



Edwards Wireless Service Application Guide

Models EST3, EST3X, FireWorks

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Important information

Limitation of liability

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Installation in accordance with this manual, applicable codes, and the instructions of the authority having jurisdiction is mandatory.

While every precaution has been taken during the preparation of this manual to ensure the accuracy of its contents, UTC assumes no responsibility for errors or omissions.

Advisory messages

Advisory messages alert you to conditions or practices that can cause unwanted results. The advisory messages used in this document are shown and described below.

WARNING: Warning messages advise you of hazards that could result in injury or loss of life. They tell you which actions to take or to avoid in order to prevent the injury or loss of life.

Caution: Caution messages advise you of possible equipment damage. They tell you which actions to take or to avoid in order to prevent the damage.

Note: Note messages advise you of the possible loss of time or effort. They describe how to avoid the loss. Notes are also used to point out important information that you should read.

Introduction

This application guide describes how to incorporate wireless features into the Edwards® family of fire alarm systems. It is intended for those trained and certified on EST3, EST3X, and FireWorks. Please make sure to review this entire document before attempting to deploy the applications described herein.

The applications described in this document may be used for system commissioning, inspection and testing, and support. The activation of this wireless interface is intended to be used, for this application only, on a temporary basis. Continuous use of the wireless interface may impact or void agency listings.

The applications described in this document were developed using Windows 10 Home, FireWorks 8.1, and 3-SDU 5.3. Edwards Technical Services, Applications Engineering, or Systems Engineering does not currently support Edwards software products running on Windows 10. Please refer to the FireWorks 8.1 and 3-SDU 5.3 software release notes for the supported operating systems.

Note: The Edwards Technical support team will only provide support for the wireless applications described in this application guide when they are installed as *temporary* connections. Permanent wireless connections to UL Listed systems are not supported.

Before you can deploy the wireless applications described in this guide on a customer's network, you must get certain information from the site network administrator to prep the site (e.g., static IPv4 addresses). Working out details beforehand in cooperation with the site network administrator results in a smoother deployment. For details, see "Appendix D – Network administration" on page 49.

Wireless service applications

This application guide tells you how to install the following wireless service applications:

- Wireless panel electronic printer
- Wireless stand-alone FireWorks command and control interface
- Wireless client for nonredundant FireWorks network
- Wireless FireWorks remote client

Referenced documents

The following referenced documents are available on the My-Eddie website (<http://www.my-eddie.com>):

- *3-RCC Series Remote Closet Cabinets Installation Sheet* (P/N 270486)
- *MN-COM1S RS-232 to Ethernet Interface Installation Sheet* (P/N 3101601-EN)
- *MN-BRKT1F Mounting Bracket Installation Sheet* (P/N 3102161-EN)
- *SIGA-CR Control Relay Module Installation Sheet* (P/N 387023P-EN)
- *3-RS485 and 3-RS232 Option Card Installation Sheet* (P/N 270489)
- *Control-Display Module Installation Sheet* (P/N 270493)
- *4X Series Control-Display Module Installation Sheet* (P/N 3101777-ML)
- *FireWorks 8.1 Software Installation Guide* (P/N3100034-EN)
- *FireWorks Life Safety Network Application Guide* (P/N 3102147-EN)

The following referenced documents are available from the TP-Link Download Center (<http://www.tp-link.com/us/download/TL-WA901ND.html>):

- *TL-WA901ND User Guide* (P/N 1910011618)
- *TL-WA901ND Quick Installation Guide* (P/N 7106505985)

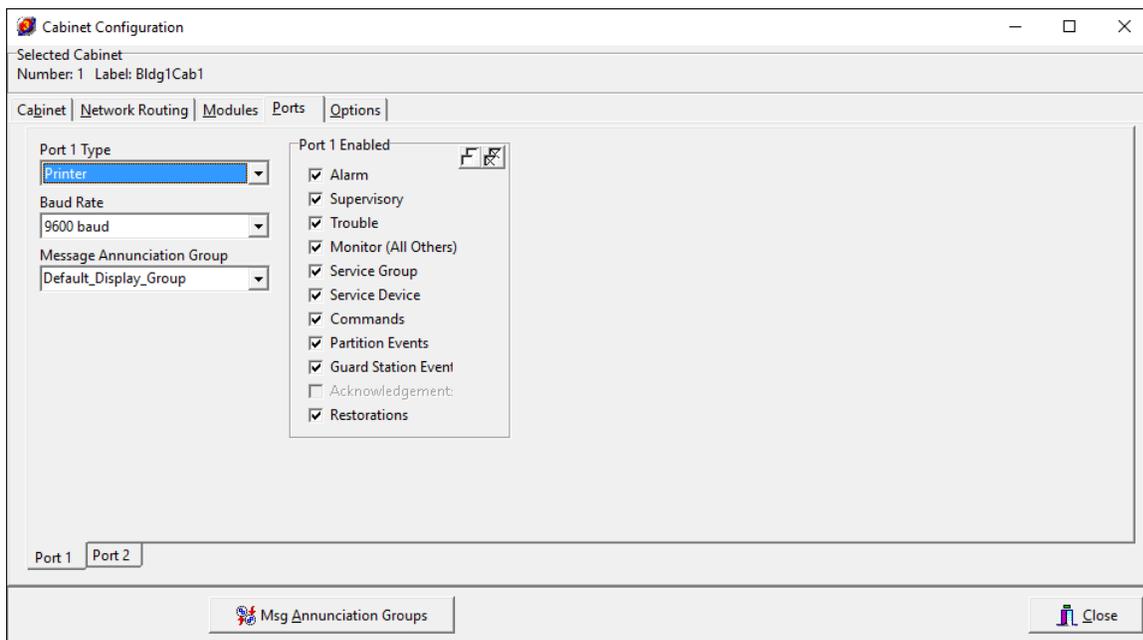
2. Make the necessary changes to the project and project programming. See “Configuring the EST3(X) control unit” below.
3. Configure the TP-Link TL-WA901ND for Client Mode operation. You will need to enter the SSID and password of the site’s wireless network.

For configuration instructions, see *TL-WA901ND User Guide* (P/N 1910011618) or *TL-WA901ND Quick Installation Guide* (P/N 7106505985).

4. Test the application. See “Testing the application” on page 5.

Configuring the EST3(X) control unit

1. Open the project in the 3-SDU.
2. Set the port type of the COM port used to connect the wireless interface to Printer. Set the baud rate to 9600 baud. Clear the check box for each event type that you *do not* want sent out the printer port.



- Configure the switch used to turn the WiFi Port on and off, and label the status indicator as shown below.

12SW/24LED - 12SW/24LED_01_04			
	Switch Label	Switch Type	LED Label
1	WiFi_PORT_ON/OFF_SW	Toggle	WiFi_PORT_ON_LED
2	12SW/24LED_01_04_002	Toggle	12SW/24LED_01_04_130
3	12SW/24LED_01_04_003	Toggle	12SW/24LED_01_04_131
4	12SW/24LED_01_04_004	Toggle	12SW/24LED_01_04_132
5	12SW/24LED_01_04_005	Toggle	12SW/24LED_01_04_133
6	12SW/24LED_01_04_006	Toggle	12SW/24LED_01_04_134
7	12SW/24LED_01_04_007	Toggle	12SW/24LED_01_04_135
8	12SW/24LED_01_04_008	Toggle	12SW/24LED_01_04_136
9	12SW/24LED_01_04_009	Toggle	12SW/24LED_01_04_137
10	12SW/24LED_01_04_010	Toggle	12SW/24LED_01_04_138
11	12SW/24LED_01_04_011	Toggle	12SW/24LED_01_04_139
12	12SW/24LED_01_04_012	Toggle	12SW/24LED_01_04_140
13			12SW/24LED_01_04_141
14			12SW/24LED_01_04_142
15			12SW/24LED_01_04_143
16			12SW/24LED_01_04_144
17			12SW/24LED_01_04_145
18			12SW/24LED_01_04_146
19			12SW/24LED_01_04_147
20			12SW/24LED_01_04_148
21			12SW/24LED_01_04_149
22			12SW/24LED_01_04_150
			12SW/24LED_01_04_151

Note: In the figure above, the first LED-switch pair on the operator layer module is used. In practice, you can use any available toggle switch and LED indicator. On EST3 control units, you can also use a 12SW/12LED module instead of a 12SW/24LED module.

- Open the Rules Editor (Rules > Rules Editor), and then add the rules below.

Note: The [STARTUP] rule below is required only when the wireless interface is connected to an EST3X control unit as shown in Figure 8 on page 23.

```
[ STARTUP ]
STUP :
    ON CAUX 'MN-COM1S_POWER' ;

[WiFi PORT ON/OFF SWITCH]
SW 'WiFi_PORT_ON/OFF_SW' :
    ON 'MN-COM1S_POWER_RELAY' ;

[WiFi PORT ON LED]
RLYCFG 'MN-COM1S_POWER_RELAY' :
    STEADY 'WiFi_PORT_ON_LED' ;
```

- Compile the rules, and then download the CPU database.

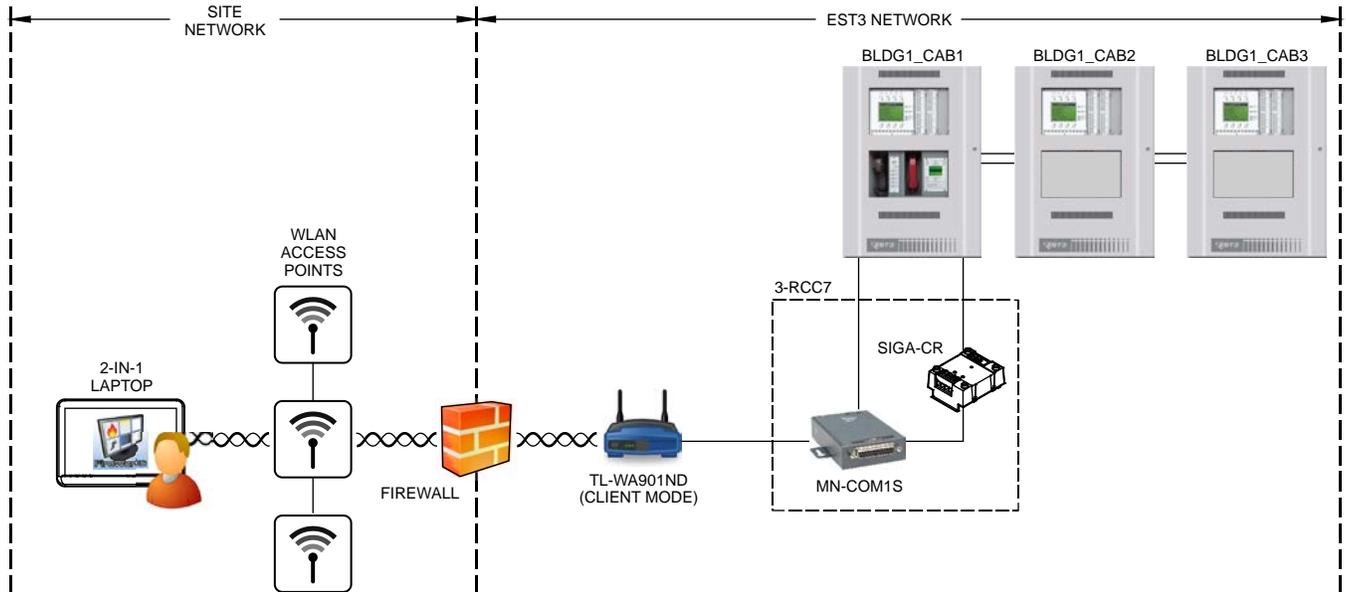
Testing the application

- Start the EST3(X) system.
- Press the WiFi Port ON/OFF switch. Verify the WiFi Port On indicator is on.
- Turn on the tablet PC, and then start PuTTY.
- Reset the EST3(X) system. Verify PuTTY displays the system state changes.

Wireless stand-alone FireWorks command and control interface

This section describes how to add a wireless stand-alone FireWorks command and control interface to your EST3(X) life safety system (see Figure 2 below).

Figure 2: Wireless stand-alone FireWorks command and control interface



What you will need

To add a wireless stand-alone FireWorks command and control interface to your EST3(X) life safety system, you need the following:

- A Windows 10 2-in-1 laptop with the following applications installed (see Table 3 on page 34 for minimum requirements):
 - FireWorks 8.1 (required PINs: FW-CGSUL). For installation instructions, see “Installing the FireWorks 8.1 software” on page 44.
 - Lantronix COM Port Redirector 4.3.0.3. For installation instructions, see “Lantronix Com Port Redirector (CPR)” on page 35.
- A control unit with the following:
 - An available Gateway Type III port
 - An available switch and indicators on a 12SW/24LED and 24LED operator layer control-display modules (or equivalent)
- On FireWorks, a TCP/IP COM port
- An EST3(X) wireless interface

Installation

1. On the control unit, do the following:

Install a 12SW/24LED and a 24LED operator layer control-display modules (or equivalent), if an unused switch and indicators are not already available. For installation instructions, see the product installation sheet.

Install the EST3(X) wireless interface. See “Appendix A – Installing an EST3(X) wireless interface” on page 19.

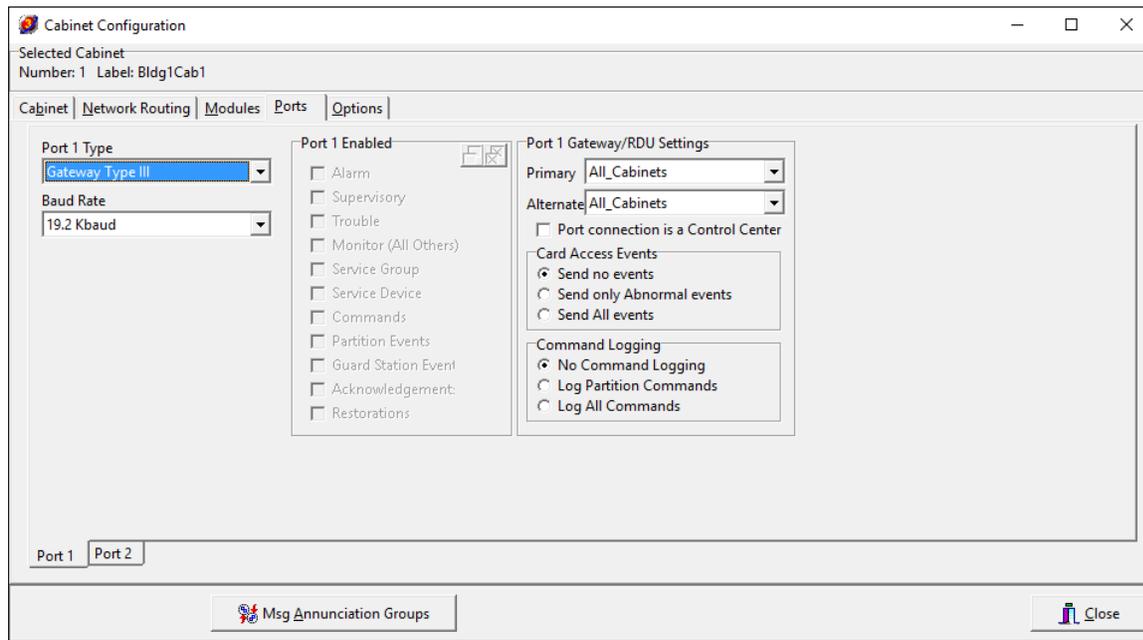
2. Make the necessary changes to the project and project programming. See “Configuring the EST3(X) control unit” below.
3. Configure FireWorks. See “Configuring the FireWorks command and control interface” on page 11.
4. Configure the TP-Link TL-WA901ND for Client Mode operation. You will need to enter the SSID and password of the site’s wireless network.

For configuration instructions, see *TL-WA901ND User Guide* (P/N 1910011618) or *TL-WA901ND Quick Installation Guide* (P/N 7106505985).

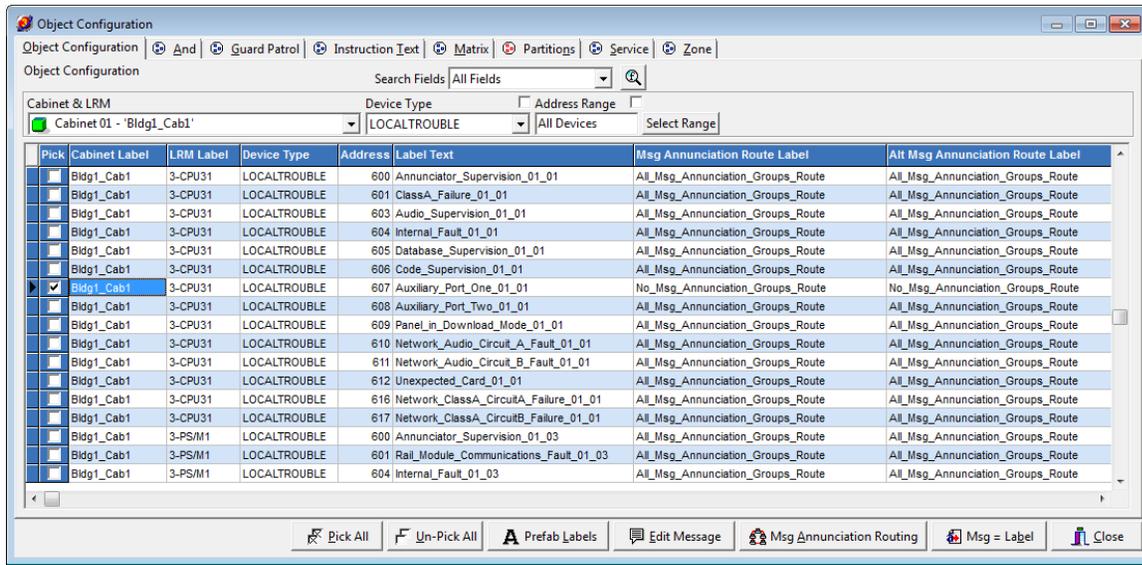
5. Test the application. See “Testing the application” on page 12.

Configuring the EST3(X) control unit

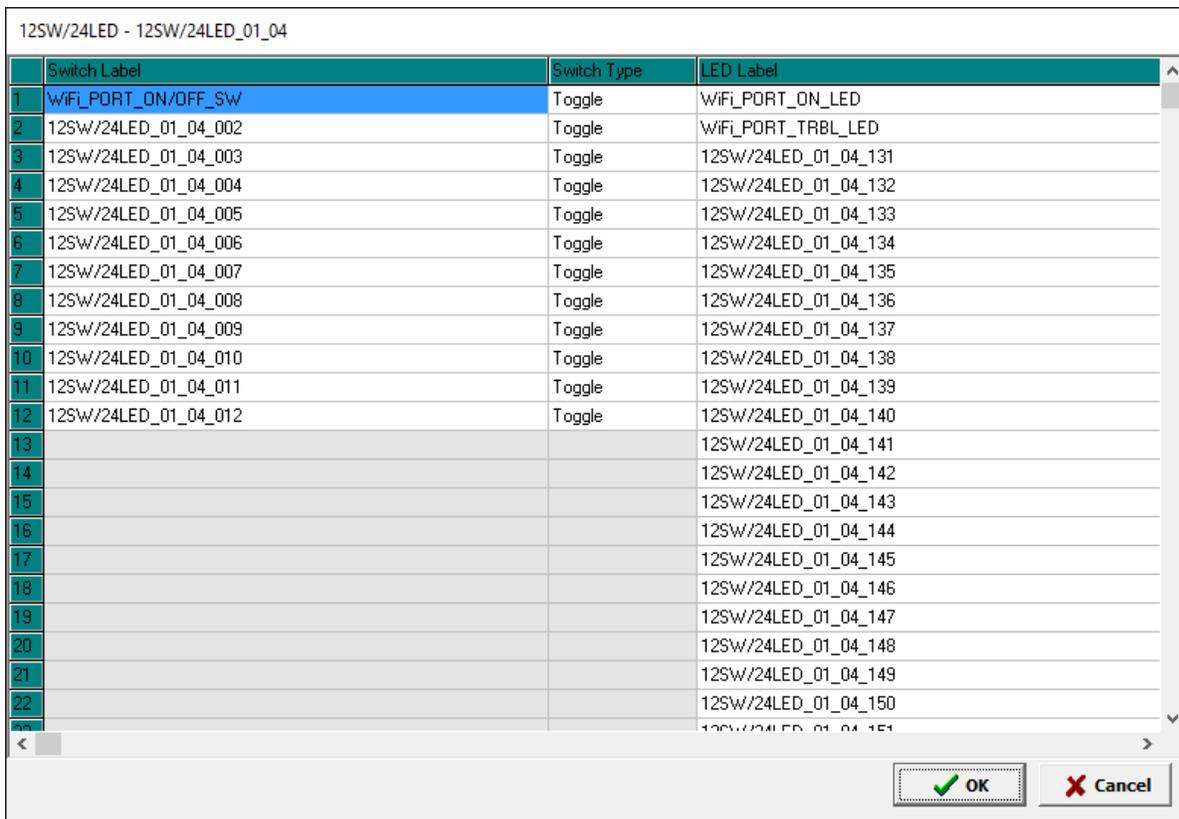
1. Open the project in the 3-SDU.
2. Set the port type of the COM port used to connect the wireless interface to Gateway Type III. Set the baud rate to 19.2 Kbaud.



- Change the message routing options for the the COM port's pseudo point to No_Msg_Annunciation_Groups_Route.



- Configure the switch used to turn the WiFi Port on and off, and label the status indicators as shown below.



Note: In the figure above, the first switch/LED group on the operator layer module is used. In practice, you can use any available toggle switch and LED indicators.

- Label the indicator used to indicate when the WiFi port is active as shown below.

24LED - 24LED_01_05

Switch Label	Switch Type	LED Label
1		WiFi_PORT_ACTIVE_LED
2		24LED_01_05_130
3		24LED_01_05_131
4		24LED_01_05_132
5		24LED_01_05_133
6		24LED_01_05_134
7		24LED_01_05_135
8		24LED_01_05_136
9		24LED_01_05_137
10		24LED_01_05_138
11		24LED_01_05_139
12		24LED_01_05_140
13		24LED_01_05_141
14		24LED_01_05_142
15		24LED_01_05_143
16		24LED_01_05_144
17		24LED_01_05_145
18		24LED_01_05_146
19		24LED_01_05_147
20		24LED_01_05_148
21		24LED_01_05_149
22		24LED_01_05_150
23		24LED_01_05_151

OK Cancel

Note: In the figure above, the first indicator on the operator layer module is used. In practice, you can use any available indicator.

- Configure AND Group 1 as shown below. AND Group 1 activates a rule that turns the WiFi Port Trouble LED on when the WiFi port is on — *but not communicating* (i.e., the COM port's pseudo point is active).

Object Configuration

Object Configuration | And | Guard Patrol | Instruction Text | Matrix | Partitions | Service | Zone

AND Groups

Label for AND Group 1: WiFi_Port_Trouble

Activation Number: 2

Activation Event: Q3 - Trouble

Group Description: MN-COMIS power relay is on; COM fault is active

Available Groups:

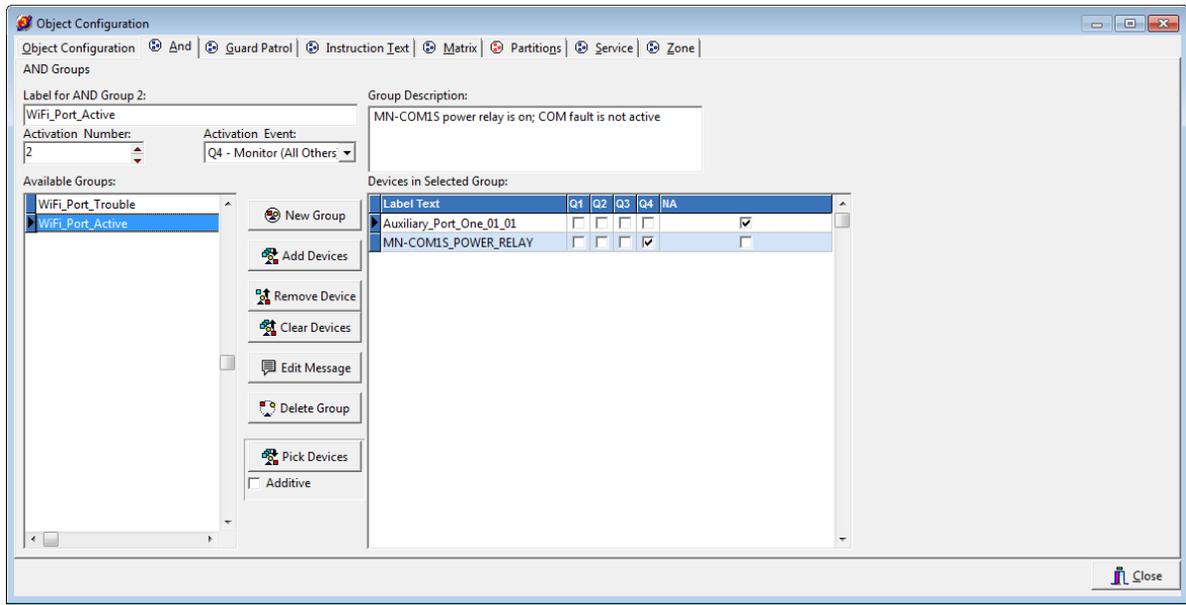
- WiFi_Port_Trouble
- WiFi_Port_Active

Devices in Selected Group:

Label Text	Q1	Q2	Q3	Q4	NA
Auxiliary_Port_One_01_01	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MN-COMIS_POWER_RELAY	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Close

- Configure AND Group 2 as shown below. AND Group2 activates a rule that turns the WiFi Port Active LED on when the WiFi port is on — *and is communicating* (i.e., the COM port's pseudo point is normal).



- Open the Rules Editor (Rules > Rules Editor), and then add the rules below.

Note: The [STARTUP] rule below is required only when the wireless interface is connected to an EST3X control unit as shown in Figure 8 on page 23.

```
[STARTUP]
STUP :
    ON CAUX 'MN-COM1S_POWER' ;

[WiFi PORT ON/OFF SWITCH]
SW 'WiFi_PORT_ON/OFF_SW' :
    ON 'MN-COM1S_POWER_RELAY' ;

[WiFi PORT ON LED]
RLYCFG 'MN-COM1S_POWER_RELAY' :
    STEADY 'WiFi_PORT_ON_LED' ;

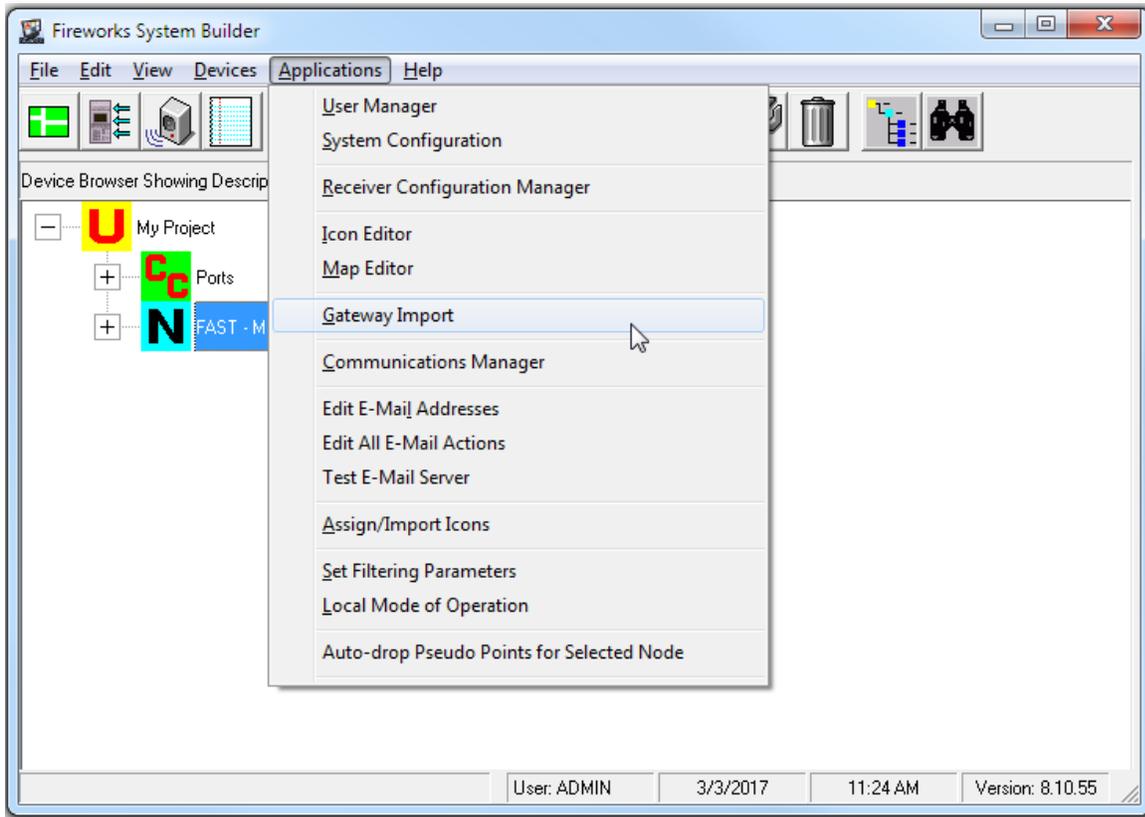
[WiFi PORT TROUBLE LED]
TRB AND 'WiFi_Port_Trouble' :
    SLOW 'WiFi_PORT_TRBL_LED' ;

[WiFi PORT ACTIVE LED]
MON AND 'WiFi_Port_Active' :
    STEADY 'WiFi_PORT_ACTIVE_LED' ;
```

- Compile the rules, and then download the CPU database.

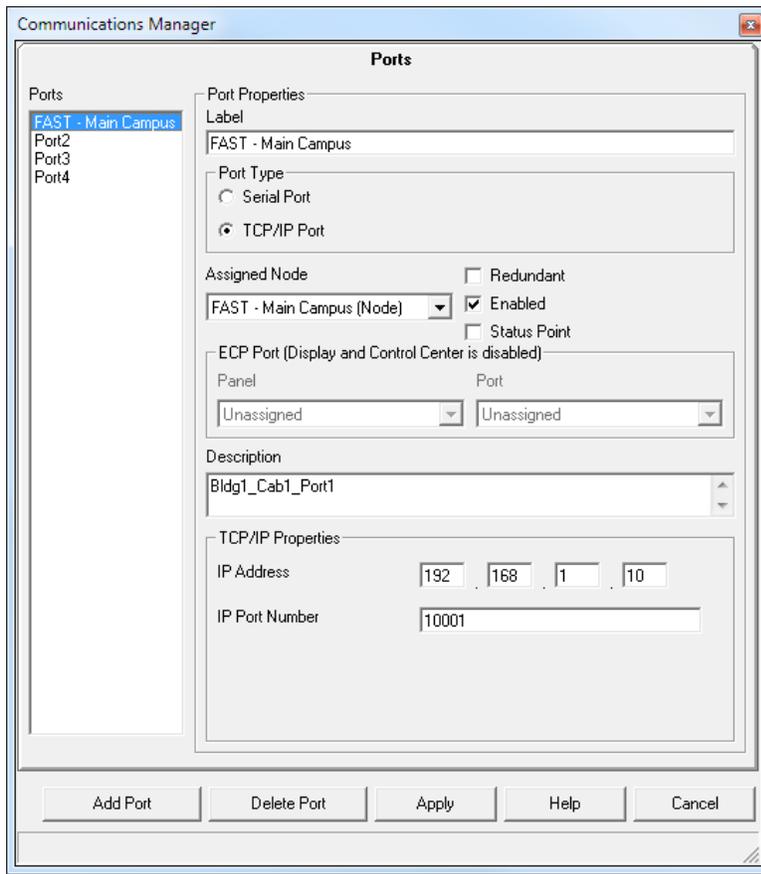
Configuring the FireWorks command and control interface

1. Export the project gateway file from the 3-SDU.
2. In FireWorks System Builder, create a project, add an EST3 node (or an EST3X node depending on the system), and then import the SDU project gateway file.



3. In FireWorks Communications Manager, configure a TCP/IP COM port as shown below. Set the TCP/IP address for the same static IPv4 address that you assigned to the MN-COM1S on the EST3(X) wireless interface and set the TCP/IP port number for 10001.

Note: The IP address shown below is an example. Obtain actual static IPv4 addresses from the site network administrator.



Testing the application

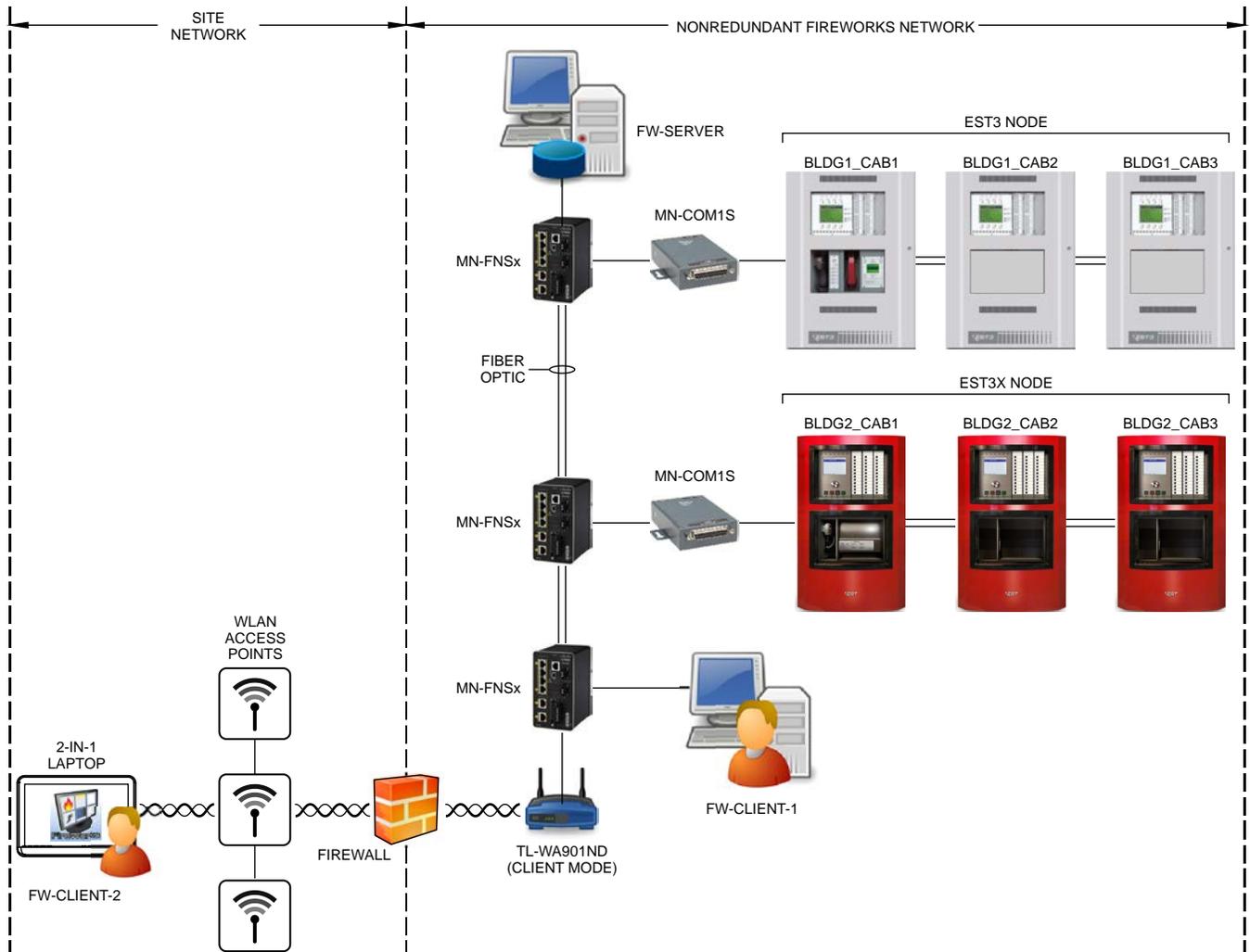
1. Start the EST3(X) system. Verify that the system is normal (no events displayed on the LCD).
2. Press the WiFi Port ON/OFF switch, and then verify the following:
 - WiFi Port On indicator is on
 - WiFi Port Trouble indicator is blinking
 - WiFi Port Active indicator is off
3. Start System Control, and then on the EST3(X) control unit verify the following.
 - WiFi Port On indicator is on
 - WiFi Port Trouble indicator is off
 - WiFi Port Active indicator is on

Wireless client for nonredundant FireWorks networks

This section describes how to add a wireless client to your nonredundant FireWorks network (see Figure 3 below). For additional information, see *FireWorks Life Safety Network Application Guide* (P/N 3102147-EN).

In this application, the wireless interface is always on. As such, the FireWorks server reports a communication fault whenever the wireless client is not connected. To prevent FireWorks from reporting the communication fault, you must remove the wireless client from the FireWorks project database before you shut down the 2-in-1 laptop or leave the site.

Figure 3: Wireless client on a nonredundant FireWorks network



What you will need

To add a wireless client to your nonredundant FireWorks network, you need the following:

- A Windows 10 2-in-1 laptop with the following application installed (see Table 3 on page 34 for minimum requirements):
 - FireWorks 8.1 (required PINs: FW-CGSUL, FW-NCZZP)
- A TP-Link TL-WA901ND Wireless N Access Point configured for Client Mode

Installation

1. On the 2-in-1 laptop, do the following:
 - Install FireWorks 8.1 (see “FireWorks 8.1” on page 43).
 - Change the computer name to something meaningful. For example: FW-CLIENT-X, where X is the next available seat on the nonredundant network. See “Changing the name of your Windows 10 2-in-1 laptop/tablet PC” below.
2. Configure the TP-Link TL-WA901ND for Client Mode operation, and then connect it to an MN-FNS switch. The TP-Link TL-WA901ND must be within range of a site WLAN access point.

For configuration instructions, see *TL-WA901ND User Guide* (P/N 1910011618) or *TL-WA901ND Quick Installation Guide* (P/N 7106505985).
3. On the FireWorks server, add a client workstation to the project. For instructions, see the topic “Adding a client workstation,” in System Builder Help.

Changing the name of your Windows 10 2-in-1 laptop/tablet PC

Windows 10 gives your computer a random name (DESKTOP- followed by an alphanumeric string). You can use the default name if you wish, but you may want to change it to something more meaningful.

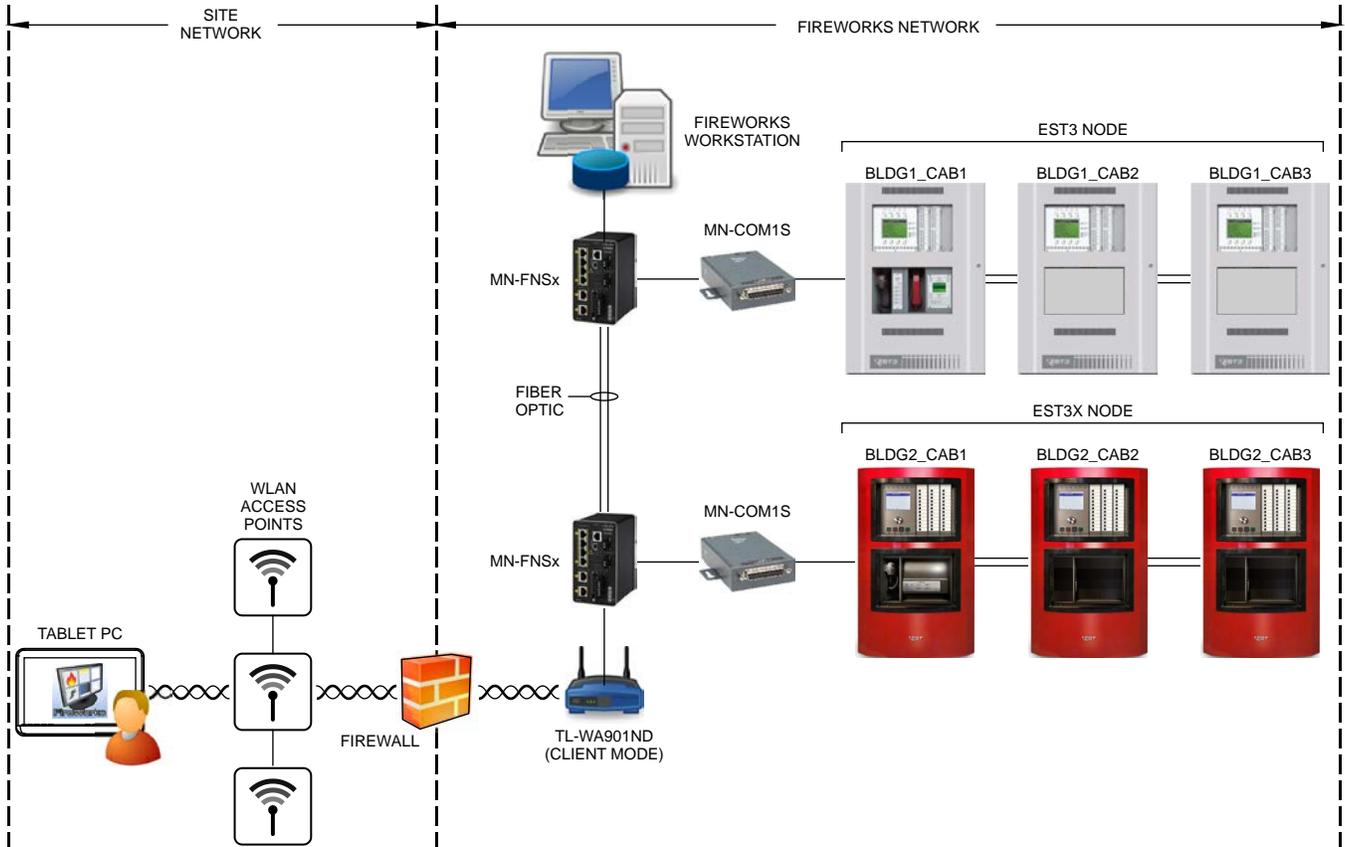
To change the name of your Windows 10 laptop/tablet PC:

1. Right-click the Start button, and then click System.
2. On the System screen, under Computer name, domain, and workgroup settings, click Change settings.
3. In the System properties dialog box, on the Computer Name tab, click Change.
4. In the Computer Name/Domain Changes dialog box, in the Computer name box, type the new computer name.
5. Click OK, and then restart the laptop/tablet PC.

Wireless FireWorks remote client

This section describes how to add a wireless FireWorks remote client to your FireWorks life safety network (see Figure 4 below).

Figure 4: Typical wireless FireWorks remote client application



What you will need

To add a wireless FireWorks remote client to your FireWorks life safety network, you need the following:

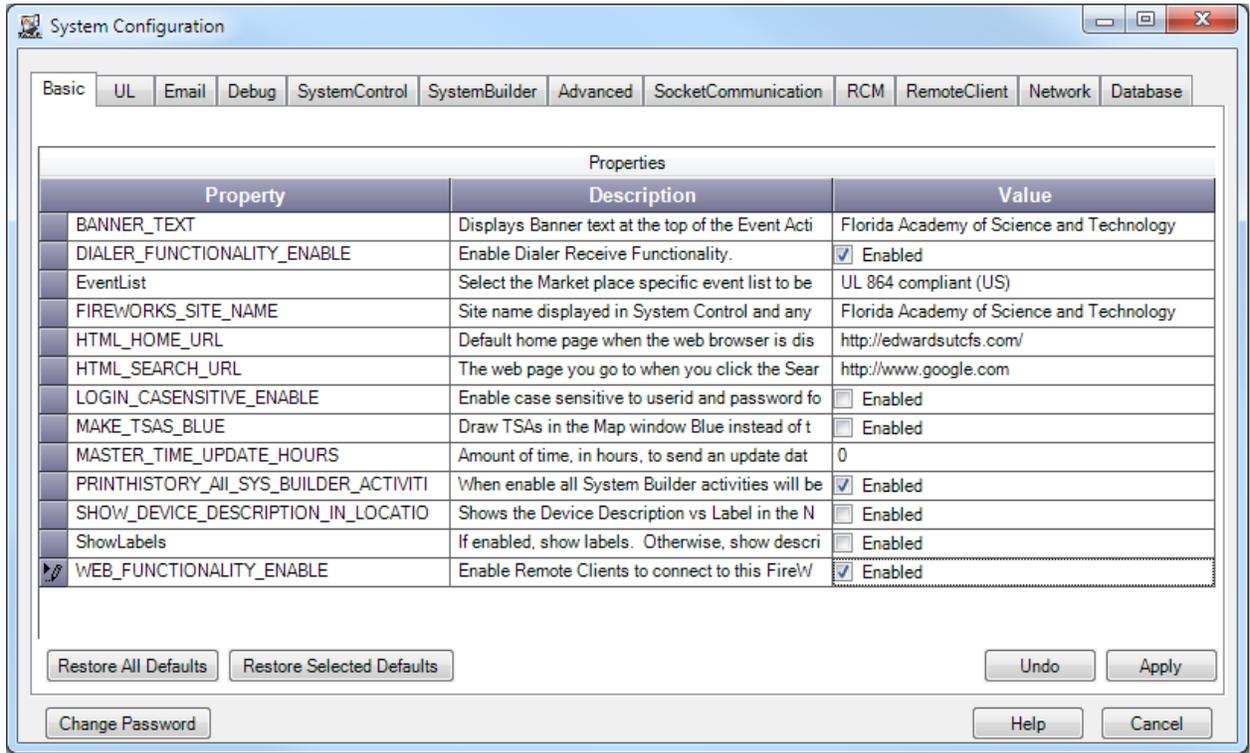
- A Windows 10 tablet PC with FireWorks 8.1 Remote Client installed (see Table 4 on page 34 for minimum requirements)
- A FireWorks 8.1 workstation with one of the following remote client software product PIN combinations activated:
 - FW-1S (supports one remote client)
 - FW-1S and FW-4S (supports up to five remote clients)
 - FW-1S, FW-4S, and FW-10S (supports up to 15 remote clients)

Installation

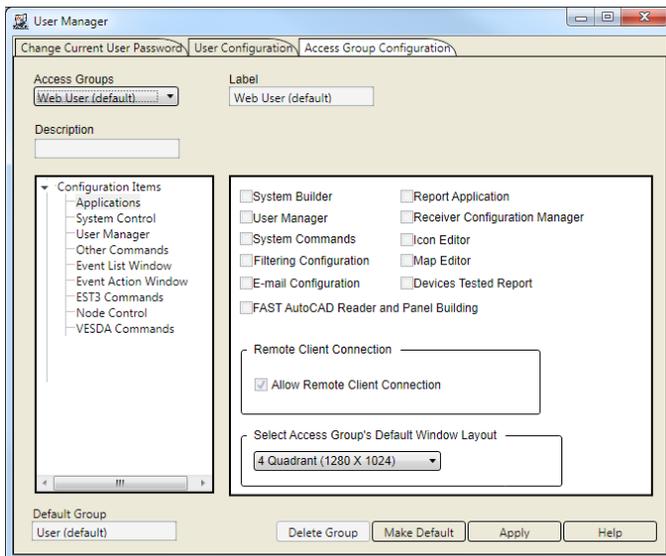
The general steps for adding a wireless FireWorks remote client to your FireWorks life safety network are:

1. On the tablet PC, install FireWorks Remote Client. For instructions, see, "FireWorks 8.1 Remote Client" on page 46.
2. On the FireWorks 8.1 workstation, do the following:

Set the **WEB_FUNCTIONALITY_ENABLE** property for **Enabled** as shown below.

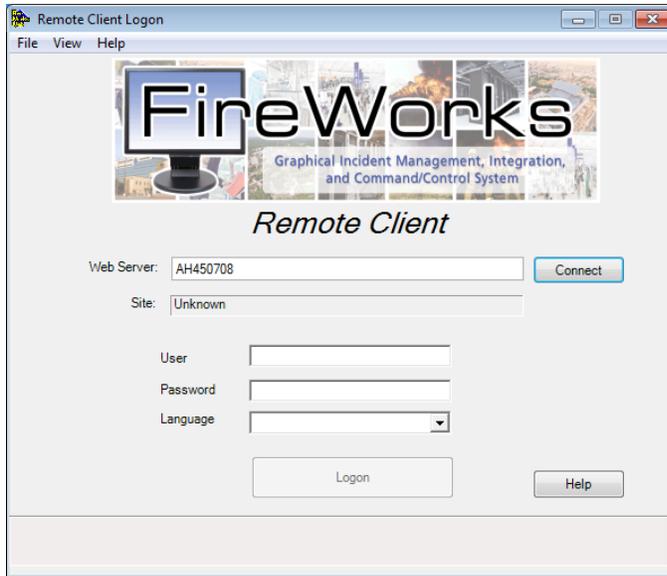


Assign the **Remote Client Connection** user right to the remote client users as shown below.

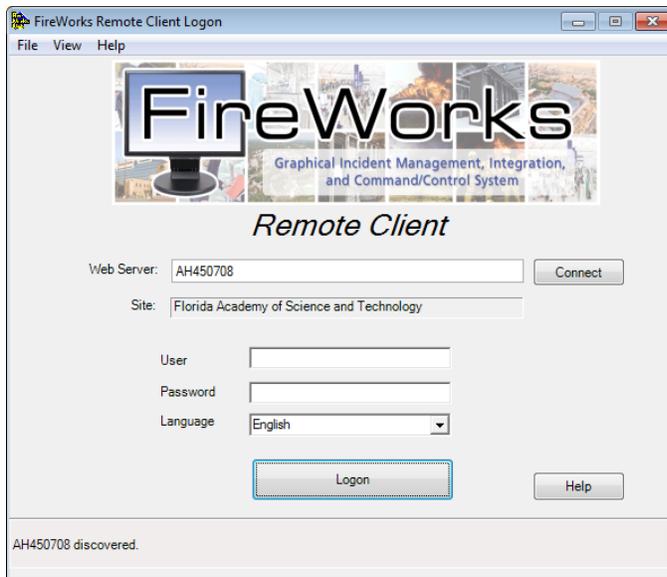


Testing the application

1. Start System Control.
2. On the tablet PC, double-click the FireWorks 8.1 Remote Client shortcut.
3. On the **Remote Client Logon** window, in the **Web Server** box, type the name of the FireWorks 8.1 workstation, and then click **Connect**.

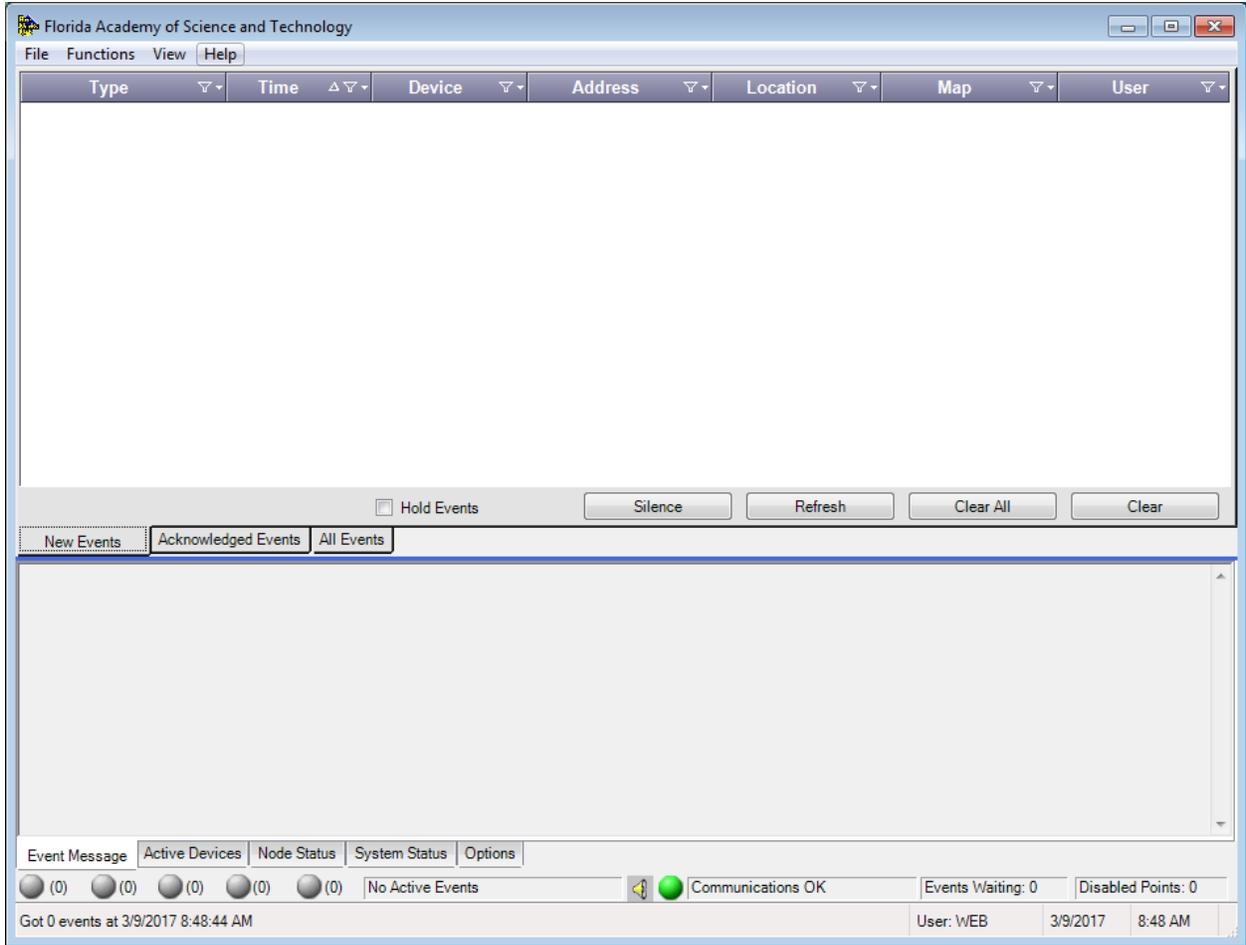


4. Wait until Remote Client discovers the FireWorks workstation as shown below.



5. After the FireWorks workstation is discovered, do the following:
In the **User** box, type your FireWorks user name.
In the **Password** box, type your FireWorks password.
Click **Logon**.

6. Verify the Remote Client opens and that the Communications status is OK as shown below.



Appendix A – Installing an EST3(X) wireless interface

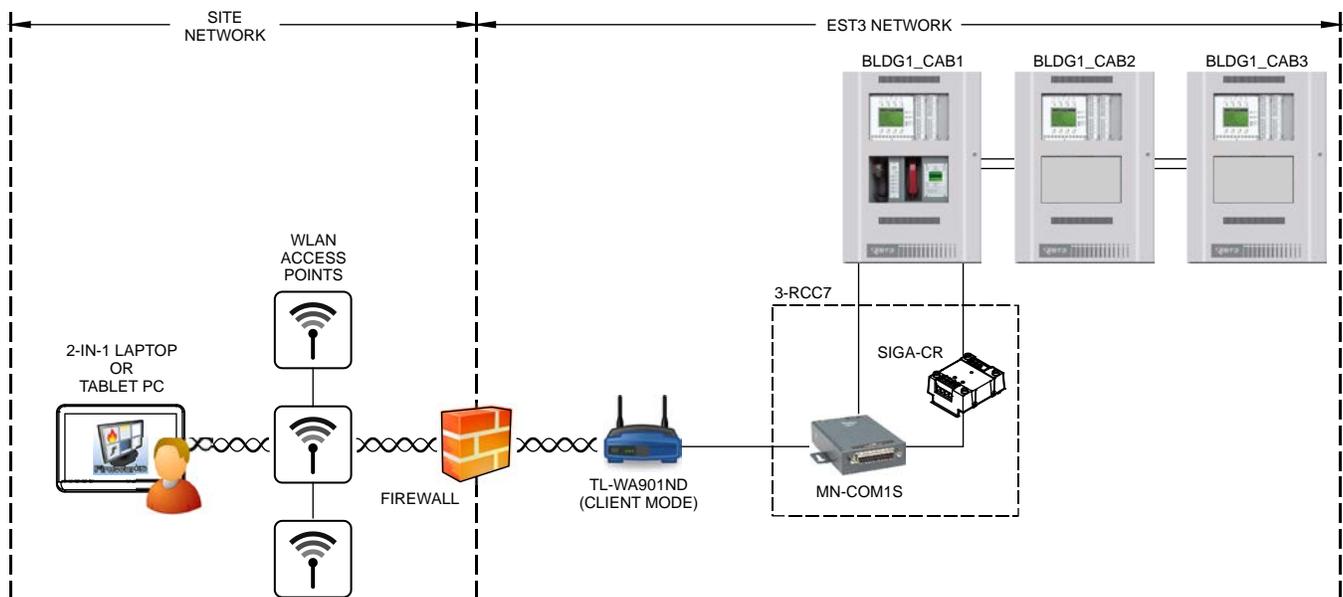
This section describes how to add a wireless interface to EST3 and EST3X control units. The wireless interface is required for integrating the following applications:

- Wireless panel electronic printer
- Wireless stand-alone FireWorks command and control interface

With wireless interface, you can use a Windows 10 2-in-1 laptop or tablet PC, and the site's wireless network or a mobile hotspot network, to remotely connect to the EST3(X) life safety system. Typically, the system operator layer provides controls to turn the connection to the wireless interface on and off and indicators to signal the status of the wireless connection. During normal operation, the connection to the wireless interface is turned off (i.e., power is not applied to the MN-COM1S).

Figure 5 below shows a typical EST3 wireless application.

Figure 5: Typical EST3 wireless application



What you will need

To add an EST3(X) wireless interface, you will need an available COM port on the control unit, and the following equipment:

- A 3-RCC7 enclosure
- A MN-BRKT1F mounting bracket
- A SIGA-CR relay module
- An MN-COM1S module (firmware version 6.11 or later)
- A TP-Link TL-WA901ND Wireless N Access Point configured to operate in Client Mode

Note: Some or all of the equipment listed above is portable and may be temporarily or permanently connected at the site.

Installation

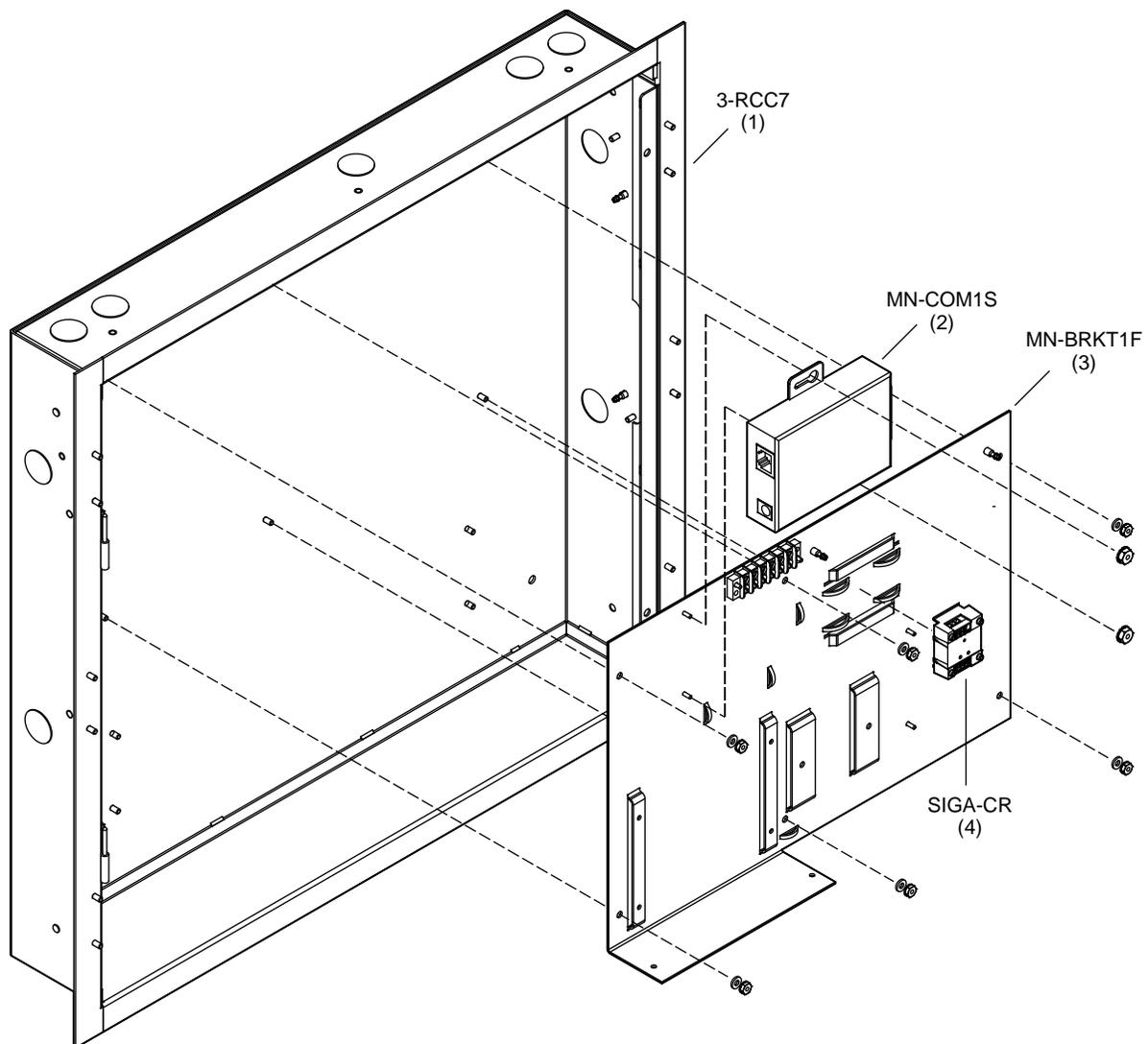
The general steps for adding a wireless interface to an existing EST3(X) control unit are:

1. Assemble the equipment as shown in Figure 6 below.
2. Connect the field wiring as shown in Figure 7 on page 22 for EST3 control units or as shown in Figure 8 on page 23 for EST3X control units.

Note: In Figure 7 and Figure 8, the SIGA-CR is shown connected to LOOP2. You can connect the SIGA-CR to either signaling line circuit (LOOP1 or LOOP2).

3. Place the TP-Link TL-WA901ND within 50 ft. of the MN-COM1S, within reach of a standard 120 V electrical outlet, and in a location free of obstructions that could degrade or block the wireless signals to the site WLAN access point. For more installation recommendations, see the documentation provided with your wireless client.

Figure 6: EST3(X) wireless interface exploded view



- (1) See *3-RCC Series Remote Closet Cabinets Installation Sheet* (P/N 270486)
- (2) See *MN-COM1S RS-232 to Ethernet Interface Installation Sheet* (P/N 3101601-EN)
- (3) See *MN-BRKT1F Mounting Bracket Installation Sheet* (P/N 3102161-EN)
- (4) See *SIGA-CR Control Relay Module Installation Sheet* (P/N 387023P-EN)

Field wiring

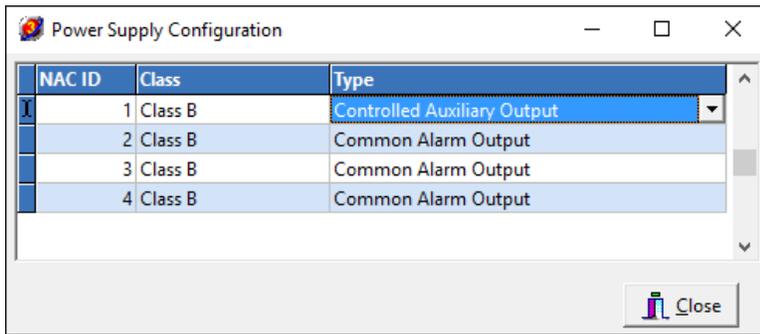
For EST3 field wiring connections, see Figure 7 on page 22. For EST3X field wiring connections, see Figure 8 on page 23.

Configuring the PS10-4B NAC/AUX output (EST3X systems only)

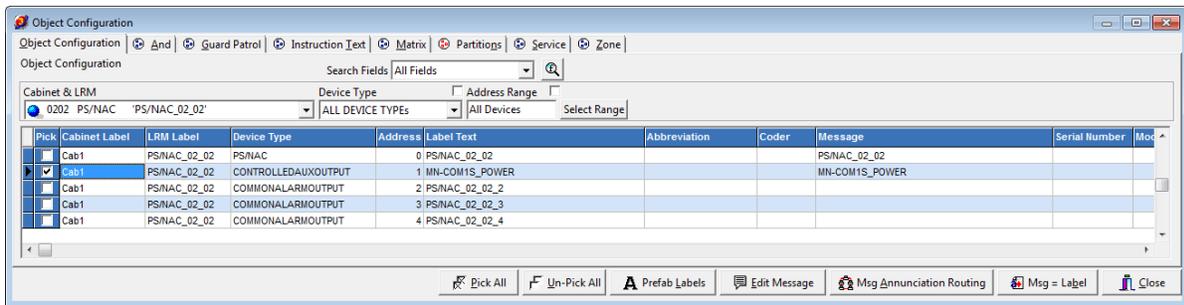
On EST3X systems, the PS10-4B is used to power the MN-COM1S on the wireless interface (see Figure 8 on page 23). You must configure the PS10-4B NAC/AUX output as a controlled auxiliary output and program it to turn on at system startup.

To configure the PS10-4B NAC/AUX output:

1. In the 3-SDU, under Cabinet Configuration (Configure > Cabinet), configure the PS10-4B NAC/AUX output used to power the MN-COM1S module as shown below.



2. In the 3-SDU, under Object Configuration (Configure > Objects), give the controlled auxiliary output used to power the MN-COM1S a meaningful label. For example: MN-COM1S_POWER (see below).



3. Open the Rules Editor (Rules > Rules Editor), and then add the rule below.

```
[ STARTUP ]  
STUP :  
    ON CAUX 'MN-COM1S_POWER' ;
```

Figure 7: EST3 wireless interface wiring

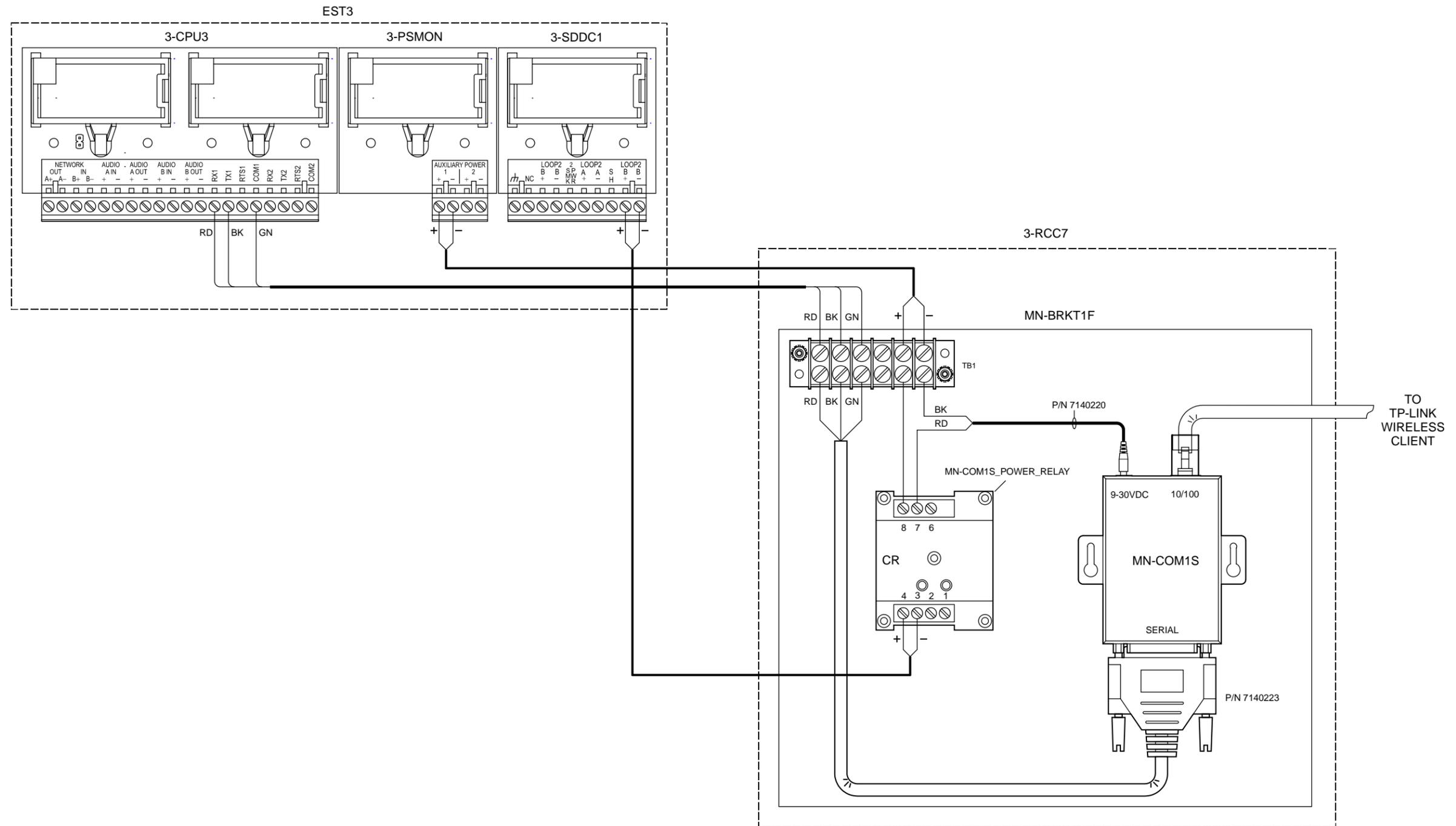
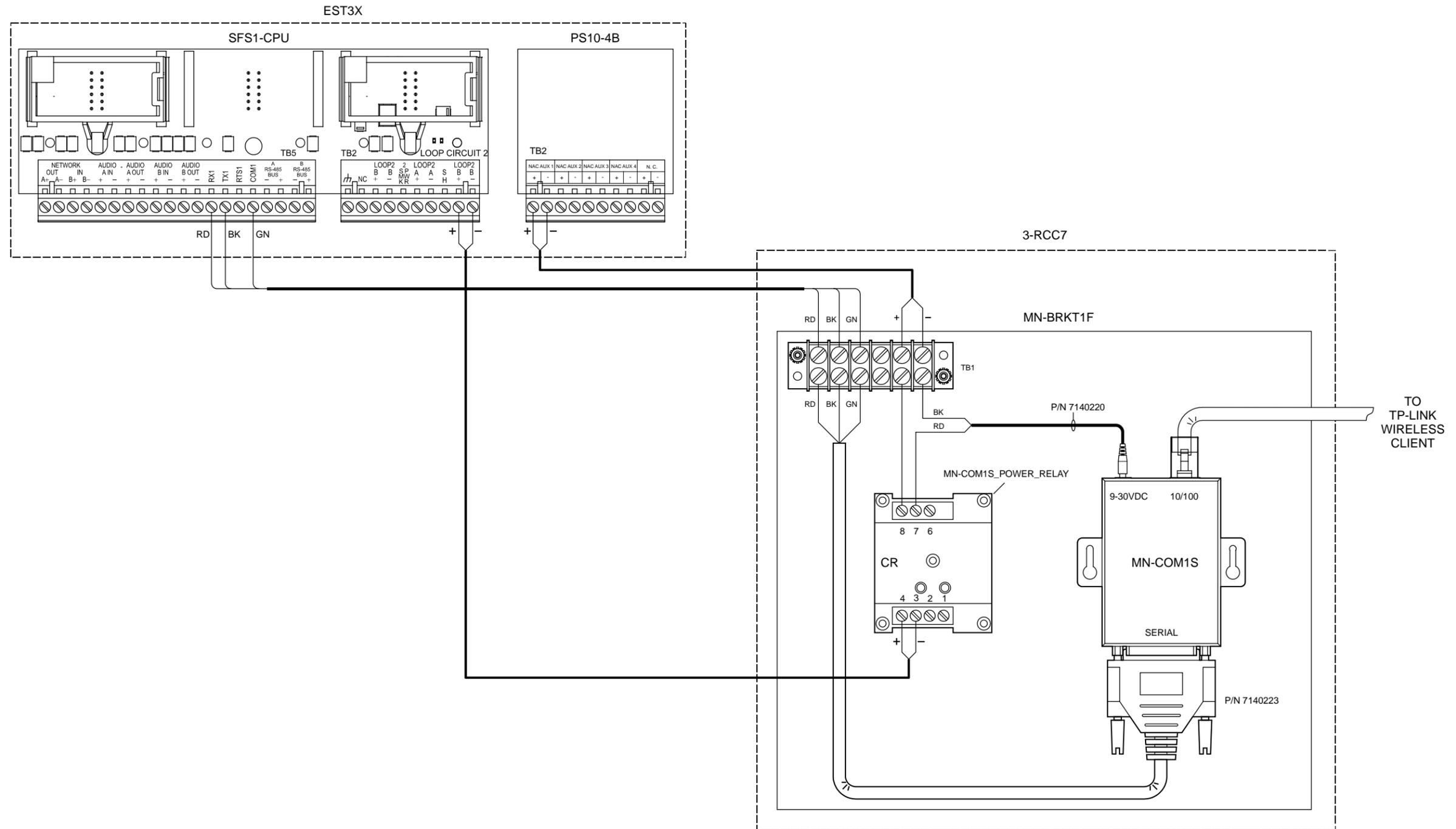


Figure 8: EST3X wireless interface wiring



Appendix B – MN-COM1S RS-232 to Ethernet Interface

The MN-COM1S RS-232 to Ethernet Interface provides a communication path between a WiFi-enabled computing device and serial devices over a wireless Ethernet connection.

This section provides instructions for:

- Setting up the configuration computer
- Configuring the MN-COM1S
- Upgrading MN-COM1S firmware

Before you begin

To configure the MN-COM1S, you should have a good understanding of basic networking principles, addressing, and terminology. If you do not, consult an IT professional.

If you are installing the device on a managed network, obtain a list of available IPv4 addresses and the required netmask from the site network administrator.

The IPv4 address consists of two parts. The first part identifies the network and the second part identifies where the host (device) is on the network. The netmask (sometimes called the subnet mask) divides the IPv4 address into network address and host address.

When configuring the MN-COM1S, the number entered for the Netmask value specifies how many bits are used for the host part of the IPv4 address starting with the least significant bit as shown in Table 1 below.

Table 1: Host bit examples

Class	Netmask (dot-decimal)	Netmask (dot-binary)	No. of host bits
A	255.000.000.000	11111111.00000000.00000000.00000000	24
B	255.255.000.000	11111111.11111111.00000000.00000000	16
C	255.255.255.000	11111111.11111111.11111111.00000000	8

Setting up the configuration computer

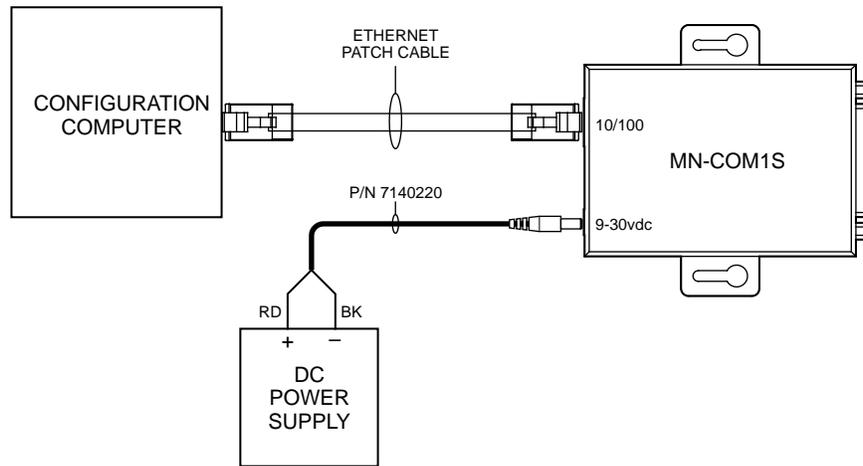
The computer that you use to configure the MN-COM1S must have its Local Area Connection IPv4 properties changed to a static IP address and its Telnet Client feature turned on.

Note: The instructions provided here are for Windows 10 computers. Instructions for Windows 7 computers are slightly different.

Step 1. Connect the MN-COM1S to the configuration computer

Connect the MN-COM1S to the configuration computer as shown below, and then apply power.

Figure 9: Equipment setup



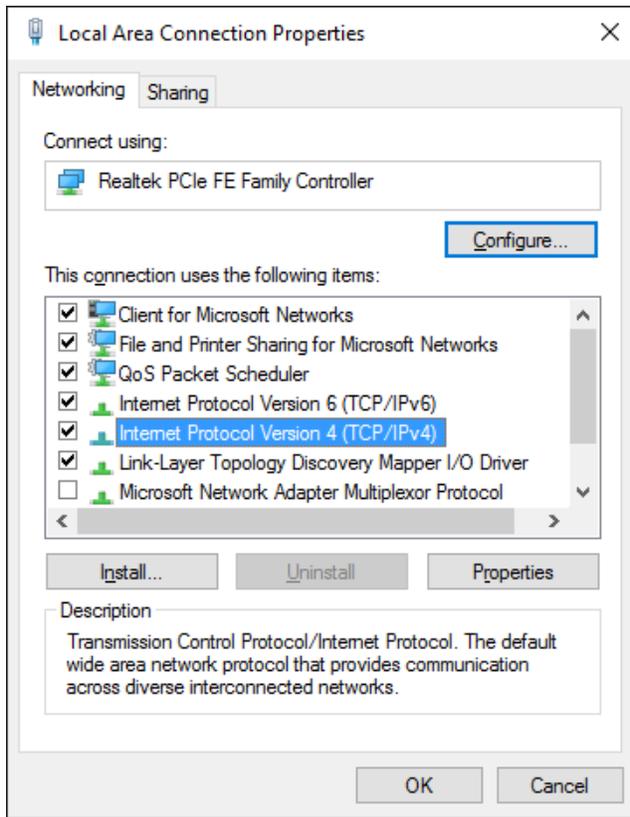
Notes

- The network interface connection on most computers auto-negotiate. If you experience communication issues between the configuration computer and the MN-COM1S, try using an Ethernet crossover cable.
- The MN-COM1S ships with a power cable for connecting a 24 VDC, filtered, and regulated power supply. If a 24 VDC power supply is not available, use a universal AC adapter with compatible ratings.

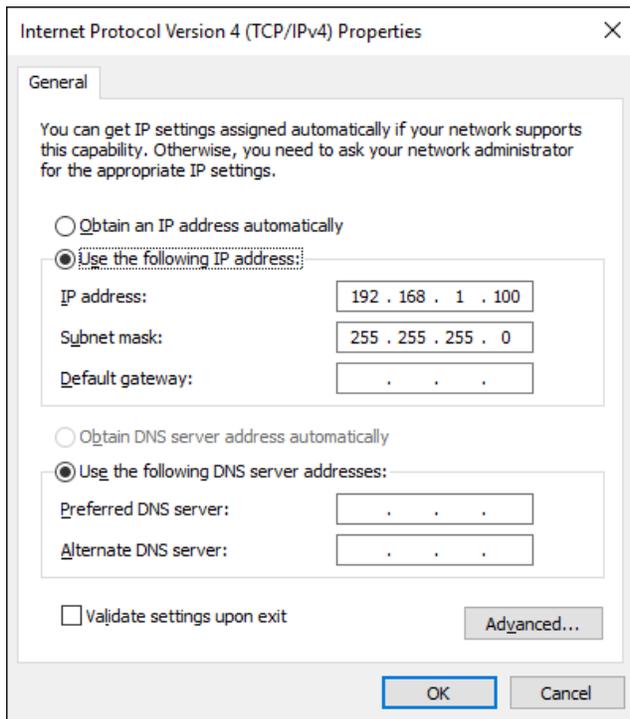
Step 2. Change the IPv4 properties of the configuration computer's Local Area Connection

1. Right-click the Start button, and then click Network Connections.
2. On the Network Connections screen, right-click Local Area Connection, and then click Properties.

3. In the Local Area Connection Properties dialog box, on the Networking tab, select Internet Protocol Version 4 (TCP/IPv4), and then click Properties.

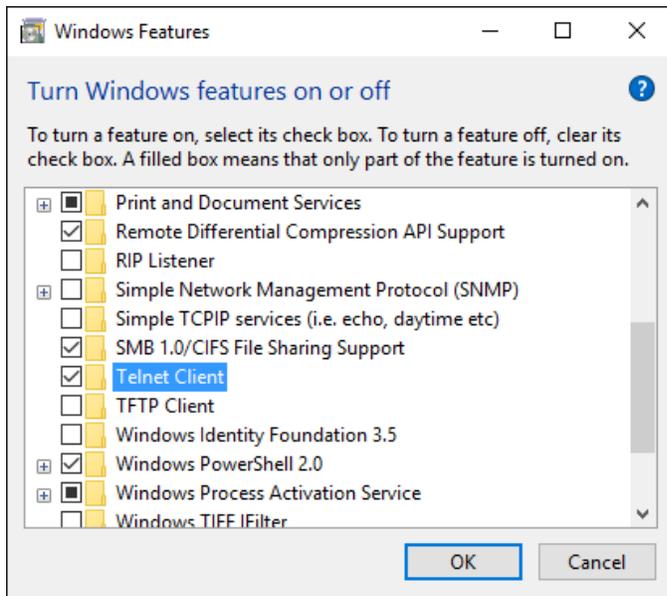


4. In the Internet Protocol Version 4 (TCP/IPv4) Properties dialog box, click Use the following IP address, and then set the IP address and Subnet mask values as shown below.



Step 3. Turn the configuration computer's Telnet Client feature on

1. Right-click the Start button, and then click Programs and Features.
2. On the Program and Features screen, click Turn Windows features on or off.
3. On the Windows Features screen, click the Telnet Client check box as shown below.



Configuring the MN-COM1S

Follow the procedure below to configure the MN-COM1S.

To configure the MN-COM1S:

Note: The instructions provided here are for Windows 10 computers. Instructions for Windows 7 computers are slightly different.

1. Right-click the Start button, and then click Command Prompt (Admin).
2. At the command prompt, type the following and then press Enter:

```
ARP -S <temporary IP address> <MAC address>
```

Where:

<temporary IP address> is the same as the configuration computer's static IPv4 address but with a different host number (e.g., 192.168.1.10)

<MAC address> is the SN number attached to the bottom of the device (e.g., SN: XX-XX-XX-XX-XX-XX)

3. At the command prompt, type the following and then press Enter:

```
TELNET <temporary IP address> 1
```

Where <temporary IP address> is the same temporary IP address that you entered in the previous step.

After a short delay, the Command Prompt window displays:

```
Connecting To <temporary IP address>...Could not open connection to the host, on  
port 1:  
Connect failed
```

The failed connection message is normal. Do not be alarmed. Proceed to the next step.

4. At the command prompt, type the following and then press Enter:

```
TELNET <temporary IP address> 9999.
```

Where <temporary IP address> is the same temporary IP address that you entered in the previous step.

The Telnet window displays the following:

```
*** Lantronix UDS1100 Device Server ***
MAC address 00204AC1E8CF
Software version V6.11.0.0 (15050808)
```

Press Enter for Setup Mode

5. Press Enter, and then use the setup menu commands to configure the MN-COM1S for your application. See Table 2 below.

Note: If the software version is earlier than V6.11.0.0, go to www.lantronix.com, download the latest firmware and then upgrade the MN-COM1S before proceeding. For more information, see “Upgrading MN-COM1S firmware” on page 29.

Table 2: MN-COM1S configuration settings

Option	GatewayType III Port	Panel Electronic Printer Port	Remote Programming Port
BASIC PARAMETERS			
Hardware Ethernet TPI	Ethernet TPI	Ethernet TPI	Ethernet TPI
IP Address	[1]	[1]	[1]
Gateway	[1]	[1]	[1]
Netmask	[1]	[1]	[1]
DNS Server	Not set	Not set	Not set
DHCP FQDN Option	Disabled	Disabled	Disabled
SECURITY			
SNMP is	Enabled	Enabled	Enabled
SNMP Community Name	Public	Public	Public
Telnet Setup is	Enabled	Enabled	Enabled
TFTP Download is	Enabled	Enabled	Enabled
Port 77FEh is	Enabled	Enabled	Enabled
77FEh Access Mode is	Read & Write	Read & Write	Read & Write
Web Server is	Enabled	Enabled	Enabled
Web Setup is	Enabled	Enabled	Enabled
ECHO is	Disabled	Disabled	Disabled
Enhanced Password is	Disabled	Disabled	Disabled
CHANNEL 1			
Baudrate	19200 [2]	9600 [2]	9600 [2]
I/F Mode	4C	4C	4C
Flow	00	00	00

Option	GatewayType III Port	Panel Electronic Printer Port	Remote Programming Port
Port	10001	10001	10001
Connect Mode	C0	C0	C0
Send '+++ ' In Modem Mode	Disabled	Disabled	Disabled
Show IP Address After 'RING'	Disabled	Disabled	Disabled
Auto Increment Source Port	Disabled	Disabled	Disabled
Remote IP Address	None	None	None
Remote IP Port	00000	00000	00000
Disconnect Mode	00	00	00
Flush Mode	80	00	00
Pack Control	23	N/A	N/A
Disconnect Time	00:00	N/A	N/A
Send Characters	0D 0D	N/A	N/A
EXPERT			
TCP Keepalive	45s	45s	45s
ARP Cache Timeout	600s	600s	600s
Monitor Mode @ Bootup	Enabled	Enabled	Enabled
HTTP Port Number	80	80	80
MTU Size	1400	1400	1400
TCP Re-transmission Timeout	500 ms	500 ms	500 ms
Alternate MAC	Disabled	Disabled	Disabled
Ethernet Connection Type	Auto-negotiate	Auto-negotiate	Auto-negotiate

[1] Obtain from site network administrator.

[2] The Baudrate setting must match the baud rate setting of the control unit's serial port.

Upgrading MN-COM1S firmware

The MN-COM1S firmware must be version 6.11.00. If it is not, go to www.lantronix.com and download the following files:

- Lantronix DeviceInstaller 4.4.0.2 (DeviceInstaller-4402-SA)
- UDS1100 Firmware version 6.11 (uds1100_61100.rom)

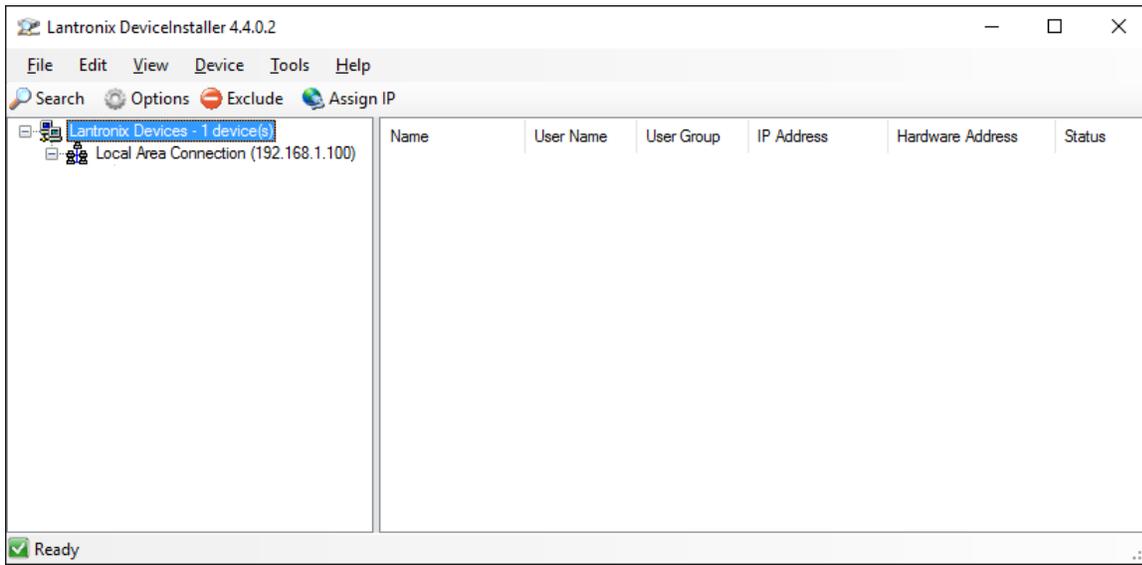
To install Lantronix DeviceInstaller 4.4.0.2:

1. Right-click the compressed ZIP folder DeviceInstaller-4402-SA, and then click Extract All.
2. On the Extract Compressed (Zipped) Folders screen, browse to where you want the files extracted to.
3. Check the Show extracted files when complete check box, and then click Extract.
4. Right-click setup_di_x86x64cd_4.4.0.2, click Run as administrator, and then follow the on-screen instructions.

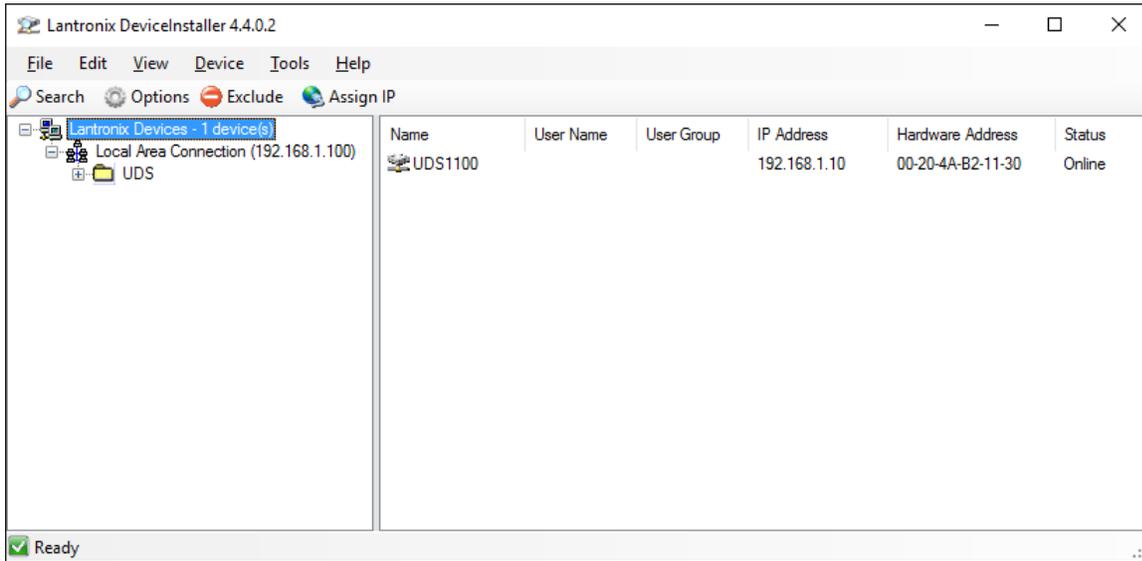
To upgrade the MN-COM1S firmware:

1. Click the Start button, and then in the Apps list under Lantronix, click DeviceInstaller.

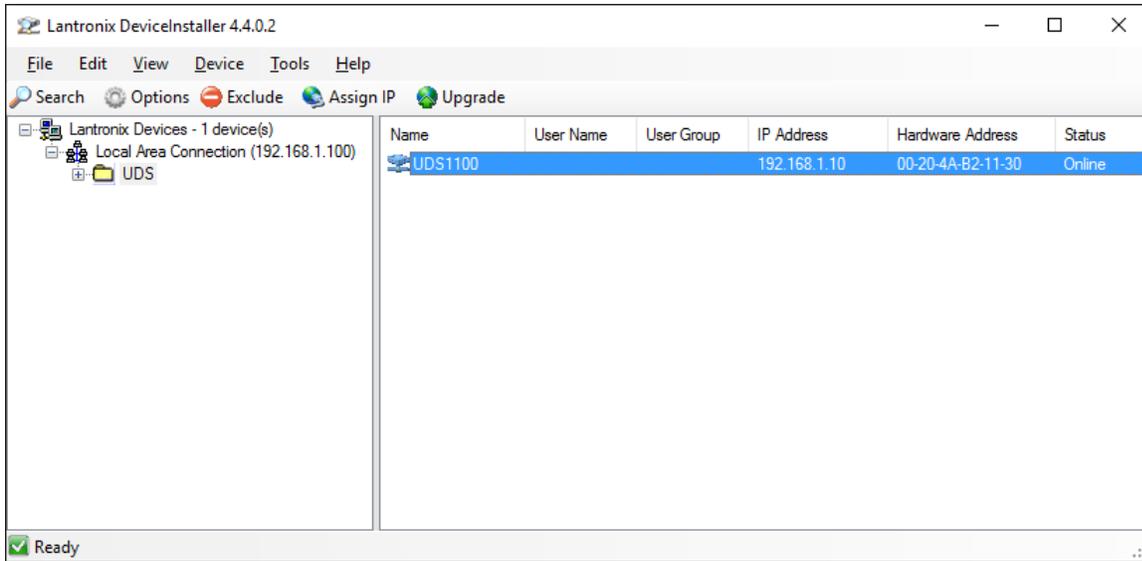
Note: If DeviceInstaller is not showing a Local Area Connection, click the Options button, and then on the Network tab, check the Local Area Connection check box.



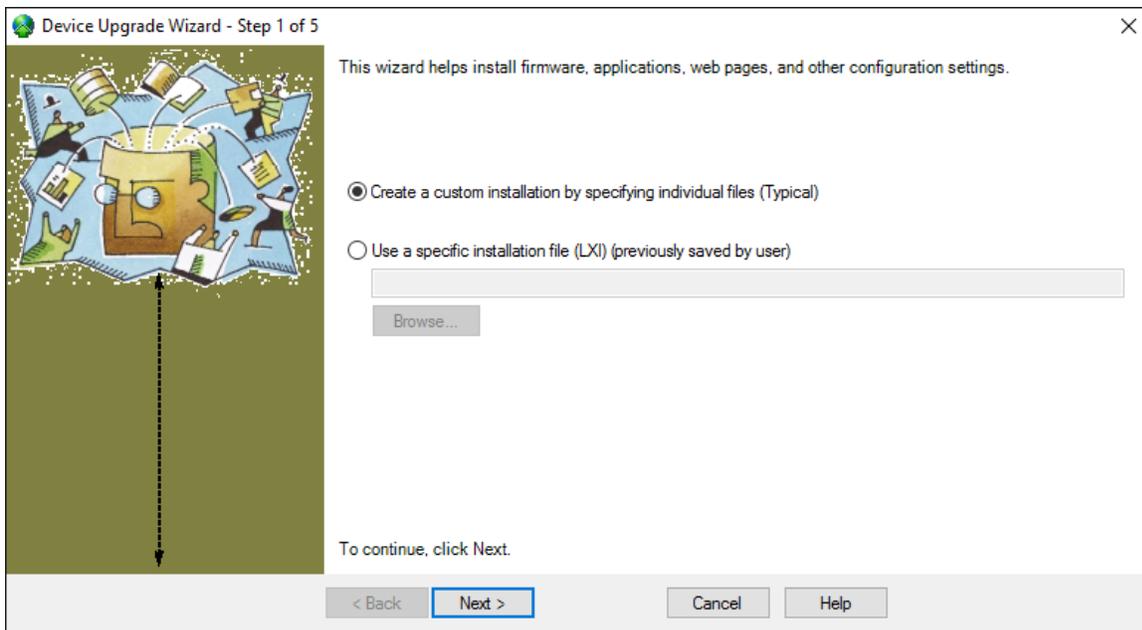
2. Click Search to find the device.



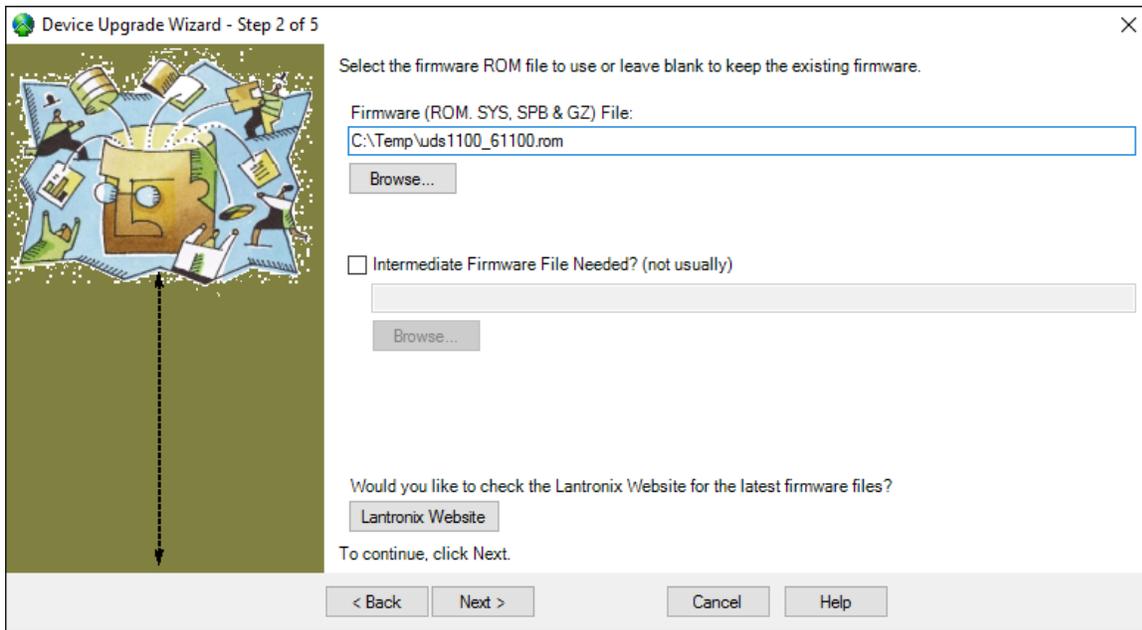
3. In the device list, select the device, and then click Upgrade to start the Device Upgrade Wizard.



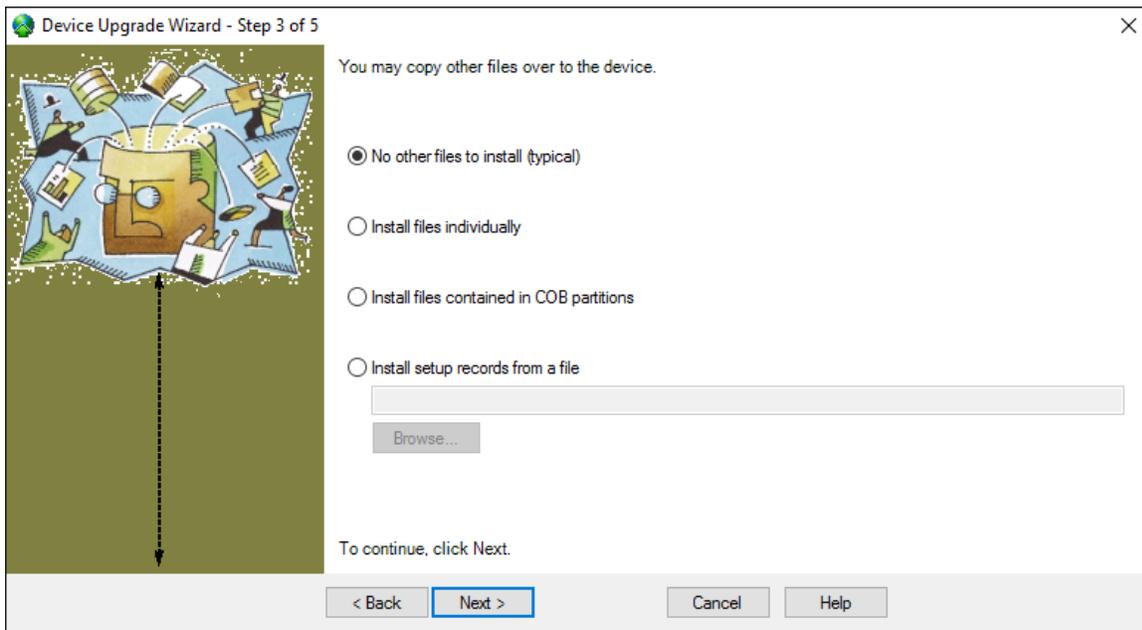
4. On the Device Upgrade Wizard – Step 1 of 5 screen, click Create a custom installation by specifying individual files, and then click Next.



5. On the Device Upgrade Wizard – Step 2 of 5 screen, browse to where you downloaded uds1100_61100.rom, and then click Next.



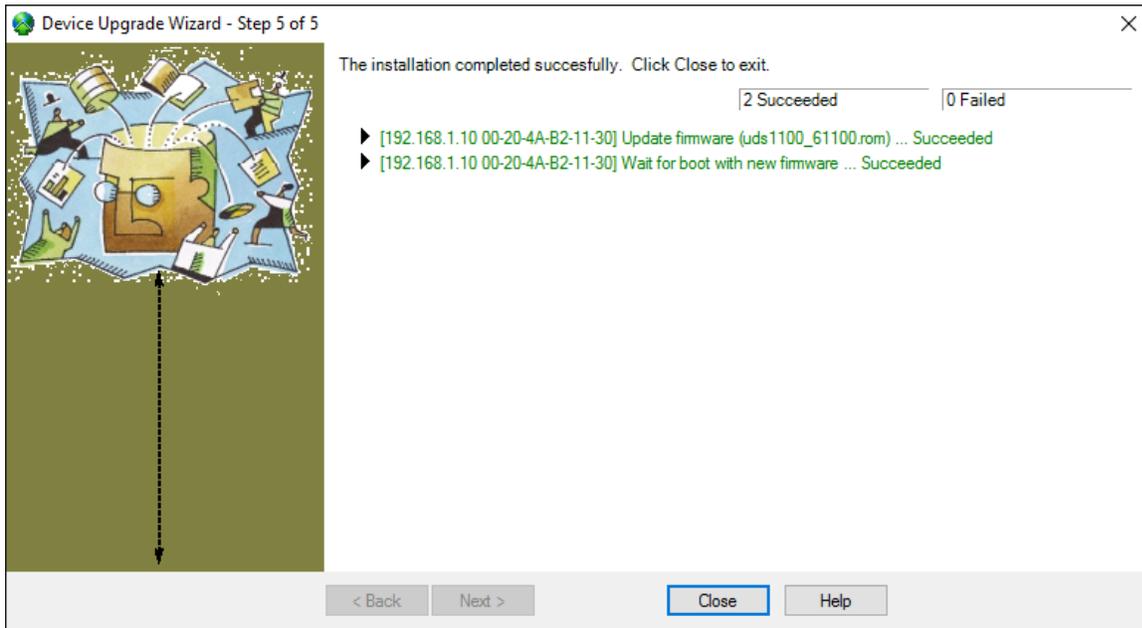
6. On the Device Upgrade Wizard – Step 3 of 5 screen, click No other files to install (typical), and then click Next.



7. On the Device Upgrade Wizard – Step 4 of 5 screen, click Next.



8. On the Device Upgrade Wizard – Step 5 of 5 screen, click Close after the firmware successfully updated and the MN-COM1S successfully rebooted.



Appendix C – Installing software on your 2-in-1 laptop or tablet PC

This section provides instructions for installing software on your 2-in-1 laptop or tablet PC.

Minimum system requirements

For FireWorks stand-alone, FireWorks nonredundant client, and remote programming applications, we recommend using a 2-in-1 laptop with the minimum system requirements listed in Table 3 below.

Table 3: 2-in-1 laptop minimum system requirements

Processor	7th Generation Intel® Core™ m3-7Y30 Processor (4M Cache, up to 2.60 GHz)
Operating system	Windows 10 Home edition, 64-bit
Memory	4GB Single Channel DDR3L 1600MHz (4GBx1)
Hard drive	128GB Solid State Drive
Video	Intel® HD Graphics
Display	11.6-inch HD (1366 × 768) LED-Backlit Touch Display
Wireless	802.11b/g/n + Bluetooth 4.0, 2.4 GHz, 1x1
USB ports	2 USB 2.0, 1 USB 3.0
HDMI ports	1

For remote client and panel electronic printer applications, we recommend using a tablet PC with the minimum system requirements listed in Table 4 below.

Table 4: Tablet PC minimum system requirements

Processor	Intel Atom Quad Core
Operating system	Windows 10 Home edition, 32-bit
Memory	2GB
Hard drive	32GB Solid State Drive
Video	Intel® HD Graphics
Display	10.1-inch HD (1280 × 800) IPS Touch Display
Wireless	802.11b/g/n + Bluetooth 4.0
USB ports	1 micro USB, 1 full USB
HDMI ports	1 mini HDMI

Lantronix Com Port Redirector (CPR)

Lantronix Com Port Redirector creates virtual COM ports that you can use to communicate with serial devices over an Ethernet connection.

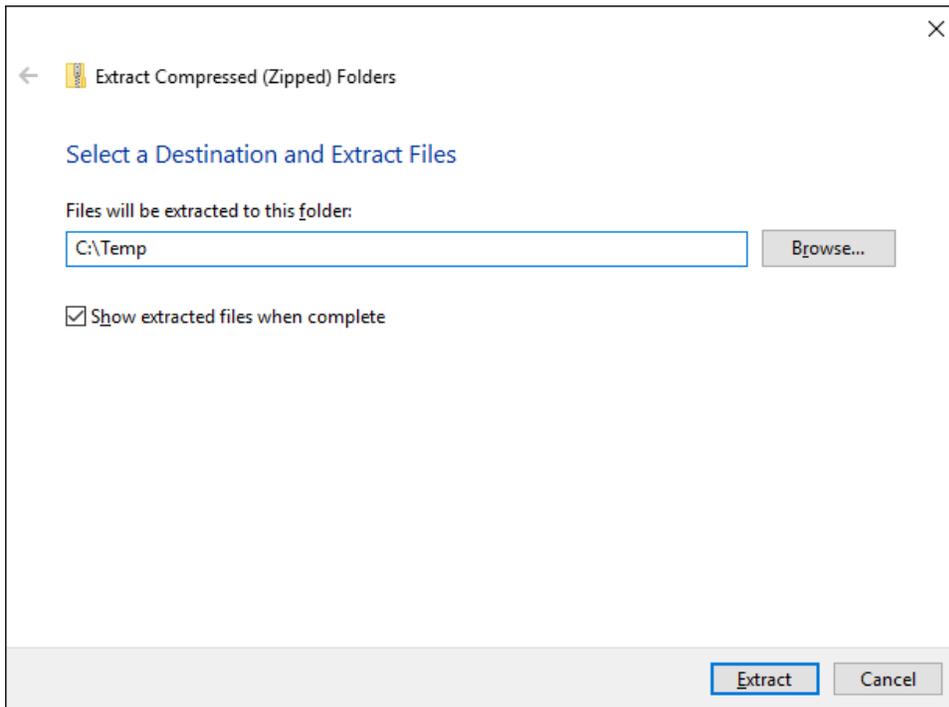
This section provides instructions for:

- Installing COM Port Redirector
- Creating a Lantronix CPR port

Installing COM Port Redirector

Note: If you already installed FireWorks 8.x on the 2-in-1 laptop, you do not have to download the setup_cpr_x86x64cd_4.3.0.3 compressed ZIP folder from the Lantronix website. Instead, go to C:\Fireworks\Tools\Serial Port Tools and install COM Port Redirector from there.

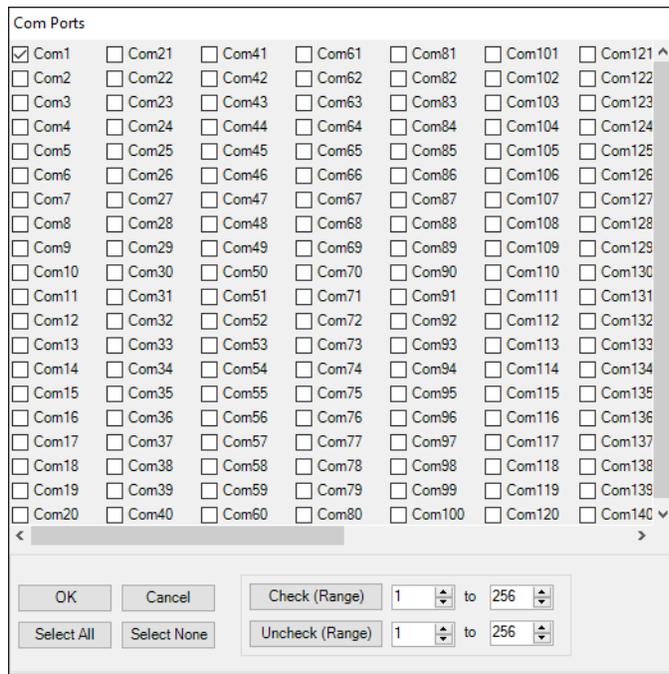
1. Go to <https://www.lantronix.com/products/com-port-redirector>, and then download the latest version of the Stand-alone Com Port Redirector (setup_cpr_x86x64cd_4.3.0.3.exe).
2. Right-click the setup_cpr_x86x64cd_4.3.0.3 compressed ZIP folder, and then click Extract All.
3. On the Select a Destination and Extract Files screen, browse to where you want to extract the files to, check the Show extracted files when complete check box, and then click Extract.



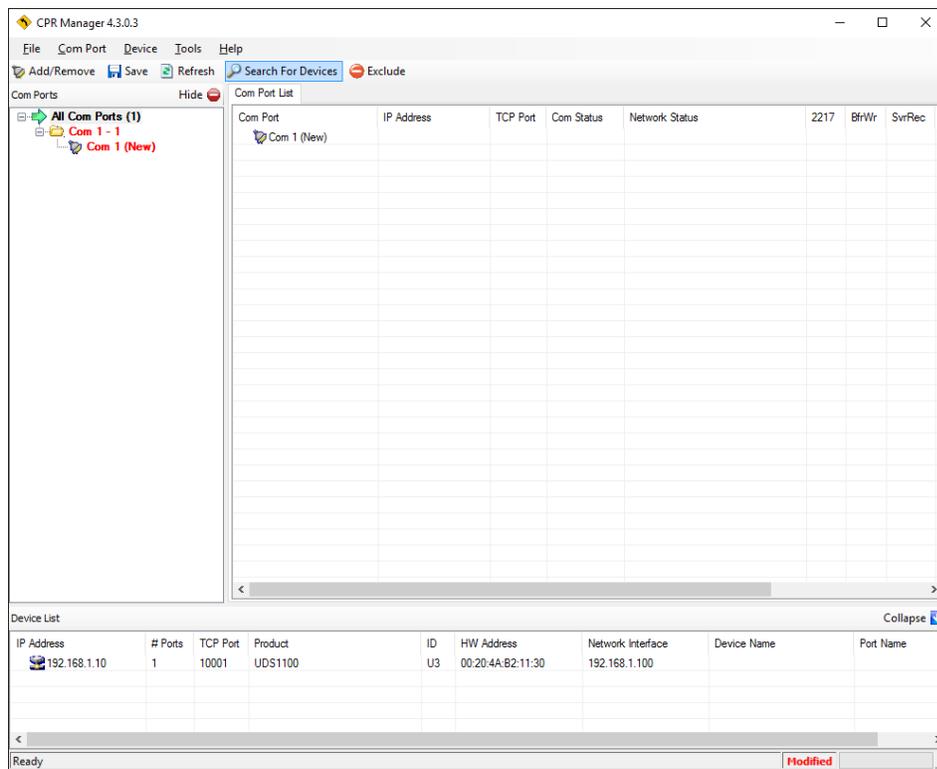
4. Right-click setup_cpr_x86x64cd_4.3.0.3, click Run as administrator, and then follow the on-screen instructions.

- In the Com Ports dialog box, check the check box for the COM ports that you want to add, and then click OK.

Note: FireWorks supports using COM1 through COM25. The 3-SDU supports using COM1 through COM8.

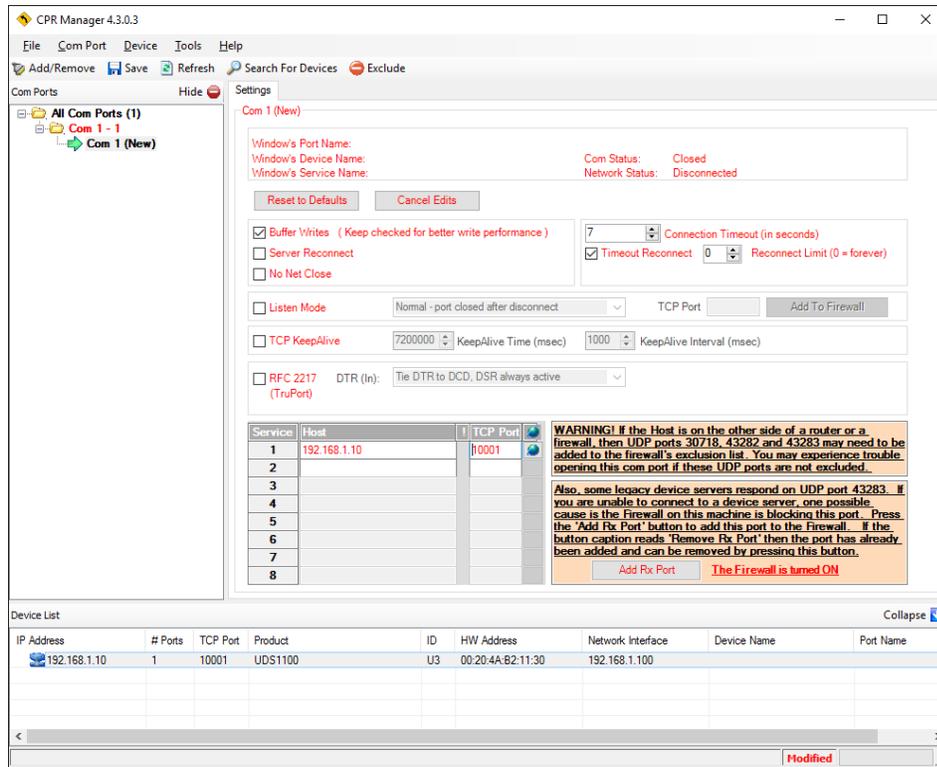


- Click Search for Devices to discover the MN-COM1S. Once discovered, the Device List displays the MN-COM1S module's IP address and its hardware (MAC) address.



- In the Com Ports list, select the COM port that you want to redirect, and then in the Device List, double-click the MN-COM1S module that you want to redirect the COM port to.

Note: If the host is on the other side of a router or of a firewall, you may have to add UDP ports 30718, 43282, and 43283 to the firewall exception list. You may experience trouble in opening this COM port if these UDP ports are not excluded. For VESDA applications, use TCP port 10001.



- Click Save.

Testing the connection

Once the equipment is set up and deployed, you can use Lantronix CPR Manager to test the connection.

To test the connection:

- Start Lantronix CPR Manager.
- In the navigation panel, click the COM port that you want to test.
- On the Com XX tab, set the serial port settings for the following values:
 Baud Rate: 19200
 Data: 8 bits
 Parity: Even
 Stop: 1 bit
 Flow control: None
- Click Open.
- Verify that Com Status is Open and that the Network Status indicates you are connected to the correct IP address.
- Click Close.

PuTTY for Windows

PuTTY is a free and open-source terminal emulator, serial console and network file transfer application. It supports several network protocols, including SCP, SSH, Telnet, rlogin, and raw socket connection. It can also serve as an xterm terminal emulator.

This section provides instructions for:

- Installing PuTTY
- Configuring a PuTTY session
- Opening a PuTTY session

Note: At the time of this publication, the current version of PuTTY is 0.68. We do not anticipate any issue with other versions.

Installing PuTTY

1. Go to <http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>.
2. Under Package files, click putty-0.68-installer.msi, and then click Save.



3. Click Open Folder.



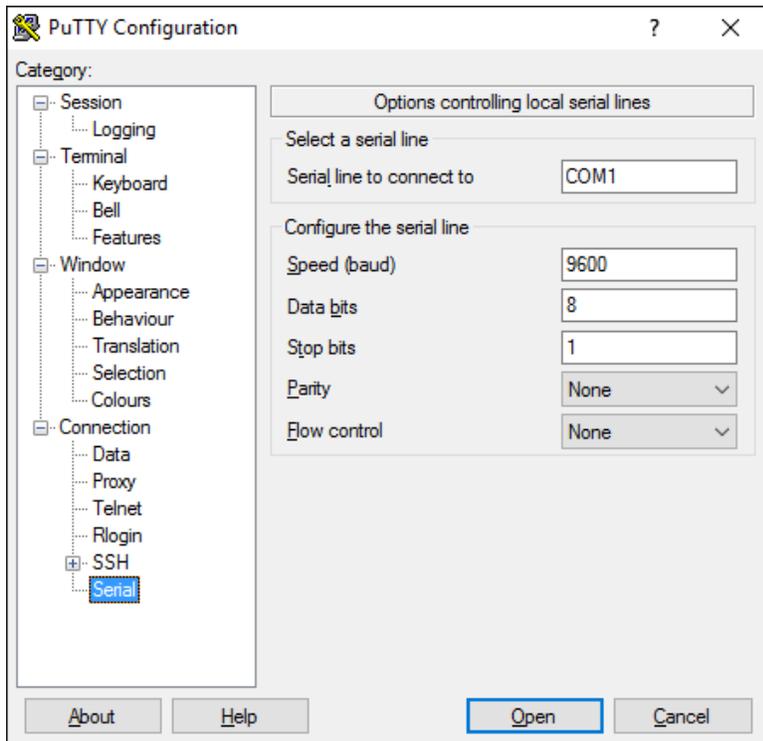
4. Right-click putty-0.68-installer, click Install, and then follow the on-screen instructions.

Configuring a PuTTY session

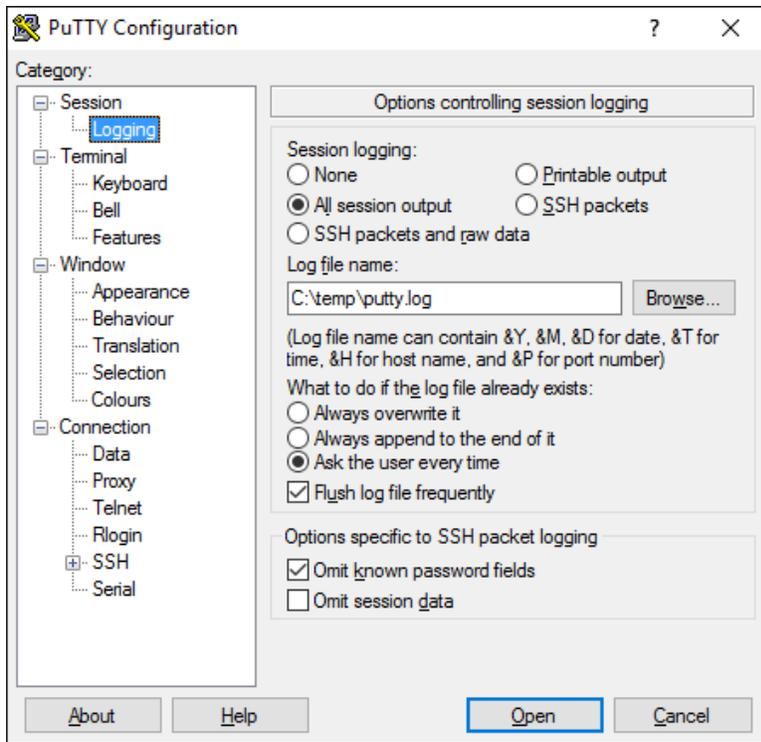
1. Click the Start button, in the Apps list under PuTTY, right-click PuTTY, and then click Run as administrator.
2. In the Category list, under Connection, click Serial, and then do the following:

In the Serial line to connect to box, type or select the COM port that Lantronix CPR Manager uses to redirect serial data to the target MN-COM1S module.

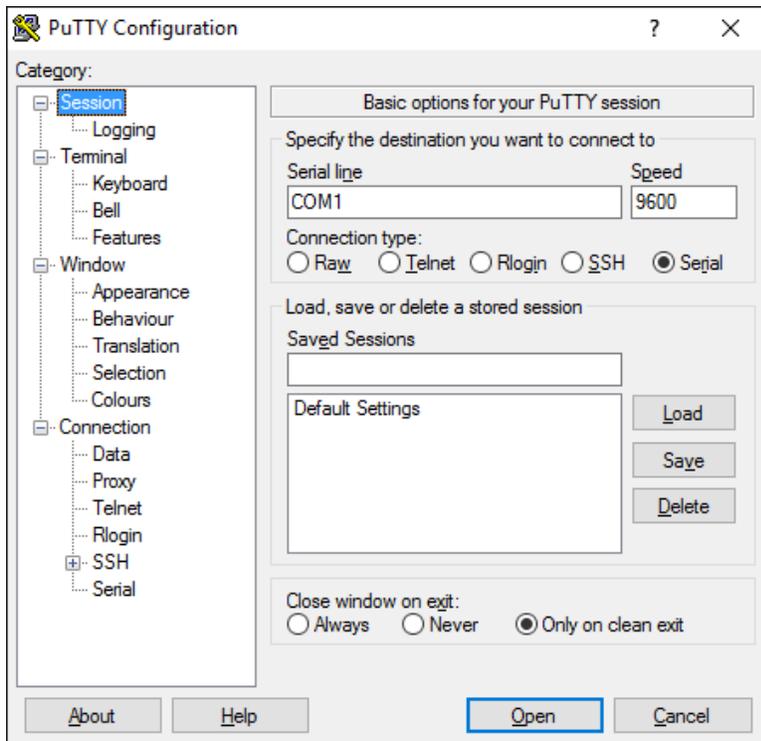
Set the values for Speed, Data bits, Stop bits, Parity, and Flow control as shown below.



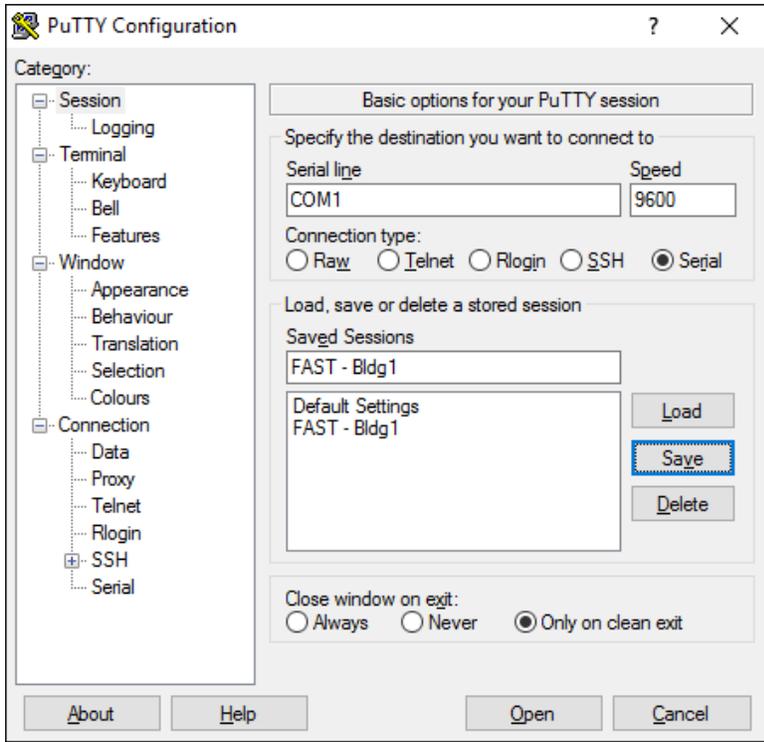
3. In the Category list, under Session, click Logging, and then set the option values as shown below.



4. In the Category list, click Session, and then under Connection type, click Serial.

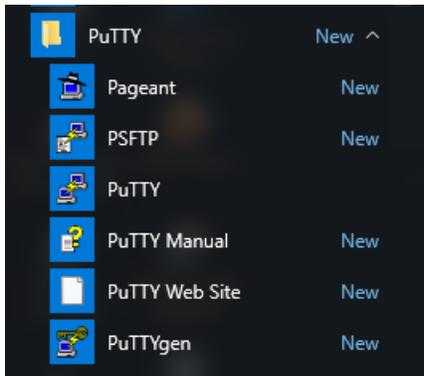


5. In the Saved Sessions box, type a name for the session, and then click Save.

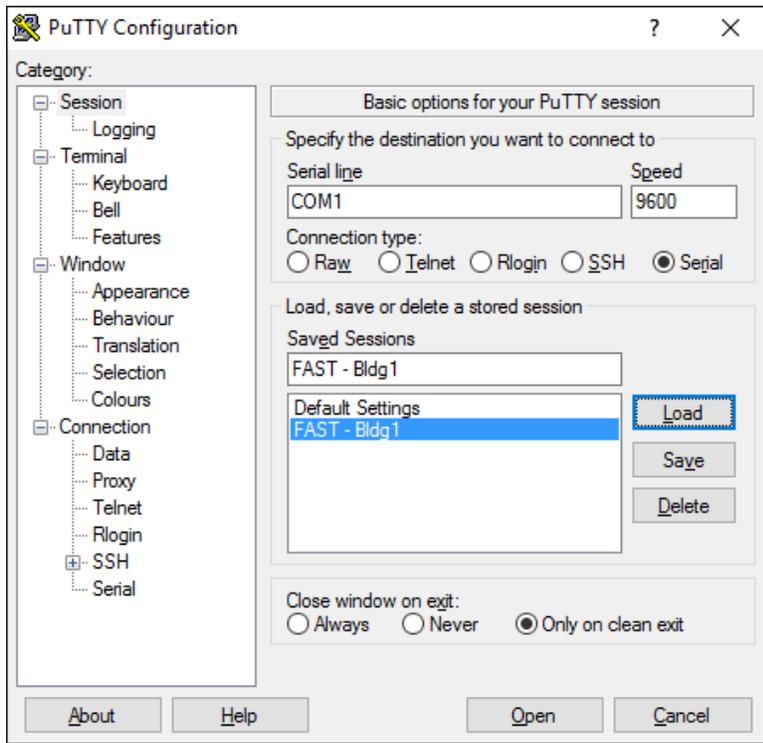


Starting a PuTTY session

1. Click the Start button, in the Apps list under PuTTY, right-click PuTTY, and then click Run as administrator.



2. In the Category list, click Session, and then under Saved Sessions, select the stored session, and then click Load.



3. Click Open.

FireWorks 8.1

These instructions are for installing FireWorks 8.1 on a Windows 10 2-in-1 laptop. For more information, see *FireWorks 8.1 Software Installation Guide (P/N 3100034-EN)*.

The general steps for installing FireWorks 8.1 are:

1. Change the Data Execution Prevention settings.
2. Download the FireWorks 8.1 software from <https://myeddie.edwardsutcfs.com>.
3. Install the FireWorks 8.1 software.

Changing the Data Execution Prevention settings

1. Right-click the Start button, and then click System.
2. On the System screen, click Advanced system settings.
3. In the System Properties dialog box, on the Advanced tab, in the Performance group, click Settings.
4. In the Performance Options dialog box, on the Data Execution Prevention tab, click Turn on DEP for essential Windows programs and services only.

Installing the FireWorks 8.1 software

1. Go to <http://www.microsoft.com>, and then download and install .NET Framework 3.5 (includes .NET Framework 2.0) and .NET 4.0 Framework Client Profile.
2. Restart the computer.
3. Turn off all antivirus, all malware protection, and all firewalls.

Note: There are typically three firewalls in Windows: Domain, Private, and Public

4. If computers are subject to administrative/group policies or other types of controls, these policies/controls must be evaluated/modified to ensure that:
 - Automatic updates are turned off
Updates should be done manually. If system has redundant servers, the servers should be updated separately at alternate dates and times.
 - USB ports are 100% active
 - Terminal services are not used.
Terminal services will shut off the Aladdin/Sentinel/Gemalto hasps, which will stop Edwards software.
5. Go into Window Features, and then do the following:
 - Turn on .NET Framework 3.5 (includes .NET 2.0 and 3.0) and both sub options
 - Make sure .NET Framework 4.6 Advanced Series and all sub options are selected
 - Turn on all options & sub options for Microsoft Message Queue (MSMQ) Server Core
 - Turn on all options and sub options for Simple Network Management Protocol (SNMP)
 - Turn on Simple TCP/IP services (i.e. echo, daytime etc.)
 - Turn on Telnet Client
 - Turn on TFTP Client
 - Apply changes.
6. Run Windows Update and then get all of the latest updates before starting this procedure.
7. Right click on the Windows icon in the lower left of the screen
8. Click Run.
9. Enter Regedit, and then click OK
10. Navigate to: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System.
11. In the right pane, look for EnableLUA, click on it and modify its value to 0. Close regedit.
12. Restart computer.
13. Create a folder on the C drive called leo.
14. Copy the entire FireWorks DVD to the leo folder.

15. Turn off ALL network connections (physical and wireless).
16. Right click on the Windows icon in the lower left of the screen.
17. Click Run.
18. Enter the following command to instruct the FireWorks installation routine to ignore the flag for Windows 7 Service Pack 2: C:\leo\setup nocareaboutSP
19. Click OK.
20. FireWorks will start installation.
21. If hasp is already programmed, use the PIN code fireworks (all lower case, no spaces)
22. Note – once you click OK, the computer may appear to hang up – LEAVE IT ALONE! It may take up to half an hour to go to the next step.
23. FireWorks installation is a multi-step process. The system will have to be rebooted manually when prompted.
24. Move the FireWorks System Builder and System Control icons from the FireWorks folder on the desktop to the actual desktop.
25. Right click on the FireWorks System Builder icon and go to Properties. Then click on Compatibility and check to make sure that the Compatibility mode is NOT selected.
26. Right click on the FireWorks System Control icon and go to Properties. Then click on Compatibility and check to make sure that the Compatibility mode is NOT selected.
27. Do NOT try to adjust the compatibility of the FireWorks programs. If you try that, FireWorks will not run and will post SQL Automation errors.
28. After installation has been completed & you have verified that FireWorks is running ok, run Windows Update again.
29. After FireWorks have completed installation and tested, change the EnableLUA value back to 1 and restart. FireWorks will work with the value at 1, but you cannot do any FireWorks software installation.
30. If you are running FireWorks Network, ALL FireWorks computers must be at the exact same SQL revision level. Easy way to do this is to run updates on all computers after installation.
31. Once everything is working properly, you can enable antivirus and the firewalls.
32. Run the Edwards FireWorks Ports Batch file (all programs/Edwards)
33. Once FireWorks is running, SHUT OFF Automatic Updates.
34. FireWorks servers MUST be up and running for any nodes or workstations to work. If using Redundant Servers are used, the PRIMARY must be up and running when you start Workstations for the 1st time.
35. Test system.

FireWorks 8.1 Remote Client

The general steps for installing FireWorks 8.1 Remote Client on a tablet PC are:

1. Copy Fireworks Remote Client.exe from the FireWorks 8.1 installation disc and paste it into the C:\Temp folder on the tablet PC.
2. In the C:\Temp folder, right-click Fireworks Remote Client.exe, click Run as administrator, and then follow the on-screen instructions.
3. On the Windows desktop, rename the Fireworks Remote Client shortcut to something meaningful. For example, the site name.

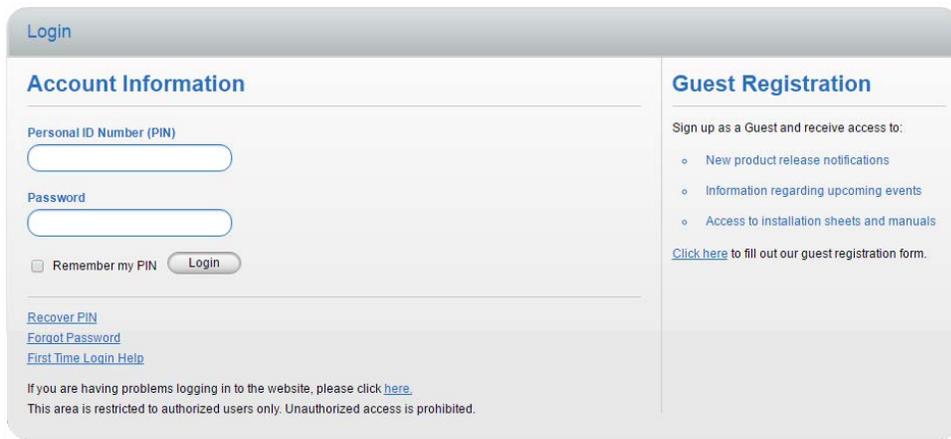
3-SDU System Definition Utility

The 3-SDU is used to program EST3 and EST3X life safety systems. The 3-SDU requires a 3-SDU USB software key to run.

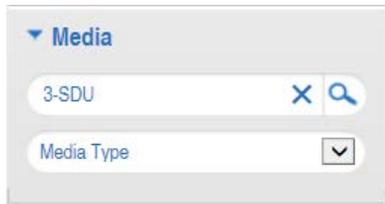
This section provides instructions for downloading and installing the 3-SDU software. Instructions for using the 3-SDU software are provided in the 3-SDU Help.

Downloading the 3-SDU software

1. Go to <https://myeddie.edwardsutcfs.com>, and then log on to your My-Eddie account.



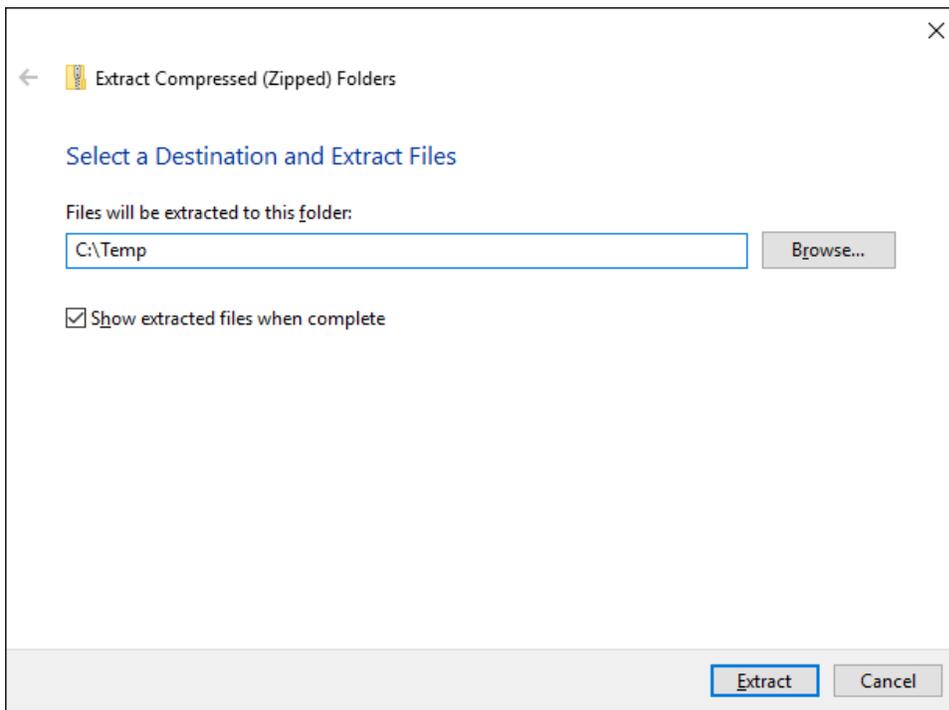
2. In the navigation pane, under Media, do the following:
In the Media Search box, type 3-SDU, and then click Search.



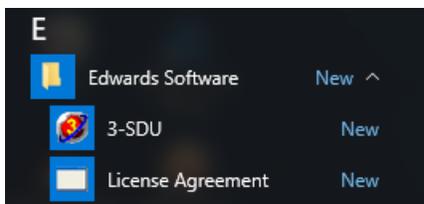
3. In the Media Results pane, under Software, click Download for the required 3-SDU version.

Installing the 3-SDU software

1. Open the Downloads folder, right-click the 3-SDU compressed ZIP folder, and then click Extract All.
2. On the Select a Destination and Extract Files screen, browse to where you want to extract the files to, check the Show extracted files when complete check box, and then click Extract.



3. Right-click the 3-SDU installation file, click Run as administrator, and then follow the on-screen instructions.
4. Plug in your 3-SDU USB software key.
5. Click the Start button, in the Apps list under Edwards Software, right-click 3-SDU, and then click Run as administrator.



6. In the Enable Products dialog box, type your name, your company's name, your 3-SDU PIN, and then click OK.

The image shows a dialog box titled "Enable Products". It has a light gray background and a white border. At the top left, the title "Enable Products" is displayed in a bold, black font. Below the title, there are three input fields, each preceded by a label: "Name:", "Company:", and "PIN Code:". Each label is underlined. The input fields are empty text boxes. At the bottom of the dialog box, there are two buttons: "OK" and "Cancel". The "OK" button has a small square icon to its left, and the "Cancel" button has a small square icon to its left. The dialog box is centered on the page.

Appendix D – Network administration

This section describes the information you must get from the site network administrator before you can deploy the wireless applications described in this guide on a customer’s network.

Note: The wireless applications described in this guide require static IPv4 addresses and they must be able to communicate freely with each other.

What is the site network administrator’s contact information?

Name: _____

Phone number: _____

Email address: _____

Mailing address: _____

What approvals/permissions are needed to connect to the local area network?

What static IPv4 addresses and subnet mask do I need to use?

IP addresses: _____

Subnet mask: _____

How may the MN-COM1S modules be connected to the local area network?

Wireless

SSID: _____

Password: _____

Wired

Location: _____

Switch ID: _____

Port number: _____

What is the WiFi SSID and password that I need to use?

SSID: _____

Password: _____

Does the application need to connect outside the local area network?

If so, record the default gateway address: _____

Does the local area network have a Domain Name Server (DNS)?

If so, record the preferred DNS address: _____

Record the alternate DNS address: _____ (optional)

Deployment Checklist

- Can the application be connected to the local networks?
- Are the computers being used customer-provided or SP-provided?
- If SP-provided computers are being used, can they connect to the site network and communicate with the control panels?
- Are the panels and computers connected to the network fixed or ad-hoc?
- Have the computers been updated and are they current on updates and patches?
- Have static IPv4 addresses been assigned for all the devices and computers?
- Have all the network ports required by the application been opened?
- Have all of the antivirus, anti-malware, and firewalls been shut off?
- Can all of the application IP addresses communicate with each other?
- Can you ping all of the IP addresses?