sWiFi/all

User Manual

Revision History

Revision Date	Document Ver.	Pages Revised	Revised/Added/Removed	Details of Revision
2020.08.15	1.0	All	-	New

Contents

Please be sure to read this manual before using and use the product safely and accurately.

• Pictures and photos in the manual may be different from the physical, and the document is subject to change without notice to improve performance. For the last information, please visit our website (www.sysbas.com).

• To view frequently asked questions and answers, please visit our website and find Support –Technical Support –FAQ section.

• Documents can be downloaded from the product page or Download section.

• Sellers or users should be aware of the fact that this device is intended for industrial use(Class A), not for residential use.

• This device has a potential for radio interference during use and may receive harmful interference from other devices.

• Warranty policy is included in the product packaging.

• The exchange/return of the device can be handled by the procedure described in the Warranty Policy.

1. WiFi Technology

WiFi(Wireless Fidelity) is any "Wireless Local Area Network(WLAN)" product based on IEEE(Institute of Electrical and Electronics Engineers) 802.11 standard, mainly using 2.4GHz and 5GHz frequency radio band.

WiFi-compatible devices use the technology to communicate wirelessly with each other over the WLAN network and wireless access points, enabling them to reach approximately 100 meters indoors and further outdoors.

WiFi saves time and money by eliminating the need to lay cables.

It also supports encryption modes for wireless communication security such as Open, WEP, WPA-PSK, WPA2-PSK, WPA-Enterprise WPA2-Enterprise and so on.

low cost   wireless   secure

Benefits that users can gain from using WiFi technology are:

• Wireless communication(Up to 100m Indoor) with low installation cost

• Simple access procedures for quick installation and application

• Secure through encrypted communication

2. Components

Gift Box

sWiF/all

5V DC Adapter

Dipole Antenna (Dual band)

Components	Ordering Information
sWiFi/all, Dipole Antenna (Dual band), 5V 1A DC Adaptor	sWiFi/all

3. Product

LED

- RDY (Yellow): When in standby mode, LED flashes every 1.0 seconds.

  When in setup mode, LED flashes every 0.4 seconds.

  When in Infrastructure mode, turns on when the connection to AP is successful.

  When in Soft AP mode, turns on when the connection is successful at Client.

- TXD (Green): Flashes when serial data is sent, turns off if there is no transmission.

- RXD (Red): Flashes when serial data is received, turns off if there is no reception.

Connector

DC Adapter, WiFi Antenna Connector(Male)　　　　　Serial Port(RS232/422/485)

- PWR: Connect 5V 1A DC adapter included in the package

  (internal diameter 3.47mm, outer diameter 1.33mm)

- WiFi Antenna Connector(Male): Connect the Antenna included in the package

- Serial Port(RS232/RS422/RS485): Serial ports which can communicate

  (Please refer to the Appendix for pin specifications)

Button

- Press RST buttons for less than 3 seconds: Enter equipment setup mode

  (Please refer to Ch.6 Getting Started for settings)

- Press RST buttons for more than 3 seconds: Initialize Equipment to factory settings

  (Please refer to Appendix for initialized value)

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4. Feature

sWiFi/all is a converter that converts wired serial communication to wireless WiFi communication and performs the following functions.

1) Converts serial signals to wireless

Converts RS232/RS422/RS485 serial signals which requires cable installation to wireless WiFi signals.

2) Supports Various WiFi wireless communication

Supports WiFi wireless communication at low price.

Supports IEEE 802.11 a/b/g/n, Dual Band(2.4GHz/5GHz), Infrastructure/Soft AP functions, encryption functions (Open, WEP, WPA-PSK, WPA2-PSK, Enterprise).

3) Low Power Running Mode

rLory is a low-power product powered by 5V DC and 2W power consumption. If it is difficult to supply power at all times in the field, it is possible to operate by supplying power using solar panels and batteries.

4) VCP(Virtual Com Port)

Among the utilities provided, the VCP(Virtual Com Port) "ComRedirector" allows users to use the serial port on sWiFi/all connected to the same network as if it is a serial port mounted on a PC.

It also supports Server/Client mode that can access serial socket.

Utility "sWiFiConfig" allows quick and easy set ups from user perspective.

5. How to Apply

## Device/PC – AP – Device Connection (Infrastructure)

In Infrastructure mode, sWiFi/all performs connection between ComRedirector, TCP Server/Client and UDP via AP.

For sWiFi/all to access AP, the IP of the router band can be set to static IP which is a fixed IP, or set as DHCP
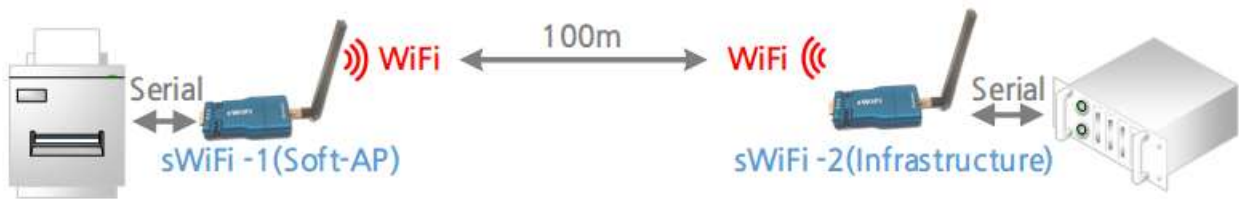
which the IP is assigned.
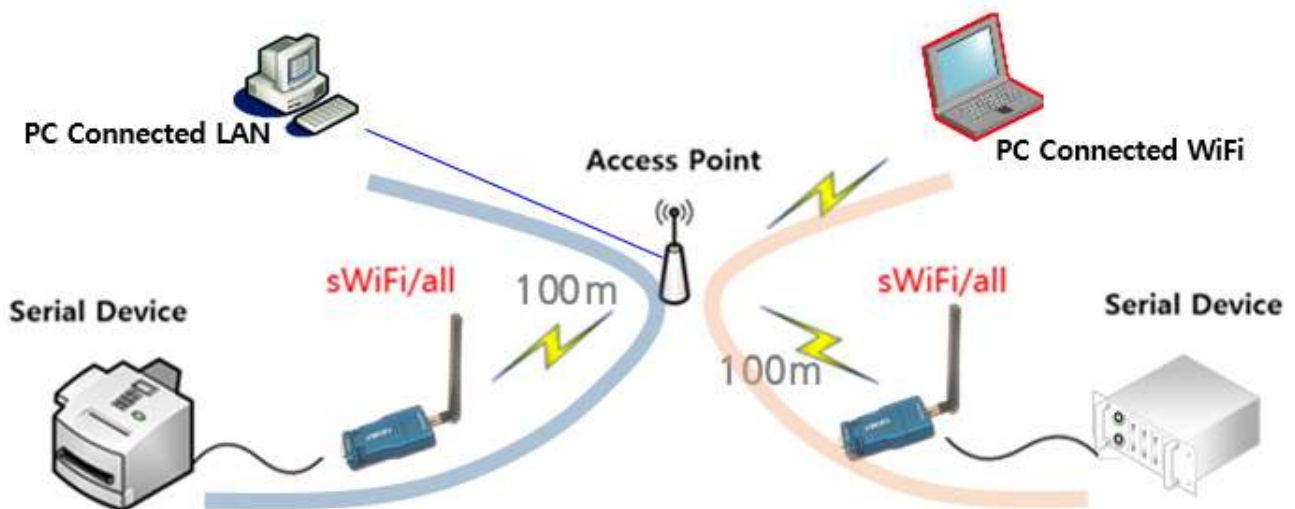
Each sWiFi/all can be connected to an AP wired PC or laptop to communicate.
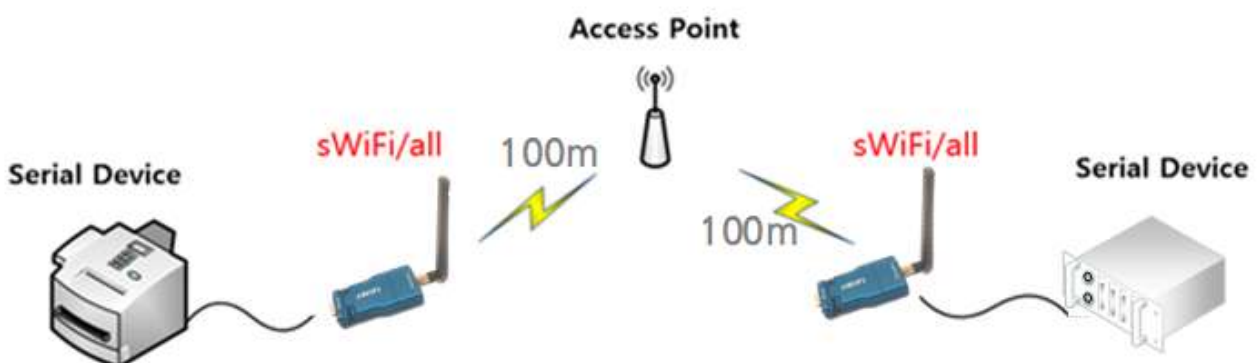
For communication, each sWiFi/all can be connected to an AP-wired PC, or sWiFi/alls can be connected as

Server/Client each other.

Device/PC – Device Connection (Soft-AP)
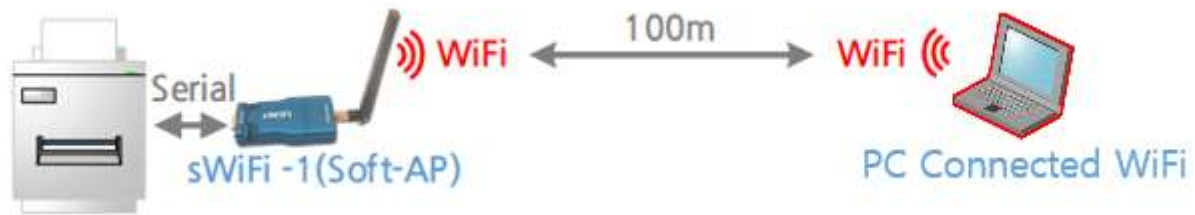
Without being connected to AP, sWiFi/all and PC can be connected 1:1 For serial communication.

Between two equipment communicates through serial port, with sWiFi/all attached to each end and connected 1:1, wireless communication is available.

To perform the sWiFi/all connection and communication, select the operating mode of one sWiFi/all with Soft-AP which operates as AP and the other with Infrastructure so the AP operates as Soft-AP.

At this point, set to either TCP Server on one side and TCP Client on the other, or UDP on both sides to connect serial socket and communicate. The Soft AP mode of sWiFi/all supports one WiFi connection.

*For detailed setup methods for each connection, please refer to the "Example of Using Setup Method" in Ch.7 Settings.

6. Get Started

Check the input voltage matches 5V 1A and supply the correct voltage. sWiFi/all starts booting at power-on with normal power supply. LED shows the operating status of the model including RDY, TXD and RXD. For detailed information, please refer to CH.3 Product – LED menu.

To view or set up an environment of sWiFi/all, use must use sWiFiConfig utility, either directly connected to serial port(RS232) or to the IP Address, the network address where sWiFi/all is operating.

(1) Connect sWiFi/all to RS232/USB port on the PC

With the RS232 serial communication port(COM port) installed on PC, put sWiFi/all in setup mode and perform 'Connect to sWiFi/all' using sWiFiConfig. .

**(2) Find and connect sWiFi/all to WiFi menu of PC.**

To access sWiFi/all setup mode through the network, put sWiFi/all in setup mode, connect to sWiFi/all on PC via WiFi and perform 'Connect to sWiFi/all' using sWiFiConfig.

7. Settings

Apply power to sWiFi/all and press the RST(Reset) switch for less than 3 seconds to operate in setup mode. RDY(Yellow) LED flashes every 0.4 seconds at this time. Then run the sWiFiConfig utility and launch the sWiFi>Connect menu on the top menu bar as below.
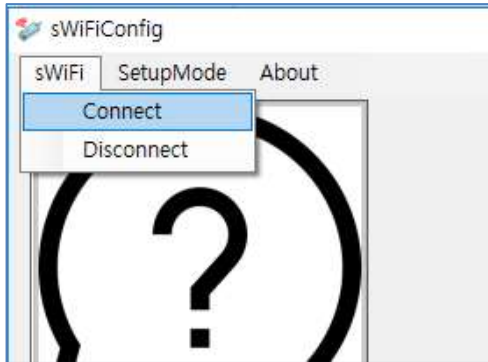
There are two methods to setup sWiFi/all. One is "Serial" method that connects to the RS232 serial communication port(COM port) on the PC, and the other is "Network" method that connects the sWiFi/all with PC WiFi and access to the IP of sWiFi/all for settings.

1) "Serial" method

The "Serial" method, which is the setup by connecting to the RS232 serial communication port(COM port) on the PC, connects with sWiFi/all with the corresponding serial port on utility.
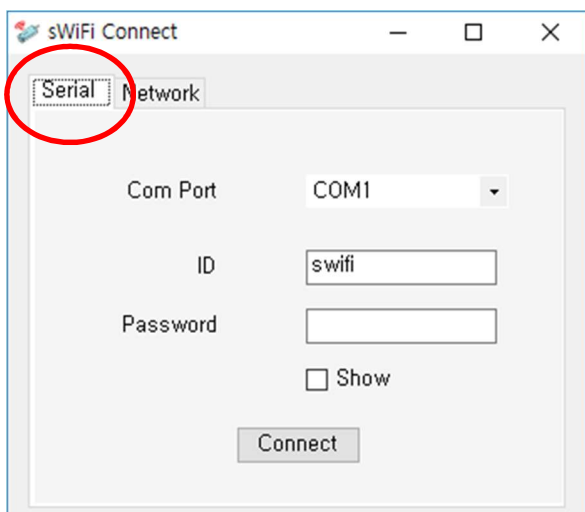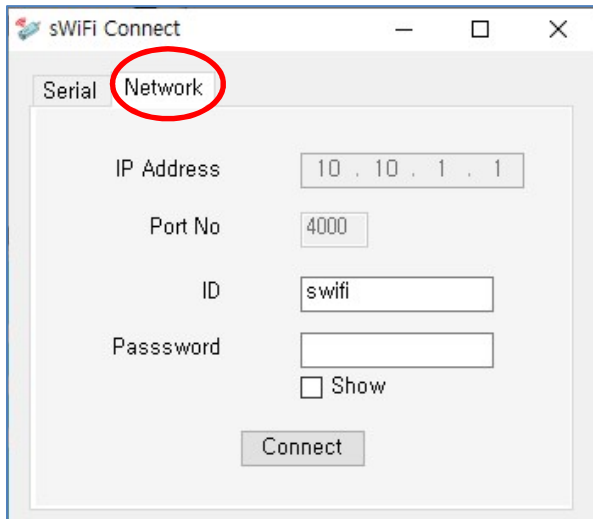

Login with ID/PW: sWiFi/99999999. Please note that sWiFi is lowercase.

*If setup is required while using sWiFi/all as RS422 and RS485 ports, there is a method to use RS232 port on the PC and to set them as "Network" access in the description below.

2) "Network" method

"Network" method is the second method, which connects sWiFi/all and WiFi on PC for settings.

Connects wirelessly to sWiFi/all and access using sWiFi/all's IP 10.10.1.1 and port number 4000.

Login with ID/PW: sWiFi/99999999. Please note that sWiFi is lowercase.

ID and password can be changed in the "Information menu" on the below page.

[PLEASE NOTE] The IP address of sWiFi/all 10.10.1.1 and TCP Port No. 4000 cannot be changed.

If the PC uses WiFi and wired LAN at the same time, if the IP of wired LAN is set to 10.10.1.xxx network, IP conflict may occur in the same band. So please stop using wired LAN and connect sWiFi/all to WiFi.

[TIP] When accessing using "Network" method, for initial connection from PC WiFi to sWiFi/all, please select "sWiFi_XX:YY" and connect. There is no specific password at this time as it is open connection. XX:YY is the end of MAC Address of sWiFi/all.

If Device Name and encryption settings are changed, please do WiFi connection on PC with changed information.

sWiFi/all retrieved from the PC

Information

Information menu outputs the basic setting information of sWiFi/all.

It also performs MCU Firmware Update, settings for the connection ID and PW of sWiFi/all.

[Update] button is a button for Firmware(MCU) Update for sWiFi/all devices.

Firmware(MCU) is the firmware for the entire operation of sWiFi/all. It can be updated via sWiFiConfig access.

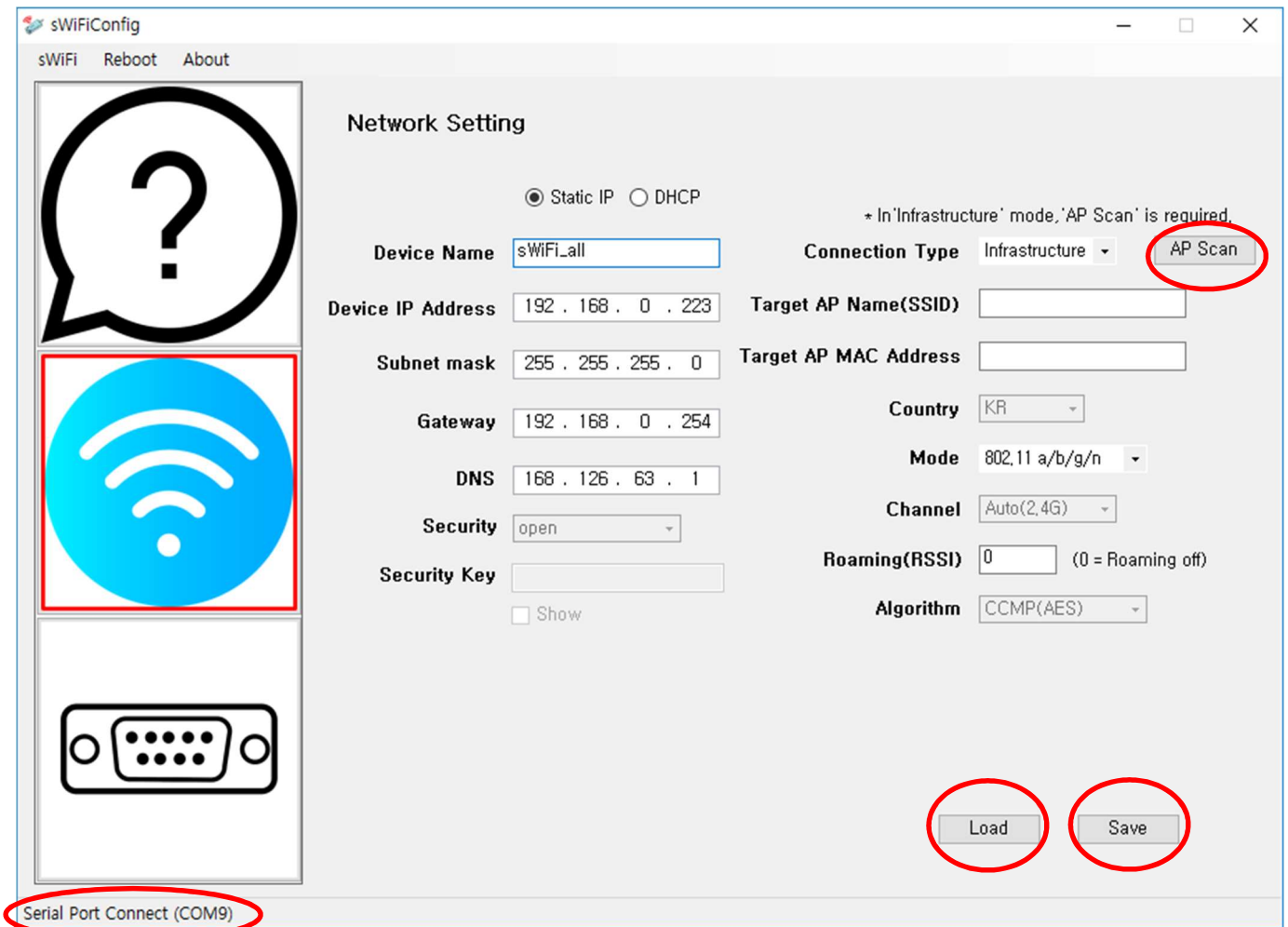Click [Update] to select the firmware file and update.

Firmware(Wireless) is the firmware for the Wireless module. It can be updated with Web access.

(Please refer to "Webpage" below)

Network Setting

Network Setup performs sWiFi/all settings related to network.

Lower-left cornet shows the information and status of the connected COMport.

[Load] button is a button that shows the information of the currently set sWiFi/all.

[Save] button is a button that saves the set content of sWiFi/all.

Once the settings have been change, please make sure to press the [Save] button and check that the changed values have been applied in the actual equipment. You can check the [Load] button to re-connect and check the set value again. If force terminate the program without saving the changes, the changed values are not saved.

[TIP] The SSID for [Tip] Soft-AP can be changed in the Device Name area. Default Device Name(SSID) is "sWiFi_all". We recommend changing the Device Name so that you can distinguish each device when using multiple sWifi/all as Soft-AP.

*For detailed network setup information, please refer to Ch.4 Setup Utility section in the following Appendix.

Serial Setting

Serial Setup perform sWiFi/all settings related to serial port.

[Load] button is a button that shows the information of the currently set sWiFi/all.

[Save] button is a button that saves the set content of sWiFi/all.

Once the settings have been change, please make sure to press the [Save] button and check that the changed values have been applied in the actual equipment. You can check the [Load] button to re-connect and check the set value again. If force terminate the program without saving the changes, the changed values are not saved.
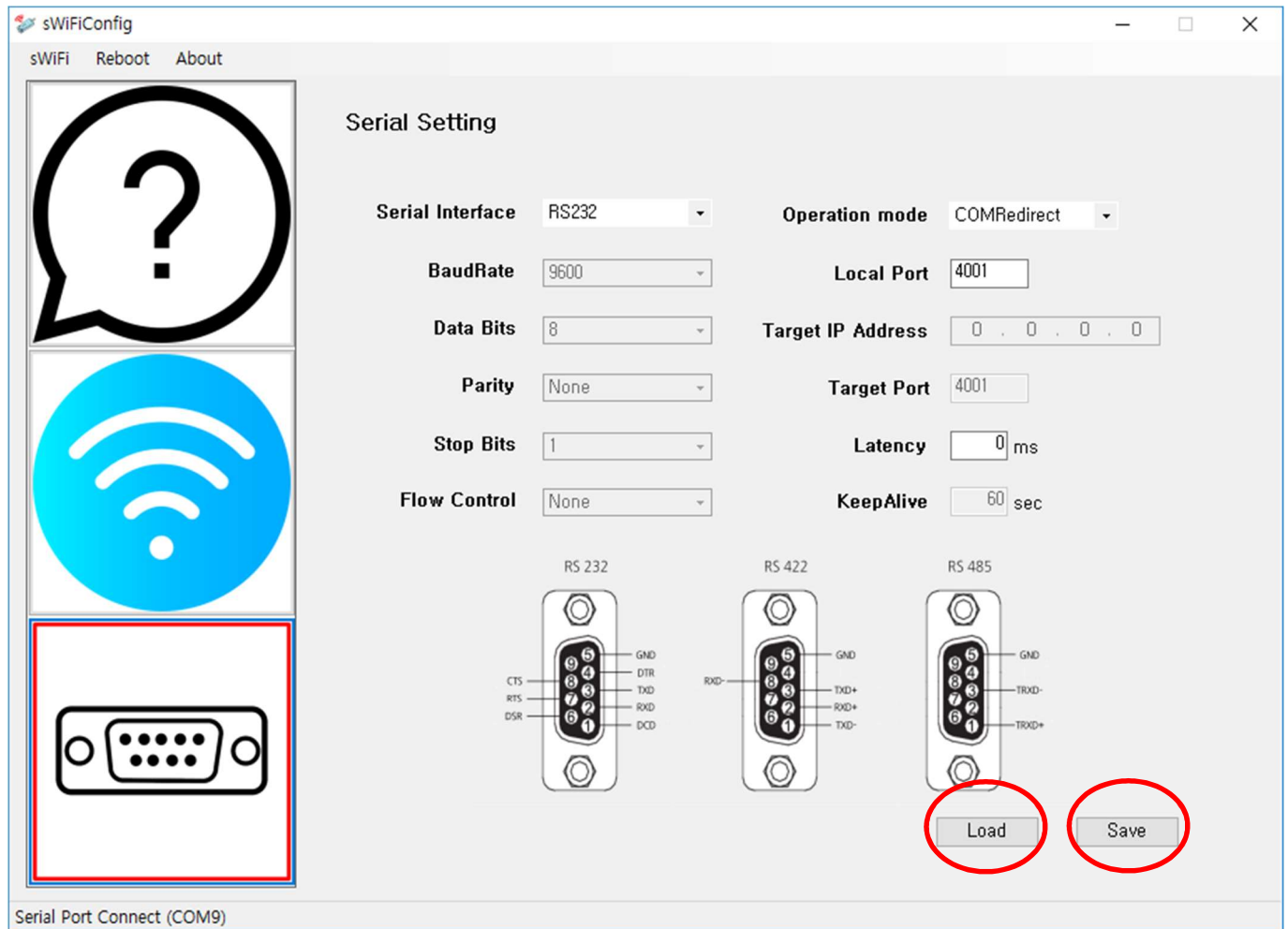
*For detailed network setup information, please refer to Ch.4 Setup Utility section in the following Appendix.

Reboot

After setting up sWiFi/all, press the '[Reboot] button to restart sWiFi/all and change it to operating mode.

Click [Reboot]　　　　　　　　　　　　Reboot succeeded

WebPage

The WebPage is used to register for WPA-Enterprise, WPA2-Enterprise among the encryption modes of sWiFi/all

or to update firmware(wireless).

There are three WebPage access methods as below.

- sWiFi/all is in setup mode, sWiFi/all and PC are connected via WiFi → Access Web using the default IP 10.10.1.1

- sWiFi/all is in Infrastructure mode, connected to AP → Access Web using IP of sWiFi/all on the connected PC

- sWiFi/all is in Soft AP mode → Access Web using the set IP of sWiFi/all on the connected PC

The figure below is the first method of the above to be Web-connected to the default web address of the device,

http://10.10.1.1.
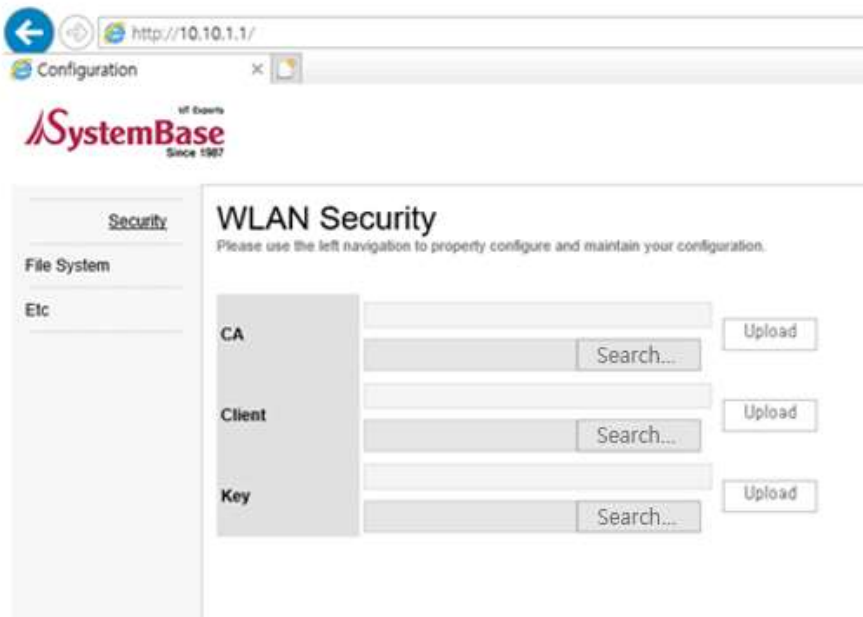
You can upload CA, Client, and Key files for Enterprise encryption.
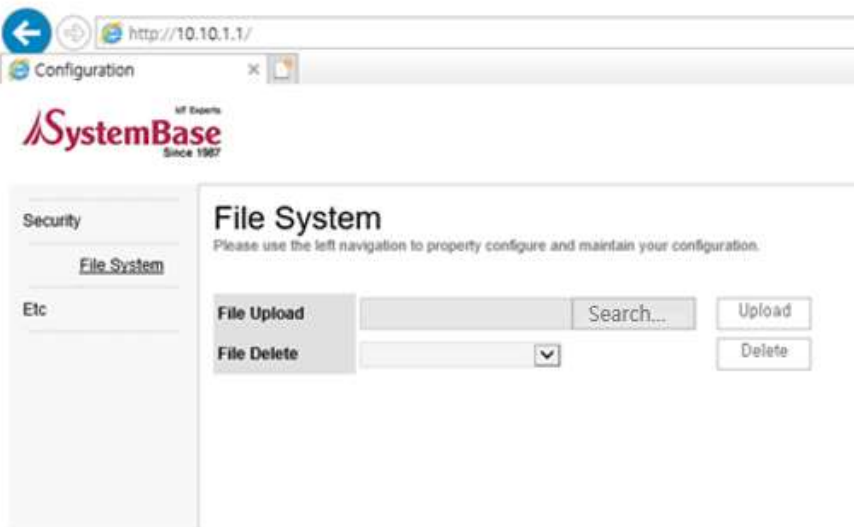
On File System menu, you can delete the CA, Client, Key files uploaded from the Security page.

Select the authentication certificate file you want to delete and click [Delete] button.
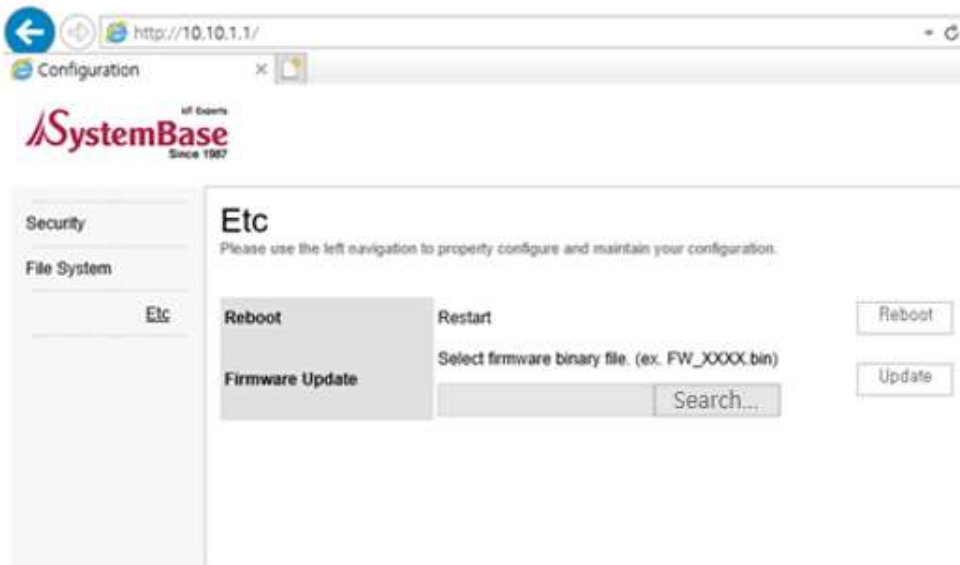
Firmware Update in the Etc menu is Firmware(Wireless) Update of sWiFI/all.

Click the [Select File] button to select the Wireless firmware file and update.

Firmware(MCU), the firmware for the entire operation of sWiFi/all can be updated with sWiFiConfig access.

(Please refer to "Information" page above)

Example of Using Setup Method

Based on the above information, we explained the information that can be easily set up through various connections. Please understand the setup method with an example of the configuration below.

Infrastructure #1
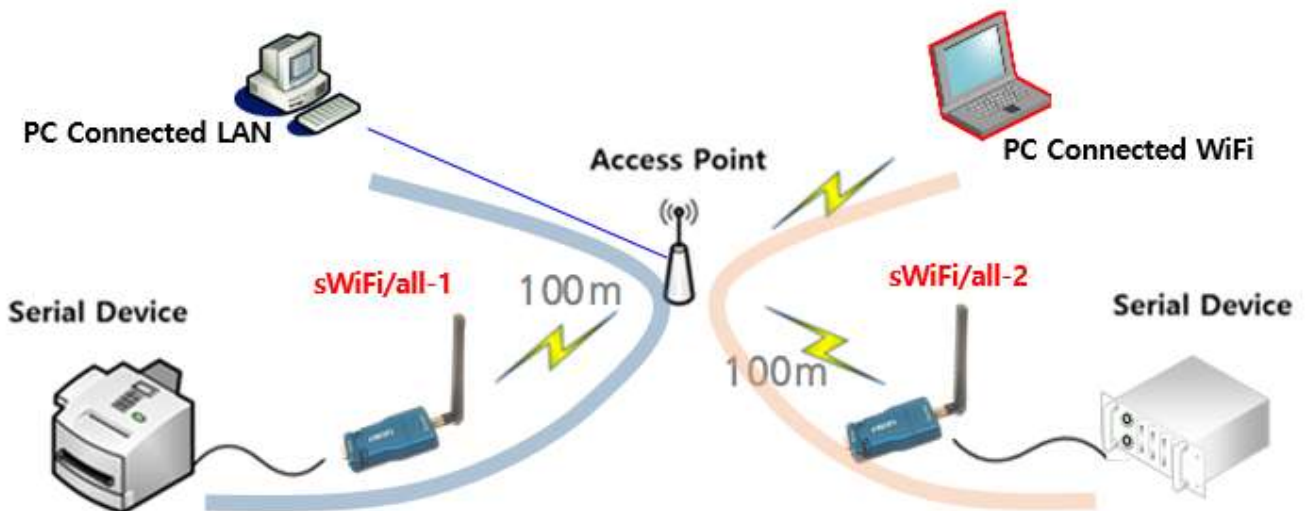
Setup		PC Connected LAN (or PC Connected WiFi)	sWiFi/all-1 (or sWiFi/all-2)
Network		Device IP Address: 192.168.0.100 Subnet Mask: 255.255.255.0 Gateway: 192.168.0.1 DNS:168.126.63.1 Connection Type: Infrastructure Target AP Name: sysbas23 (If you select AP with [AP Scan] button, the AP name is automatically displayed.)	Device Name: sWiFi/all_1 Device IP Address: 192.168.0.200 Subnet Mask: 255.255.255.0 Gateway: 192.168.0.1 DNS:168.126.63.1 Connection Type: Infrastructure Target AP Name: sysbas23 (If you select AP with [AP Scan] button, the AP name is automatically displayed.)
Serial		Use COM Redirector to connect to the COMx port (192.168.0.200 4001)	Operation Mode: COM Redirector Local Port: 4001
		TCP Server Local Port: 4001	Operation Mode: TCP Client Target IP: 192.168.0.100 Target Port: 4001
		Operation Mode: TCP Client Target IP: 192.168.0.200 Target Port: 4001	Operation Mode: TCP Server Local Port: 4001

	Operation Mode: UDP	Operation Mode: UDP
	Local Port: 4001	Local Port: 4001
	Target IP: 192.168.0.200	Target IP: 192.168.0.100
	Target Port: 4001	Target Port: 4001

Infrastructure #2
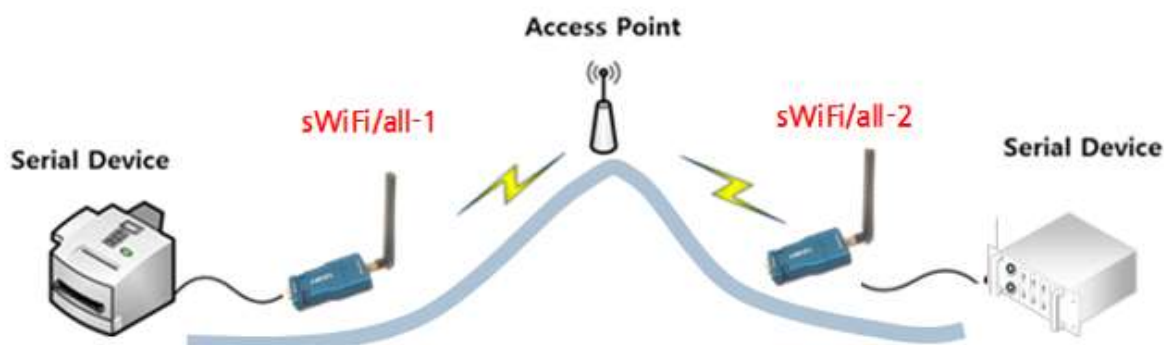
To set Infrastructure mode

Setup	sWiFi/all -1	sWiFi/all-2
Network	Device Name: sWiFi/all_1 Device IP Address: 192.168.0.100 Subnet Mask: 255.255.255.0 Gateway: 192.168.0.1 DNS:168.126.63.1 Connection Type: Infrastructure Target AP Name: sysbas23 (If you select AP with [AP Scan] button, the AP name is automatically displayed.)	Device Name: sWiFi/all_2 Device IP Address: 192.168.0.200 Subnet Mask: 255.255.255.0 Gateway: 192.168.0.1 DNS:168.126.63.1 Connection Type: Infrastructure Target AP Name: sysbas23 (If you select AP with [AP Scan] button, the AP name is automatically displayed.)
Serial	Operation Mode: TCP Server Local Port: 4001	Operation Mode: TCP Client Target IP: 192.168.0.100 Target Port: 4001

* Setting values are examples for understanding. The values may vary by product and site.

As shown above, Infrastructure, Server/Client settings enables 1:1 communication.

Soft-AP #1

To set Soft-AP mode

Setup	sWiFi -1(Soft-AP)	PC Connected WiFi
Network	Device Name: sWiFi/all_SoftAP1 Device IP Address: 192.168.1.100 Subnet Mask: 255.255.255.0 DNS:168.126.63.1 Connection Type: Soft-AP Channel: 10 Security: open	Device Name: sWiFi/all_2 Device IP Address: 192.168.1.200 Subnet Mask: 255.255.255.0 DNS:168.126.63.1 Connection Type: Infrastructure Channel: 10 AP: sWiFi/all_SoftAP1
Serial	Operation Mode: COM Redirector Local Port: 4001	Use COM Redirector to connect to the COMx port (192.168.0.200 4001)
	Operation Mode: TCP Server Local Port: 4001	Operation Mode: TCP Client Target IP: 192.168.1.100 Target Port: 4001
	Operation Mode: TCP Client Target IP: 192.168.1.200 Target Port: 4001	Operation Mode: TCP Server Local Port: 4001
	Operation Mode: UDP Local Port: 4001 Target IP: 192.168.1.200 Target Port: 4001	Operation Mode: UDP Local Port: 4001 Target IP: 192.168.1.100 Target Port: 4001

* Setting values are examples for understanding. The values may vary by product and site.

As shown above, Soft-AP, Infrastructure, COM Redirector, Server/Client, UDP enables 1:1 communication between

devices.

Soft-AP #2

To set Soft-AP mode

Setup	sWiFi -1(Soft-AP)	sWiFi/all-2(Infrastructure)
Network	Device Name: sWiFi/all_SoftAP1 Device IP Address: 192.168.1.100 Subnet Mask: 255.255.255.0 DNS:168.126.63.1 Connection Type: Soft-AP Channel: 10 Security: open	Device Name: sWiFi/all_2 Device IP Address: 192.168.1.200 Subnet Mask: 255.255.255.0 DNS:168.126.63.1 Connection Type: Infrastructure Channel: 10 Target AP Name: sWiFi/all_SoftAP1 Target AP MAC Address: MAC Address of sWiFi/all_SoftAP1
Serial	Operation Mode: TCP Server Local Port: 4001	Operation Mode: TCP Client Target IP: 192.168.1.100 Target Port: 4001

* Setting values are examples for understanding. The values may vary by product and site.

As shown above, Soft-AP, Infrastructure, Server/Client settings enables 1:1 communication between devices.

sWiFi/all set to Soft-AP operates as Static IP, which is fixed IP.

To connect, the counterpart sWiFi/all(sWiFi/all-2 in the above figure) should also be set to the Static IP, which is a fixed IP in the same bandwidth as sWiFi/all in Soft AP.

Soft-AP operates in open, WPA_PSK and WPA2_PSK encryption modes.

[Tip] When using as Soft-AP, we recommend you to change the default Device Name(sWiFi_all) so that you can find it easily through AP as we have changed the device name "sWiFi -1" to "sWiFi/all_SoftAP1" above.

Soft-AP operates in open, WPA_PSK and WPA2_PSK encryption modes.

Class A equipment

Sellers or users should be aware of the fact that this device is intended for industrial use(Class A), not for residential use.

This device has a potential for radio interference during use and may receive harmful interference from other devices.

-----------------------Appendix-----------------------

1. Specification

WiFi	Frequency	2,412 ~2,462 MHz, 5,150 ~ 5,250 MHz, 5,725 ~ 5,850 MHz
	Standard	IEEE 802.11 a/b/g/n
	ANT	Dipole Antenna / Avg 1.5dBi/2.4GHz, -0.7dBi/5GHz
	Mode	Station, Peer to Peer
Serial	Port	1 Port DB9 (Female), RS232/422/485
	Speed	Max. 921.6Kbps
	Data bit	5, 6, 7, 8
	Stop bit	1, 2
	Parity bit	None, Even, Odd
	Flow Control	None, RTS/CTS
	Signals(RS232)	TXD, RXD, RTS, CTS, DTR, DSR, DCD
	Signals(RS422)	TXD+, TXD-, RXD+, RXD-
	Signals(RS485)	TRXD+, TRXD-
Hardware	Power Requirement	5V~12V 1A DC Input, Power Consumption: 2W
	Power Connector	External: Φ3.5mm, Internal: Φ1.35mm
	Size (W) x (L) x (H)	40.9(W) x 90.1(L) x 16.5(H)mm
	Weight	32.1g
	Operating Temperature	-40 ~ 85℃ (-40 ~ 185℉)
	Humidity	Max. 90% R.H
	LED	RDY(Yellow), TXD(Green), RXD(Red)
Software	OS	RTOS
	Protocols	COM Redirector, TCP Server/Client, UDP
	Security	Open, WEP, WPA-PSK, WPA2-PSK, WPA-Enterprise, WPA2-Enterprise
	Support	TCP No-Delay Mode, TCP KeepAlive
	Utility	sWiFi/all Setup Utility, COM Redirector
Ordering Information		sWiFi/all V1.0

2. Dimension

(mm)
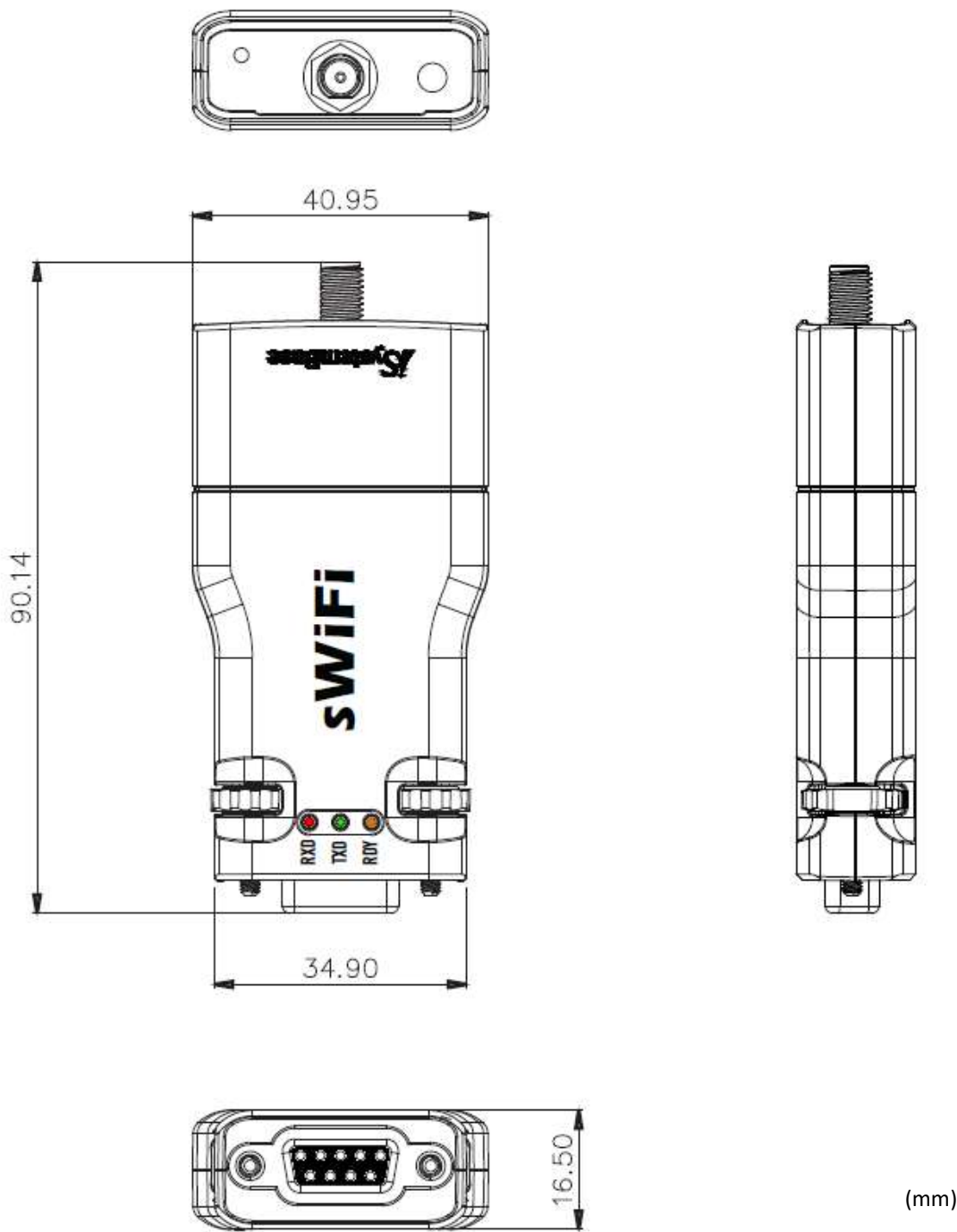
3. Serial Port Pin Specification

Pin No.	RS232	RS422	RS485
1	DCD	TXD-	TRXD-
2	RXD	RXD+	-
3	TXD	TXD+	TRXD+
4	DTR	-	-
5	GND	GND	GND
6	DSR	-	-
7	RTS	-	-
8	CTS	RXD-	-
9	-	-	-
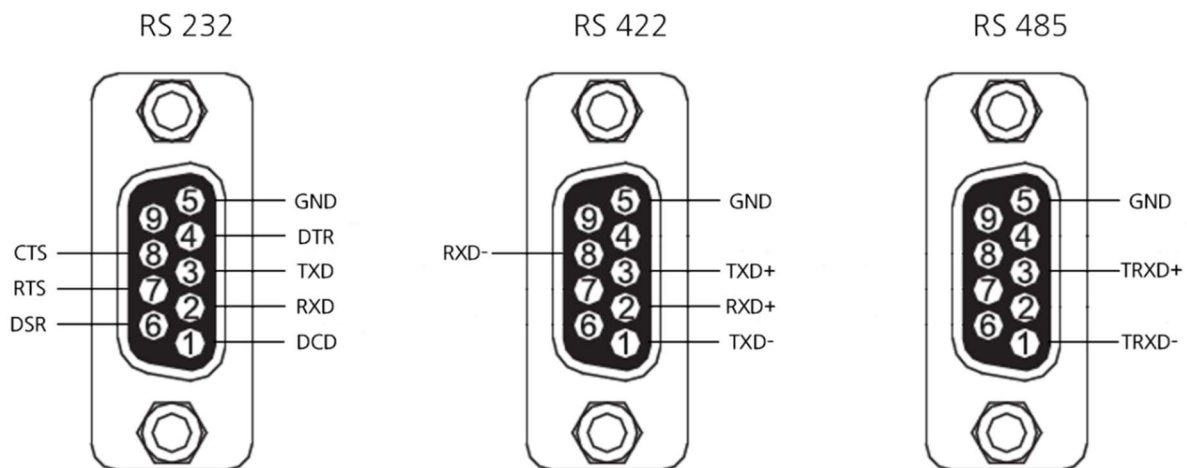
* As DCE (Data Communications Equipment) mode, RS232 port directly connects with DTE port such as PC.

* RS422 port cross-connects with DTE port. (Tx- with Rx-,   Tx+ with Rx+,   Rx- with Tx-,   Rx+ with Tx+)

* RS485 port connects with DTE port. (TRx- with TRx-,   TRx+ with TRx+)

* If you need setup while using as RS422 or RS485 port, connect to RS232 port and press RST button for

settings.

4. Setup Utility

The main menus of Network Setup are as follows.

Menu	Default	Description
IP Type choice	Static IP	Select the IP type to set for device. Static IP is fixed IP and DHCP is the automatic IP mode assigned from the AP.
Device Name	sWiFi_all	Set the device name.
Device IP Address	192.168.0.223	Set the Static IP address of the device. (If the connection type is Static IP, enter the IP address. If DHCP, it cannot be changed)
Subnet mask	255.255.255.0	Set the subnet mask address of the device. (If the connection type is Static IP, enter the subnet mask. If DHCP, it cannot be changed)
Gateway	192.168.0.254	Set the Gateway address of the device. (If the connection type is Static IP, enter the gateway address. If DHCP, it cannot be changed)
DNS	168.126.63.1	Set the IP address of the server that provides DNS (Domain Name Service).
Security	open	Enable encryption mode. **open** Disable encryption mode. **WEP** An encryption method that uses RC4 algorithm, using 40bit(5Byte), 104bit(13Byte) keys. **WPA-PSK** Basically uses TKIP algorithm but CCMP algorithm is also enabled. At least 8Byte key is required. **WPA2-PSK** Use AES algorithm. Requires key over 8Byte. **WPA-Enterprise** Encryption mode that blocks unauthorized devices from accessing the network and allows only authorized devices. Uses EAP (Extensible Authentication Protocol). **WPA2-Enterprise** WPA-Enterprise supports CCMP by default instead of TKIP. Shaded in Infrastructure mode as it is accessed with the

		information of AP to access. In Soft-AP mode, encryption mode can be chosen between open, WSA-PSK.
Security Key	-	Enter the password of a AP to access.
Connection Type	Infrastructure	Set the connection type of sWiFi/all. **Infrastructure** The mode that intermediate AP performs a sWiFi/all connection and exchanges data. When selecting this type, the AP Scan Button menu appears. **Soft AP** The mode that sWiFi/all performs AP functions. Without the AP, the computer or other sWiFi/all is connected to the operating sWiFi/all to communicate. At this time, please select Static IP for the sWiFi/all you want to connect and use it as the static IP in the same band.
Target AP Name(SSID)	-	Designate the AP name of the target. If you select AP with [AP Scan] button, the AP name is automatically displayed.
Target AP MAC Address	-	Designate the MAC Address of the target AP. If you select AP with [AP Scan] button, the AP name is automatically displayed.
Country	KR	Note the country code for sWiFi/all/ ***Channel values may vary by country.**
Mode	802.11 a/b/g/n	Set 802.11 protocol(a/b/g/n). **802.11 a** 5GHz Bandwidth Uses OFDM technology and supports transmission speed up to 54Mbps. Easily affected by the surrounding environment such as obstacles or urban buildings due to the signal characteristic. **802.11 b** 2.4GHz Bandwidth The highest transmission speed is 11Mbps, but during implementation of CSMA/CA technology, it shows efficiency of 6-7Mbps. **802.11 g** 2.4GHz Bandwidth The transmission speed is as same as **802.11 a** and the only difference is that it uses 2.4GHz bandwidth frequency. It is easily compatible with the commonly used **802.11 b** and is

		now widely used.
		802.11 n
		2.4GHz Bandwidth
		Use 2.4GHz bandwidth and supports maximum speed of 600Mbps.
Channel	Auto(2.4G)	Set the channel of sWiFi/all. ***Channel values may vary by country.**
Roaming	0	Activate/Deactivate the automatic roaming function. 0 deactivates. If you give RSSI value between -100 and -1dbm, it performs automatic roaming if sensitivity become less than that RSSI.
Algorithm	TKIP	Encryption Algorithm **TKIP(Temporal key Integrity Protocol)** Basic encryption algorithm used on WPA. **CCMP(AES) (Counter Cipher Mode with block chaining message authentication code Protocol (Advanced Encryption Standard))** AES(Advanced Encryption Standard)-based encryption algorithm with increased security.
EAP type	-	**TLS** TLS is an IETF disclosure standard defined in RFC5216. It is considered the safest of the EAP standards and commonly used. An authentication certificate is required on both Server and Client. **TTLS** TTLS secures TLS and performs cross certification of Client and network through encrypted channels on the server. TTLS only requires Server side certificate. **PEAP** Transfers authentication data using tunneling between the authentication Server and PEAP Client. Only Server side certificate is required as same as TTLS. **This setting is displayed when Security is Enterprise**.
EAP ID	-	EAP Authentication ID **This setting is displayed when Security is Enterprise**.
EAP PW	-	EAP Authentication Password **This setting is displayed when Security is Enterprise**.
EAP Anonymous ID	-	EAP Anonymous ID **This setting is displayed when Security is Enterprise**.

Main functions of Serial Setup are as below.

Menu	Default	Description
Serial Interface	RS232	Set the interface of the serial port. Select one between RS232, RS422, RS485NE(Non-Echo) mode.
Baud Rate	9600	Set the communication speed of the serial port. ("300", "600", "1200", "2400", "4800", "9600", "14400", "19200", "28800", "38400", "57600", "115200", "230400", "460800", "921600")
Data Bit	8	Set the number of bits which make up the byte. (5, 6, 7, 8)
Parity	None	Set the parity checking method. (None, Odd, Even)
Stop Bit	1	Set the number of stop bits. (1, 2)
Flow Control	None	Set the flow control method. (None, RTS, CTS, RTS_CTS)
Operation Mode	COM Redirector	Set the operating protocol. **COM Redirector** With a virtual COM port(VCP, Virtual Com Port) on the a PC in Windows environment, it can communicate through the Ethernet. **TCP Server** sWiFi/all acts a s server and waits for access from the client on the network. The socket number waiting for access is set in [Local Port], and when the socket connection is completed, the data can be transmitted. **TCP Client** When a particular server is waiting for access on the network, sWiFi/all acts as a client of the socket, attempting to connect with the IP address and socket number of the server set. When the socket connection is completed, the data can be transmitted. Set the IP and port number of the server to request access in [Target IP / Target Port]. **UDP** sWiFi/all communicates as a UDP. The socket number to be opened is set in [Local Port]. The IP and port number of the target you want to communicate with in [Target IP / Target Port].

		It is recommended to use Static IP instead of DHCP in COM Redirector, TCP Server and UDP mode.
Local Port	4001	Designate the number assigned to the port. This port is used to wait for network connection in TCP Server and UDP mode.
Target IP Address	0.0.0.0	Designate the IP address of the target to connect to in TCP Client mode.
Target Port	4001	Designate the port of the target to connect to in TCP Client mode.
Latency	0	Set up if you want to send continuously-received data from the serial port to the socket at once. For example, if a serial device transmits 100 bytes of text from a serial device to a socket on the server via CS sWiFi/all, if the value is 0, the data entered in bytes at a time is immediately sent to the server through the socket, ensuring real time, but causing a lot of traffic to the network. This can lead to poor performance of the product, leading to loss of serial port data. If this value is not set to 0, it buffers the data received several bytes at a time, waits for amount of time set, re-buffers the data if it is read again, and if it is not, it sends all the data back to the socket, regarding that it has been received, so there is no traffic problem caused by many packets, but real time cannot be ensured. (Setting Range : 0 ~ 1,000)
KeepAlive	60	Check the network status every set number of seconds after socket connection and terminate or reset the socket connection if network failure is determined. Deactivated when set to 0.

5. Certification

- **KC**

  Number: R-R-STB-sWiFiallV10

  Test Item: KN 301 489-1, KN 301 489-17, Electromagnetic Compatibility based on Article 12 Radio Equipment

  accounted by National Radio Research Agency No. 2019-32. 2019.12.31)

- **FCC**

  Number: PRO-SWIFIALLV190

  Test Item: FCC Part 15 subpart C 15.247, FCC Part 15 subpart E 15.407

- CE

  Test Item:

  Radio: EN 300 328 V2.1.1(2016-11), EN 301 893 V2.1.1(2017-05), EN 300 440 V2.1.1(2017-03)

  EMC: EN 301 489-1 V2.2.3(2019-11). EN 301 489-17 V3.1.1(2017-02)

  Safety: IEC 62368

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