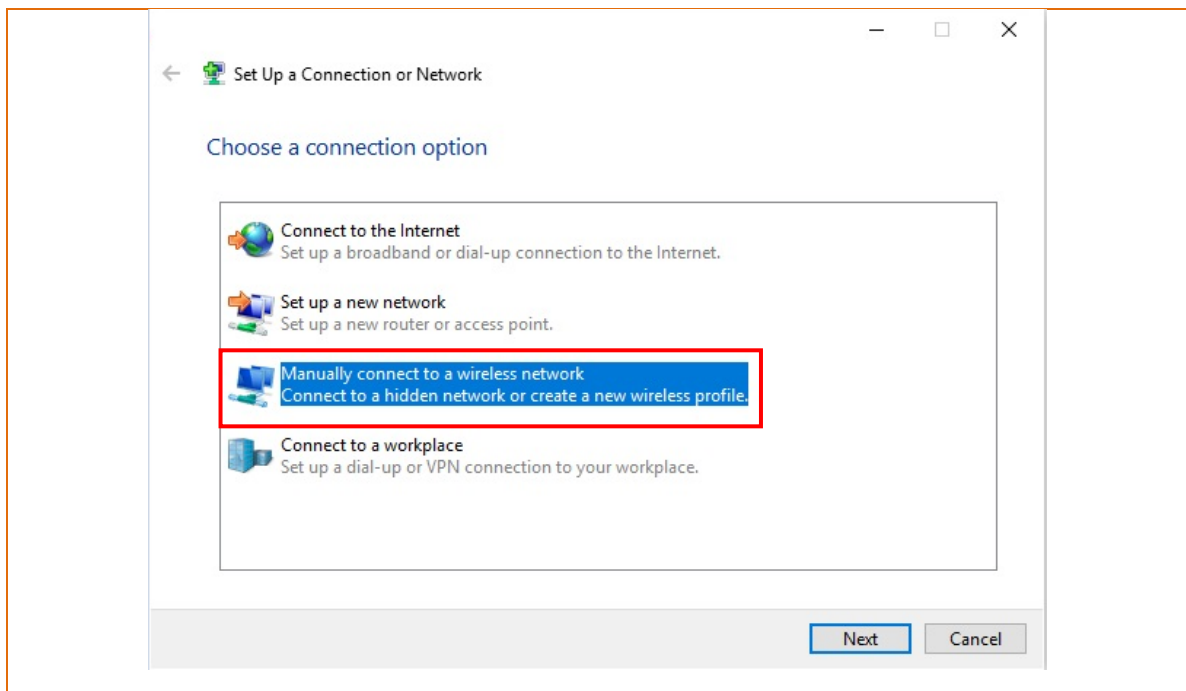


6) Click the "Set up a new connection or network".



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7) Click the “Manually create a wireless network”.

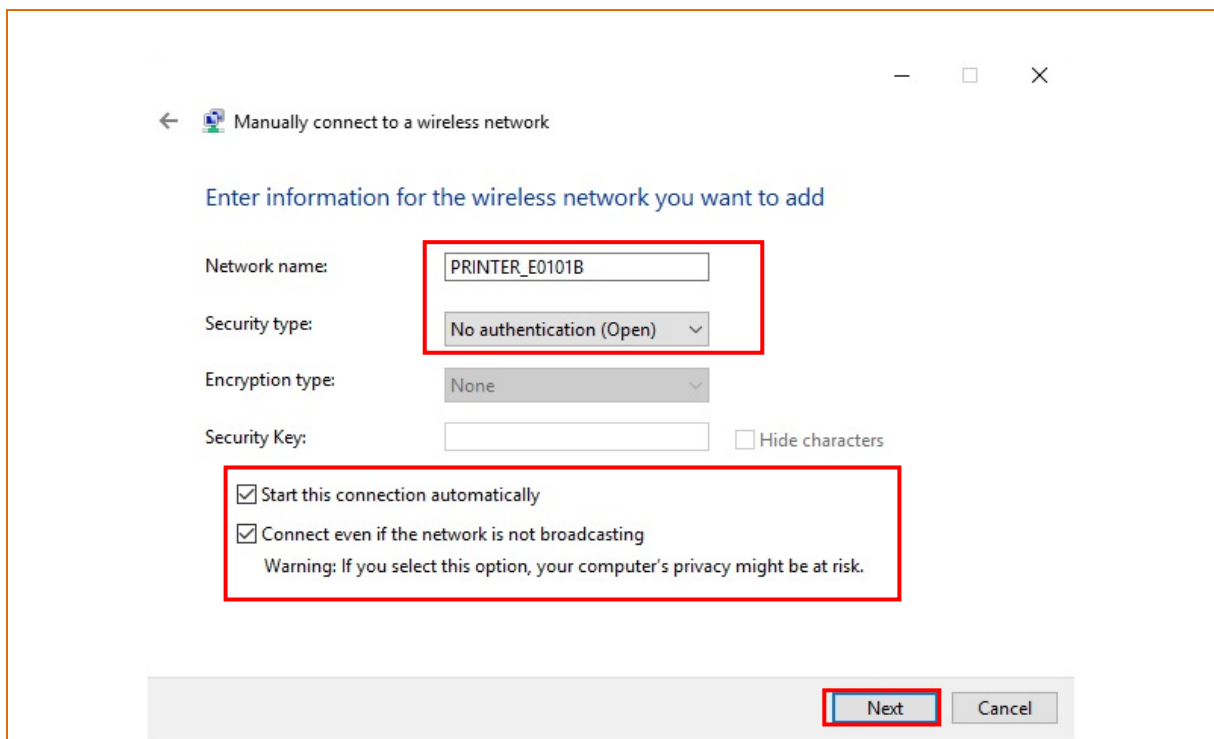


8) 'Network name' = PRINTER_XXXXXX

'Security type' = Open,

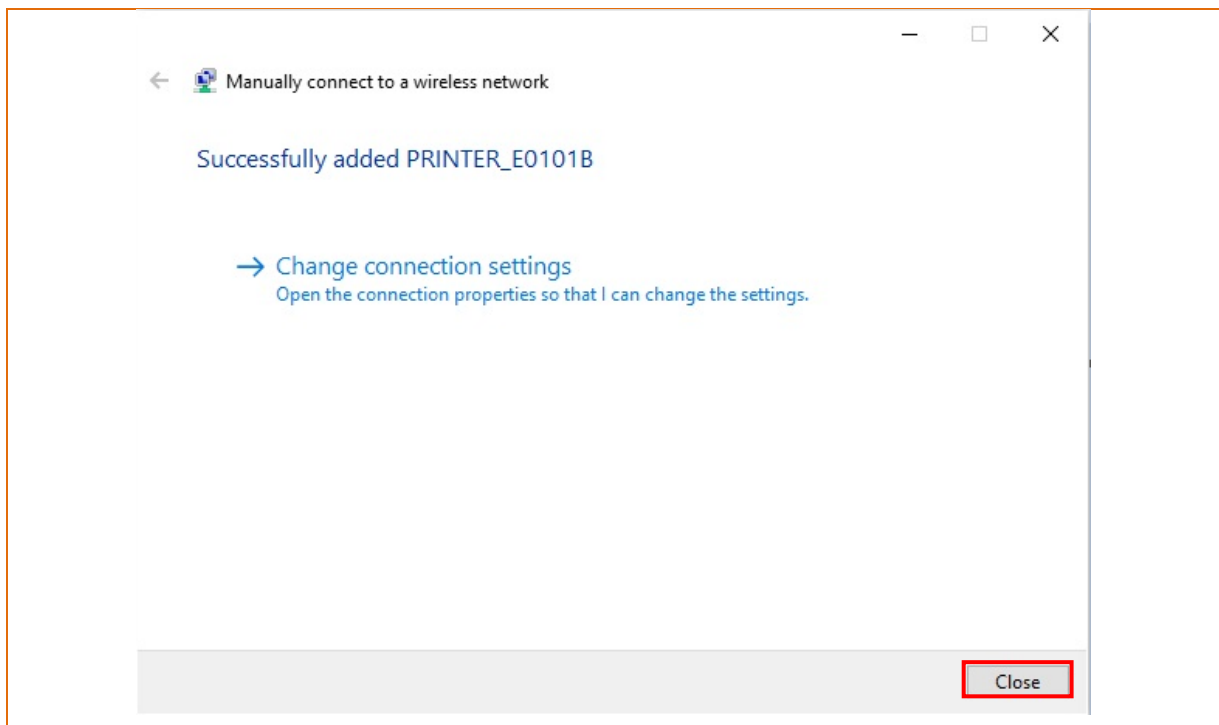
Check “Start this connection automatically”,

“Connect even if the network is not broadcasting” and then click the “Next”

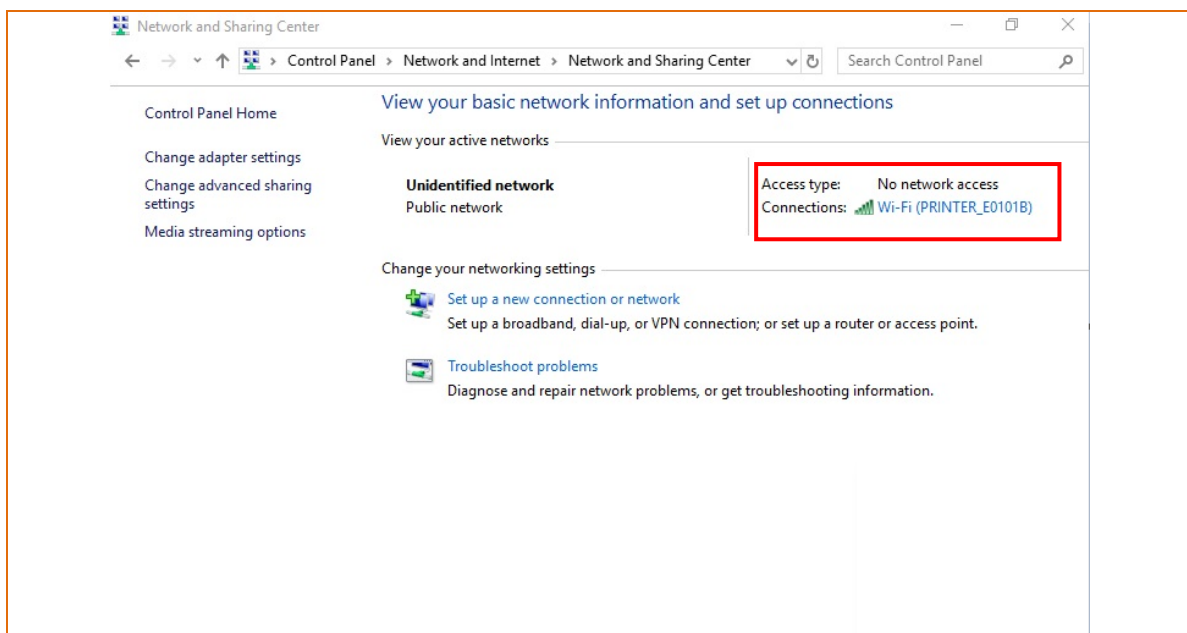


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9) Click the "Close".



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 LAN Setting Values

Classification	Item	Remarks	Input Range
Home		LAN setting status display	
System	Printer Name	Printer name	0~32 letters
	Printer Port	TCP Raw port that the printer can use	0~32767 integer (except 1,23,25, 80,443,3318)
	User Name	ID to use for ftp, telnet, web-server log-in	1~32 letters
	User Password	Password to use for ftp, telnet, web-server log-in	1~32 letters
	Confirm Password	Confirm Password	1~32 letters
Protocol	TELNET	Set whether to use Telnet	Enable/Disable
	FTP	Set whether to use FTP	Enable/Disable
	SMTP	Set whether to use SMTP	Enable/Disable
Network	Inactivity Time	TCP connection hold time	0~3600 integer(Sec)
	IP Assignment Method	IP assignment method	DHCP/Manual
	IP Address	Printer IP	IP Address
	Subnet Mask	Subnet mask	IP Address
	Gateway	Default Gateway	IP Address
	DNS	Domain name server IP	IP Address

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4-2 WLAN Setting Values

Classification	Item	Remarks	Input Range
System		WLAN setting status display	
Wireless	Connection Type	Wireless LAN operating mode	Infrastructure/Adhoc/Soft AP/WiFi Direct
	SSID	ID of the AP to connect	1~32 letters
	WLAN Security Type	Wireless LAN authentication method	open, wpa1/2-psk
Network	Connection Type	ConnectionType status display	
	DHCP	Set whether to use DHCP	ON/OFF
	IP	Printer IP	IP Address
	Subnet	Subnet mask	IP Address
	Gateway	Default Gateway	IP Address
	DNS	Domain name server IP	IP Address
Traffic		Traffic status display	
Security	CA	Server Certificate Authentication	
	Client	Client Certificate Authentication	
	Key	Client Certificate Key	
Etc	Account	Account	
	Reboot	Reboot	
	Firmware Update	Firmware update for Wlan	
	TCP Port	TCP Port	
	Inactivity Time	TCP connection hold time	
	XPM Server	Setting for XPM Server	

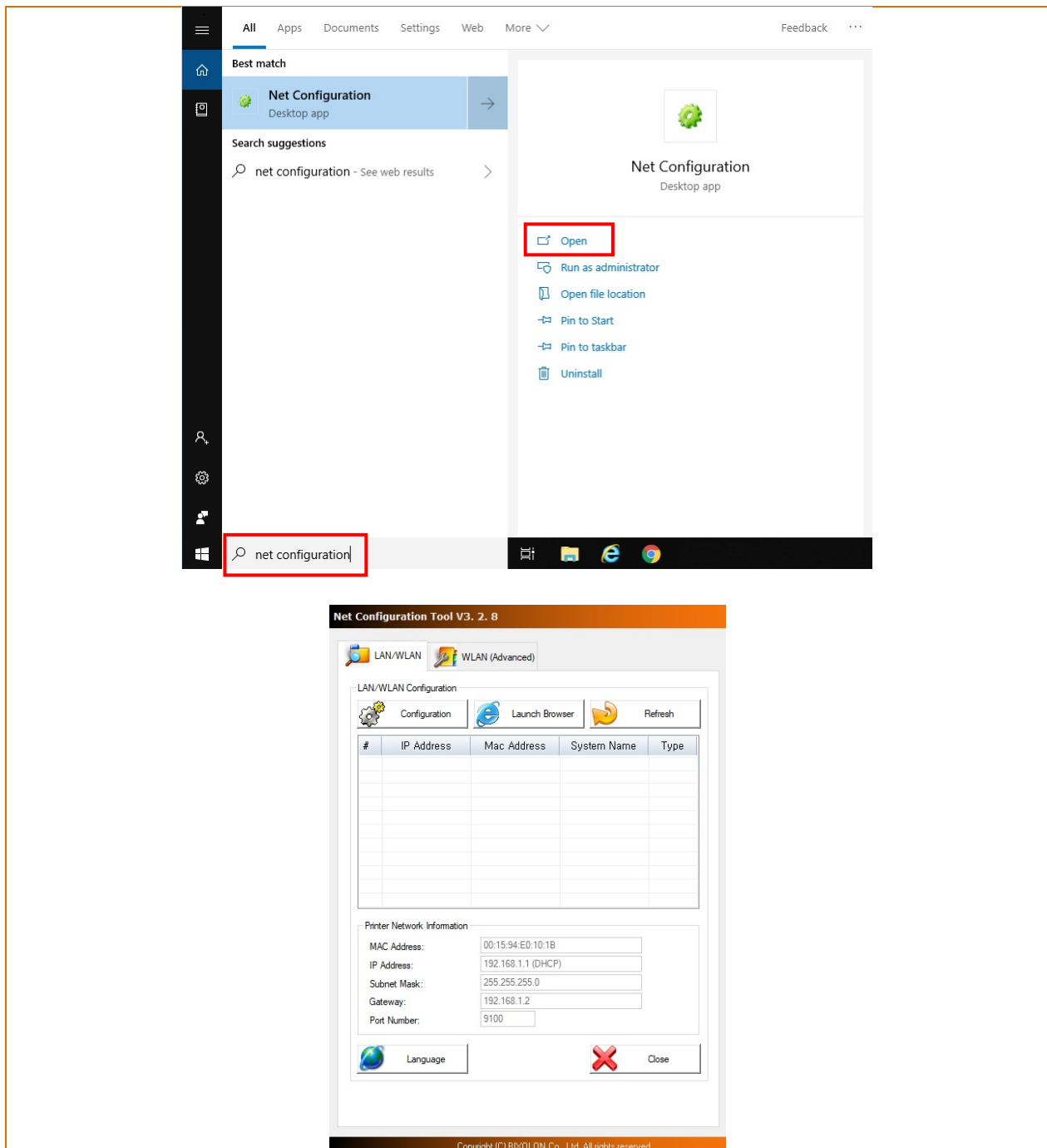
4-3 Configuration Tool

- Install Net Configuration Setup_[version] and execute.



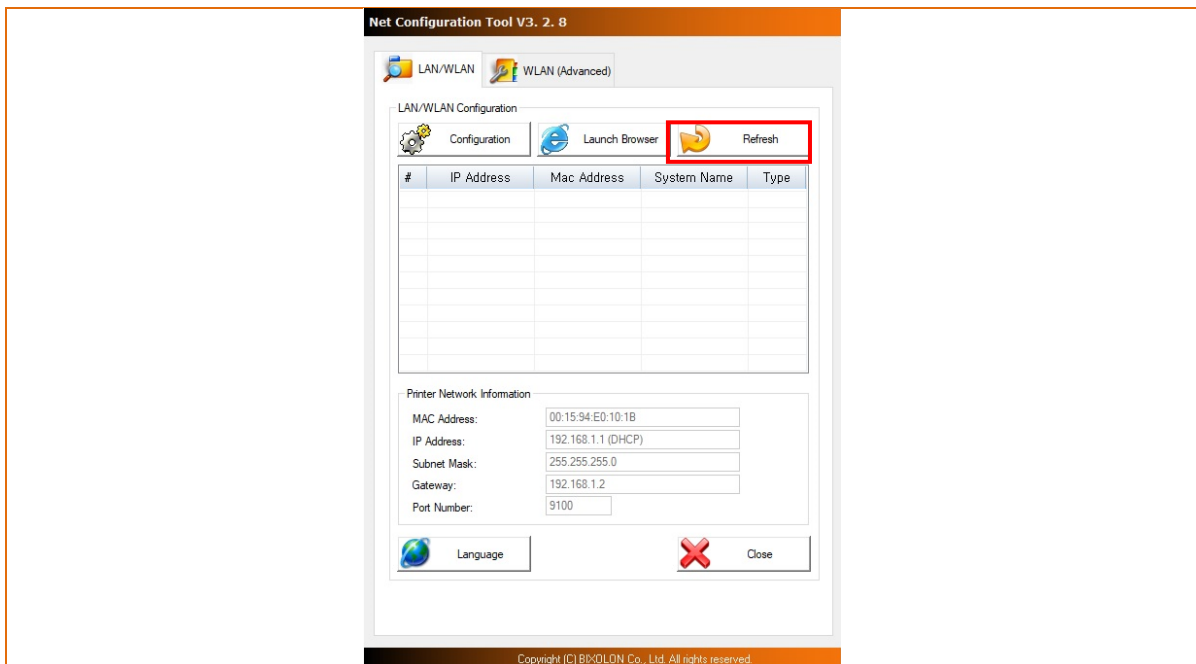
You can download from our home page the Net Configuration Setup_[version]. (www.bixolon.com)

(Search the “Net Configuration” and then Click the “Open”)

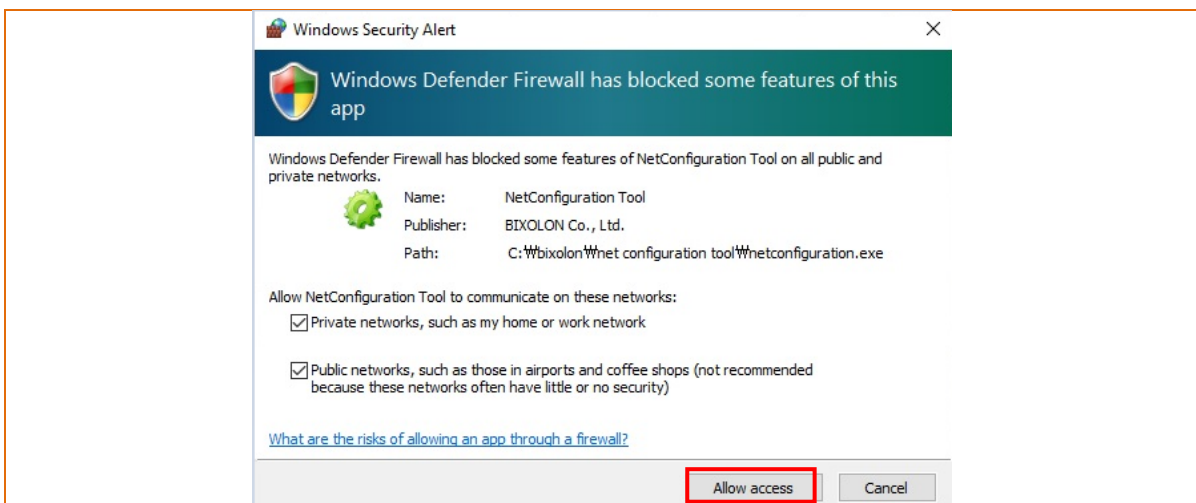


4-3-1 Ethernet Configuration

- 1) When you press the Search button, the printer connected to the network will be shown in the list.

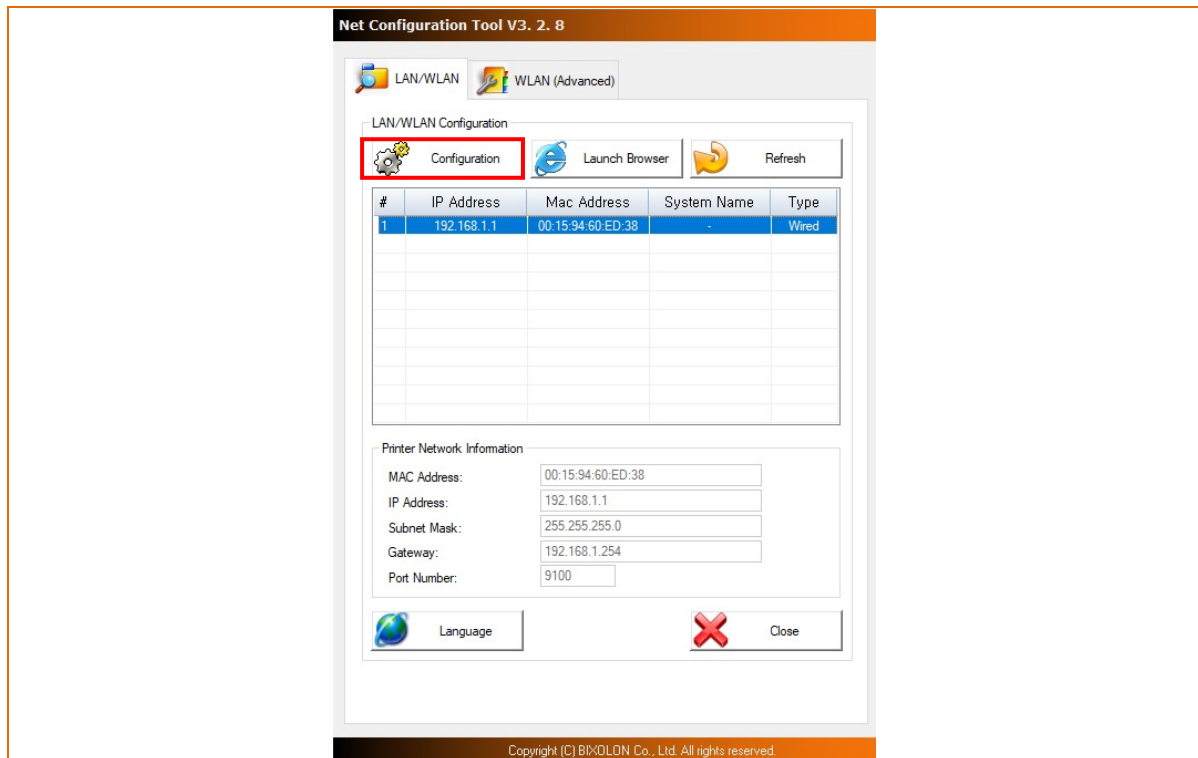


- 2) The following warning message may pop up if the firewall is installed. Select [Allow access], and then retry the Search operation.

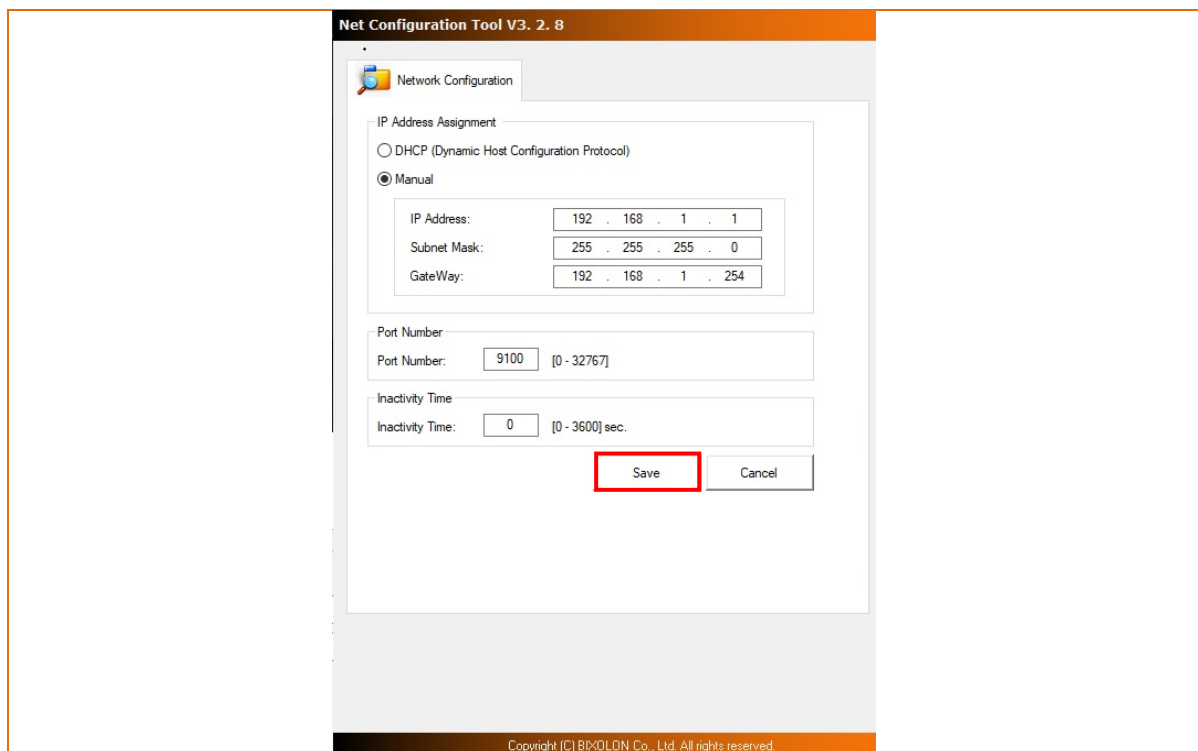


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- 3) Select the printer from the list and press the [Configuration] button, and then the following window for setting Ethernet settings will pop up.

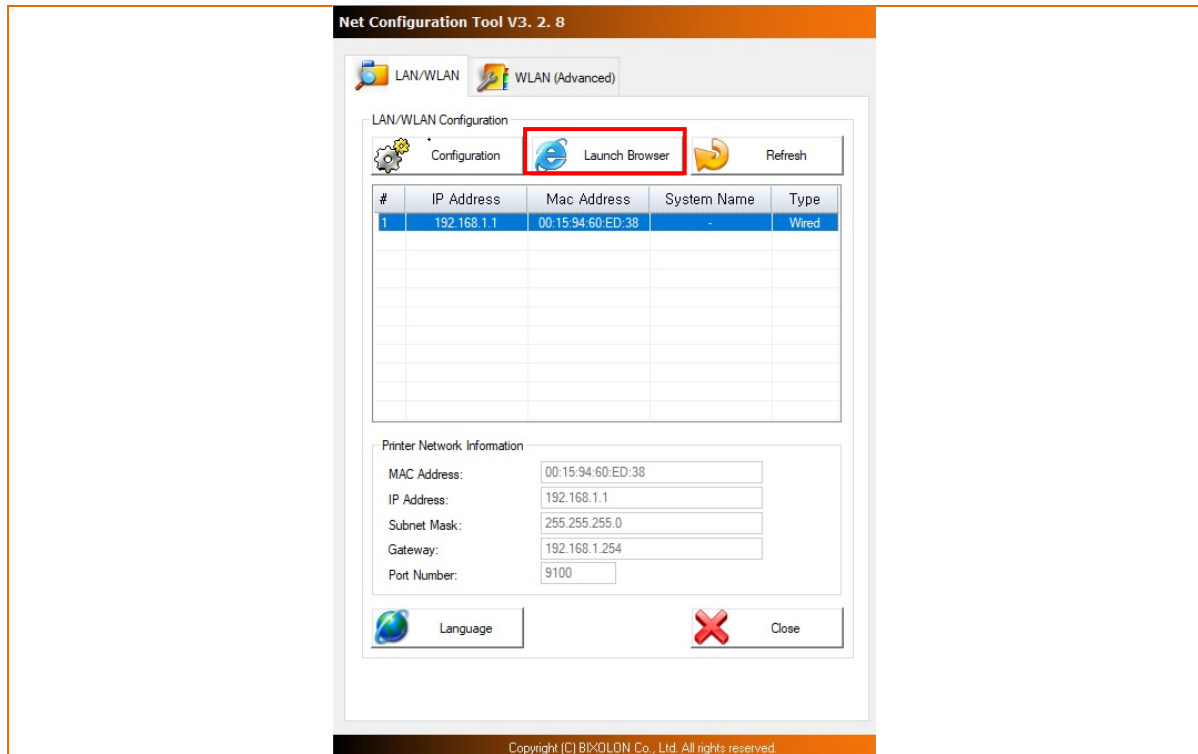


- 4) Enter the proper IP Address, Subnet Mask, and Gateway for the currently used network, and then press the Save button to save the settings.

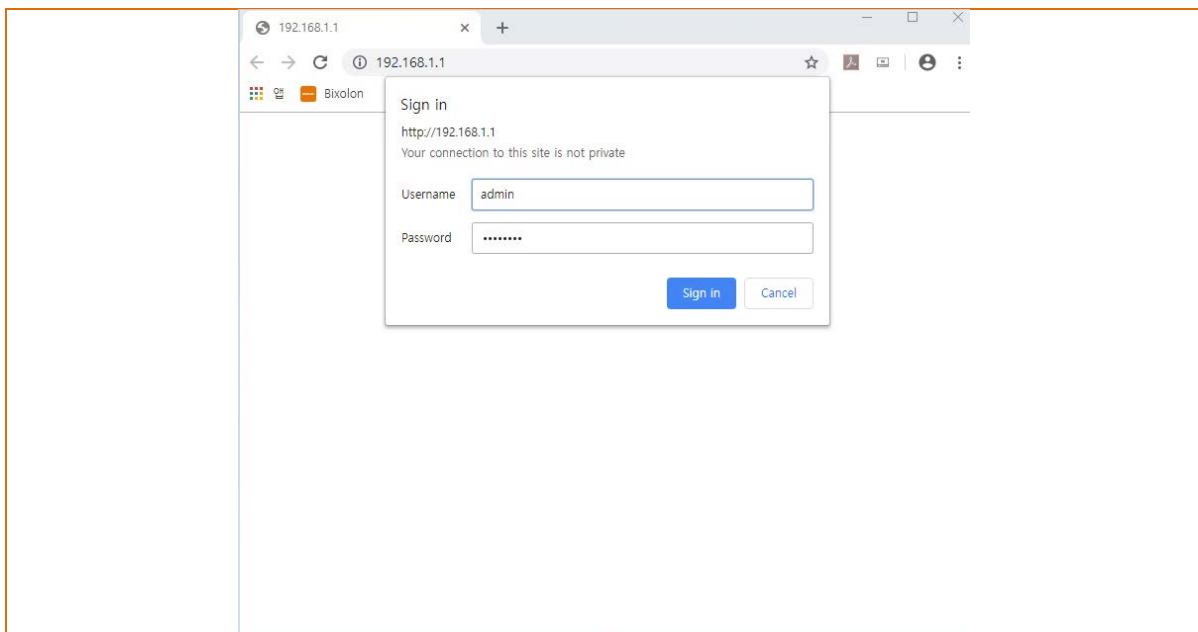


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- 5) Select the printer from the list and press the [Launch Browser] button, and then the Login window will pop up.

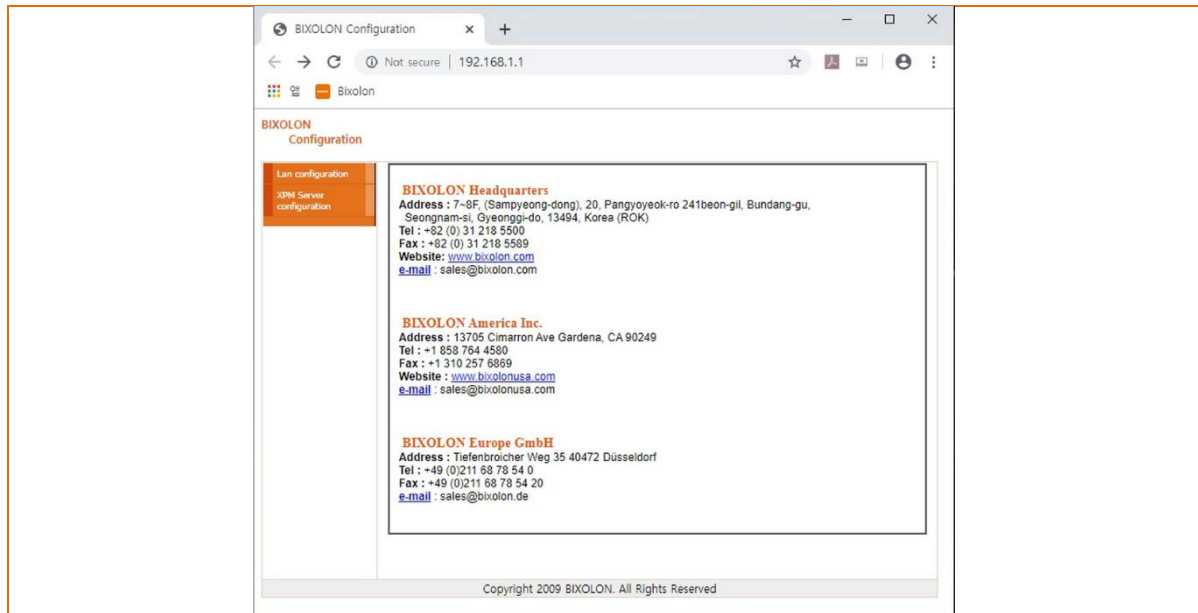


- 6) Enter the Username and Password set for the printer, and then click OK.
(Default settings are Username: "admin", Password: "password")



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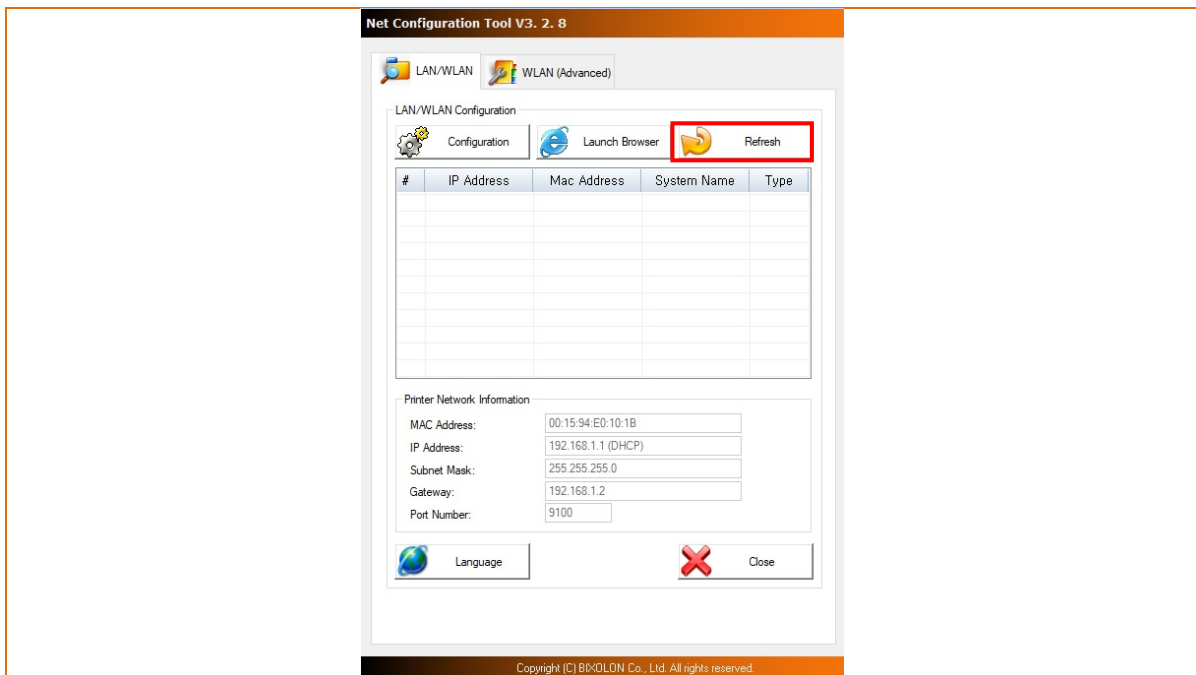
7) When you log in, you will see the web browser for changing the Ethernet settings as shown below.



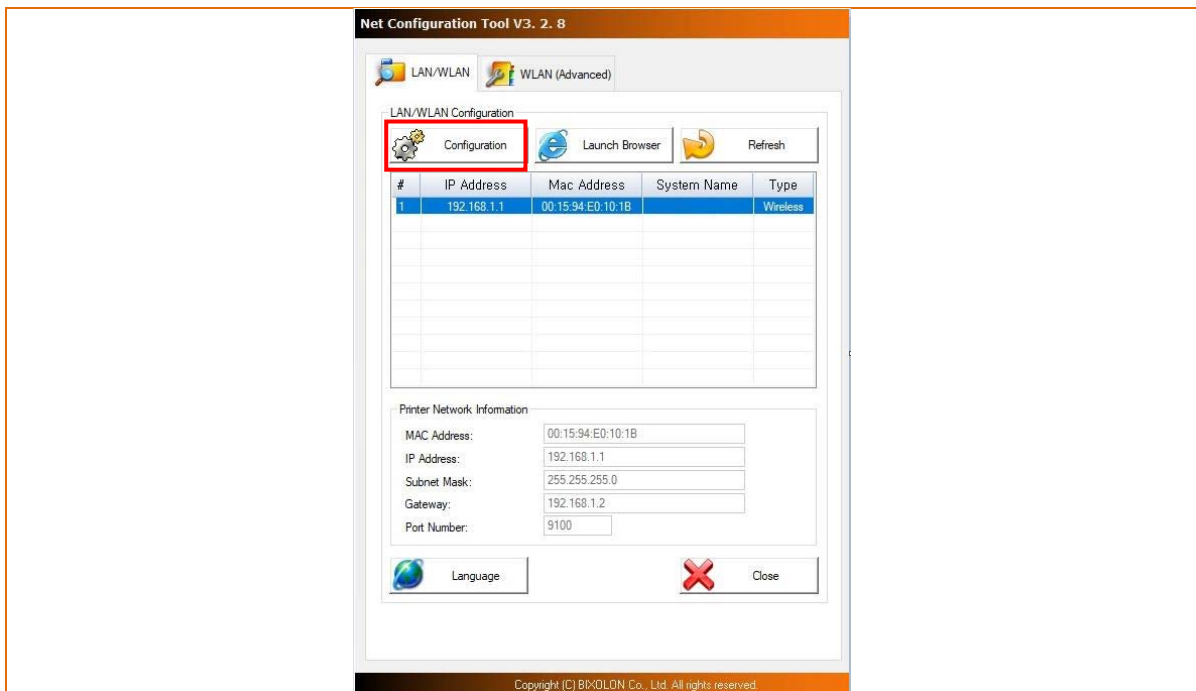
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4-3-2 WLAN Configuration(After initial Wireless LAN Connection)

- 1) When you press the Search button, the printer connected to the network will be shown in the list.



- 2) Select the printer from the list and press the [Configuration] button, and then the following window for changing the WLAN settings will pop up.



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- 3) Enter the proper IP Address, Subnet Mask, and Gateway of the currently used network, and then click the [Save] button to save the settings.

Net Configuration Tool V3.2.8

Network Configuration

IP Address Assignment

☐ DHCP (Dynamic Host Configuration Protocol)

☒ Manual

IP Address: 192 . 168 . 1 . 1

Subnet Mask: 255 . 255 . 255 . 0

GateWay: 192 . 168 . 1 . 2

Port Number

Port Number: 9100 [0 - 32767]

Inactivity Time

Inactivity Time: 10 [0 - 3600] sec.

System Name

System Name:

Save Cancel

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- 4) Select the printer from the list and press the [Launch Browser] button, and then the Login window will pop up. Enter the Username and Password set in the printer, and Click OK. (Default settings are Username: "admin", Password: "password")

Net Configuration Tool V3.2.8

LAN/WLAN Configuration

Configuration Launch Browser Refresh

#	IP Address	Mac Address	System Name	Type
1	192.168.1.1	00:15:34:6D:10:1B		Wireless

Printer Network Information

MAC Address: 00:15:34:6D:10:1B

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Gateway: 192.168.1.2

Port Number: 9100

Language Close

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192.168.1.1

Sign In

http://192.168.1.1

Your connection to this site is not private

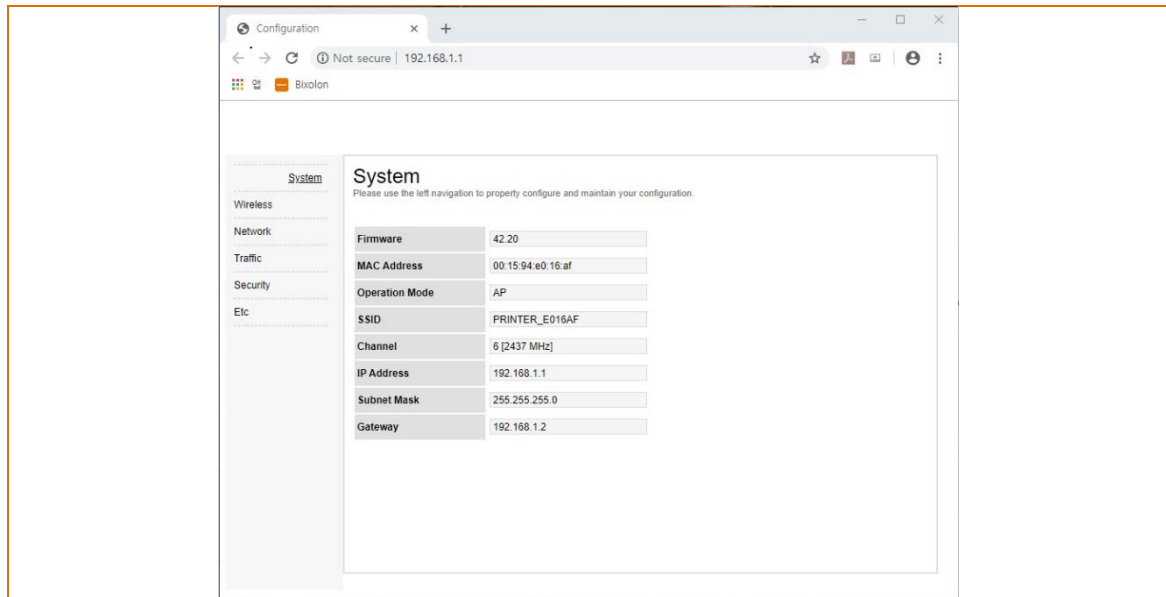
Username: admin

Password: password

Sign in Cancel

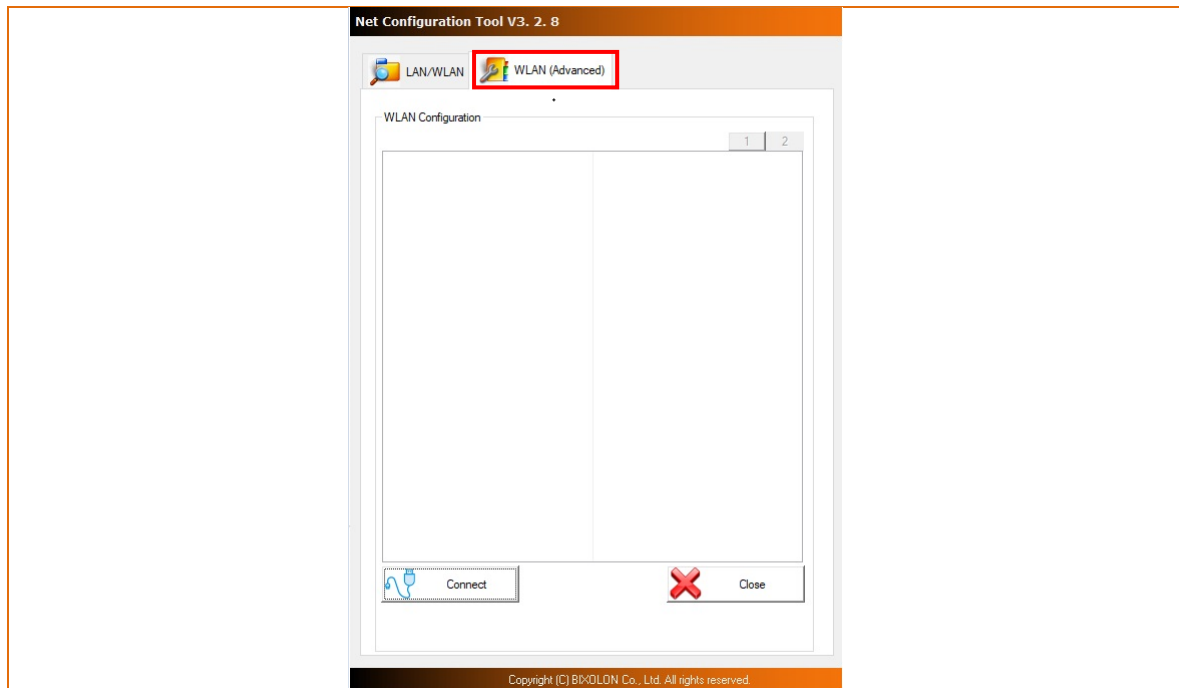
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5) When you log in, you will see the web browser for changing the WLAN settings as shown below.

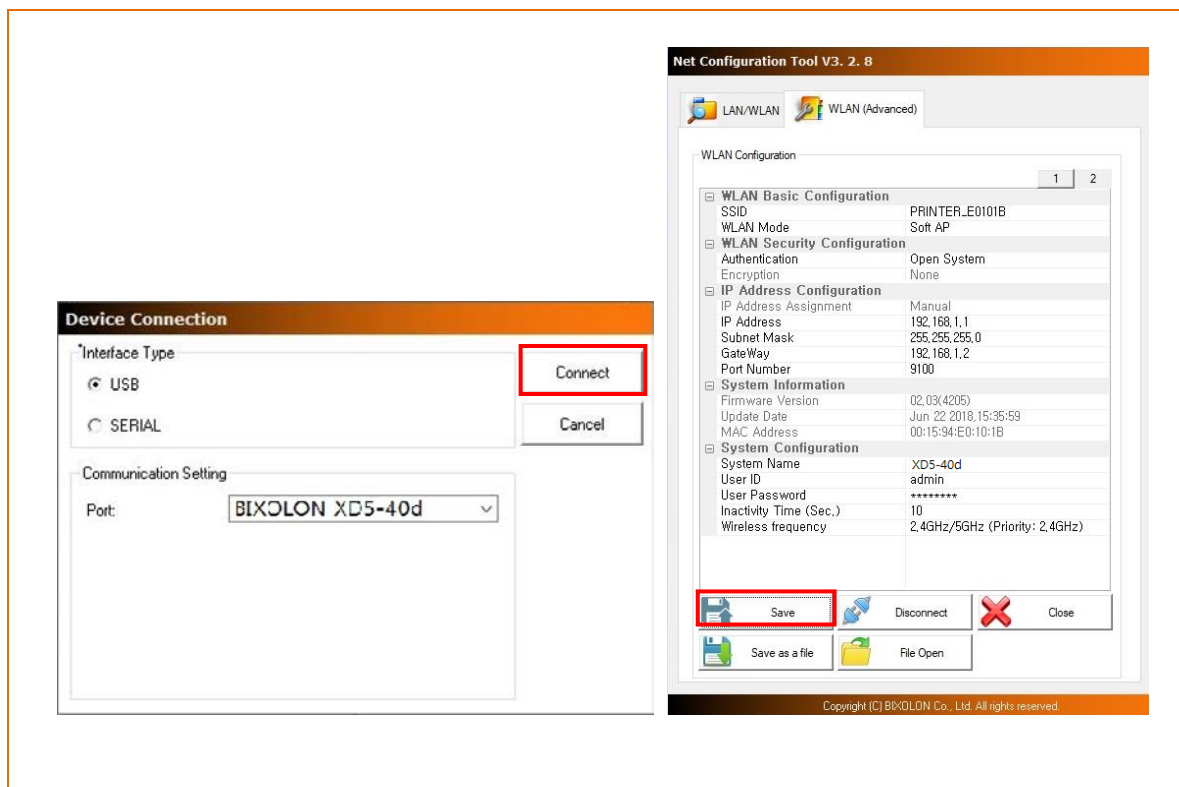


4-3-3 WLAN Configuration(USB Cable)

1) Click [WLAN(Advanced)] tab to configure WLAN settings using USB cable



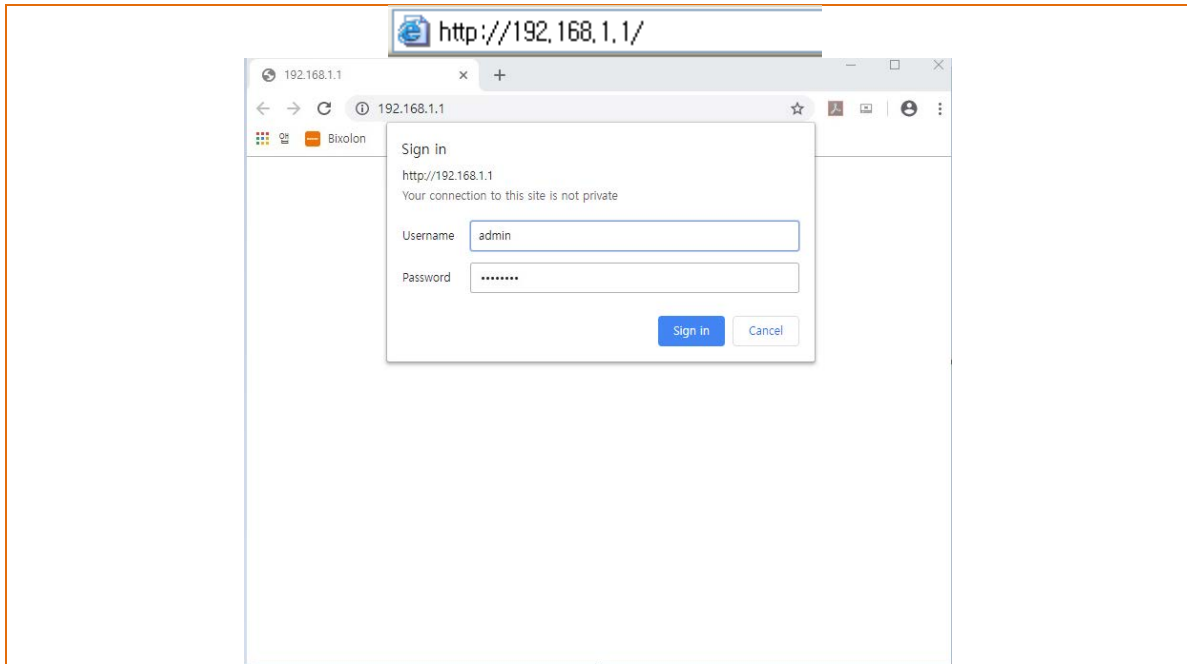
2) Click [Connect] after printer connection via USB to configure Network(WLAN), Protocol, System, Authentication..etc. for network environment in use. Then click[Save] to save the settings.



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4-4 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, and then click [OK]. (Default setting values are Username: "admin", Password: "password".)

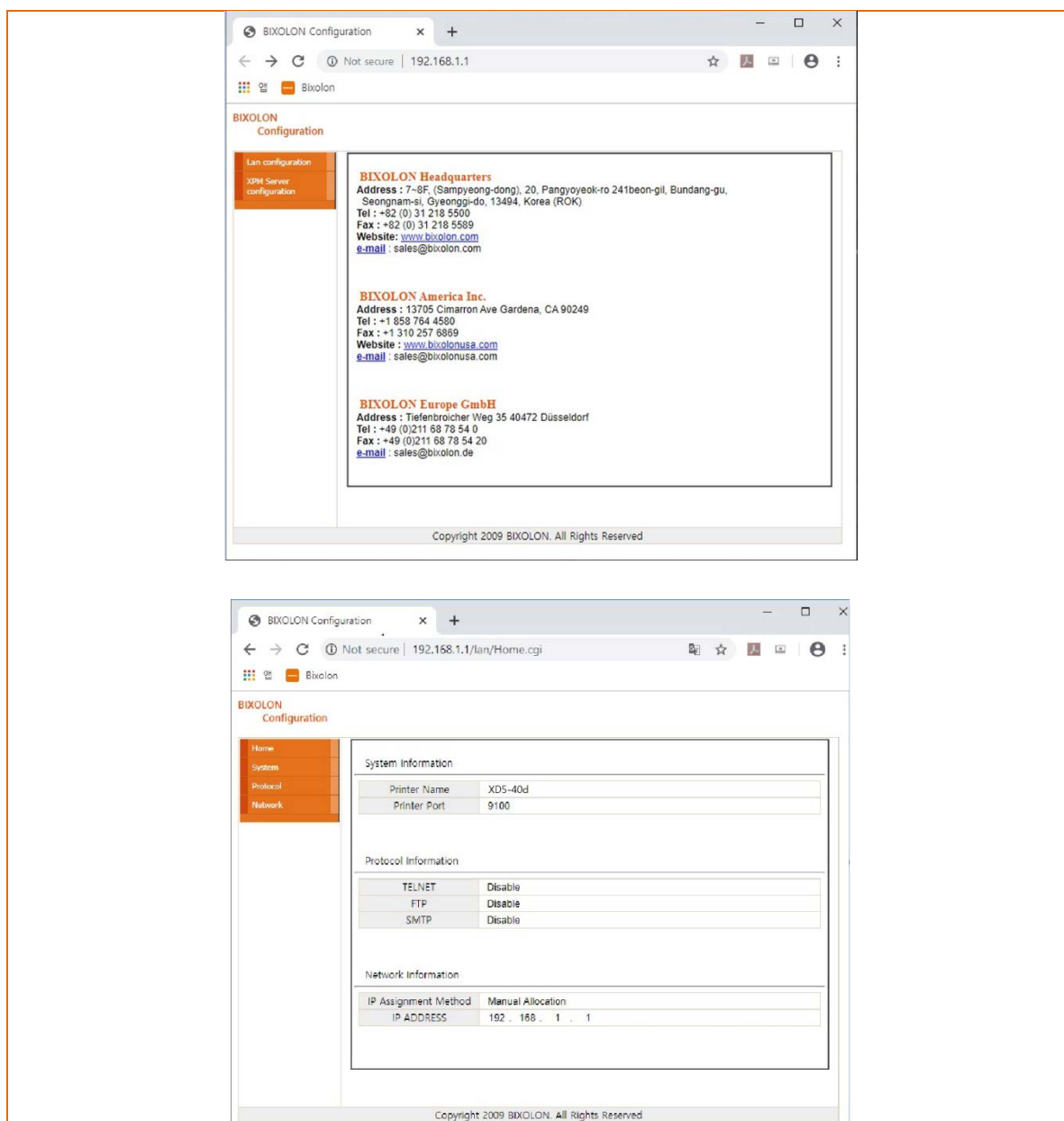


When the Username and Password match the ones registered in the printer, the following window will be opened.

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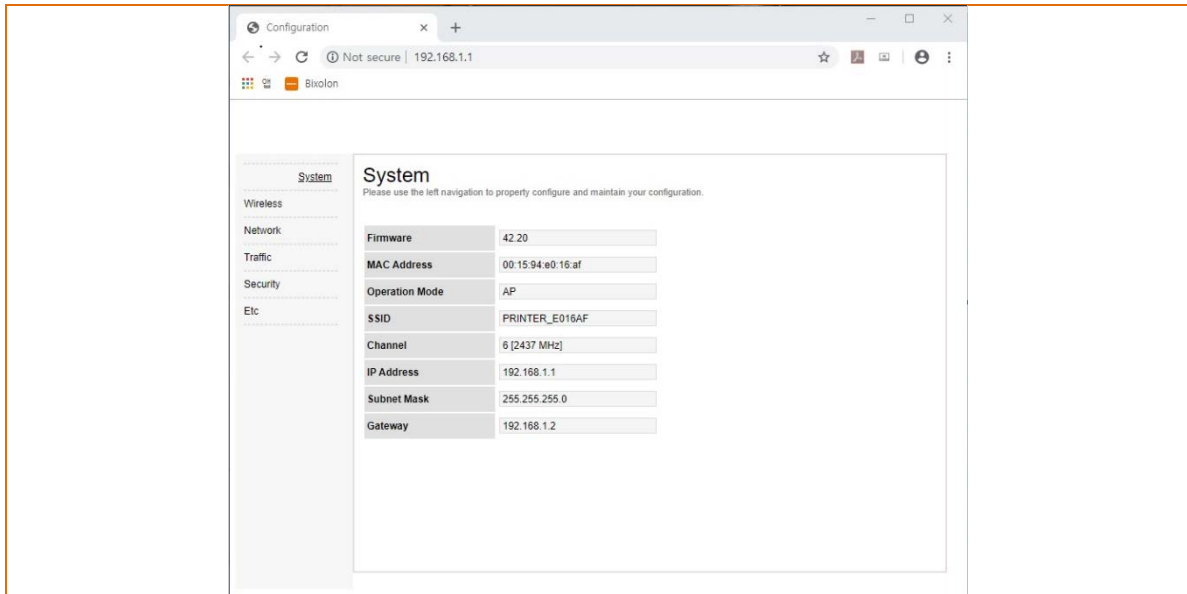
4-4-1 Ethernet Configuration Selection

Settings related to Home, System, Protocol, and Network(LAN) can be configured in this window.



4-4-2 Wireless LAN Selection

Wireless, Network(WLAN), Traffic ,Security and ETC can be configured from this window.

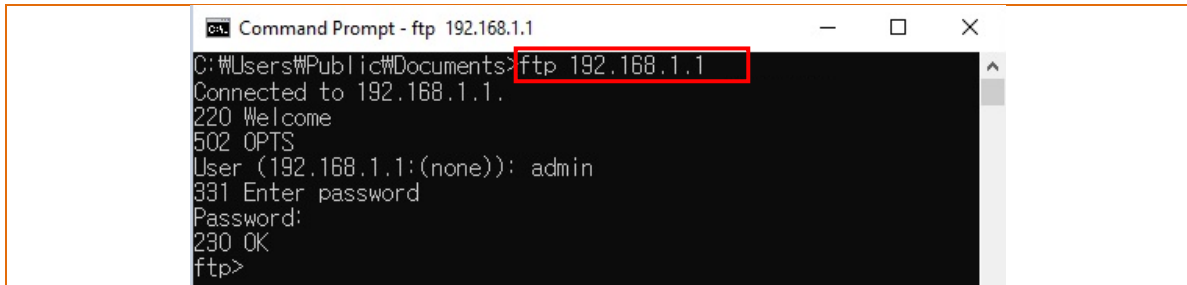


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4-5 FTP

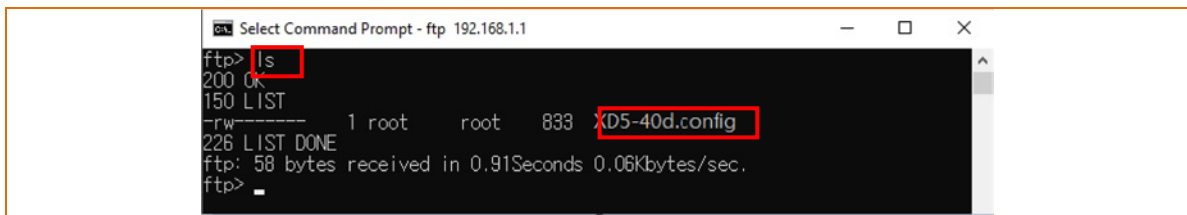
- The configuration files will be downloaded and uploaded to and from the current path. In the following case, the current path is "C:\Users\Public\Documents".

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



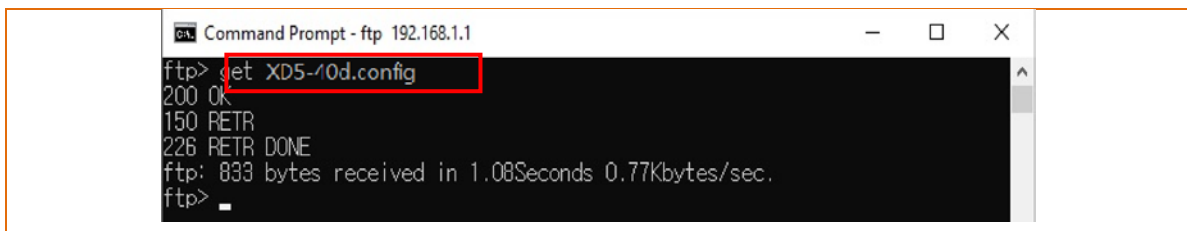
```
Command Prompt - ftp 192.168.1.1
C:\Users\Public\Documents>ftp 192.168.1.1
Connected to 192.168.1.1.
220 Welcome
502 OPTS
User (192.168.1.1:(none)): admin
331 Enter password
Password:
230 OK
ftp>
```

Enter the "ls" command to check the file name to download.



```
Select Command Prompt - ftp 192.168.1.1
ftp>ls
200 OK
150 LIST
-rw----- 1 root root 833 XD5-40d.config
226 LIST DONE
ftp: 58 bytes received in 0.91Seconds 0.06Kbytes/sec.
ftp>
```

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

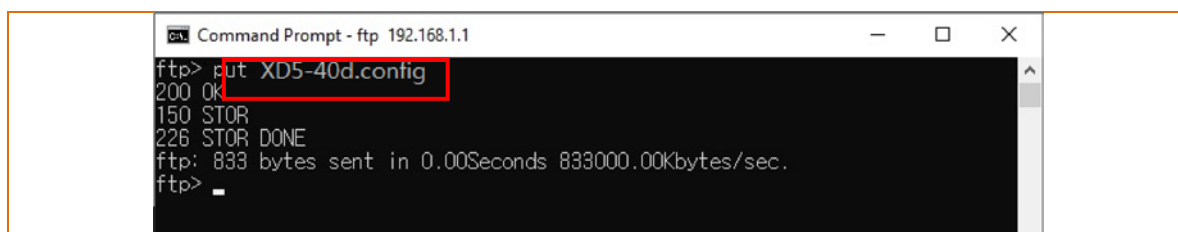


```
Command Prompt - ftp 192.168.1.1
ftp>get XD5-40d.config
200 OK
150 RETR
226 RETR DONE
ftp: 833 bytes received in 1.08Seconds 0.77Kbytes/sec.
ftp>
```

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

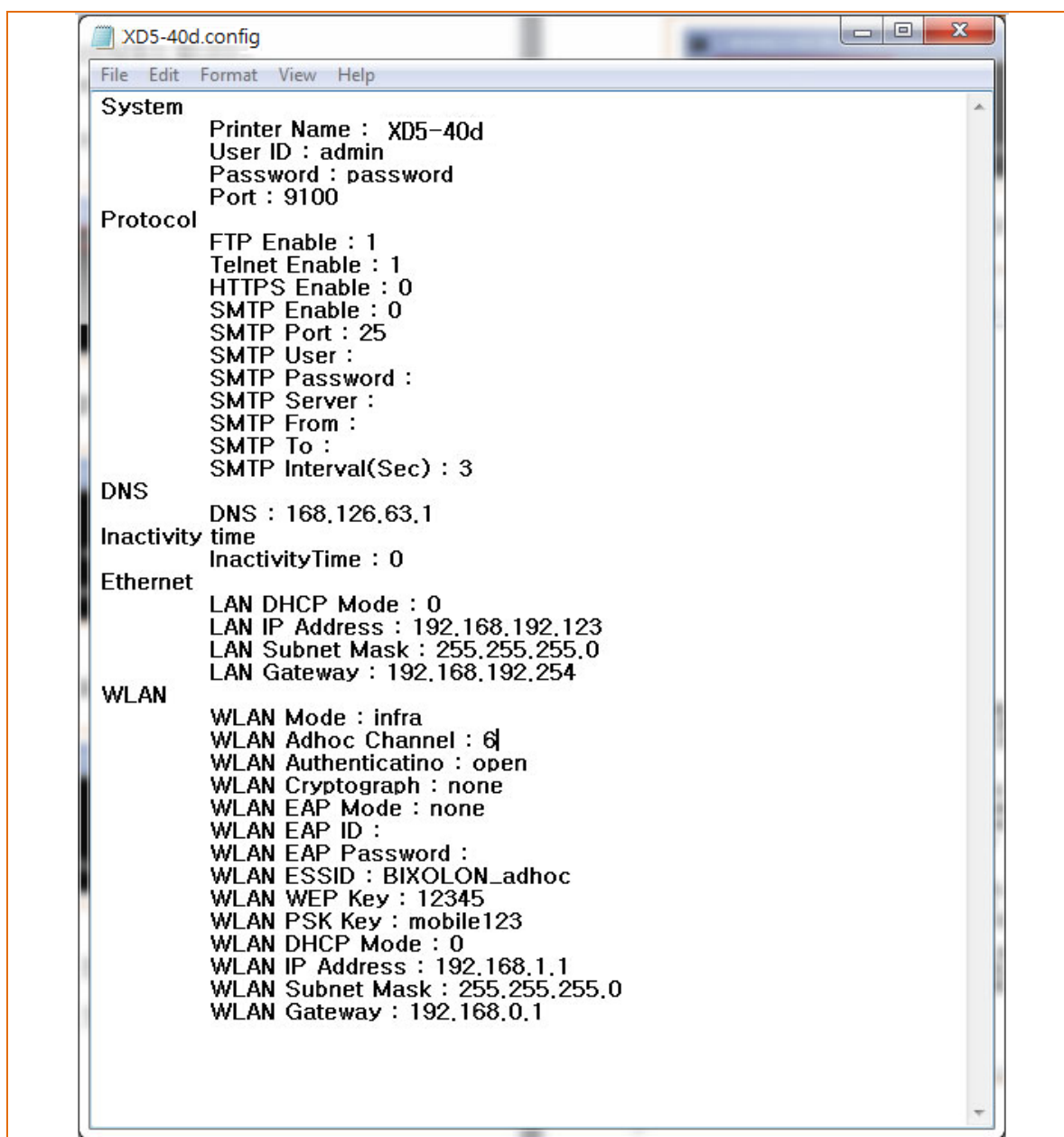
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Enter “put [Printer name].config” command if you want to upload the configuration file in the corresponding directory for the printer.



```
Command Prompt - ftp 192.168.1.1
ftp> put XD5-40d.config
200 OK
150 STOR
226 STOR DONE
ftp: 833 bytes sent in 0.00Seconds 833000.00Kbytes/sec.
ftp>
```

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

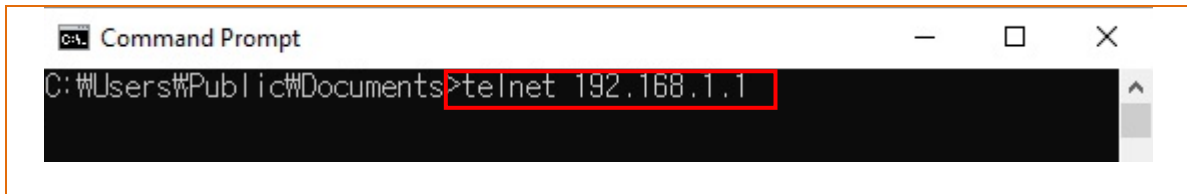


```
XD5-40d.config
File Edit Format View Help
System
Printer Name : XD5-40d
User ID : admin
Password : password
Port : 9100
Protocol
FTP Enable : 1
Telnet Enable : 1
HTTPS Enable : 0
SMTP Enable : 0
SMTP Port : 25
SMTP User :
SMTP Password :
SMTP Server :
SMTP From :
SMTP To :
SMTP Interval(Sec) : 3
DNS
DNS : 168.126.63.1
Inactivity time
InactivityTime : 0
Ethernet
LAN DHCP Mode : 0
LAN IP Address : 192.168.192.123
LAN Subnet Mask : 255.255.255.0
LAN Gateway : 192.168.192.254
WLAN
WLAN Mode : infra
WLAN Adhoc Channel : 6
WLAN Authentcatino : open
WLAN Cryptograph : none
WLAN EAP Mode : none
WLAN EAP ID :
WLAN EAP Password :
WLAN ESSID : BIXOLON_adhoc
WLAN WEP Key : 12345
WLAN PSK Key : mobile123
WLAN DHCP Mode : 0
WLAN IP Address : 192.168.1.1
WLAN Subnet Mask : 255.255.255.0
WLAN Gateway : 192.168.0.1
```

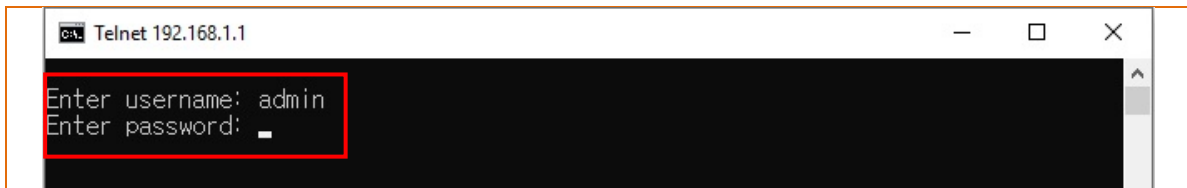
* The format of the configuration file is “Configuration item: Setting value”.
Uploading a file that doesn’t have the format shown above will not change the setting values.

4-6 Telnet

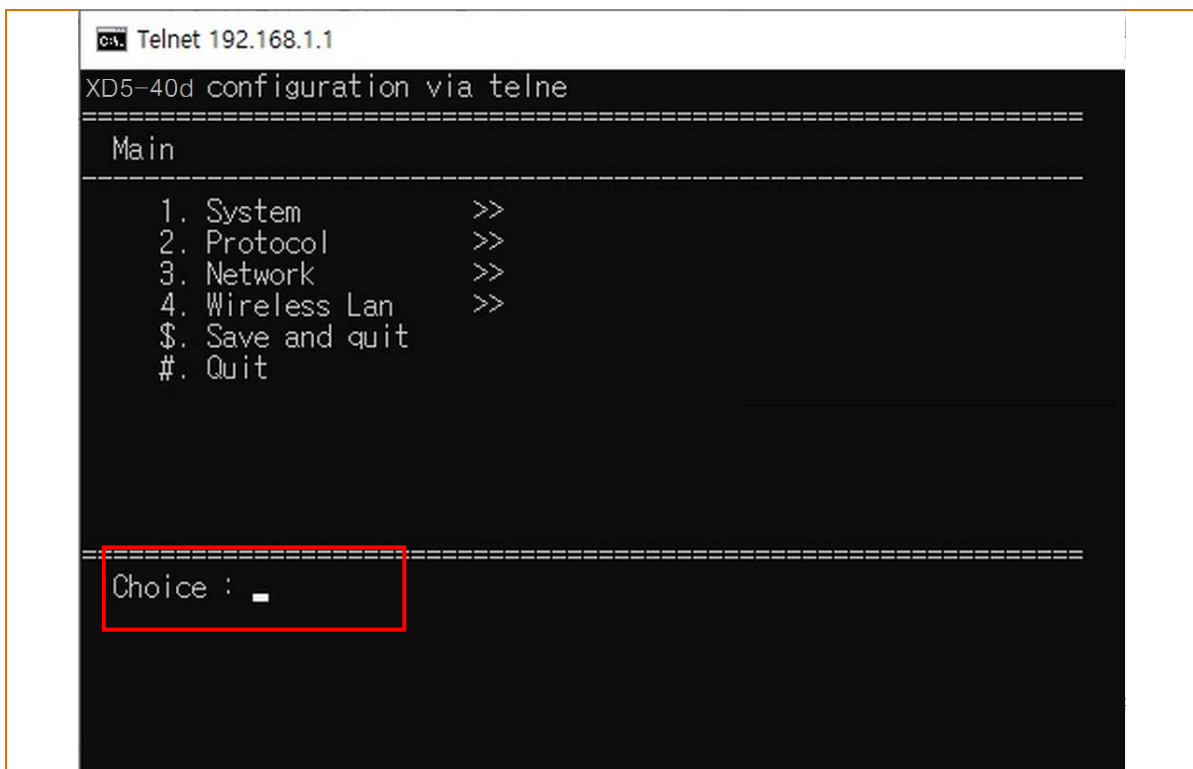
Enter "telnet Printer IP".



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.



4-7 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.

(Refer to Configuration)

Using Web Browser

Connect to the printer web-server.

(Enter the IP address of the printer in the address bar.)

Select LAN configuration, and then select the Protocol tab.

The screenshot shows the BIXOLON Configuration web interface. On the left is a navigation menu with links: Home, System, Protocol (highlighted in red), and Network. The main content area is titled 'Function' and 'Set-up'. It contains a table with three rows: TELNET, FTP, and SMTP. Each row has a dropdown menu set to 'Disable'. The SMTP row also has a 'Configuration' button. Below the table is a 'SUBMIT' button. At the bottom of the page, it says 'Copyright 2009 BIXOLON. All Rights Reserved'.

Function	Set-up
TELNET	Disable
FTP	Disable
SMTP	Enable Configuration

Click the Configuration button to display the following window.

The screenshot shows the SMTP Configuration web interface. It has a table with two columns: 'SMTP' and 'Set-up'. The rows contain various configuration fields: SMTP User ID, SMTP Password, SMTP Server Name, SMTP Port Number, From Address, To Address, Check Interval(Sec), Paper Empty, Cover Open, Cutter Error, Ribbon, Calibration Error, TPH Over Heat, and Paper Jam. Each field has a text input or a dropdown menu. At the bottom of the table is a 'SUBMIT' button. At the bottom of the page, it says 'Copyright 2009 BIXOLON. All Rights Reserved'.

SMTP	Set-up
SMTP User ID	userid@mail_server
SMTP Password	*****
SMTP Server Name	mail_server
SMTP Port Number	25
From Address	userid@mail_server
To Address	administor@mail_server
Check Interval(Sec)	3
Paper Empty	OFF
Cover Open	OFF
Cutter Error	OFF
Ribbon	OFF
Calibration Error	OFF
TPH Over Heat	OFF
Paper Jam	OFF

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Check the SMTP setting values

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 by using Windows Test Page

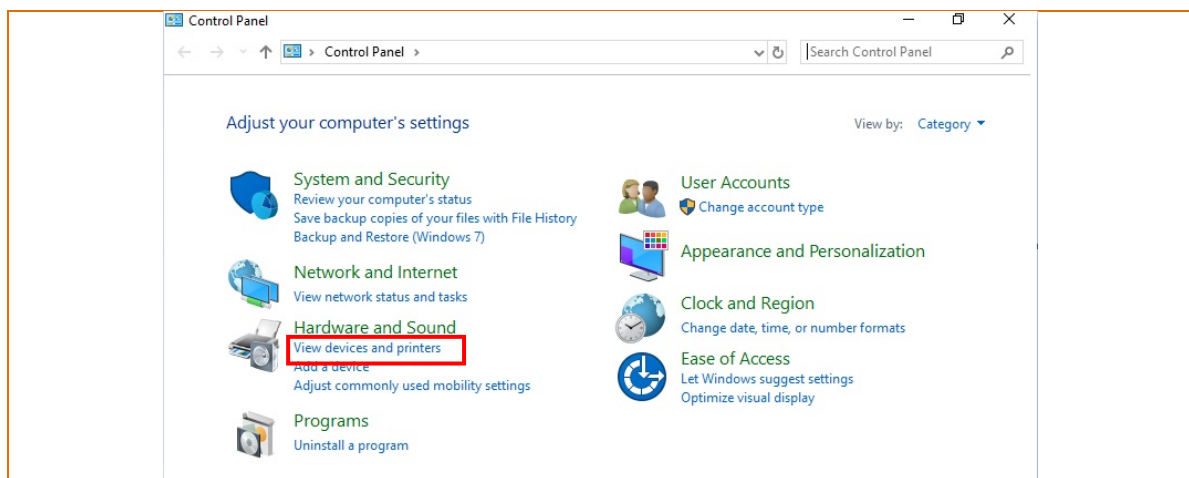
You can use the Windows printer driver as shown below when there is no test program.

1) Install the Windows printer driver.

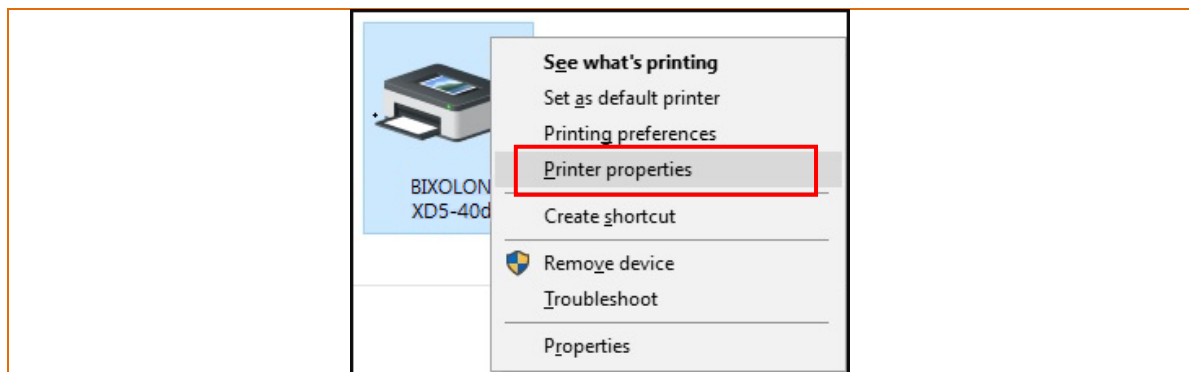


You can download from our home page the Windows driver.
(www.bixolon.com)

2) Click the “View devices and printers” from the Control Panel.

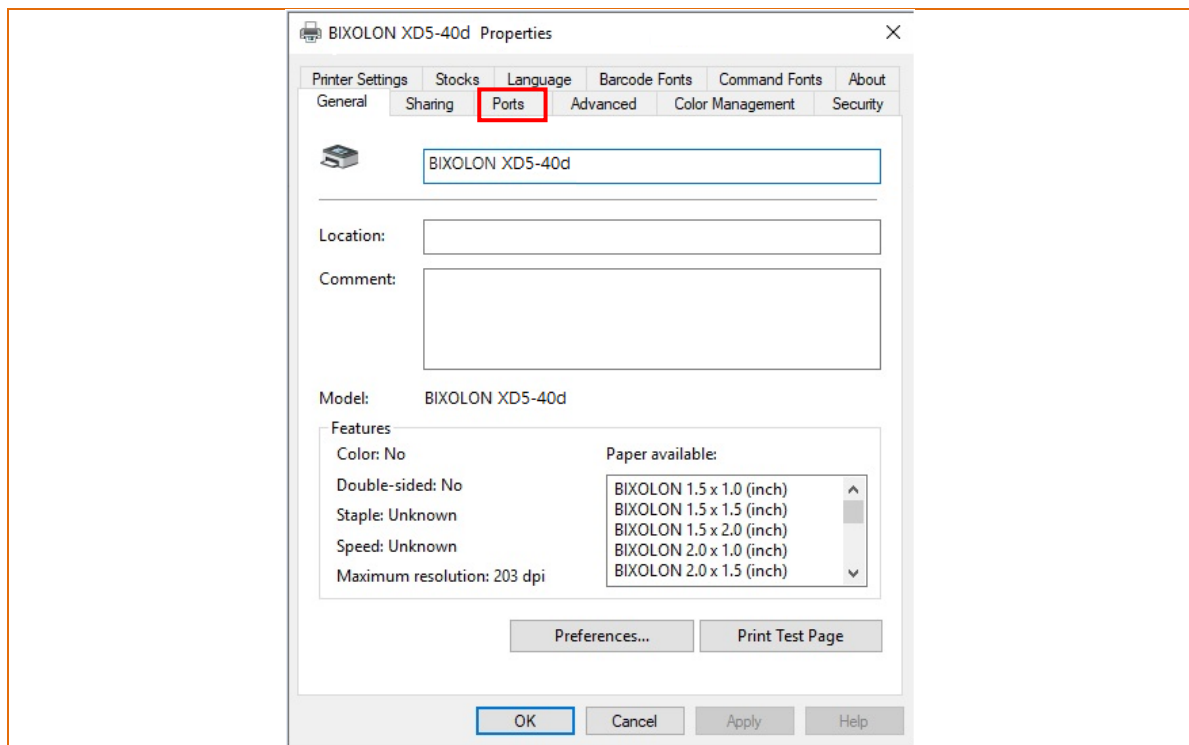


3) Select and right click on the corresponding model, and then select “Printer properties.”

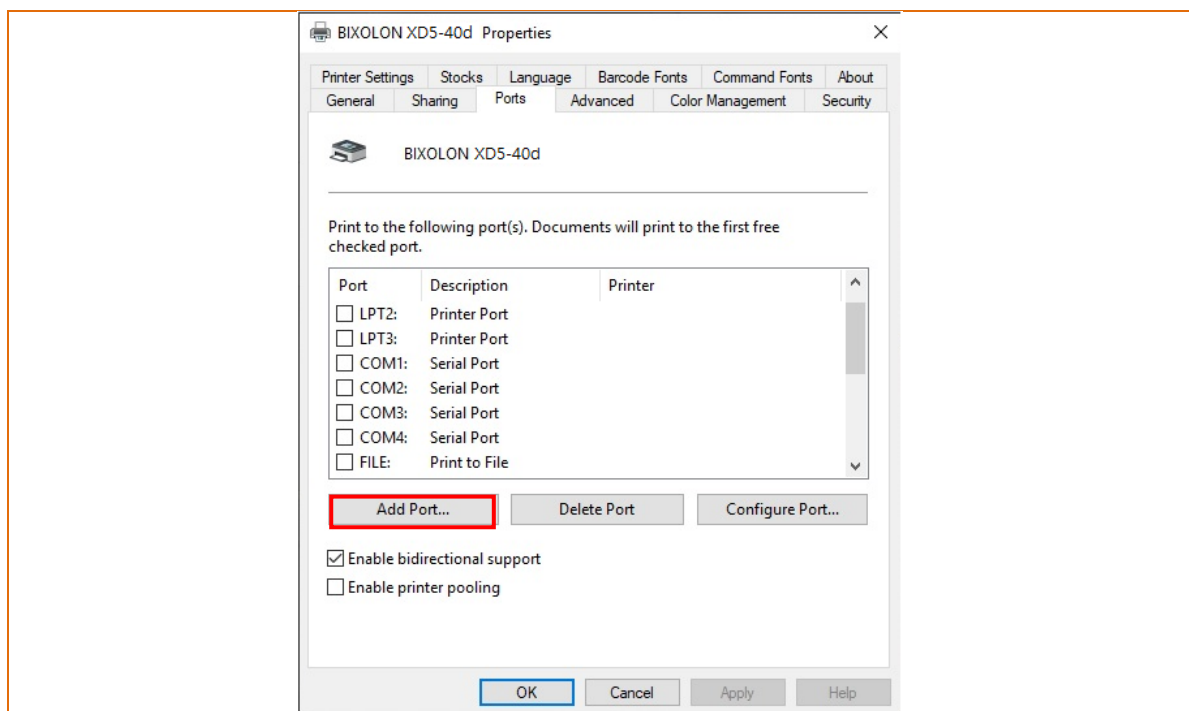


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4) Select the "Ports" tab from the "Properties" window.

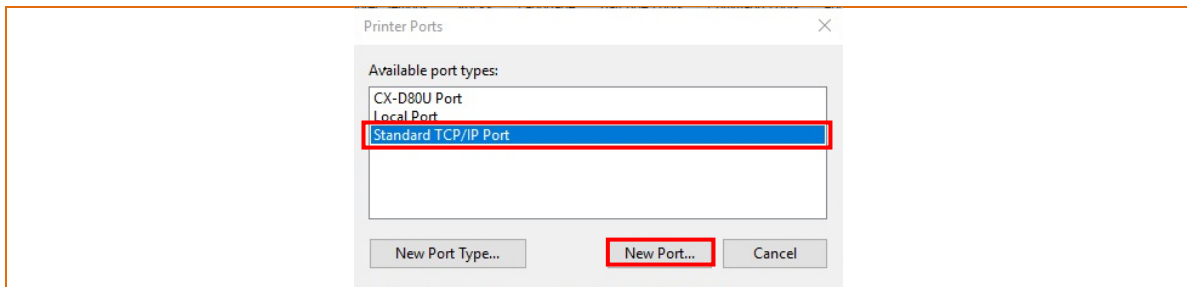


5) Click "Add Port..."

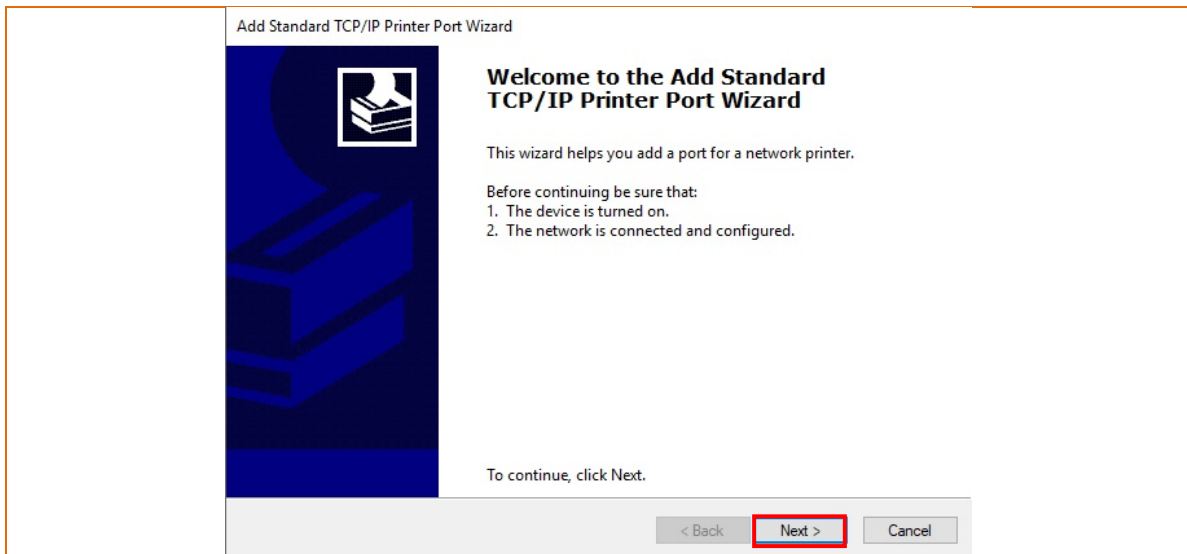


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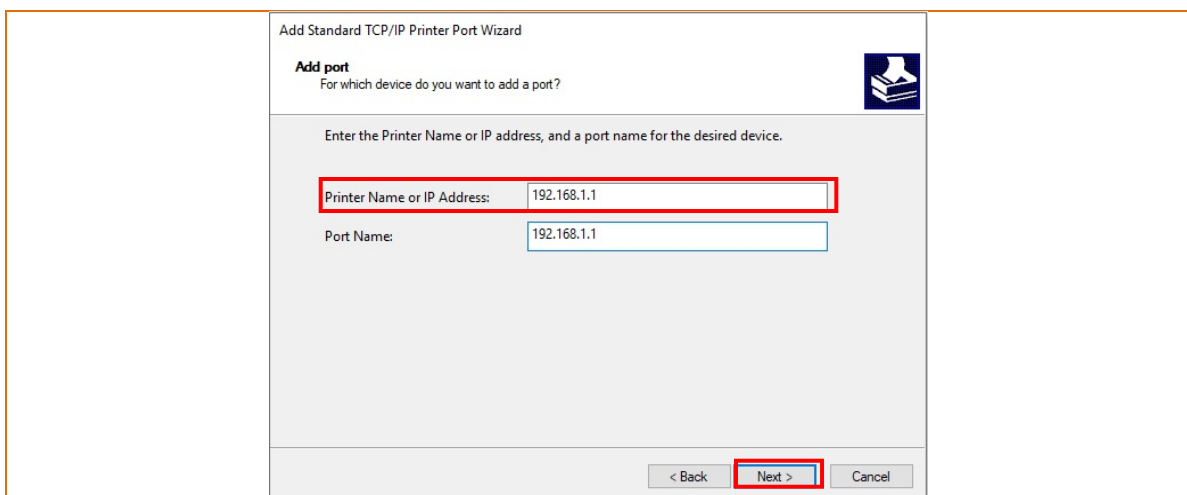
6) Select “Standard TCP/IP Port” and click “New Port...”



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



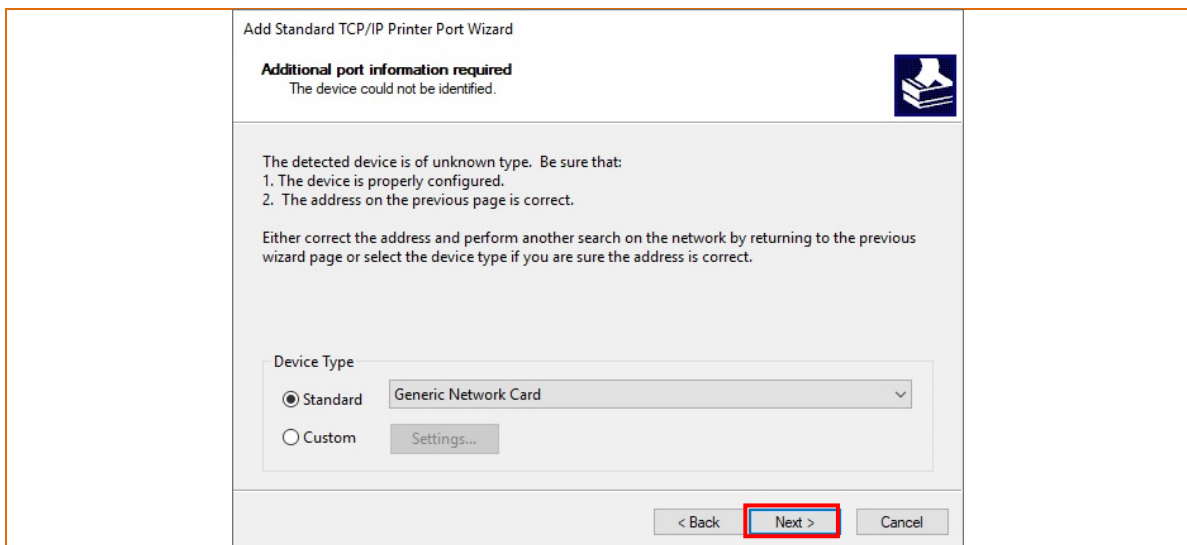
8) Enter the IP address assigned to the printer in the “Printer Name or IP Address” field in the “Add Port” pop up window, and then click the [Next] button.



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

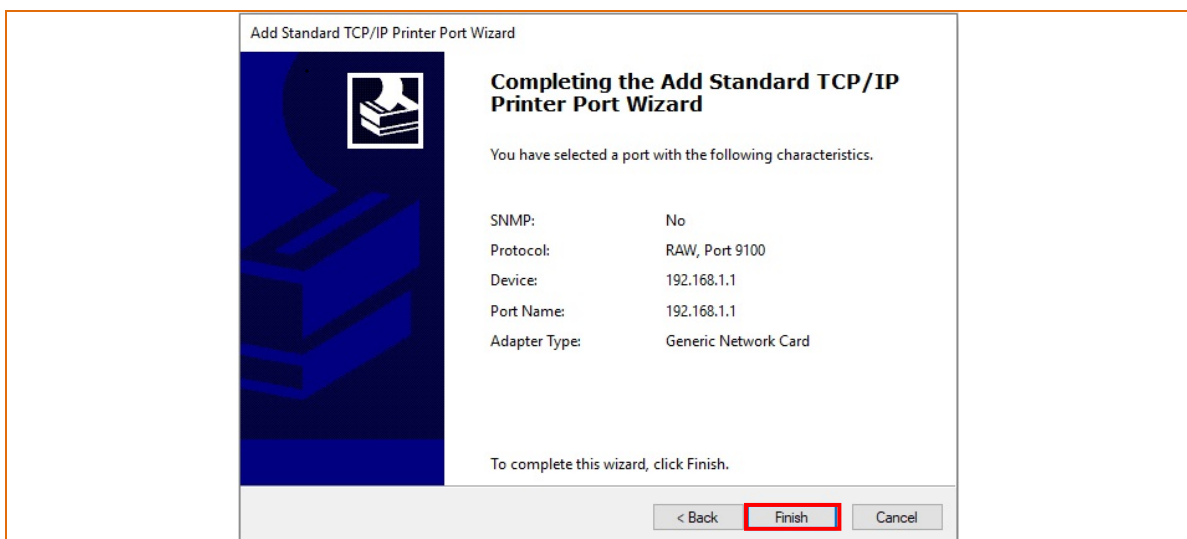
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9) Click the [Next] button in the “Additional Port Information Required” window.

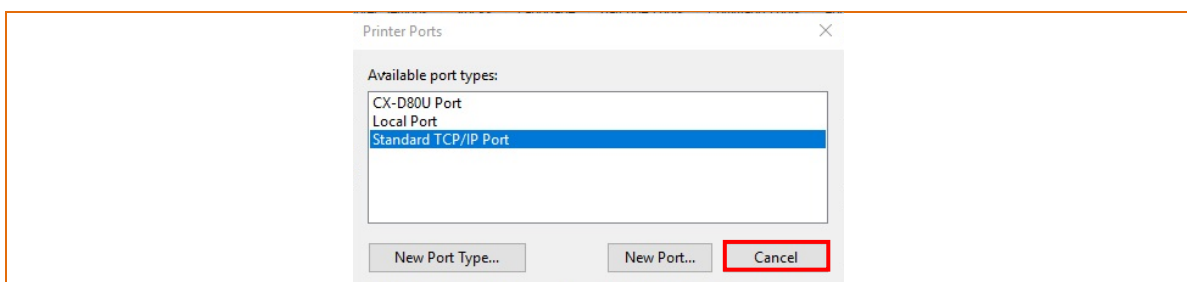


Click the [Next] button to proceed without any changes.

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

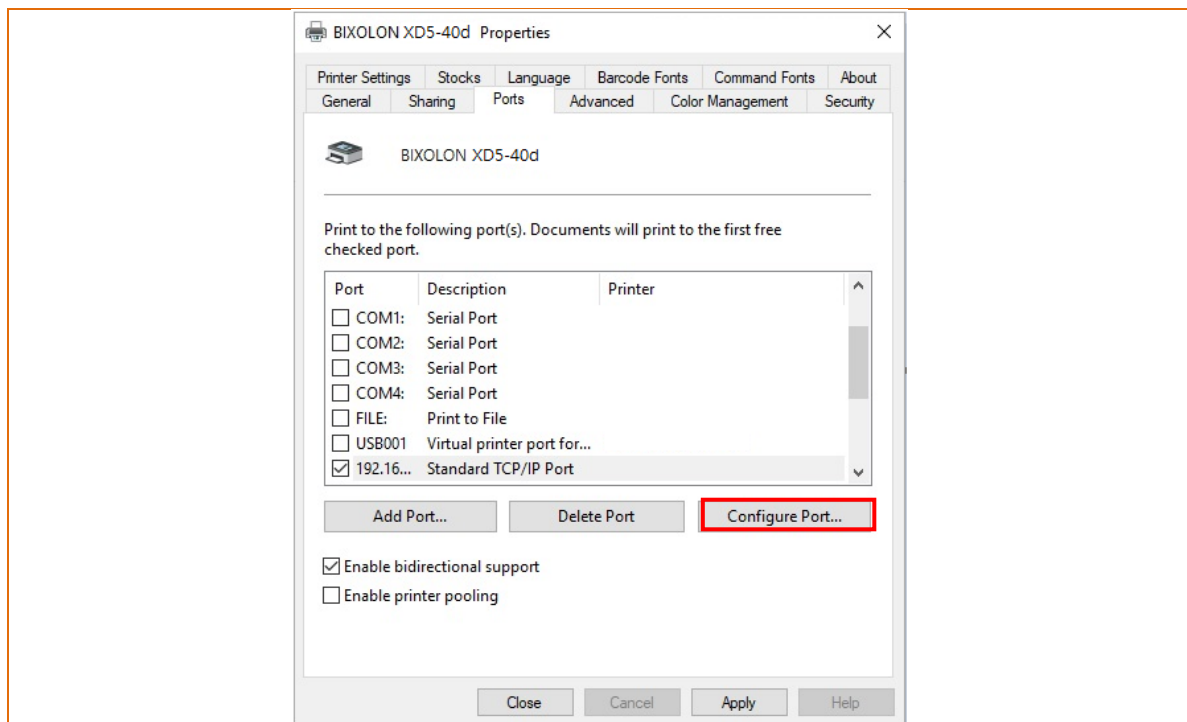


11) Click the “Cancel” button in the Printer Port window, closing the window.

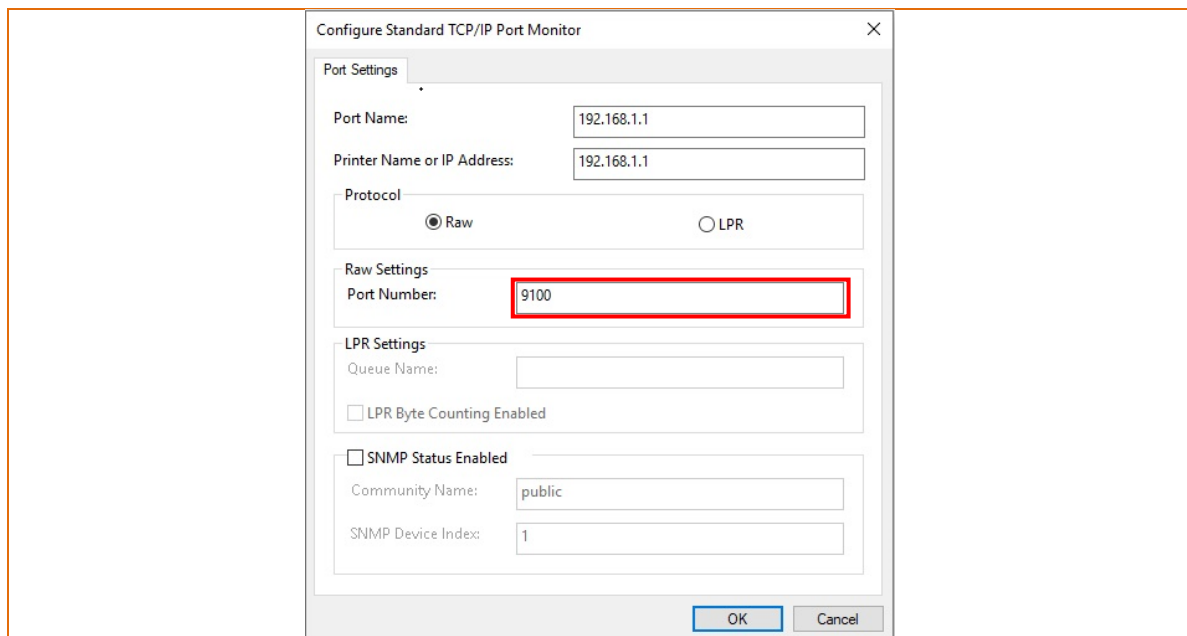


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12) Click the “Configure Port...” button in the “Properties” window.



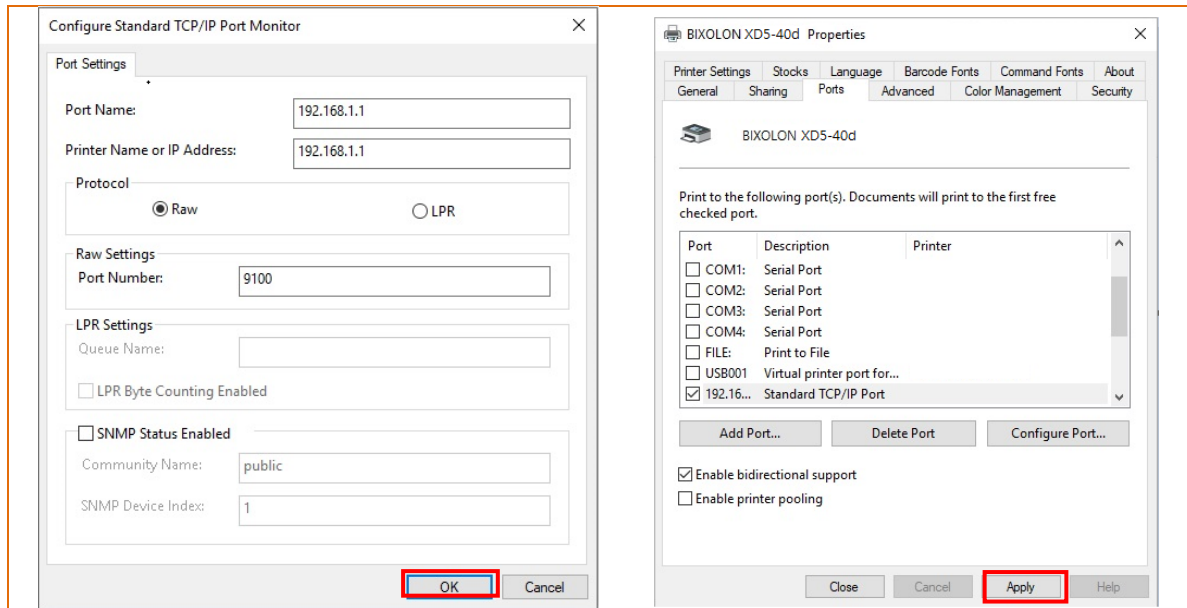
13) Enter the same number as the local port number set during the installation of the interface card in the “Port Number” field in the Raw Settings.



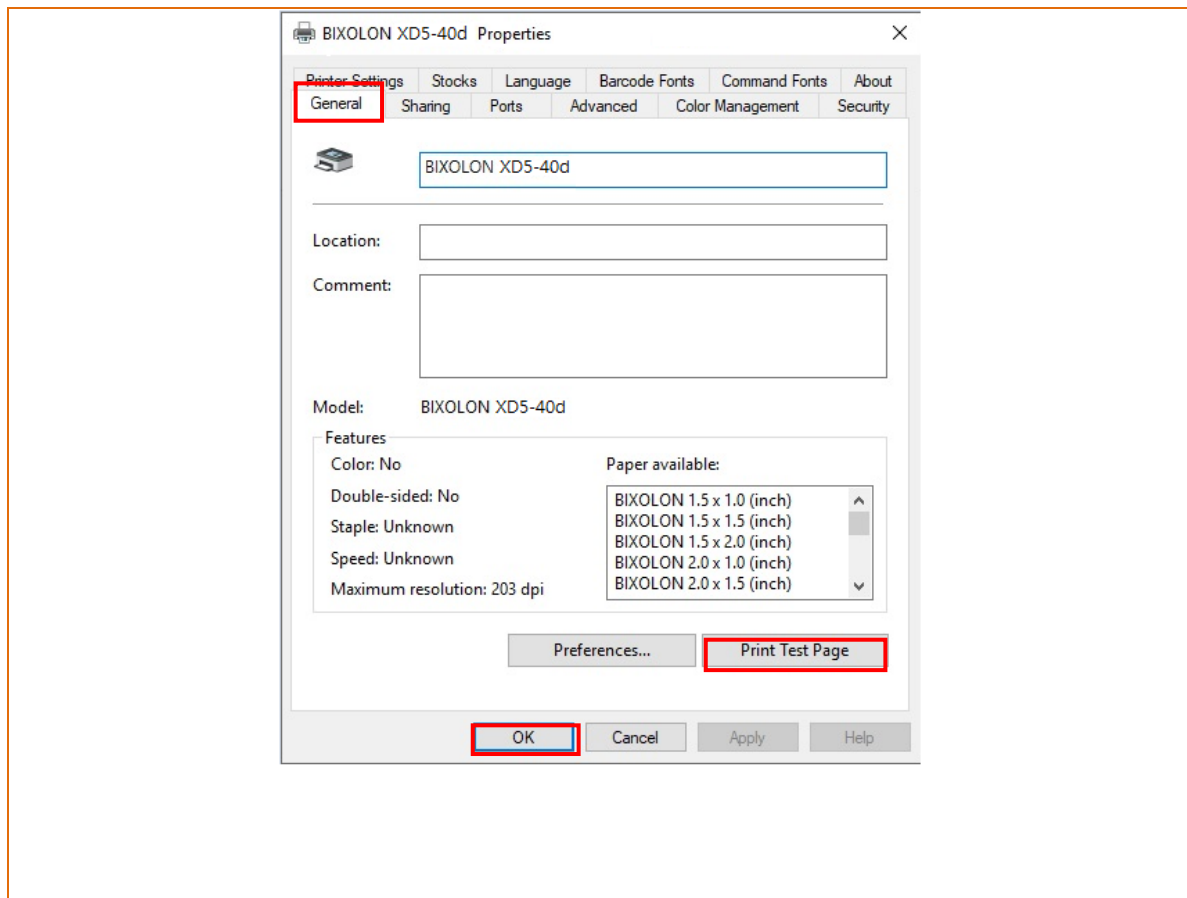
Do not change any other items except the RAW Settings.

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- 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

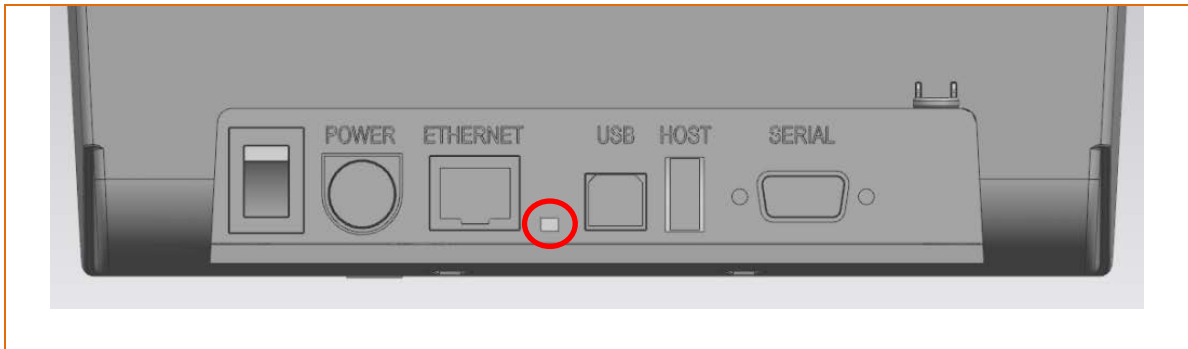
This function changes the Ethernet and WLAN settings of the printer to the initial factory settings.

- SSID of WLAN will be reset as Default(Soft AP)

6-1 Initializing Ethernet Setting

There are 2 ways to make the printer LAN reset

- 1) In order to carry out the factory reset, turn off the printer, and then turn on the printer while pressing the reset button as shown in the following picture.
(Please wait for about 10 to 15 seconds while holding down the reset button)
- 2) Send the ethernet_factory_reset.bin file to the printer via Unified Label Utility.



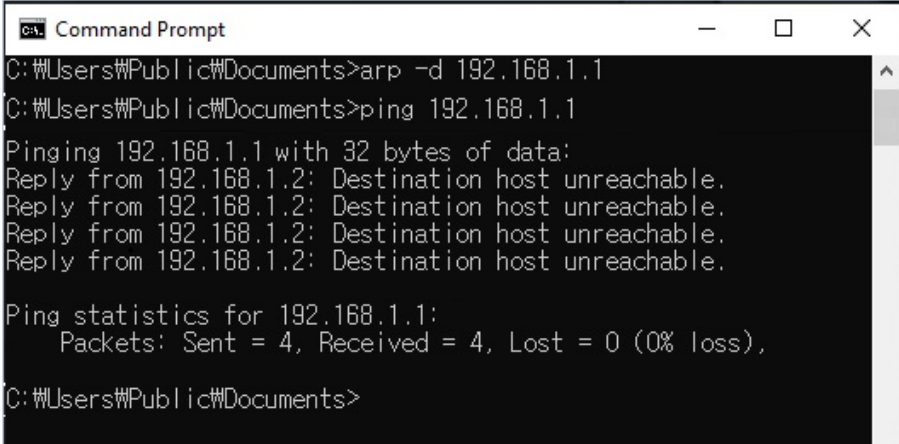
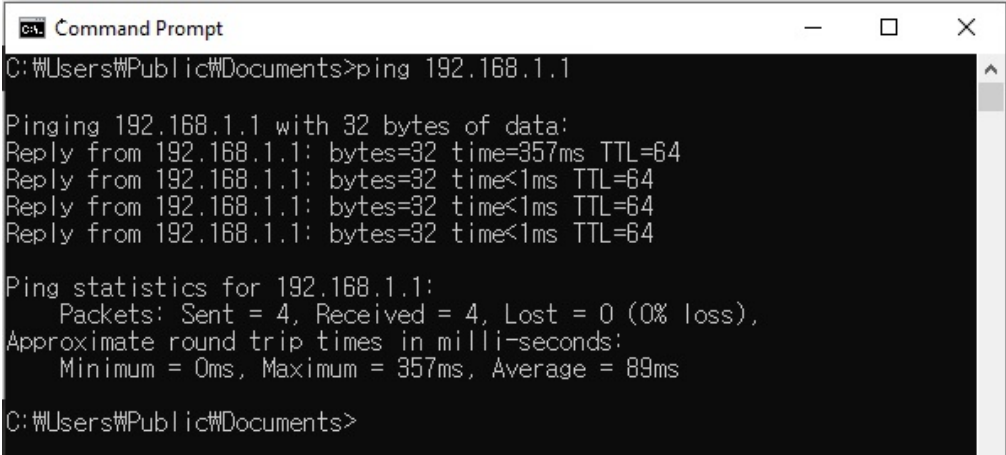
6-2 Initializing WLAN Setting

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

7. Troubleshooting

When printing doesn't work

Check network setting	
When using Ethernet	<ul style="list-style-type: none"> - IP Address Check whether the IP Address band of the printer and 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.
When using WLAN	<p>Check the wireless network setting of the AP and the printer. (Refer to Configuration for checking/changing the printer settings)</p> <ul style="list-style-type: none"> - 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.

PING Check	
Checking IP collision	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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}  <p>When you see “Destination host unreachable.” as shown below, it means that there is no collision. The corresponding IP can be used.</p> <p>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.</p> 
Check Cable	
When using Ethernet	<p>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.</p>

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Default Values

Printer Name	Printer Name	XD3-40x / XD5-4xx / XL5-4xCT
	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

[illegible]