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DALLAS FT WORTH AUSTIN HOUSTON

NICOLSCALES.COM

800.225.8181

CONTACT US

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SCT-1000ETHERNET/ SCT-2200WIFI

Ethernet, Modbus TCP, Wi-Fi

Operation Manual



July 15, 2019

RICE LAKE WEIGHING SYSTEMS

PN 190959

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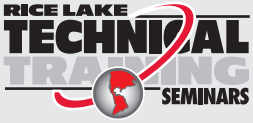
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1.0 Introduction

This manual is intended for use by service technicians responsible for installing the SCT-1000 Ethernet and the SCT-2200 Wi-Fi as network communications for SCT-2200 indicators.

Manuals and additional resources are available from the Rice Lake Weighing Systems website at www.ricelake.com
Warranty information can be found on the website at www.ricelake.com/warranties

1.1 Safety

Safety Signal Definitions:

DANGER — ***Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.***

WARNING — ***Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Includes hazards that are exposed when guards are removed.***

CAUTION — ***Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.***

IMPORTANT — ***Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.***

General Safety

Do not operate or work on this equipment unless this manual has been read and all instructions are understood. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals.

WARNING

Failure to heed could result in serious injury or death.

Electric shock hazard!

The units have no power switch, to completely remove power from the units, disconnect the power source.

Always disconnect from main power before performing any work on the device.

Do not allow minors (children) or inexperienced persons to operate this unit.

Do not operate without all shields and guards in place.

Do not use for purposes other then weighing applications.

Do not place fingers into slots or possible pinch points.

Do not use this product if any of the components are cracked.

Do not make alterations or modifications to the unit.

Do not remove or obscure warning labels.

Do not use near water, avoid contact with excessive moisture.

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The SCT-1000 Ethernet module and SCT-2200 Wi-Fi module add the following communication functions to the SCT-2200 indicator, See Section 5.1 on page 20 for full specifications:

Device Name	Functions
SCT-1000 Ethernet	1 RS-485 bidirectional port for connection to SCT-2200 1 RS-232 bidirectional port for connection to SCT-2200 1 Ethernet port for connection to PC/PLC Allows the following conversions: • RS-232 ↔ Ethernet • RS-485 ↔ Ethernet • RS-232 ↔ RS-485 • MODBUS TCP ↔ Ethernet
SCT-2200 Wi-Fi	2 RS-485 bidirectional ports for connection to SCT-2200 1 RS-232 bidirectional port for connection to SCT-2200 1 LAN port 1 WAN port 1 SMA port for Wi-Fi Allows the following conversions: • RS-485 ↔ Wi-Fi • RS-485 ↔ Ethernet

Table 1-1. Device Functions

LED Definitions

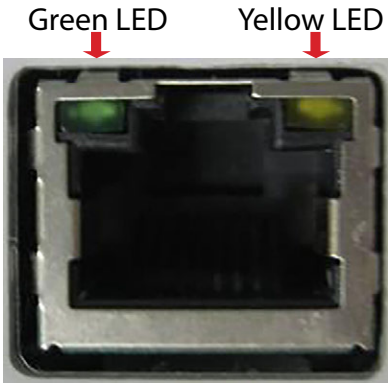


Figure 1-1. Module LEDs

	Green	Yellow
SET NUMBER OF BLINKS	At startup: indicates the module is ON When module is on: indicates the presence of serial activities	
OFF	Network cable not connected	
FIXED	Device connected to network	N/A
CONTINUOUS BLINKING	N/A	Presence of network activity

Table 1-2. LED Definitions

2.0 Setup

2.1 Module Connection to SCT-2200 Transmitters

2.1.1 RS-485 Connection

It is possible to connect up to 32 devices on the same RS-485 line.

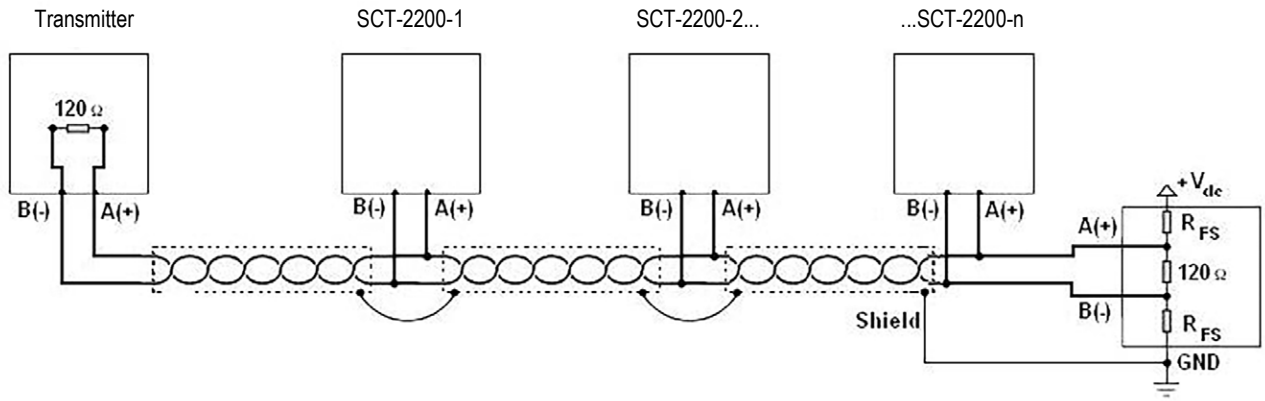


Figure 2-1. Electrical Diagram of RS-485 Connection

- Use an STP (Shield Twisted Pair) cable to make the connection. STP Cable - 2x24 AWG twisted and shielded pair(s). Single shielding for each pair is provided through foil wrap and total shielding through conduit.
- Using the appropriate cable for RS-485 connections, the maximum line length is about 1200 meters.
- As cable length increases, the cable capacity (near 50pF/m) becomes a major factor in power consumption and increases as speed increases.
- This means that the maximum distance cannot be covered with the maximum possible speed. For approximate values, consult the table below:

Baud Rate	Total Capacity of Cable (pF)
1200	400000
2400	200000
4800	100000
9600	50000
19200	25000
38400	12000
57600	8000
115200	4000

Table 2-1. Baud Rate and Cable Capacity

Note ***When the SCT-1000 Ethernet is set up to use Modbus TCP, it is only capable of communicating with one SCT2200.***

Making an RS-485 Connection

1. Verify that the grounding satisfies the SCT-2200 requirements. See the SCT-2200 Operating Manual (PN 183522). Connect all of the digital and analog masses and power circuits to the grounding bar, and connect the grounding bar to the earth ground.
2. The shielding can be connected to a single point in the network (as shown in Figure 2-1) or at both ends, however, it is important that all the devices have the same potential in order to avoid forming ground rings.

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3. Connect two termination resistances equal to the characteristic impedance of the cable (typically 120 Ω, see Figure 2-1 on page 3). Only connect the two devices at the two ends of the ring connection (Example: indicator and last device). The terminal resistance is not supplied with the ports of the indicator.
4. The difference of potential between the A(+) and B(-) terminals in rest conditions (Example: in set-up phase) must be at least 0.2 V.
5. To create a resistive divider which maintains this difference of potential when all the transmitters are disabled, insert in the RS-485 port where the termination resistances are located the polarization or fail-safe resistances (R_{FS} in Figure 2-1 on page 3). The value of these resistances is between 390 Ω and 2.2 kΩ.

Note ***The value of these resistances must be greater than the value calculable through the formula below:***

$$R_{FS} = \frac{R_{eq}}{2} \times \left(\frac{V_{dc}}{0.2} - 1 \right)$$

V_{dc} = The power supply voltage of the line

R_{eq} = The overall resistance to the A(+) and B(-) between the lines, supplied by the parallel of the two termination resistances and all the input resistances of the devices connected to the bus.

Example:

Assume that a connection has 120 Ω as termination resistance and 32 connected devices, each with an input impedance of 12 kΩ. The V_{dc} power supply is 5 V, and calculate R_{eq} to be about 52 Ω. After plugging these numbers into the equation, R_{FS} must be at least equal to 624 Ω.

If connecting with non-RLWS devices:

- Be aware that lines may be marked differently. Generally the A/B markings correspond to the +/- and HI/LO markings, but this is not always the case. Therefore if the device does not function properly, try inverting the connections.

2.2 Electrical Diagrams

2.2.1 SCT-1000 Ethernet Module

Once the SCT-1000 Ethernet module is integrated into the SCT-2200 indicators, it can be connected to an external Ethernet cabling using an external RJ-45 connector. We recommend using a network surge suppressor (PN 72682) wired through a cord grip with the RJ-45 socket left outside of the enclosure.

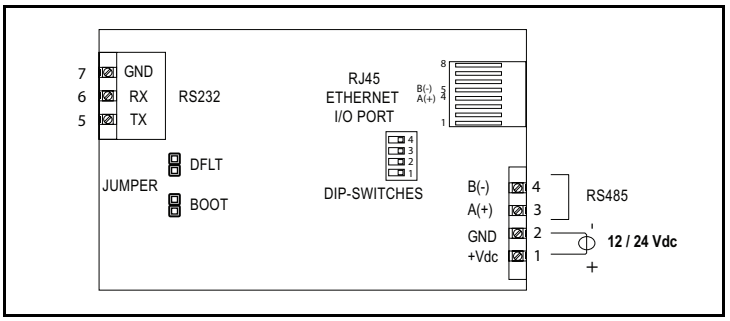


Figure 2-2. SCT-1000 Ethernet Module Electrical Diagram

2.2.2 Wi-Fi Module

The SCT-2200 Wi-Fi can be configured through a web browser using eitherWi-Fi capability or the external Ethernet cabling with an external RJ-45 connector. We recommend using a network surge suppressor (PN 72682) wired through a cord grip with the RJ-45 socket left outside of the enclosure.

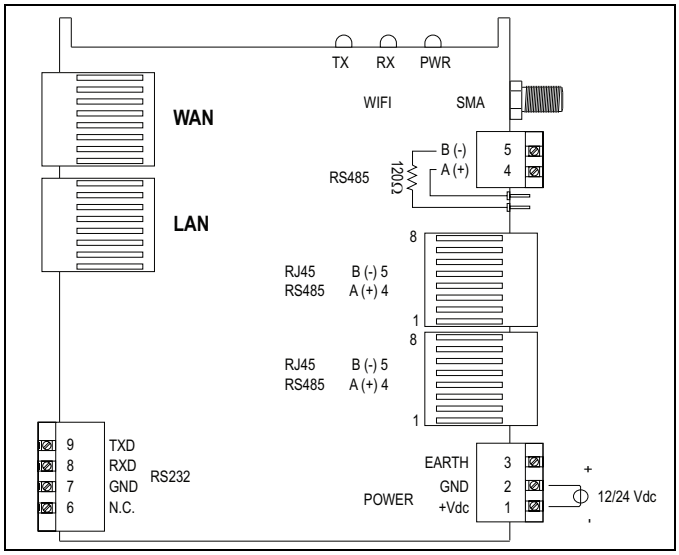


Figure 2-3. SCT-2200 Wi-Fi Electrical Diagram

2.3 Configuring PC to communicate with Module

2.3.1 Setting the IP address for Ethernet connections

Both the SCT-2200 Wi-Fi and the SCT-1000 Ethernet module have Ethernet capability and will be automatically recognized when hardwired into a network.

- The default IP address of the SCT-2200 Wi-Fi is 192.168.16.254.
- The default IP address of the SCT-1000 Ethernet is 192.168.16.205.

The computer Ethernet port must belong to the same class of network for the module to be recognized on the network (in this case, the network must have an IP address of the type 192.168.16.xxx). To modify the IP address in Windows 10 follow these steps:

1. From the Start menu, select Settings. See step 1 in Figure 2-4.
2. In Windows Settings, select Network and Internet. See step 2 in Figure 2-4.
3. In Network and Internet, select Ethernet, then select Change Adapter Options. See step 3 in Figure 2-4..

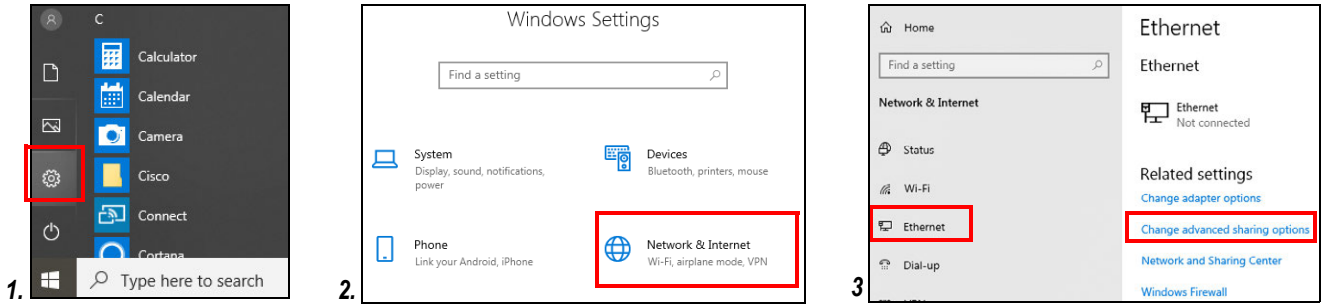


Figure 2-4. Setting IP Address

4. In the Network Connections window, double click Ethernet. See Figure 2-5.

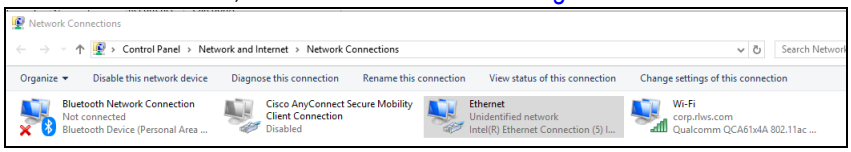


Figure 2-5. Network Connections

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5. In Ethernet Status, click Properties. See step 5 in Figure 2-6.
6. Highlight Internet Protocol Version 4 (TCP/IPV4) and click Properties.See step 6 in Figure 2-6.
7. Toggle ***Use the following IP address***. See step 7 in Figure 2-6.
   - Enter any IP address between 192.168.16.0 and 192.168.16.255, except 192.168.16.205 or 192.168.16.254
   - Subnet mask is 255.255.255.0
   - Gateway is empty
8. Click ok and close on all open windows to enable static IP address.

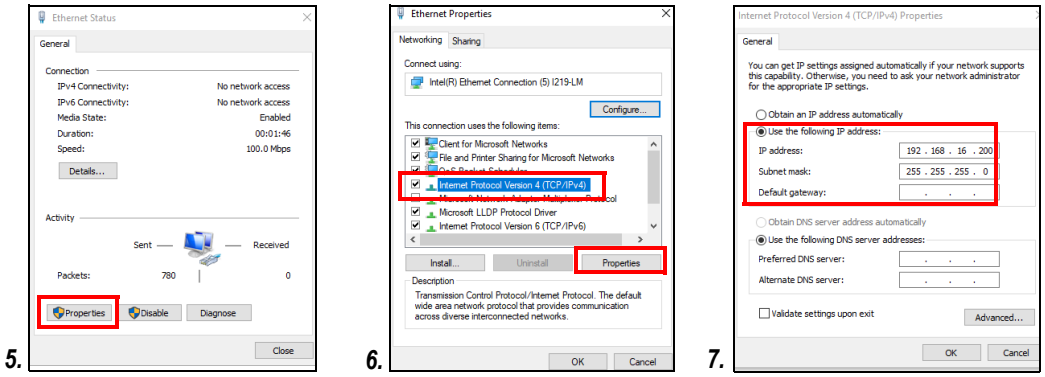


Figure 2-6. Ethernet Status

2.3.2 Setting upWi-Fi

When the SCT-2200 Wi-Fi has been connected to power it will automatically begin transmitting a Wi-Fi signal. See Figure 2-7.

- Default SSID is HI-LINK_5C53
- Default password is 12345678

To reset the SSID and password, See Section 4.3 on page 16.

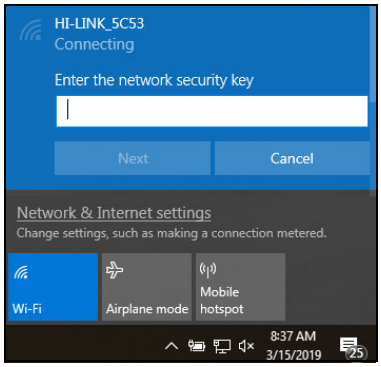


Figure 2-7. Default SSID

2.4 Resetting the SCT-1000 Ethernet

The SCT-1000 Ethernet can be reset and return it to its initial settings at any time. To reset the SCT-1000 Ethernet:

1. Switch off the device.
2. Open the device to access the jumper DFLT.
3. Close the jumper DFLT.
4. Switch on the device. The red and green LEDs blink repeatedly.
5. Complete the reset by opening the jumper and restarting the module.

3.0 SCT-1000 Ethernet Module Parameters

3.1 Status and Configuration

Type the IP address into a browser. The unit default is 192.168.16.205. Status & Configuration displays.

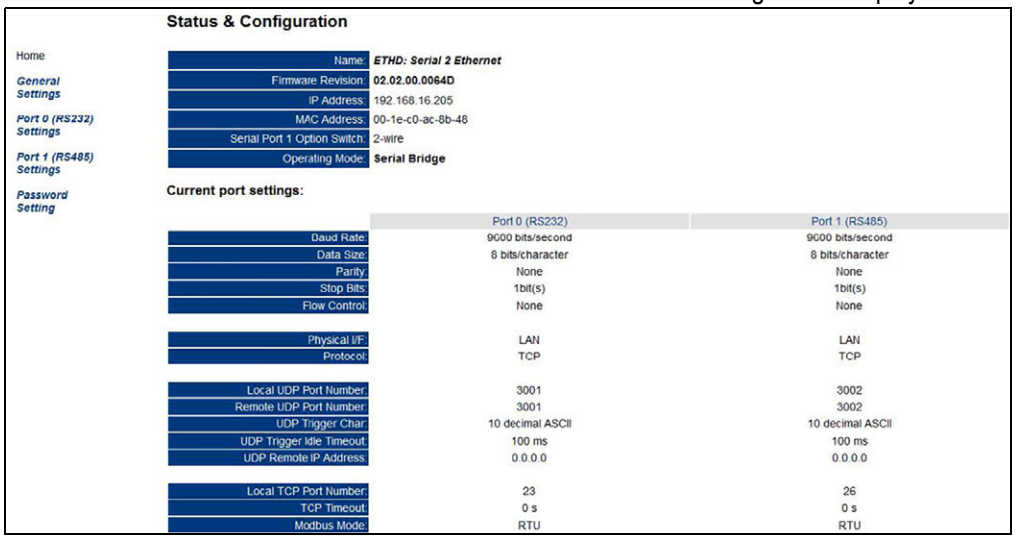


Figure 3-1. Status & Configuration Page

3.2 General Settings

Click ***General Settings*** in the menu on the left side of the page to display the Miscellaneous Settings page. Here changes can be made to the IP Address Selection, General Configuration Settings or this device can be rebooted by selecting ***Restore Factory Defaults***.

The top of the page displays the module's Name, Firmware Revision, IP Address and MAC Address. Click ***Reboot*** to reboot the module.

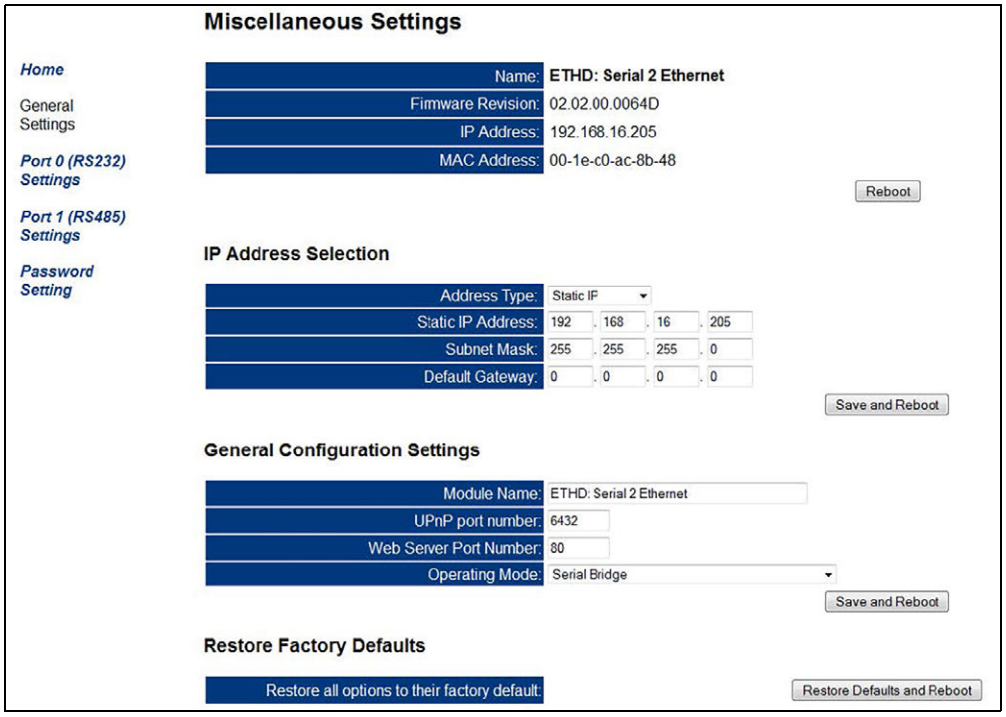


Figure 3-2. Miscellaneous Settings Page

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3.2.1 IP Address Selection

This section provides a way to change the Address Type from the drop-down menu, as well as enter the Static IP Address, Subnet Mask, and Default Gateway. Click ***Save and Reboot*** to save changes and reboot the module.

3.2.2 General Configuration Settings

This section provides a way to change the Module Name, UPnP Port Number, Web Server Port Number, and Operating Mode. Click the drop-down to choose from the following Operating Modes:

- **Serial to Ethernet**

  Translates the WLAN or LAN information into serial signals RS-232 or RS-485. Sets both serial ports to 9600,n,8,1 with no flow control, and sets the TCP local ports to 23 and 26.

- **Serial Bridge**

  Creates a bridge between the RS-232 and RS-485 signals. Every packet received via WLAN or LAN is ignored by the module. Sets both serial ports to 9600,n,8,1 with no flow control.

- **Port0: SNet Adapter - Port1: Serial to Ethernet**

  Creates a network between two or more instruments. Sets both serial ports to 115200,n,8,1 with no flow control, sets UDP local/remote ports to 3001 on Serial Port 0, and sets TCP local ports to 26 on Serial Port 1.

  After clicking Save and Reboot and refreshing the screen, a SETH-NET Service option appears in the menu on the left side of the page. Click on it to monitor the current status of the connection as well as statistics.

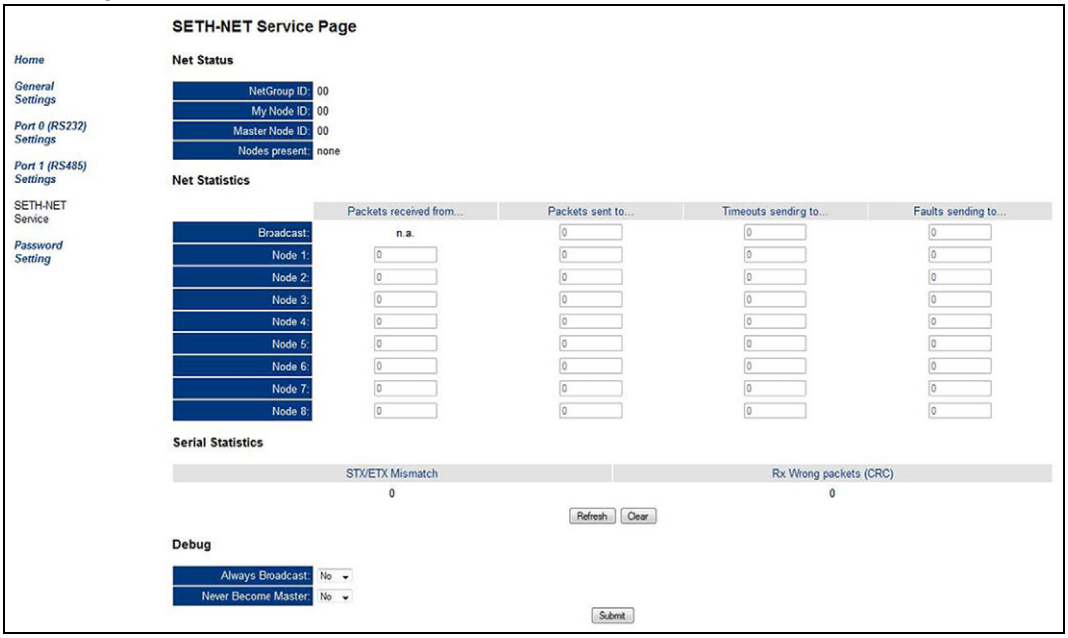


Figure 3-3. SETH-NET Service Page

- **Modbus TCP**

  Transmits Modbus data via LAN. Sets both serial ports to 9600,n,8,2 with no flow control, sets Modbus-RTU on both serial ports, and sets TCP local ports to 502 and 503. Requires a network connection that uses TCP/IP protocols. In order to establish communication, connect a device that supports the Modbus RTU or Modbus ASCII on the module's RS-232/485 signals.

Click ***Save and Reboot*** to save changes and reboot the module.

3.2.3 Restore Factory Defaults

Restore all of the module options to their factory defaults. To do this, click ***Restore Defaults and Reboot***.

3.3 Port Settings

Click on the ***Port 0 (RS-232) Settings*** or ***Port 1 (RS-485) Settings*** option in the menu on the left side of the page to display the current port settings. The Port Settings page displays the port's current Serial, LAN, UDP, and TCP settings in editable tables.

The first column of each table lists the parameters, the second shows the current setting of each parameter, and the third allows each parameter to be edited. If a parameter is changed, ensure that ***Make these settings permanent*** is checked, then click ***Save*** to save the changes.

3.3.1 Edit Settings

Set the Baud Rate, Data Size, Parity, Stop Bits, and Flow Control using the drop-downs in the Serial Settings table.

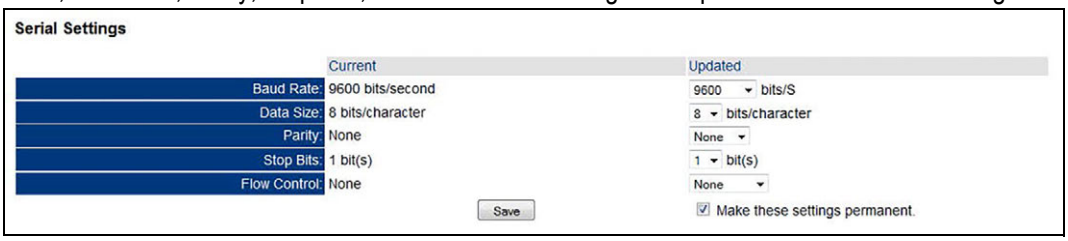


Figure 3-4. Serial Settings

Set the transmission Protocol using the drop-downs in the LAN Settings table.

The Physical I/F parameter is not editable.



Figure 3-5. LAN Settings

Set the Local UDP Port Number, Remote UDP Port Number, UDP Trigger Char, UDP Trigger Idle Timeout, and UDP Remote IP Address using the fields in the UDP table.

UDP settings are only editable if the Protocol parameter is set to UDP in the LAN Settings table.

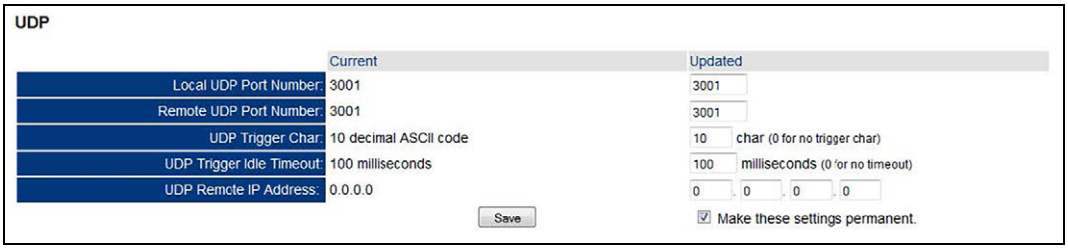


Figure 3-6. UDP Settings

Set the Local TCP Port Number, TCP Timeout, and Modbus Mode using the fields and drop-down in the TCP table.

TCP settings are only editable if the Protocol parameter is set to TCP in the LAN Settings table.

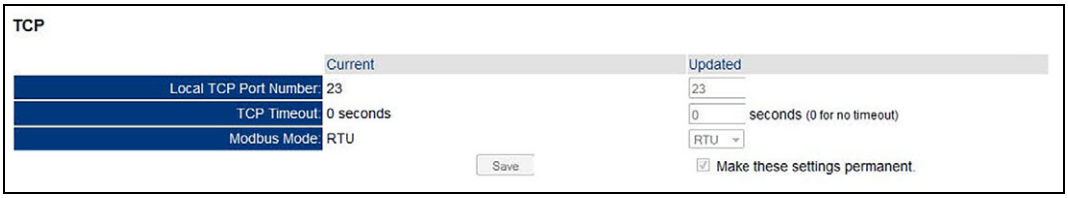


Figure 3-7. TCP Settings

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3.3.2 Tunneling Mode

Tunneling mode allows the Ethernet protocol to overcome the limits of serial communication by creating a virtual connection. This mode requires the use of two modules and their respective UDP ports.This can only be performed in Serial to Ethernet mode.

Note ***Tunneling mode can only be set up between the same port on each module, i.e., Port0-Port0 or Port1-Port1.***

To set up tunneling mode:

1. Navigate to each module's Port 0 or Port 1 Settings page.
2. Insert the Local UDP Port Number of module 1 into the Remote UDP Port Number field of module 2.
3. Insert the Local UDP Port Number of module 2 into the Remote UDP Port Number field of module 1.
4. Ensure the ***Make these settings permanent*** box is checked, then click ***Save***.

Example:

	SCT-1000 Ethernet 1	SCT-1000 Ethernet 2
IP	192.168.16.205	192.168.16.206
Local UDP Port Number	3001	3002
Remote UDP Port Number	3002	3001
UDP Remote IP Address	192.168.16.206	192.168.16.205

Table 3-1. Example Tunneling Mode Parameters

Note ***Do not change the other UDP parameters.***

To disable tunneling mode, set the UDP Remote IP Address field to 0.0.0.0 for both modules.

3.3.3 Double Tunneling Mode

Double tunneling mode functions the same as single tunneling mode, but can manage two virtual connections at the same time. This mode requires the use of two modules and their respective UDP ports. This can only be performed in Serial to Ethernet mode.

Note ***Double tunneling mode can only be set up between the same ports on each module, i.e., Port0-Port0 and Port1-Port1.***

To set up double tunneling mode:

1. Navigate to each module's Port 0 Settings page.
2. Insert the Local UDP Port Number of module 1 into the Remote UDP Port Number field of module 2.
3. Insert the Local UDP Port Number of module 2 into the Remote UDP Port Number field of module 1.
4. Ensure the ***Make these settings permanent box*** is checked, then click ***Save***.
5. Repeat steps 2-4 for each module's Port 1 settings.

Example:

	SCT-1000 Ethernet 1	SCT-1000 Ethernet 2
IP	192.168.16.205	192.168.16.206
Port 0		
Local UDP Port Number	3001	3002
Remote UDP Port Number	3002	3001
UDP Remote IP Address	192.168.16.206	192.168.16.205
Port 1		
Local UDP Port Number	3003	3004
Remote UDP Port Number	3004	3003
UDP Remote IP Address	192.168.16.206	198.168.16.205

Table 3-2. Example Port Settings

Note ***Do not change the other UDP Parameters.***

3.3.4 Broadcast Mode

Setting a module to broadcast mode designates it as a Master module, and allows it to send data to other modules set on the same UDP port. To set up broadcast mode, enter **255.255.255.255** in the module's UDP Remote IP Address field. Ensure the ***Make these settings permanent*** box is checked, then click ***Save***.

3.4 Manually Changing the Functioning Mode

The module has four functioning modes than can be selected by changing the dip-switches located on the circuit board. Every time the functioning mode is changed, the module is reset to default parameters and IP address of 192.168.16.205.

3.5 Password Setting

A password can be set to prevent unwanted access to the module's settings. To set a password:

1. Click ***Password Setting*** in the menu on the left side of the page.
2. Enter a password into the ***Password*** field, then type the same password again into the ***Re-enter*** field.
3. Click ***Submit!*** to save the password.

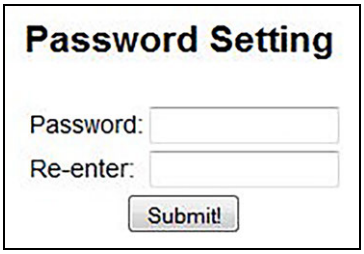


Figure 3-8. Setting a Password

Note ***To disable the Password feature, remove all text in both password fields and click Submit.***

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4.0 SCT-2200 Wi-Fi Module Parameters

4.1 Status and Configuration

Type the IP address into an internet browser. The default address is 192.168.16.254.

- The SCT-2200 Wi-Fi will require a password. See Figure 4-1. Enter default device Username: admin and Password: admin. To change device password see Section 4.4.1 on page 18.

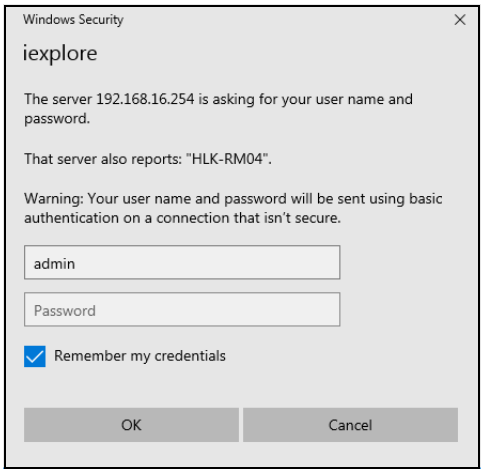


Figure 4-1. Enter Device Password

Click on the ***Serial2Net Settings*** option in the menu on the left side of the page to display the Serial2Net Settings page. Here changes can be made to the NetMode and serial communications settings.

To adopt changes to NetMode and serial communication settings, change desired configurations and click ***Apply***. The unit will restart with the new configuration settings applied. NetMode and serial communication settings are explained in Section 4.2 on page 13 and Section 4.3 on page 16.

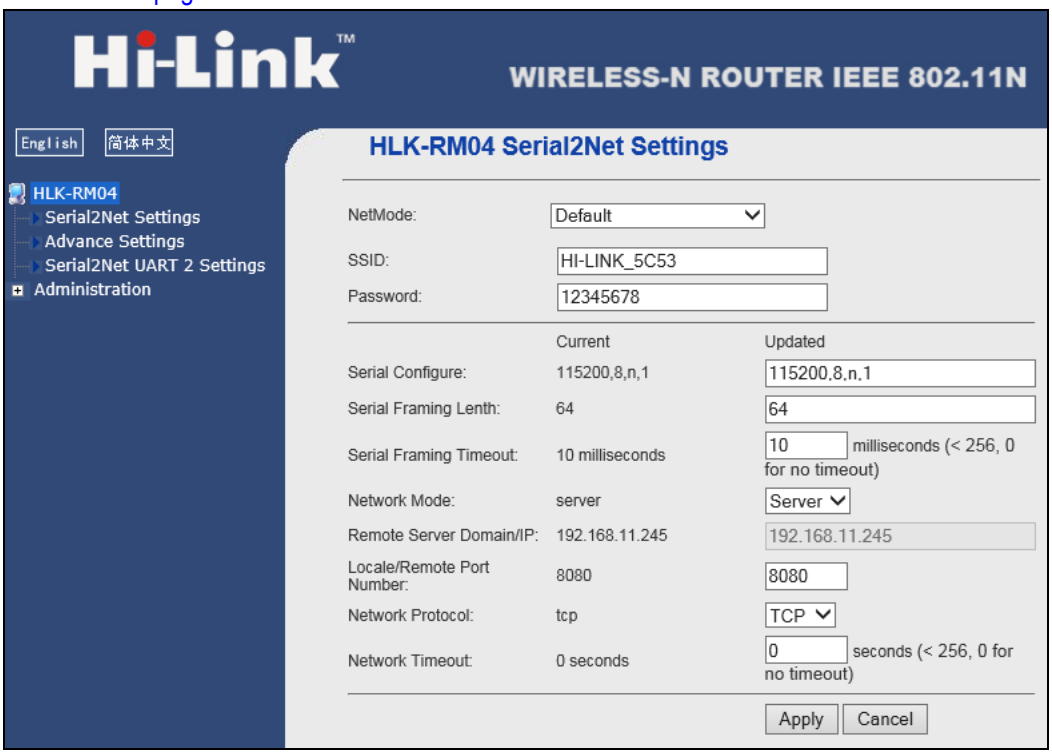


Figure 4-2. Serial2Net Settings

4.2 NetMode

The module can be configured into four modes within the NetMode menu of the Serial2Net Settings. Click on the NetMode dropdown and the following options will display.

- Default
- ETH-SERIAL - Serial to Ethernet
- Wi-Fi(CLIENT)-SERIAL - Serial to Wi-Fi CLIENT
- Wi-Fi(AP)-SERIAL - Serial to Wi-Fi AP (access point)

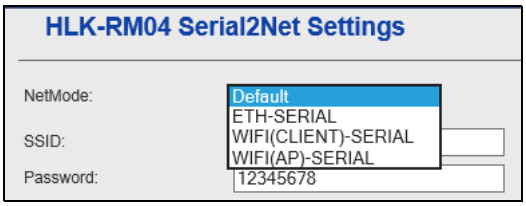


Figure 4-3. NetMode Menu

4.2.1 Default Mode

- Wi-Fi is enabled in AP mode
- ETH1 is enabled as WAN
- ETH2 is enabled as LAN
- Two-way data communication is possible between COM1 and the network
- All Wi-Fi encryption methods are supported
- Wi-Fi device can connect with the module and become the device under Wi-Fi LAN
- WAN default IP is dynamic
- LAN and Wi-Fi are enabled by the default DHCP server

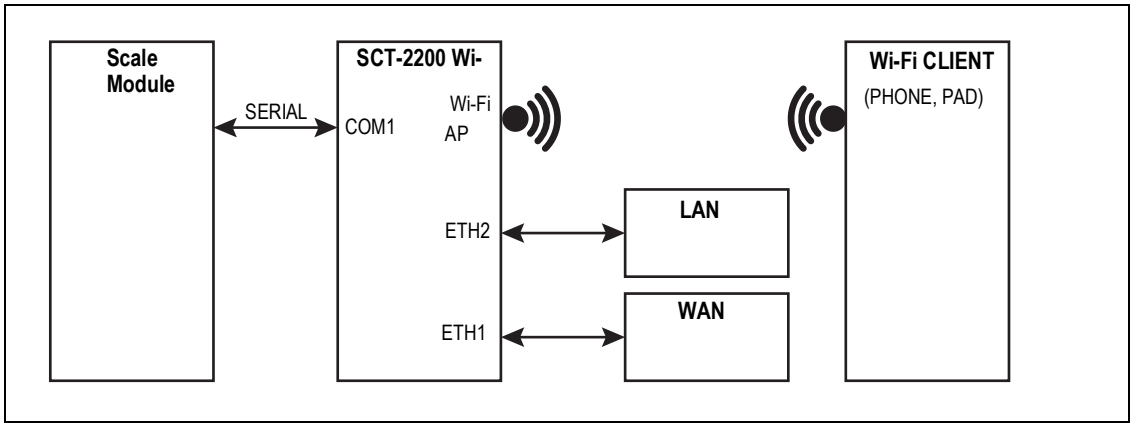


Figure 4-4. Default Mode Model

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4.2.2 Serial to Ethernet

- ETH1 is enabled
- Wi-Fi and ETH2 are disabled
- Two-way data communication is possible between COM1 and the network
- Ethernet can be configured as a dynamic IP address (DHCP) or as a static IP address (STATIC)

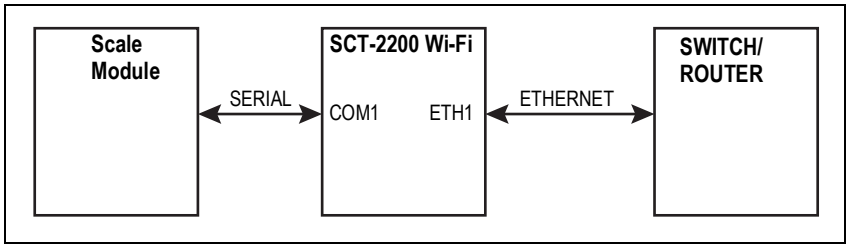


Figure 4-5. Serial to Ethernet Model



Figure 4-6. Serial to Ethernet-Dynamic IP

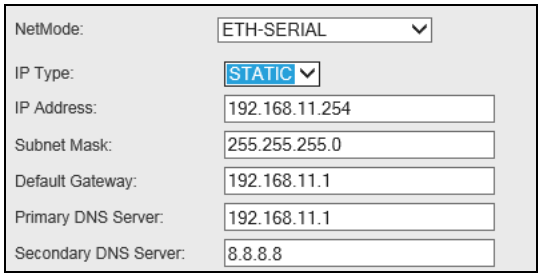


Figure 4-7. Serial to Ethernet-Static IP

4.2.3 Serial to Wi-Fi CLIENT

- Wi-Fi is enabled in client mode
- ETH1 and ETH2 are disabled
- Two-way data communication is possible between COM1 and the network
- Wi-Fi(CLIENT) can be configured as a dynamic IP address (DHCP) or as a static IP address (STATIC)
- All Wi-Fi encryption methods are supported

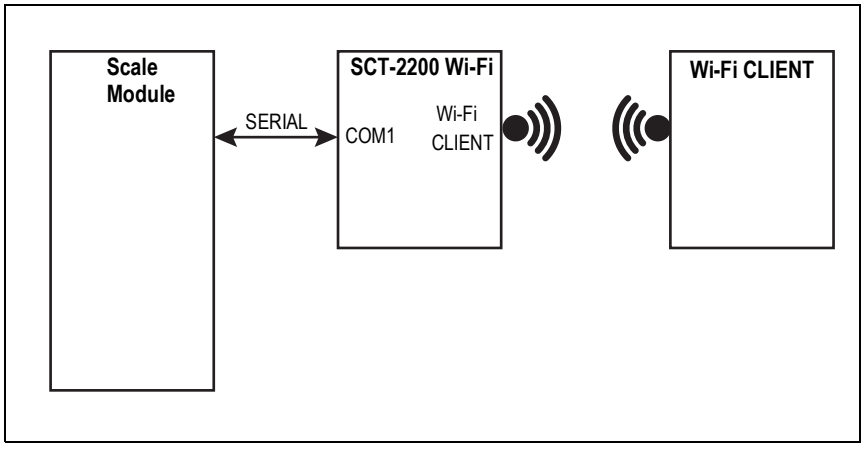


Figure 4-8. Wi-Fi(CLIENT)-Serial Mode Model

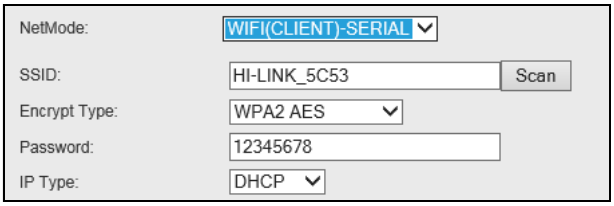


Figure 4-9. Serial to Wi-Fi CLIENT Dynamic IP

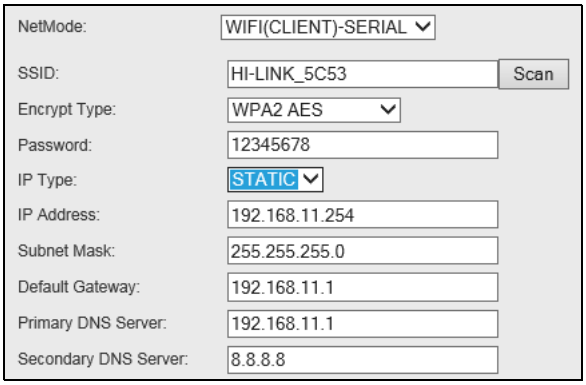


Figure 4-10. Serial to Wi-Fi CLIENT Static IP

4.2.4 Serial to Wi-Fi AP

- Wi-Fi is enabled in AP mode
- ETH1 and ETH2 are disabled
- Two-way data communication is possible between COM1 and the network
- All Wi-Fi encryption methods are supported
- Wi-Fi device can connect with the module and become the device under Wi-Fi LAN

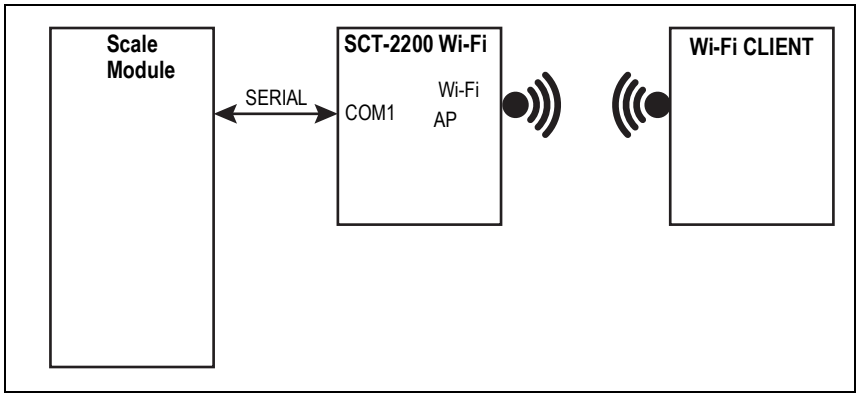


Figure 4-11. Serial to Wi-Fi AP Mode Model

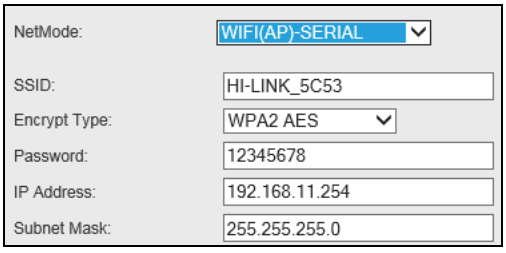


Figure 4-12. Serial to Wi-Fi AP

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4.3 Serial Settings

The Serial Settings menu allows for the parameters of the serial communications to be changed. There are 3 columns of information in this menu.

1. The first column lists the name of the parameter to be adjusted.
2. The second column, labeled Current, shows the current serial communication configuration.
3. The third column, labeled Updated, shows cells that can be altered to revise the current parameters.

To adopt new parameters, adjust the applicable cells and click ***Apply***.

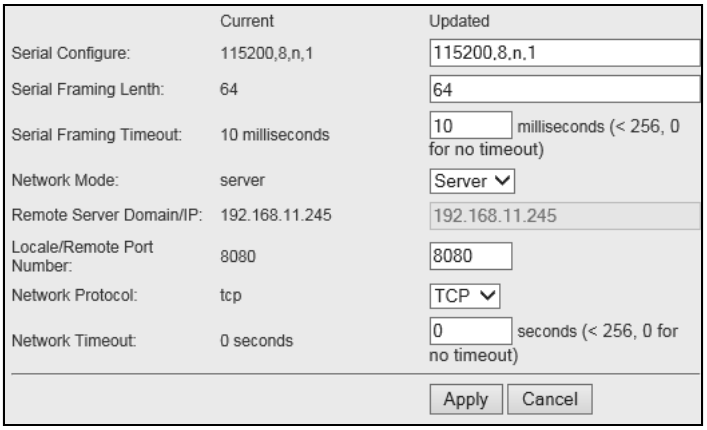


Figure 4-13. Serial Settings Menu

Parameter	Description
Serial Configure	Serial configuration format is the following parameters separated by commas: • Baud rate, data bits, parity bit, stop bit Example: "115200, 8,n,1"
Serial Framing Length	The length of the serial framing
Serial Framing Timeout	The time of serial framing
Network Mode	Choose: Client, Server or None
Remote Server Domain/IP	Remote Server Domain/IP address Example: 192.168.11.245 or www.ricelake.com
Locale/Remote Port Number	The specified prarameter is not the same under different network modes; client specifies the port number on the remote, server specified local port number
Network Protocol	Choose: TCP or UDP
Network Timeout	Under the server network mode, no data transmission within the timeout period, the connection will be disconnected; 0 specifies never disconnected

Table 4-1. Serial Settings Definitions

There are four modes for serial-net conversion. The modes can be activated by adjusting the ***Network Mode*** and the ***Network Protocol*** in the menus above. Those modes are:

- TCP Server
- TCP Client
- UDP Server
- UDP Client

4.3.1 TCP Server

In this mode, the module is listening on the specified port, waiting for the TCP Client connection. If connected, all TCP data is sent directly to the serial port endpoint and the data of the serial endpoint is sent to the TCP Client.

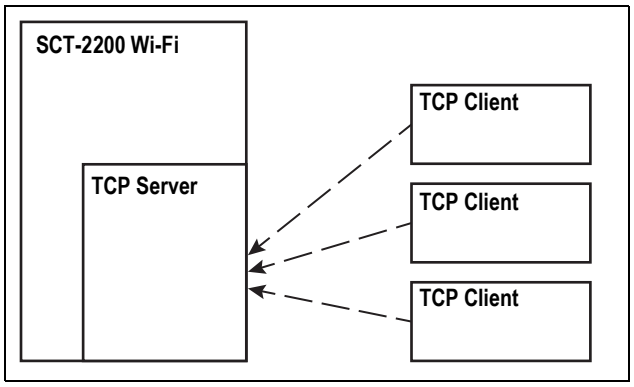


Figure 4-14. TCP Server Model

4.3.2 TCP Client

In this mode, the module is connected to the specified domain/IP port. All the data sent from the TCP Server-side endpoints will be sent directly to the serial port, the data from the serial endpoints sent to the TCP Server-side. Abnormal network disconnect will cause the module active reconnect. TCP Active reconnection function enable, TCP Server initiative disconnected, the module will immediately take the initiative to reconnect, and otherwise the module will not reconnect.

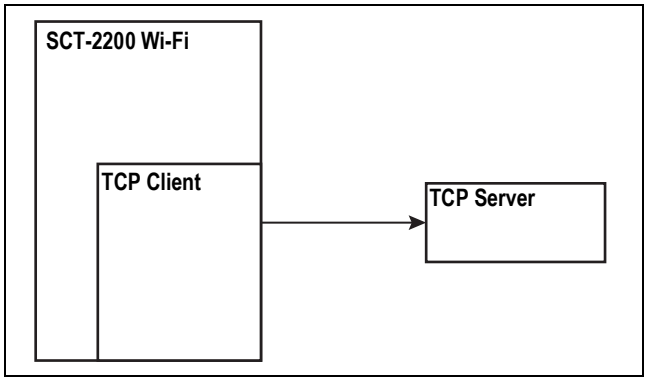


Figure 4-15. TCP Client Model

4.3.3 UDP Server

In this mode, the module opens the local designated port. The module will send the data to the serial port, and record the remote ip, port. The module will record only the last information on the remote connection. Serial received data will be sent directly to the recorded remote ip, port.

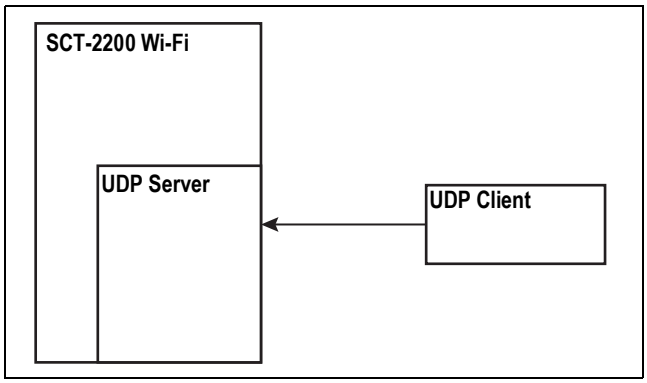


Figure 4-16. UDP Server Model

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4.3.4 UDP Client

In this mode, the module directly sends the serial data to the specified ip port. The serial data returned form the server-side will be distributed to the serial port.

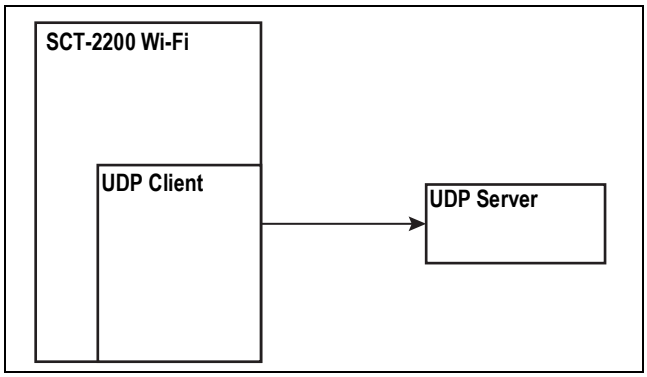


Figure 4-17. UDP Client Model

4.4 Administration

4.4.1 System Management

The System Management tab allows for the Administrator account and password to be changed.

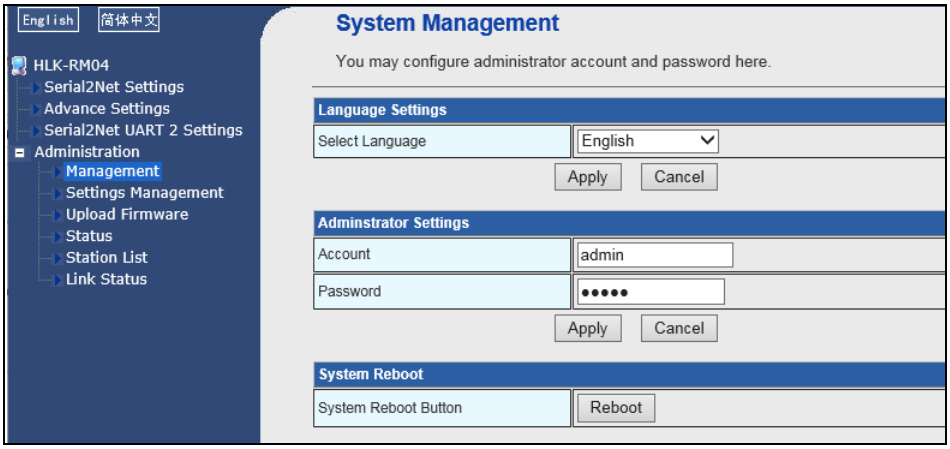


Figure 4-18. System Management

4.4.2 Settings Managment

The Settings Management menu enables exporting and importing of Settings.

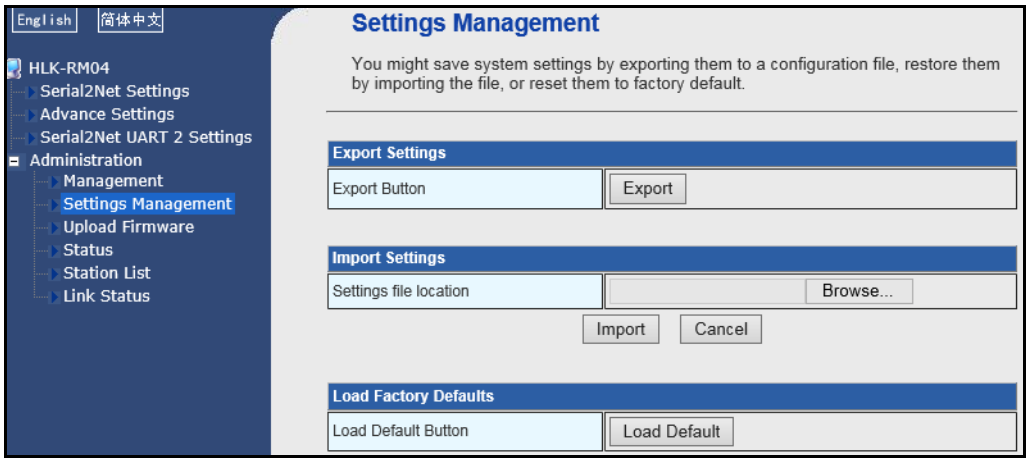


Figure 4-19. Setting Managment

Export Settings

To save the current setting of the SCT-2200 Wi-Fi click ***Export*** in the Settings Management menu. See Figure 4-19. The module will create a DAT file of the settings. Follow the browser prompts to save the file in a folder on the computer.

Import Settings

To import settings that have been saved to the computer.

1. Click ***Browse...*** in the import settings menu. See Figure 4-19.
2. Follow the prompts to find the location of the DAT file. See Figure 4-20.
3. Click ***Open.*** See Figure 4-20. The file name will populate the box. See Figure 4-21.

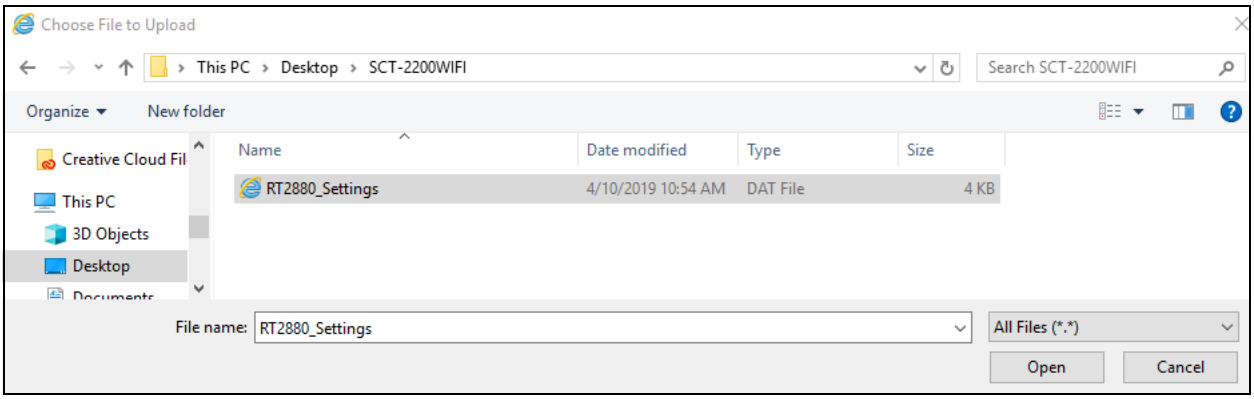


Figure 4-20. Find the File Location

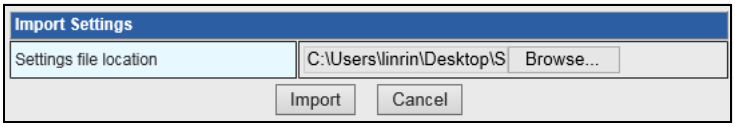


Figure 4-21. File name

4. Click ***Import***. The unit will restart with the imported settings enabled.

Load Factory Defaults

To restore factory default settings to the SCT-2200 Wi-Fi, click ***Load Default***. Upon system reboot, the system will be returned to factory settings.

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5.0 Specifications

5.1 SCT-1000 Ethernet Specifications

Physical Characteristics

Power Supply	+5Vdc / +12Vdc (AMP)
	+12Vdc +24Vdc (WIRE TERMINAL)
Max Consumption	200mA, 5W at 24Vdc
Dimensions	2" x 2.5" x 3.5" (53mm x 58mm x 90mm)
Case	ABS case for panel mounting on Omega/DIN bar
Operating Temperature	14°F +122°F (-10°C +50°C)
Operating humidity	10% - 90%RH (noncondensing)
Storage Temperature	-40 - 176ºF (-40-80ºC)
Storage humidity	5%-90% RH (noncondensing)
Connections	RS-232
	RS-485
	RJ45 bidirectional port

Network Parameters

Network Management	Remote Web Management
	Configuration file import and export
	WEB software upgrade
Protocols	TCP, UDP, DHCP, SNMP, SSL 3.0/TLS 1.0, HTTP, SMTP, ICMP, IGMP
Available Conversions	RS-232 ↔ Ethernet
	RS-485 ↔ Ethernet
	RS-232 ↔ RS-485
	MODBUS TCP ↔ Ethernet
Network Standards	10/100 Base-T
	IEEE802.3, IEEE802.3u
LAN Data Transfer Rate	10-100Mbps
Serial Baud Rate	50-230400bps

5.2 SCT-2200 Wi-Fi Specifications

Physical Characteristics

Power Supply	+5Vdc / +12Vdc (AMP)
	+12Vdc +24Vdc (WIRE TERMINAL)
Max Consumption	200mA, 5W at 24Vdc
Dimensions	.98" x 4.52" x 4.72" (25mm x 115mm x 120mm)
Case	ABS case for panel mounting on Omega/DIN bar
Operating temperature	-4 - 158ºF (-20-70ºC)
Operating humidity	10% - 90%RH (noncondensing)
Storage Temperature	-40 - 176ºF (-40-80ºC)
Storage humidity	5%-90% RH (noncondensing)
Connections	2 RS-485 bidirectional ports
	1 RS-232 bidirectional port
	1 LAN port
	1 WAN port
	On-board Antenna/External Antenna

Network Parameters

Network Management	Remote Web Management
	Configuration file import and export
	WEB software upgrade
Protocols	TCP, UDP, DHCP, SNMP, SSL 3.0/TLS 1.0, HTTP, SMTP, ICMP, IGMP
TCP Connection	Max Connections: 20
UDP Connection	Max Connections: 20
Available Conversions	RS-485 ↔ Ethernet
	RS-485 ↔ Wi-Fi

Ethernet Network Parameters

Ethernet Standard	10/100base-T
	IEEE802.3, IEEE802.3u
LAN Data Transfer Rate	10-100Mbps
Serial Baud Rate	50-230400bps

Wi-Fi Network Parameters

Network Standards	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b
Wireless Transmission Rate	11n: max 150Mbps
	11g: max 54Mbps
	11b: max 11Mbps
Wi-Fi Channels	1-14
Wireless Frequency	2.4-2.4835G
Signal Strength	12-15DBM
Antenna Type	On-board Antenna/External Antenna
Wi-Fi Work Mode	Client/AP/Router
WDS Function	Support WDS wireless bridge connection
Wireless Security	Wireless MAC address filtering
	Wireless security function switch
	64/128/152 bit WEP encryption
	WPA-PSK/WPA2-PSK, WPA/SPA2 security mechanism

Compliance

The SCT 22000 complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Radio certificate number:

WiFi: US: ZXVHLK-RM04

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6.0 Compliance

EU DECLARATION OF CONFORMITY

EU-KONFORMITÄTSERKLÄRUNG
DÉCLARATION UE DE CONFORMITÉ

Rice Lake Weighing Systems
230 West Coleman Street
Rice Lake, Wisconsin 54868
United States of America

RICE LAKE WEIGHING SYSTEMS

Type/Typ/Type: SCT indicator series

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Deutsch Wir erklären unter unserer alleinigen Verantwortung, dass die Produkte auf die sich diese Erklärung bezieht, den folgenden Normen und Regulierungsbestimmungen entsprechen.

Francais Nous déclarons sous notre responsabilité que les produits auxquels se rapporte la présente déclartion, sont conformes à la/aux norme/s suivante ou au/aux document/s normatif/s suivant/s.

EU Directive	Certificates	Standards Used / Notified Body Involvement
2014/30/EU EMC	-	EN 61000-6-2:2015, EN 61000-6-4:2007+A1:2011, EN61326-1:2013, EN55011:2009 +A1:2010
2014/35/EU LVD	-	EN 61010-1:2010
2011/65/EU RoHS	-	EN 50581:2012

Signature: Richard Shipman

Type Name: Richard Shipman

Title: Quality Manager

Place: Rice Lake, WI USA

Date: May 3, 2019

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