EDWARDS

FW-UL6WW10 FireWorks Workstation Installation Manual

Content

Important information

Regulatory information

The FW-UL6WW10 workstation computer was investigated against, and found to be compliant with, the following standards:

- CAN/ULC-S303-M91 *Standard for Local Burglar Alarm Units and Systems, first edition*
- CAN/ULC-S527-11 *Standard for Control Units for Fire Alarm Systems, third edition*
- CAN/ULC-S559-13 *Standard for Equipment for Fire Signal Receiving Centres and Systems, second edition*
- CSA C22.1-12 *Canadian Electrical Code, Part 1*
- UL 365 *Standard for Police Station Connected Burglar Alarm Units and Systems, fourth edition*
- UL 609 *Standard for Local Burglar Alarm Units and Systems, eleventh edition*
- UL 636 *Standard for Holdup Alarm Units and Systems, tenth edition*
- UL 864 *Standard for Control Units and Accessories for Fire Alarm Systems, tenth edition*
- UL 1076 *Standard for Proprietary Burglar Alarm Units and Systems, fifth edition*
- UL 1610 *Standard for Central-Station Burglar-Alarm Units, third edition*
- UL 1635 *Standard for Digital Alarm Communicator System Units, third edition*
- UL 2017 *Standard for General-Purpose Signaling Devices and Systems, second edition*
- UL 2572 *Standard for Mass Notification Systems, second edition*
- NFPA 11 *Standard for Low-Expansion Foam Systems, 2010 edition*
- NFPA 11A *Standard for Medium- and High-Expansion Foam Systems, 2010 edition*
- NFPA 12 *Standard on Carbon Dioxide Extinguishing Systems, 2011 edition*
- NFPA 12A *Standard on Halon 1301 Fire Extinguishing Systems, 2009 edition*
- NFPA 12B *Standard on Halogenated Fire Extinguishing Agent Systems Halon 1211*
- NFPA 13 *Standard for the Installation of Sprinkler Systems, 2013 edition*
- NFPA 15 *Standard for Water Spray Fixed Systems for Fire Protection, 2012 edition*
- NFPA 16 *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems, 2011 edition*
- NFPA 17 *Standard for Dry Chemical Extinguishing Systems, 2013 edition*
- NFPA 17A *Standard for Wet Chemical Extinguishing Systems, 2013 edition*
- NFPA 70 *National Electrical Code*
- NFPA 72 *National Fire Alarm Signaling Code*
- NFPA 92 *Standard for Smoke-Control Systems*
- NFPA 2001 *Standard on Clean Agent Fire Extinguishing Systems, 2012 edition*
- FM 3010 *Approval Standard for Fire Alarm Signaling Systems, 2010 edition*

UL 2572 security and data protection

For UL 2572 second edition applications only:

- Approved Security Function for FIPS PUB 140-2: No encryption employed

- Communication Security: Level 1

- Stored Data Security: Level 0

- Access Control Security: Level 2

- Physical Security: Level 1

- Audit Control: Not provided

Industry Canada information

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Limitation of liability

To the maximum extent permitted by applicable law, in no event will Carrier be liable for any lost profits or business opportunities, loss of use, business interruption, loss of data, or any other indirect, special, incidental, or consequential damages under any theory of liability, whether based in contract, tort, negligence, product liability, or otherwise. Because some jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damages the preceding limitation may not apply to you. In any event the total liability of Carrier shall not exceed the purchase price of the product. The foregoing limitation will apply to the maximum extent permitted by applicable law, regardless of whether Carrier has been advised of the possibility of such damages and regardless of whether any remedy fails of its essential purpose.

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, Carrier 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.

Chapter 1
Introduction

Summary

This chapter provides a brief introduction to FW-UL6WW10 workstation computers.

Content

Introduction

This manual provides instructions for installing FW-UL6WW10 workstation computers. It is intended for authorized and product-certified distributors who are responsible for the installation of fire alarm equipment and are already familiar with multiplex fire alarm systems and the relevant codes and standards.

This manual does not provide instructions for installing or using the FireWorks graphical command interface software, or for programming a FireWorks life safety system.

In this manual:

• "EST control unit" refers to EST3, EST3X, and EST4 control units

• "Windows 10" refers to "Windows 10 Enterprise LTSC." Unless stated otherwise, no other edition of Windows 10 is supported.

Description

The FW-UL6WW10 provides the hardware platform for a FireWorks life safety network. See Figure 1.

Figure 1: FW-UL6WW10 workstation computer
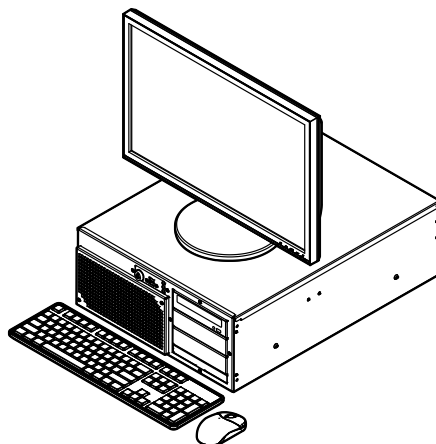
The FW-UL6WW10 workstation computer is suitable for use as:

• A workstation computer in a FireWorks stand-alone network

• A client workstation computer in a FireWorks nonredundant or redundant network

• A witness computer in a FireWorks redundant network SQL cluster

• The communication transmission medium between VESDA detectors and EST control units. For releasing service applications, the FW-UL6WW10 may not control, manipulate, or display any releasing device service features.

• A Firefighter Smoke Control Station (FSCS)

• Building System Information Unit (BSIU)

The FW-UL6WW10 uses a hardware RAID 1 hard drive array consisting of two separate hard drives. Both hard drives store the same data. If one drive fails, the other drive continues to operate with all the data intact.

Figure 2: Typical FireWorks stand-alone network
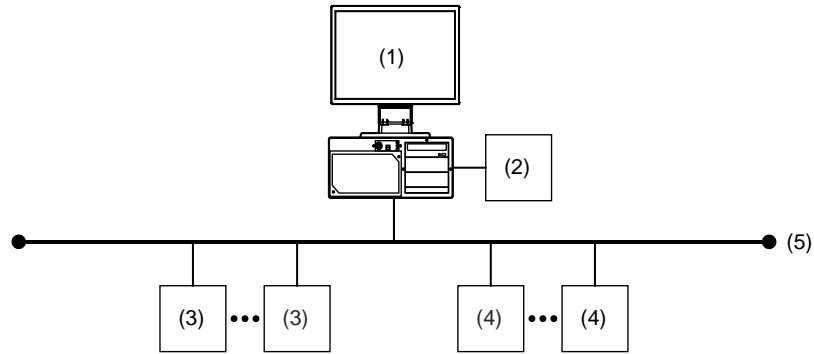
(1) FW-UL6WW10
(2) System event printer (if required)
(3) FireWorks nodes (125 max.)

(4) FireWorks remote client computer (15 max.)
(5) Dedicated fiber optic network

Figure 3: Typical FireWorks nonredundant network
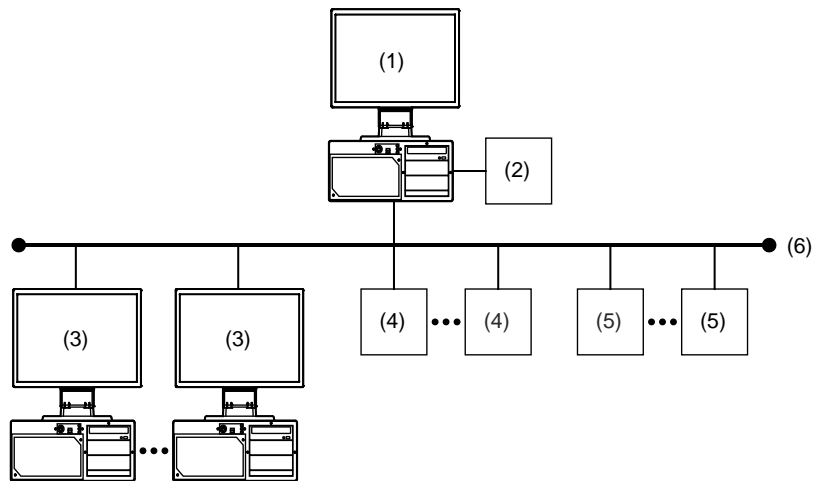
(1) FW-UL6SW10 server computer
(2) System event printer (if required)
(3) FW-UL6WW10 client workstation computer
     (15 max.)

(4) FireWorks nodes (125 max.)
(5) FireWorks remote client computer (15 max.)
(6) Dedicated fiber optic network

Figure 4: Typical FireWorks redundant network
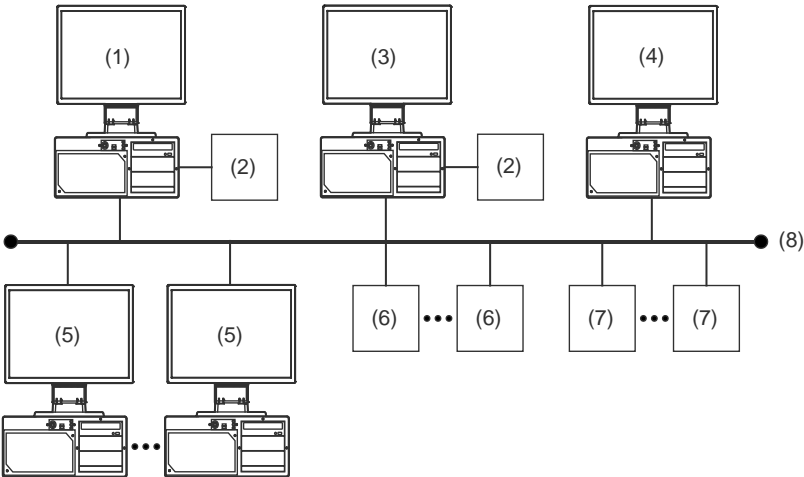
(1) FW-UL6SW10 primary server computer
(2) System event printer (if required)
(3) FW-UL6SW10 backup server computer
(4) FW-UL6WW10 witness computer

(5) FW-UL6WW10 client workstation computer
   (30 max.)
(6) FireWorks nodes (125 max.)
(7) FireWorks remote client computer (15 max.)
(8) Dedicated fiber optic network

Software product options

Table 1 lists the software products that you can install on FW-UL6WW10 workstations. Software products are ordered and installed separately.

Access to the software products is controlled by a software key that has been activated with your personal initialization numbers (PINs).

Table 1: FireWorks software product descriptions

Product	Description
FW-CGSUL [1]	FireWorks stand-alone system software with command and control features (includes FIREKEYUSB)
FW-CGS [1]	FireWorks stand-alone system software without command and control features (includes FIREKEYUSB)
FW-DARCOM	Digital alarm receiver software for displaying Contact ID or SIA 4/2 formatted events from any fire alarm or security control panel. Requires a compatible digital alarm communicator receiver (DACR).
FW-IPMON1000	Digital alarm receiver software for displaying Contact ID formatted events from up to 1,000 iO64/iO1000 fire alarm control units
FW-1S [2]	Remote client software. License supports one remote client computer for displaying system events. Text only, no command and control.
FW-4S [2]	Remote client software. License supports four additional seats for displaying system events on up to five remote client computers. Text only, no command and control. You must activate FW-1S before you can activate FW-4S.

Product	Description
FW-10S [2]	Remote client software. License supports 10 additional seats for displaying system events on up to 15 remote client computers. Text only, no command and control. You must activate FW-1S and FW-4S before you can activate FW-10S.
FW-HSSD5	Allows up to five FW-HSSX1 (VESDA) node connections
FW-HSSD20	Allows up to 20 FW-HSSX1 (VESDA) node connections
FW-FAST	Automatically populate device maps with device information from AutoCAD files
FW-NCZZFP	New nonredundant network client workstation. License supports up to 15 nonredundant client workstations, where ZZ determines the number of workstations (5, 10, or 15).
FW-RCZZFP	New redundant network client workstation. License supports up to 50 redundant client workstations, where ZZ determines the number of workstations (5, 10, 15, 20, 25, or 50).

[1] UL Listed when installed on UL 864 Listed FireWorks server and workstation computers.

[2] The FireWorks software installed on the workstation and the Remote Client software installed on the remote computer must be the same version number.

Front panel features

Figure 5 shows the features found on the front panel of the FW-UL6WW10.

Figure 5: Front panel features

(1) ON/OFF key switch
(2) USB 2.0/1.1 ports (2X)
(3) Status LEDs (see Table 2)
(4) Optical drive
(5) Empty drive bays
(6) Filter assembly
(7) Fan 2
(8) Fan 1
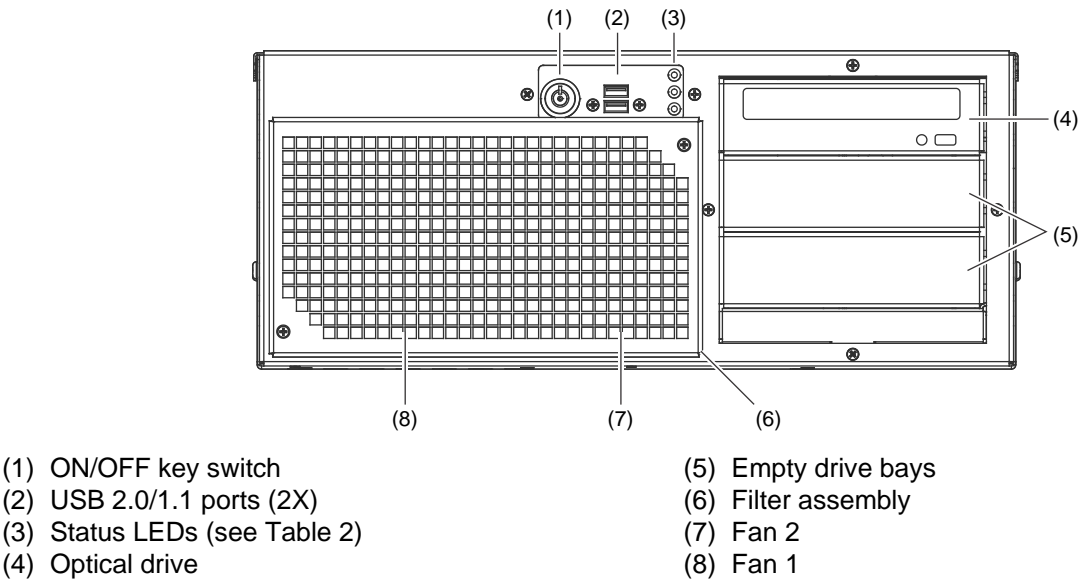
Table 2: Status LED descriptions

LED	Description
☀	Indicates the workstation is on
⬭	Indicates hard drive activity
⚠	Indicates internal faults reported by the watchdog card

Rear panel features

Figure 6 shows the features found on the rear panel of the FW-UL6WW10.

Figure 6: Rear panel features
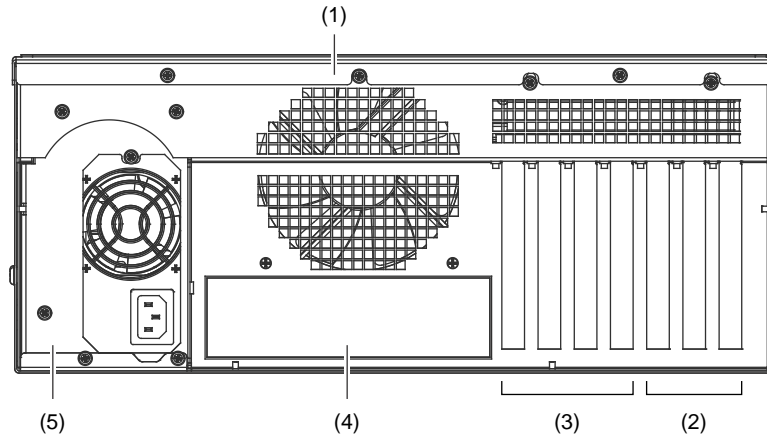
(1) Fan 3
(2) PCI expansion card slots
(3) Not used

(4) I/O panel (see Figure 7)
(5) Power supply

Figure 7: FW-UL6WW10 I/O panel
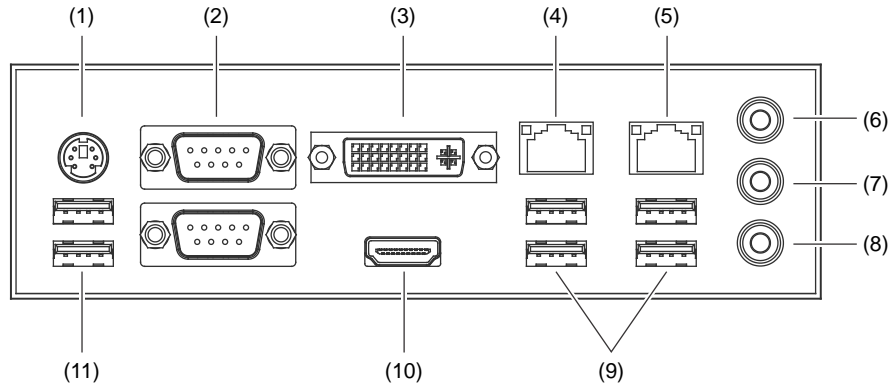
(1) Not used
(2) Not used (2X)
(3) DVI-I video port
(4) RJ-45 Ethernet port (LAN 2)
(5) RJ-45 Ethernet port (LAN 1)
(6) Not used

(7) Not used
(8) Not used
(9) USB 3.0/2.0/1.1 ports (4X)
(10) HDMI video port
(11) USB 2.0/1.1 ports (2X)

Internal cable connections

Figure 8 and Figure 9 list the cable connections inside the FW-UL6WW10.

For additional information, see *FW-PCWD6 Replacement FW-UL6 Watchdog Card Installation Sheet* (P/N 3102219).

Figure 8: FW-PCWD6 cable connections

(1) Not used
(2) Not used (2X)
(3) From front panel Trouble LED
(4) From power supply

(5) Fan cable connections (see Table 3)
(6) No connection
(7) From motherboard COM3 connector (see Figure 9)
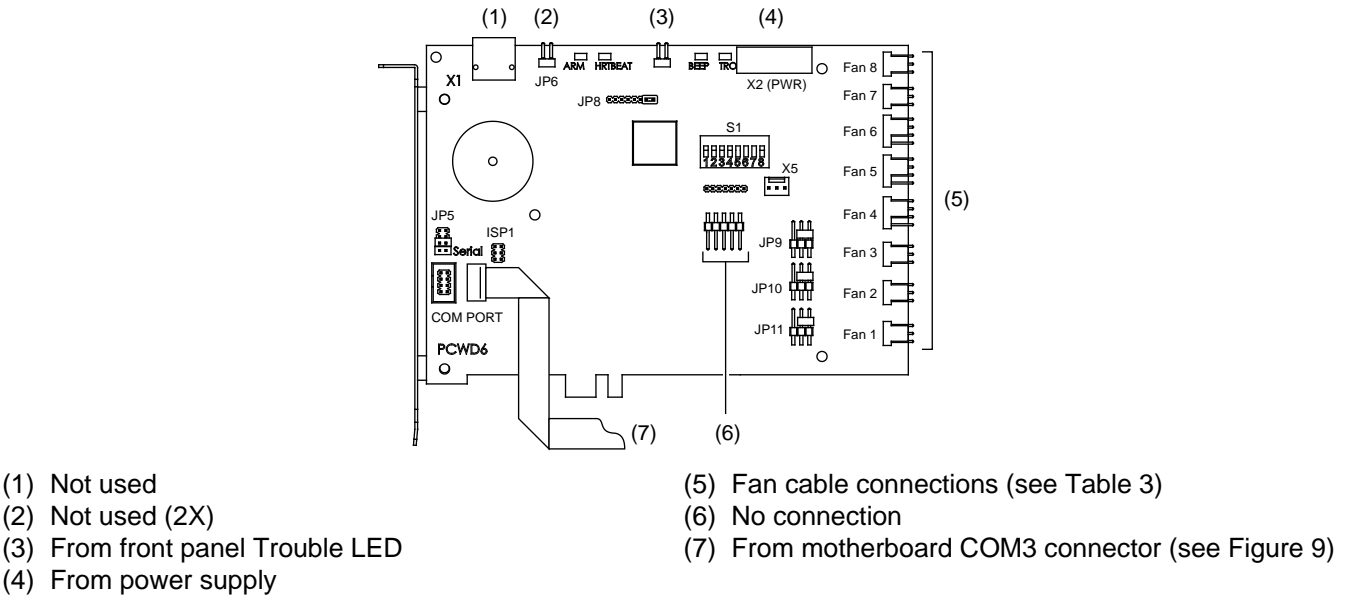
Table 3: FW-PCWD6 cable connections

FW-PCWD6	FW-UL6WW10	Switch setting
Fan 8	Power supply fan	S1-8: ON
Fan 7	Not used	S1-7: OFF
Fan 6	Not used	S1-6: OFF
Fan 5	CPU fan	S1-5: ON
Fan 4	Not used	S1-4: OFF
Fan 3	Rear fan	S1-3: ON
Fan 2	Front right fan	S1-2: ON
Fan 1	Front left fan	S1-1: ON

Figure 9: FW-UL6WW10 motherboard cable connections
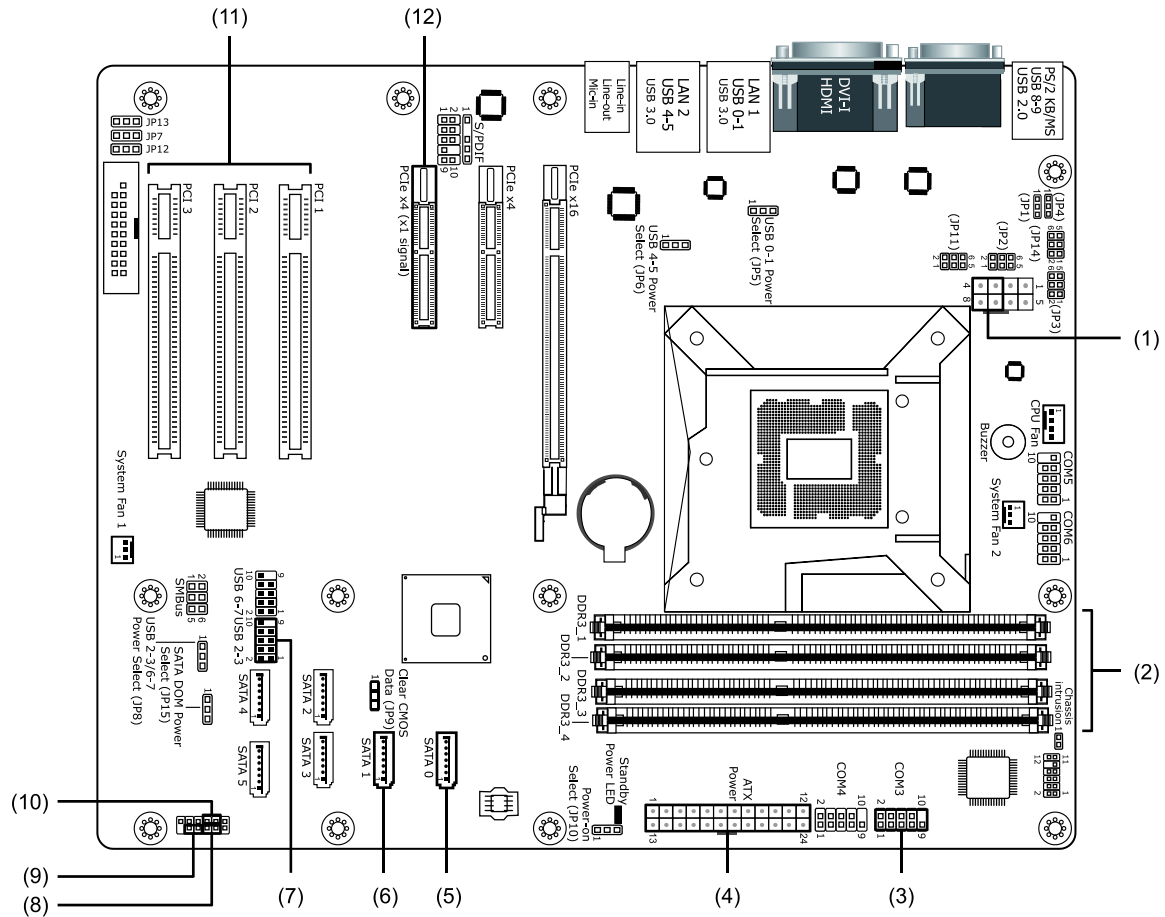
(1) From power supply
(2) Memory slots (32 GB installed)
(3) From FW-PCWD6 COM PORT connector
(4) From power supply
(5) From Drive 0
(6) From Drive 1
(7) From front panel USB ports
(8) From front panel Power LED
(9) From front panel ON/OFF key switch
(10) From front panel Hard Drive LED
(11) Expansion slots for option cards
(12) FW-PCWD6 card slot (FW-PCWD6 card installed)

Compatible monitors, option cards, and other accessories

Table 4 and Table 5 list the compatible monitors, option cards, and other accessories that you can use with FW-UL6WW10 workstation computers, unless noted otherwise.

Table 4: Workstation accessories

Model	Description
FW-19LCDWTS [1]	19-inch widescreen LCD monitor with a base, a capacitive USB touch screen, and built-in speakers
FW-22LCDWTS	22-inch widescreen LCD monitor with a base, a capacitive USB touch screen, and built-in speakers
FW-42LCDWTS	42-inch widescreen LCD monitor with a surface acoustic wave (SAW) USB touch screen
FW-PCWD6	Replacement FW-UL6 watchdog card
FW-SP4I	Four-port, optically isolated serial card
FW-UL6CC1	Rear panel cable cover
FW-UL6SSSD1TB	Replacement blank 1 terabyte solid-state hard drive
FW-FILTER	Replacement filter
PT-1S	System event printer
MN-COM1S	RS-232 to Ethernet interface module
MN-FVPN	VoIP encoder/decoder module
MN-NETRLY4	Network relay module
MN-TK10	10-position, 4-pole DIN rail terminal block
MN-NETSW1 [1]	Unmanaged Ethernet switch, four copper connections and two fiber optic connections
MN-FNS4C2F3	Managed Ethernet switch, four copper connections and two fiber optic connections
MN-FNS8C2F3	Managed Ethernet switch, eight copper connections and two fiber optic connections
MN-FNS18C8F3	Managed Ethernet switch/router, 16 copper connections and two fiber optic connections
Bosch D6600/D6100	Digital alarm communications receiver
FW-HSSX1	VESDA Modbus High Level Interface
MFC-A	Accessory enclosure

[1] Discontinued. Included here for retrofit applications.

Table 5: Rack mounting accessories

Model	Description
RKU-61-24B	19-inch rack mount enclosure, black, 35 EIA panel spaces
FW-19LCDWRACK	Rack mount kit for 19-inch widescreen LCD monitors

Model	Description
FW-22LCDRMK1	Rack mount kit for 22-inch widescreen LCD monitors
FW-RACKKB	Keyboard rack mount kit (requires two EIA panel spaces)
BP1	Blank plate, 1.75 × 19 in. (requires one EIA panel space)
BP2	Blank plate, 3.50 × 19 in. (requires two EIA panel spaces)
BP3	Blank plate, 5.25 × 19 in. (requires three EIA panel space)

Minimum system configurations

Proprietary Fire/Security

Note: Security listings include UL 365, UL 636, UL 1076, and UL 1610.

• FW-UL6W with FW-PCWD6, keyboard, and mouse
• UL 864 Listed compatible monitor (see Table 4)
• PT-1S system event printer (if required)

Proprietary Fire

• FW-UL6WW10 with FW-PCWD6, keyboard, and mouse
• UL 864 Listed compatible monitor (see Table 4)
• PT-1S system event printer (if required)
• Bosch D6600/D6100 (one per workstation)

Central Station Security

• FW-UL6W with FW-PCWD6, keyboard, and mouse
• UL 864 Listed compatible monitor (see Table 4)
• PT-1S system event printer

Local Security

• FW-UL6W with FW-PCWD6, keyboard, and mouse
• UL 864 Listed compatible monitor (see Table 4)
• PT-1S system event printer (if required)

Central Station Receiving

• FW-UL6WW10 with FW-PCWD6, keyboard, and mouse
• UL 864 Listed compatible monitor (see Table 4)
• PT-1S system event printer (if required)
• Bosch D6600/D6100 (one per workstation)

ECS/MNS (Emergency Signaling)

• FW-UL6WW10 with FW-PCWD6, keyboard, and mouse
• UL 864 Listed compatible monitor (see Table 4)
• PT-1S system event printer (if required)
• Bosch D6600/D6100 (one per workstation)

Building System Information Unit (BSIU)

- FW-UL6WW10 with FW-PCWD6, keyboard, and mouse
- UL 864 Listed compatible monitor (see Table 4)
- PT-1S system event printer (if required)

Note: An ITE UL Listed monitor may be connected in parallel with the UL 864 Listed compatible monitor.

Specifications

Operating system	Windows 10 Enterprise LTSC, 64-bit, Version 1809
Processor	Intel Core i7
Memory	32 GB (not expandable)
Hard drive	1 TB
Optical drives	1
Video ports	2 (1 HDMI, 1 DVI-I)
Universal Serial Bus Ports (USB) ports	
Front	2 USB 2.0/1.1 ports
Rear	4 USB 3.0/2.0/1.1 ports, 2 USB 2.0/1.1 ports
Ethernet ports	2 10/100/1000 Mbps, RJ-45
Serial ports [1]	8 (optically isolated)
Watchdog card	Yes (FW-PCWD6)
ON/OFF key switch	Yes
Status LEDs	Yes
Power	120 V, 50/60 Hz, 5 A
Dimensions [2]	Width:17.0 in. (43.2 cm) Height: 7.0 in. (17.8 cm) Depth: 22.7 in. (57.7 cm)
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Relative humidity	0 to 93% noncondensing

[1] Requires two FW-SP4I cards, ordered separately. Each FW-SP4I card provides four serial ports.

[2] Add 5.5 in. (14.0 cm) to the depth if an FW-UL6CC1 is installed.

Chapter 2
Installation

Summary

This chapter provides instructions for installing an FW-UL6WW10 workstation computer.

Content

Package contents

The following items are included with the FW-UL6WW10:

- Standard North American power cord (NEMA 5-15P to IEC 320 C13)

  Other power cord types are purchased locally

- UL 1449 Listed Type 1 SPD

- Keyboard and mouse

- Motherboard driver CD

- Windows media DVD and Certificate of Authenticity sticker

- Two barrel keys

Installation

Install the FW-UL6WW10 in accordance with applicable national and local codes, ordinances, and regulations.

Installing the FW-UL6WW10 on a bench

To install the FW-UL6WW10 on a bench you need the following equipment:

- A workbench that provides adequate working space for the FW-UL6WW10, monitors, keyboard, and mouse (see Figure 10)

- An FW-UL6CC1 cable cover

Position the workbench far enough from walls and other obstacles to allow air to move freely around the workstation, and within 3 to 5 ft. (92 to 152 cm) of a power junction box.

For ECS/MNS (emergency signaling) applications, the FW-UL6WW10 must be in the same room as the EST control unit to which it is connected and positioned so that both can be viewed at the same time.

Figure 10: Typical bench installation
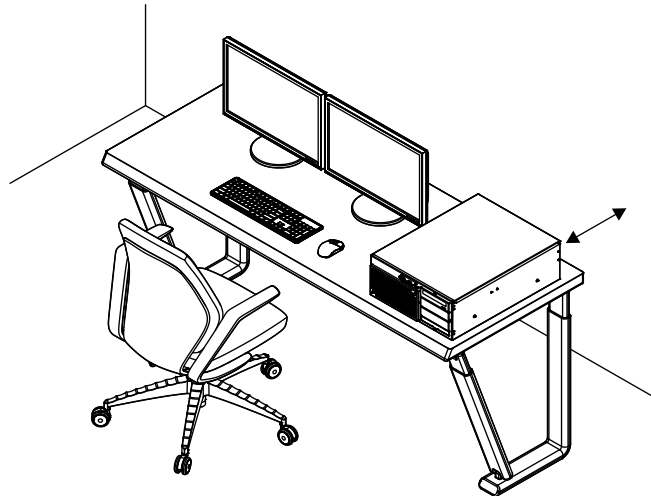
Installing the FW-UL6WW10 in a rack

To install the FW-UL6WW10 in a rack you need the equipment listed in Table 5 on page 10.

Rack-mount installations do not require an FW-UL6CC1. The rack must be dedicated to the FW-UL6WW10. No other equipment may be installed in the rack.

Connecting AC power

The FW-UL6WW10 requires a permanent connection to a dedicated fire alarm branch-circuit supply by way of a UL 1481 Listed uninterruptible power supply (UPS) and a UL 1449 Listed Type 1 surge protection device at the AC power junction box. See Figure 11 and Figure 13.

WARNING: Electrocution hazard. Make sure that all power sources are disconnected and remain disconnected. Use accepted lockout/tagout practices.

To connect AC power:

1. Mount the surge protective device (SPD) on the AC power junction box.

2. Cut the plug end off the AC power cord, and then pull the power cord through the conduit into the junction box.

    There must be 3 to 5 ft. (92 to 152 cm) of cable between the SPD and the workstation.

3. Connect the line (BK), neutral (WH), and ground (GN) wires together. See Figure 11.

    Strip the wires about 1/4-inch and use appropriately sized, UL approved fasteners to connect the wires.

4. Using a ground pigtail, connect the ground wires to the junction box. Make the ground pigtail from the SPD to the junction box as short as possible.

5. Plug the AC power cord connector into the power supply. See Figure 12.

Figure 11: SPD wiring diagram
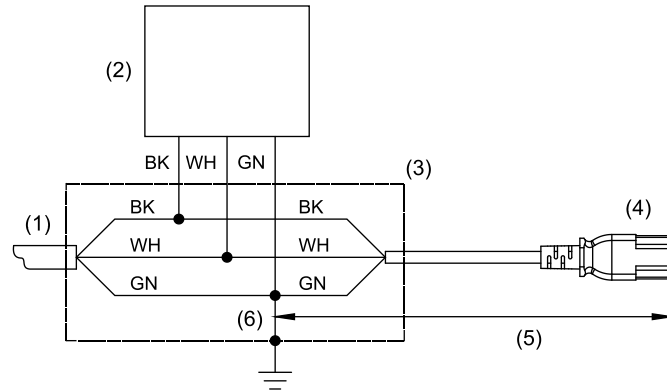
(1) Dedicated fire alarm branch-circuit supply from UL 1481 Listed UPS
(2) UL 1449 Listed Type 1 SPD (supplied with the FW-UL6WW10)
(3) Junction box
(4) AC power cord in conduit
(5) 3 to 5 ft. (92 to 152 cm)
(6) Ground pigtail tied to the junction box

Figure 12: AC power connection
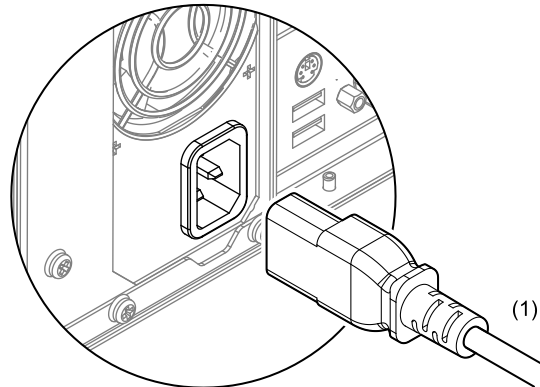
(1) Permanent connection to a dedicated fire alarm branch-circuit supply by way of a UL 1481 Listed UPS. Enclose in conduit or equivalent protection against mechanical injury.

Figure 13: AC power connection using the FW-UL6CC1
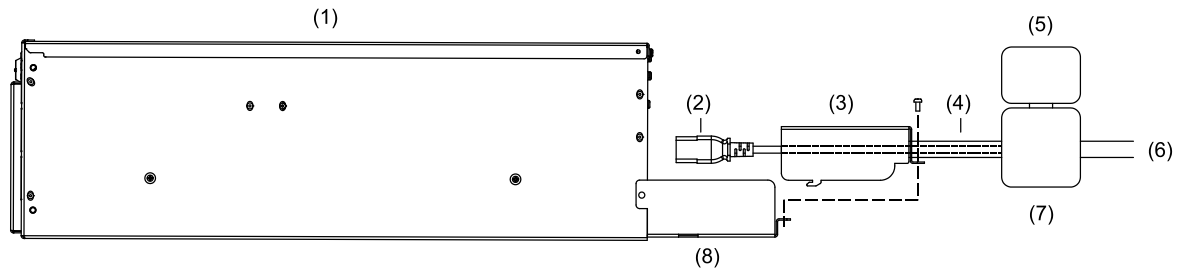
(1) FW-UL6WW10
(2) AC power cord
(3) FW-UL6WW10 power cover. For details, see
FW-UL6CC1 Cable Cover Installation Sheet
(P/N 3102212)
(4) Conduit
(5) UL 1449 Listed Type 1 SPD (supplied with the
FW-UL6WW10)

(6) Permanent connection to a dedicated fire alarm
branch-circuit supply by way of a UL 1481 Listed
UPS
(7) Junction box
(8) FW-UL6CC1 cable tray

Connecting the keyboard and mouse

Connect the keyboard and the mouse to the USB ports. See Figure 14.

Figure 14: Keyboard and mouse connections
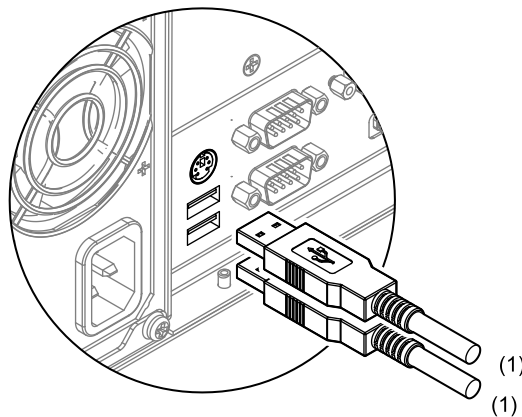
(1) Limit connections to the same room, and within 8 ft. (2.4 m).

Connecting monitors

Connect the FW-UL6WW10 workstation computer's monitors to either of the video ports on the back of the FW-UL6WW10 (see Figure 15). Use the thumbscrews to secure the DVI-I cable to the connector.

Use the DVI-I cable supplied with the monitor or use an HDMI adapter cable (purchased separately).

Dual monitor systems may require additional setup. See "Setting up the monitors" on page 22.

Figure 15: Monitor connections
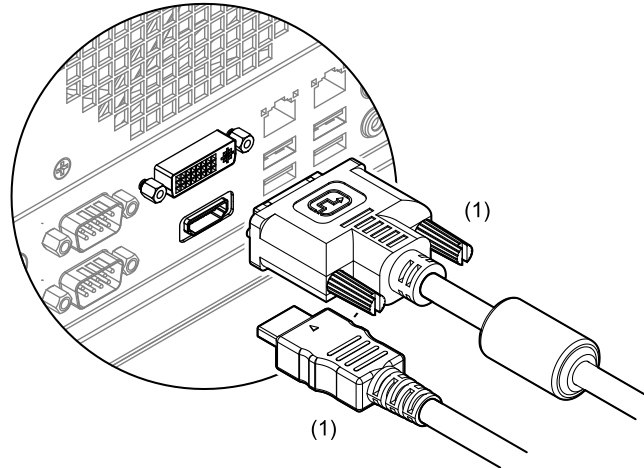
(1) Limit connections to the same room, and within 8 ft. (2.4 m).

Ethernet port connections

The FW-UL6WW10 provides two RJ-45 Gigabit Ethernet ports for making local area network connections. See Figure 16.

Figure 16: Ethernet port connections
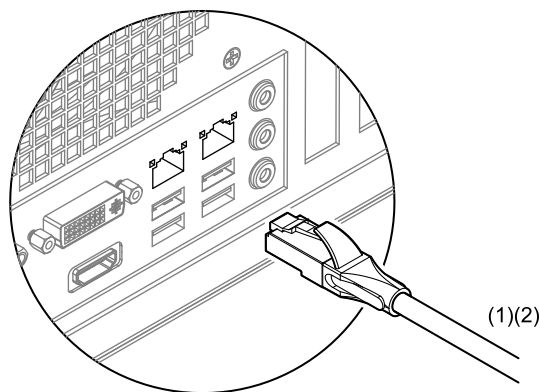
(1) UL 2572 Communication Security Level 1.
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.

Serial port connections

Connect compatible serial devices to the FW-SP4I card serial ports. See Figure 17. Do not use the DB-9 serial port connectors on the I/O panel on the back of the workstation.

Note: Serial port connections require one or two FW-SP4I cards. For installation instructions, see *FW-SP4I Serial Port Expander Card Installation Sheet* (P/N 3100897).

Figure 17: Serial port connections
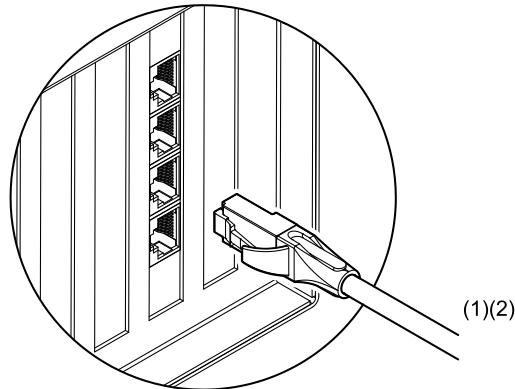
(1) UL 2572 Communication Security Level 0.
(2) RJ-45 to DB-9 adapter cable supplied with the FW-SP4I card. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.

Securing I/O cable connections

Use nylon cable ties to secure the I/O cable connections to the FW-UL6CC1 cable tray. See Figure 18.

For installation instructions, see *FW-UL6CC1 Cable Cover Installation Sheet* (P/N 3102212).

Typically, only USB cables and HDMI cables need to be secured. The power cord and the Ethernet cables are enclosed in conduit, and the DVI-I cable is secured with thumb screws.

Figure 18: Securing I/O cable connections
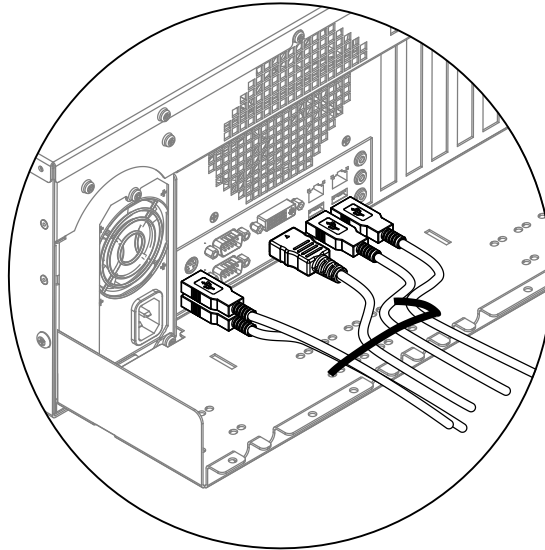
Setting up the FW-UL6WW10

The general steps for setting up an FW-UL6WW10 are:

1. Turn on the FW-UL6WW10.

2. Log on to the FW-UL6WW10.

3. Change the Windows user account passwords.

4. Set up the monitors.

5. Set up the monitor touch screens.

Details of each step are given below.

Turning on the FW-UL6WW10

To turn on the FW-UL6WW10, insert the barrel key into the ON/OFF switch, and then momentarily turn the key to the right until the Power LED lights.

Logging on to the FW-UL6WW10

The FW-UL6WW10 is preconfigured with the Windows user accounts described below.

Administrator: A system administrator account that allows users to install software, shut down the Windows operating system, and change the account password.

Note: UL requirements prohibit installing third party applications on the FW-UL6WW10 workstation computer.

Maintenance: A standard user account that does not allow users to install software, shut down the Windows operating system, or change the account password.

FWUser: A standard user account that does not allow users to install software, shut down the Windows operating system, or change the account password.

EstSupport: A special administrator account used by the Edwards technical support team. Do not change the password or any other properties for this account.

Each user account is password protected. Table 6 lists the default passwords.

Table 6: Windows user account default passwords

User account name	Password	Privilege Group
Administrator	ESTFW	Administrators
Maintenance	Admin	Users
FWUSER	USER	Users
EstSupport	Reserved for technical support use only	Administrators

Note: User account names are not case sensitive. Passwords are case sensitive.

To log on to the FW-UL6WW10:

1. In the **User Name** box, type the user account name.

2. In the **Password** box, type the user account password.

3. Press **Enter**.

Changing the Windows user account passwords

Requiring a user to enter their name and password is an important part of securing your FW-UL6WW10 workstation computer.

Consult your local IT professional if you have stricter requirements for managing user accounts than those discussed here. We strongly recommend that you at least change the Administrator account password.

Note: By default, users are not allowed to change their user account passwords, except the system administrator. User account passwords are set to never expire.

Changing the Administrator account password

You must first change the Administrator user account properties to allow changing passwords before you can change the Administrator user account password.

To change the Administrator account password:

1. Log on to the Administrator user account.

2. Press **Ctrl+Alt+Delete**, and then click **Change a Password**.

3. In the **Old password** box, type the current password.

4. In the **New password** box, type the new password.

5. In the **Confirm password** box, type the new password again.

6. Press **Enter**.

Changing other user account passwords

The system administrator can change other user account passwords without allowing them to change their own account passwords.

To change the other user account passwords:

1. Log on to the Administrator user account.

2. Open **Control Panel**.

3. On the **All Control Panel Items** page, change the **View By** option to **Large Icons**, and then click **User Accounts**.

4. On the **User Accounts** page, click **Manage another account**.

5. Click the account whose password you want to change, and then click **Change the password**.

6. In the **Current password** box, type the current user account password.

7. In the **New password** box, type the new password for the user account.

8. In the **Confirm new password** box, type the new password again.

9. Click **Change password**.

Allowing others to change their own user account passwords

The system administrator can allow others to change their own user account passwords.

To allow users to change their own password:

1. Log on to the Administrator user account.

2. Start the Computer Management application.

    In the Task bar, click the search button, and then in the search box, type: Computer Management.

3. In the **Computer Management** navigation pane, double-click **Local Users and Groups**, and then click the **Users** folder.

4. For each user account, double-click the user name, and then on the **General** tab, clear the **User cannot change password** check box.

5. Click **OK**.

The next time a user logs on to their account, they can change their password by pressing Ctrl+Alt+Delete, and then clicking Change Password. Afterwards, the system administrator can prevent them from changing it again by selecting the User Cannot Change Password option.

Setting up the monitors

FW-UL6WW10 workstations support the use of one or two monitors. In dual monitor systems, you can use monitors that are the same size, or you can use monitors that are different sizes.

When you power up the FW-UL6WW10 workstation, the Intel HD graphics driver automatically sets your monitors for their optimal resolution. See Table 7. FireWorks software native resolution is 1280 × 1024.

Table 7: Monitor optimal resolutions

Monitor	Resolution
FW-19LCDWTS	1440 × 900
FW-22LCDWTS	1680 × 1050
FW-42LCDWTS	1920 × 1080

Single monitor systems

Typically, there is nothing to set up on single monitor systems, except for display scaling and possibly the screen resolution.

Display scaling

Whether you are setting up a single monitor system or a dual monitor system, make sure the scaling on each monitor is set for 100%.

To set the display scaling:

1. Right-click the Windows desktop, and then click **Display settings**.

2. On the **Display** page, under **Scale and layout**, in the **Change the size of text, apps, and other items** box, select **100%**.

Extending the desktop on dual monitor systems

On dual monitor systems, you can extend the Windows desktop across both monitors. When you power up a dual monitor system, Windows automatically:

• Identifies the monitor connected to the DVI-I port as the first monitor

• Identifies the monitor connected to the HDMI port as the second monitor

• Extends the Windows desktop across both monitors with the first monitor as the primary desktop and second monitor as the extended desktop

Typically, when you extend the Windows desktop across two monitors, the monitors are the same size, and they are placed next to each other with the primary desktop on the left and the extended desktop on the right. See Figure 19.

Figure 19: Typical dual monitor setup

To identify the displays:

1. Right-click the Windows desktop, and then click **Display settings**.

2. On the **Display** page, under **Rearrange your displays**, click **Identify**.

If the monitors are not in the left-right order shown above and you cannot easily move them or change the cabling, you can rearrange the display order on the Display page.

To change which monitor is the main display:

1. Right-click the Windows desktop, and then click **Display settings**.

2.   On the **Display** page, under **Rearrange your displays**, select the display that you want to set as the main desktop.

3.   Under **Multiple displays**, select the **Make this my main display** check box.

When you extend the Windows desktop from a smaller monitor to a larger monitor, the extended desktop does not fill the screen of the larger monitor. See Figure 20.

Figure 20: Extending the desktop to a larger monitor

When you extend the Windows desktop from a larger monitor to a smaller monitor, the smaller monitor does not display the entire extended desktop. See Figure 21.

Figure 21: Extending the desktop to a smaller monitor

If you extend the desktop across different size monitors, set the display resolution the same for each monitor. See Figure 22.

Note: If the same display resolution is not available for both monitors, try selecting two display resolution settings that have the same aspect ratio. For example, 1920 × 1080 and 1280 × 720 have the same aspect ratio.

Figure 22: Different size monitors set for the same resolution

To change a monitor's display resolution:

1. Right-click the Windows desktop, and then click **Display settings**.

2. On the **Display** page, under **Rearrange your displays**, select the display whose display resolution you want to change.

3. Under **Scale and layout**, in the **Display resolution** list, select the resolution.

Setting up the monitor touch screens

Touch screens are considered supplementary. When deployed in the field, you must also connect a mouse and a keyboard to use as primary input devices.

The general steps for setting up the monitor touch screens are:

1. Connect the touch screen USB cables.

2. Install the eGalaxTouch touch screen driver.

3. Map the touch screen controllers.

4. Calibrate the touch screens.

Details of each step are given below.

Connecting the touch screens

Connect the monitor touch screens to any of the USB ports on the back of the workstation. See Figure 23.

Use the touch screen USB cables supplied with the monitors.

Figure 23: Touch screen connections
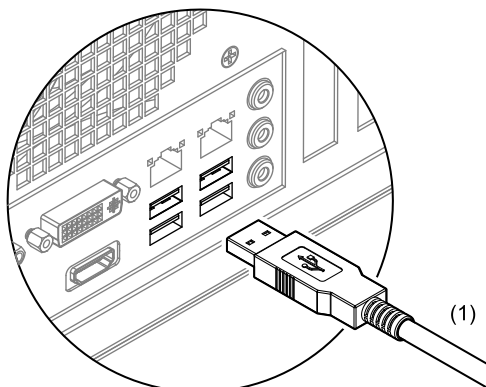
(1) Unsupervised and power limited. Limit connections to the same room, and within 8 ft. (2.4 m).

Installing the eGalaxTouch touch screen driver

1. Turn on the monitors, and then turn on the FW-UL6WW10.

2. Log on to the Administrator user account.

3. For FW-22LCDWTS monitors, do the following:

   Using File Explorer, open the **C:\Drivers\Touch Screen** folder.

   Unzip **69-1506x-001-B.zip**.

   Open the **69-1506x-001-B\Drivers\Win\eGalaxTouch_5.14.0.18411-Release-190211-SingleTouchDev** folder.

   Right-click **setup.exe**, and then click **Run as administrator**.

   Follow the on-screen instructions. Use the default settings, except clear the **Install RS-232 interface driver** check box.

   At the end of the installation, click **No** when you are prompted to perform the 4-point calibration.

4. For FW-42LCDWTS monitors, do the following:

   Using File Explorer, open the **C:\Drivers\Touch Screen** folder.

   Unzip **69-11476-001-B.zip**.

   Open the **69-11476-001\GTDrv4.2.2.1SU_XPVISTAWIN7_EN** folder.

   Right-click **setup.exe**, and then click **Run as administrator**.

   Follow the on-screen instructions. Use the default settings, except:

   - On the **Please select touchscreen device** page, select **USB**, and then click **Next**.
   - On the **Setup complete!** page, select the check box, and then click **Finish**.

Mapping the touch screen controller to the monitor

Before you can calibrate the touch screens you must map the touch screen controllers to their respective monitors.

To map the touch screen controllers:

1. Start the eGalaxTouch Calibration Utility.

2. On the **General** tab, click the **Monitor Mapping** button.

3. Follow the on-screen instructions.

After you have mapped the touch screen controllers, *do not* attempt to change the mapping.

To see how the touch screen controllers are mapped, select a USB Controller icon on the General tab, and then click the Display tab to see which display is selected.

Calibrating the touch screens

After the touch screen controllers have been mapped, you can calibrate the touch screens. For best results, we recommend that you perform a 4-point calibration first and then the 25-point linearization.

Caution: Equipment damage hazard. Only use your fingers to calibrate the touch screen. Do not use a stylus, pencil, or other mechanical objects that could damage the touch screen.

To calibrate the touch screen on FW-22LCDWTS monitors:

1. On the **Settings** tab, under **Linearization Style**, select **25 points**, and then click **Apply**.

2. On the **General** tab, select the first USB Controller icon.

3. On the **Tools** tab, click the **Clear and Calibrate** button, and then perform the 4-point calibration. See Figure 24.

    Press each target point until it changes color and the screen displays OK.

4. On the **Tools** tab, click the **Linearization** button, and then perform the 25-point linearization. See Figure 24.

5. If you are using two FW-22LCDWTS monitors, on the **General** tab, select the second USB Controller icon, and then repeat steps 3 and 4 above.

Figure 24: Calibration target points
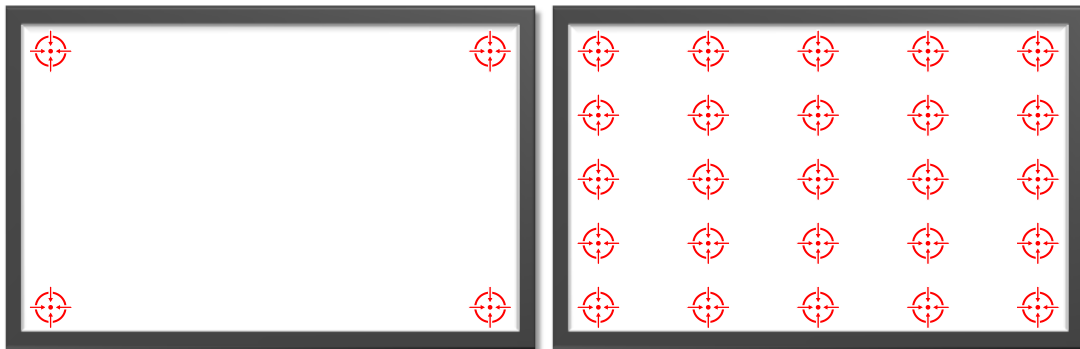
To calibrate the touch screen on FW-42LCDWTS monitors:

1. Open the **69-11476-001\GTDrv4.2.2.1SU_XPVISTAWIN7_EN\APP\amd64** folder.

2. Right-click **GenCalib.exe**, and then click **Run as administrator**.

3. Follow the on-screen instructions.

Connecting a PT-1S system event printer

Connect a PT-1S printer to one of the USB ports (see Figure 25). Use the Windows Add Printer wizard to add the printer and select Generic/Text Only when prompted to install a printer driver.

Figure 25: USB printer connection
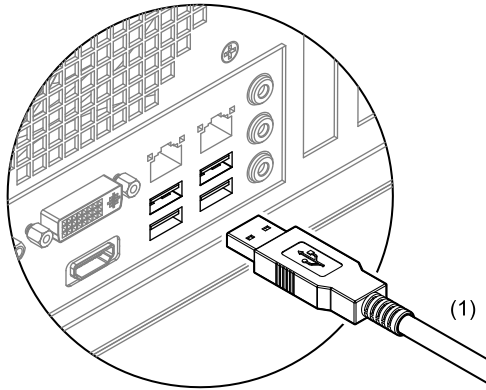
(1) Supervised and power-limited. Limit connections to the same room.

Notes

• FireWorks only supervises the system event printer for loss of communication.

• FireWorks does not differentiate between a printer that is turned off and a USB cable that is unplugged and does not provide supervision for "loss of power" and "printer taken offline manually."

• FireWorks does not display a printer fault event until after another event occurs.

• FireWorks will not recognize the system event printer automatically. You must add it to your FireWorks project.

Chapter 3
FireWorks network connections

Summary

This chapter describes the different methods for connecting control units and other equipment to the FireWorks life safety network.

Content

Introduction

This section describes how to connect the FW-UL6WW10 to the following:

- EST3 control units
- EST3X control units
- EST4 control units
- Bosch D6600/D6100 communications receivers
- iO64/iO1000 control units
- FW-HSSX1 Modbus high level interfaces

Connecting to an EST3 control unit

You can connect an FW-UL6WW10 workstation to an EST3 control unit as follows:

- Through a serial connection using an FW-SP4I card
- Through an Ethernet connection using an MN-COM1S connected to the EST3 control unit's serial port

Serial connection using an FW-SP4I card

Figure 26 shows how to connect an FW-UL6WW10 to an EST3 control unit using a serial connection. For this type of connection, the FireWorks workstation must be equipped with a properly configured FW-SP4I card. For more information, see *FW-SP4I Serial Port Expander Card Installation Sheet* (P/N 3100897).

Figure 26: FW-SP4I card serial port connection
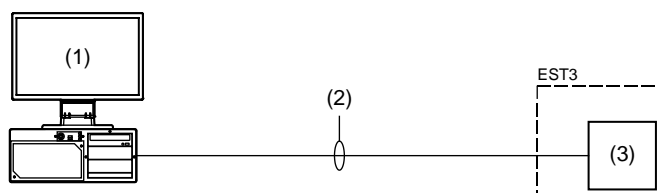
(1) FW-UL6WW10, FW-SP4I card, and FW-UL6CC1.
(2) A DB-9 serial cable with fly-out leads (supplied by the installer). Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) EST3 CPU card and RS-232 option card.

Connect the DB-9 serial cable to the serial port on the control unit as shown in Figure 27. The DB-9 serial cable must have the following characteristics:

- Wire: 20 to 26 AWG solid copper, insulated
- Length: 20 ft (6.1 m) max
- Connector: DB-9F with cover and mating hardware

Figure 27: EST3 serial port field wiring
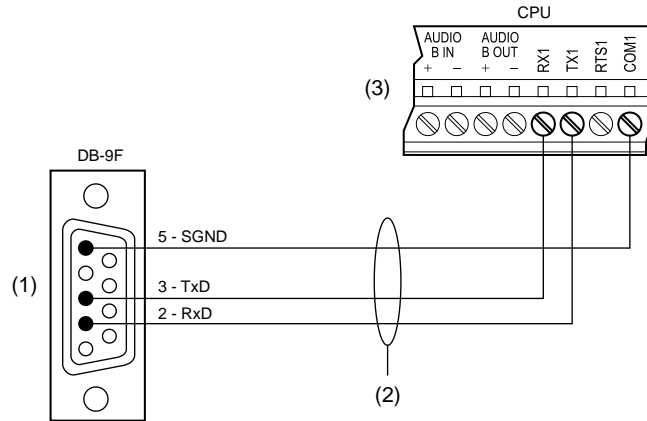
(1) To an FW-SP4I serial port by way of an RJ-45 to DB-9 adapter cable supplied with the FW-SP4I card
(2) Supervised and power-limited
(3) EST3 CPU card

Configure the serial port on the EST3 control unit as follows:

• Port Type: Gateway Type III

• Baud Rate: 19.2 Kbaud

Configure the FireWorks serial port as shown in Figure 28.

Note: You also need to know how Windows COM ports are assigned to the FW-SP4I card serial ports. Figure 29 shows the typical Windows COM port assignments for an FW-SP4I card.

Figure 28: FireWorks serial port settings
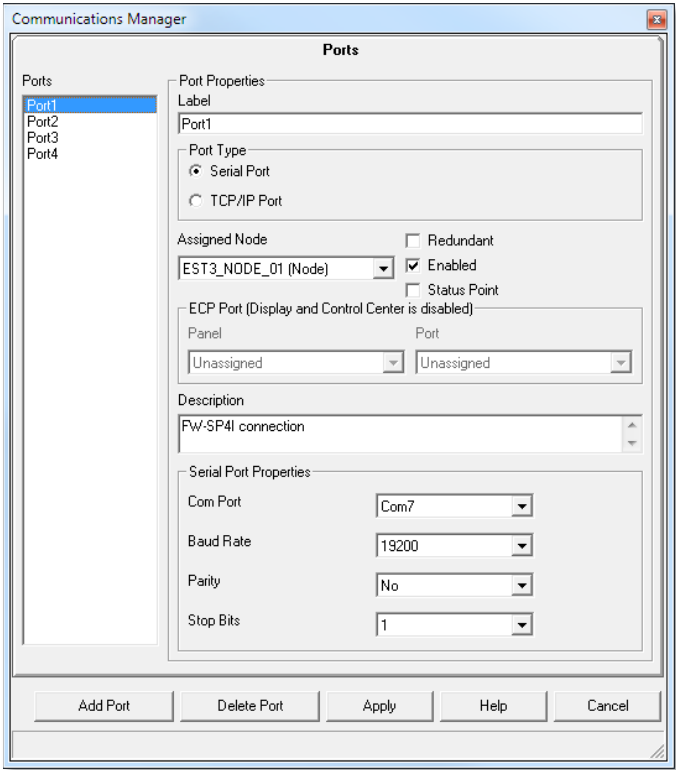
Figure 29: Typical FW-SP4I card COM port assignments
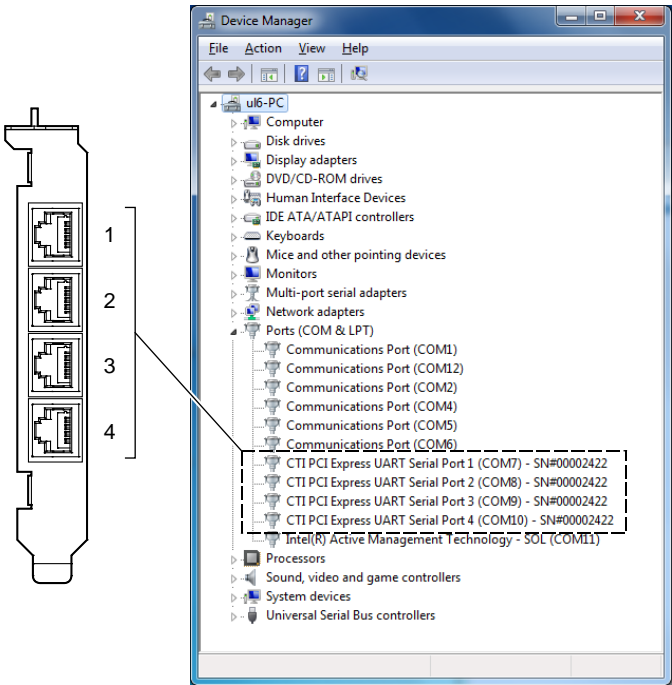
Ethernet connection using an MN-COM1S

Figure 30 and Figure 31 show how to connect an FW-UL6WW10 to an EST3 control unit using an Ethernet connection. For this type of connection, the EST3 control unit must be equipped with a properly configured MN-COM1S. For more information, see *MN-COM1S RS-232 to Ethernet Interface Installation Sheet* (P/N 3101601).

Figure 30: Local MN-COM1S connection
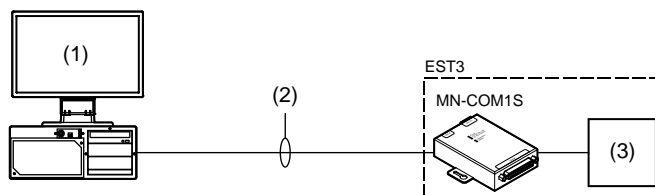
(1) FW-UL6WW10 and FW-UL6CC1.
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) EST3 CPU card and RS-232 option card.

Figure 31: Remote MN-COM1S connection
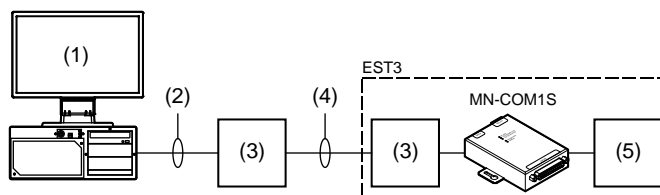
(1) FW-UL6WW10 and FW-UL6CC1.
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) MN-NETSW1 or MN-FNS series Ethernet switch
(4) Dedicated fiber network.
(5) EST3 CPU card and RS-232 option card.

Connect the DB-25 serial cable supplied with the MN-COM1S to the serial port on the EST3 control unit as shown in Figure 32.

Figure 32: EST3 serial port field wiring
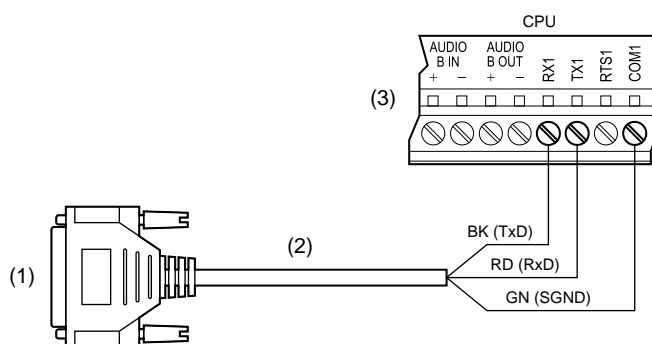
(1) To the MN-COM1S
(2) DB-25 serial cable supplied with the MN-COM1S
(3) EST3 CPU card serial port

Configure the serial port on the EST3 control unit as follows:

- Port Type: Gateway Type III
- Baud Rate: 19.2 Kbaud

Configure a FireWorks TCP/IP port as shown in Figure 33.

Figure 33: FireWorks TCP/IP port settings
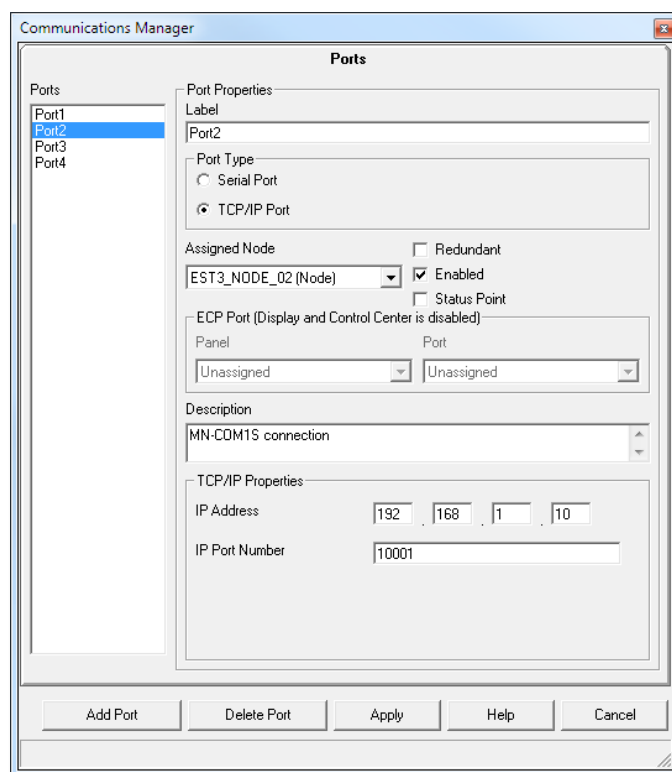
# Connecting to an EST3X control unit

You can connect a FW-UL6WW10 workstation to an EST3X control unit as follows:

- Through a serial connection using an FW-SP4I card
- Through an Ethernet connection using an MN-COM1S connected to the EST3X control unit's serial port (requires 3-SDU V5.32 and C-CPU application code V1.31)
- Through an Ethernet connection using a 3X-ETH1/2/3 card installed in the EST3X control unit (requires 3-SDU V5.32 and C-CPU application code V1.31)

Serial connection using an FW-SP4I card

Connect the FW-UL6WW10 workstation to an EST3X control unit the same way you connect it to an EST3 control unit. For more information, see "Serial connection using an FW-SP4I card" on page 30.

Ethernet connection using an MN-COM1S

Connect the FW-UL6WW10 workstation to an EST3X control unit the same way you connect it to an EST3 control unit. For more information, see "Ethernet connection using an MN-COM1S" on page 33.

Ethernet connection using a 3X-ETH1/2/3 card

Figure 34 and Figure 35 show how to connect an FW-UL6WW10 workstation to an EST3X control unit using an Ethernet connection. For this type of connection, the EST3X control unit must be equipped with a properly configured 3X-ETH1/2/3 card. For more information, see *3X-ETH Ethernet Adapter Card Installation Sheet* (P/N 3101775).

Figure 34: Local 3X-ETH1/2/3 card connection
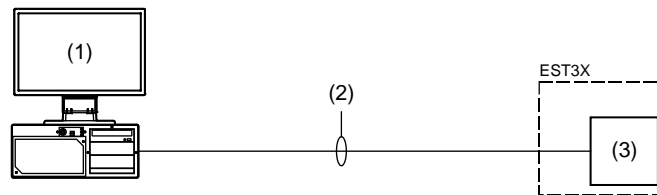
(1) FW-UL6WW10 and FW-UL6CC1.
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) EST3X CPU card and 3X-ETH1/2/3 option card.

Figure 35: Remote 3X-ETH1/2/3 card connection
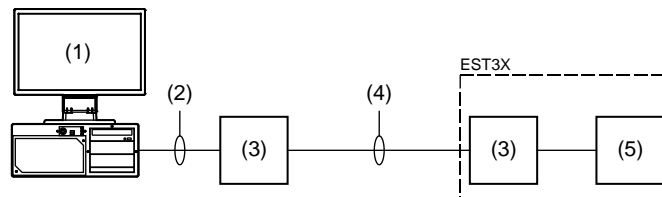
(1) FW-UL6WW10 and FW-UL6CC1.
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) MN-NETSW1 or MN-FNS series Ethernet switch
(4) Dedicated fiber network.
(5) EST3X CPU card and 3X-ETH1/2/3 option card.

Configure a FireWorks TCP/IP port as shown in Figure 36.

Note: For encrypted communication, check the Encrypted Communication check box and enter a passphrase. Enter the same passphrase used on the EST3X control unit.

Figure 36: FireWorks TCP/IP port settings for 3X-ETH1/2/3 connection

Connecting to an EST4 control unit

You can connect a FW-UL6WW10 workstation to an EST4 control unit through an Ethernet connection using a 4-FWAL1/2/3/4 card.

Figure 37 and Figure 39 show how to connect an FW-UL6WW10 workstation to an EST4 control unit using an Ethernet connection. For this type of connection, the EST4 control unit must be equipped with a properly configured 4-FWAL1/2/3/4 card, a 4-FWAL-CAT SFP module, and an ECP communication service.

Figure 37: Local EST4 Ethernet connection
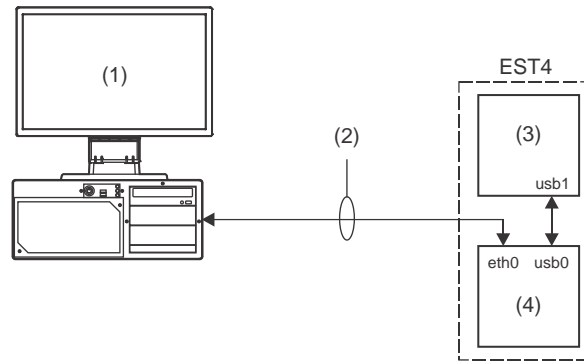
(1) FW-UL6WW10 and FW-UL6CC1.
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) EST4 CPU card (e.g., 4-CPU, 4-ANNCPU, 4-CPUGRPH).
(4) 4-FWAL1/2/3/4 card and 4-FWAL-CAT SFP module.

Configure a FireWorks TCP/IP port as shown in Figure 38.

Configure the Ethernet port on the 4-FWAL1/2/3/4 card for a static IP address. In the TCP/IP properties below, enter the same static IP address used by the 4-FWAL1/2/3/4 card's Ethernet port, and enter the same IP port number and passphrase as the ECP communication service.

Figure 38: FireWorks TCP/IP port settings for EST4 connection
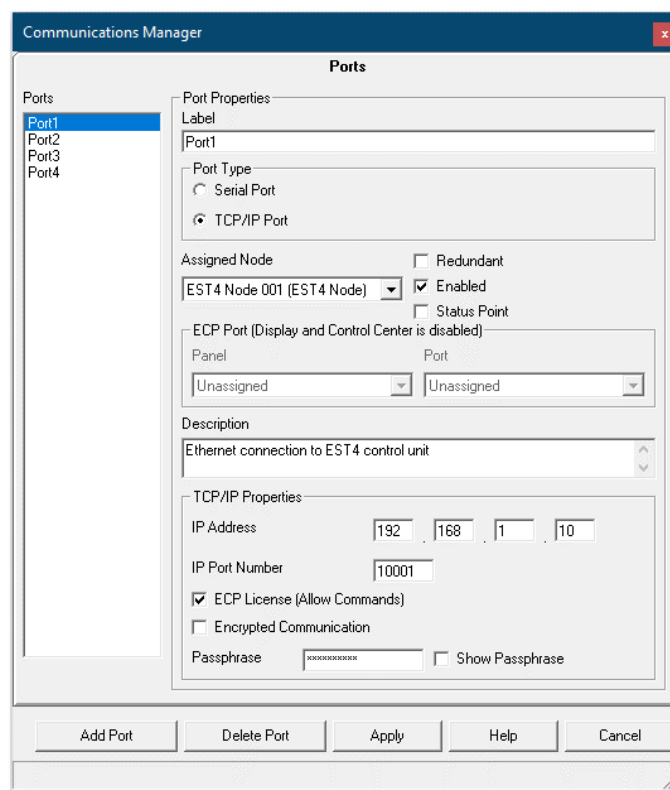
Figure 39: Remote EST4 Ethernet connection
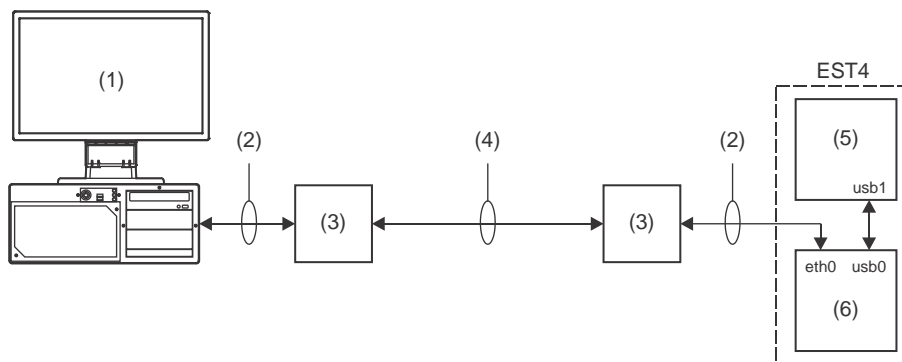
(1) FW-UL6WW10 and FW-UL6CC1.
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) MN-NETSW1 or MN-FNS series Ethernet switch
(4) Dedicated fiber network.
(5) EST4 CPU card (e.g., 4-CPU, 4-ANNCPU, 4-CPUGRPH).
(6) 4-FWAL1/2/3/4 card and 4-FWAL-CAT SFP module.

Connecting to a Bosch D6600/D6100 Communications Receiver

You can connect a FW-UL6WW10 workstation to a Bosch D6600/D6100 communications receiver as follows:

- Through a serial connection using an FW-SP4I card connected to the Bosch D6600/D6100 automation port (requires FW-DARCOM).

- Through an Ethernet connection using an MN-COM1S connected to the Bosch D6600/D6100 automation port (requires Lantronix CPR Manager 4.3.03 to redirect the FireWorks COM port). For more information, see Appendix D "Lantronix CPR Manager" on page 77).

Note:

- You can only connect one Bosch D6600/D6100 to the FW-UL6WW10.

- The Receiver Type setting for an OH Network Receiver is: Radionics D6600.

Serial connection using an FW-SP4I card
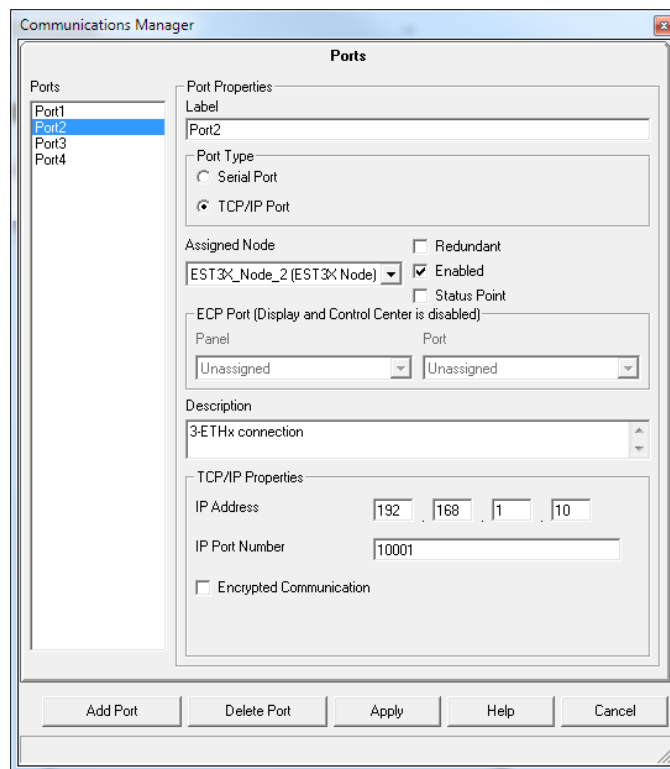
Figure 40 shows how to connect an FW-UL6WW10 to a Bosch D6600/D6100 using a serial connection. For this type of connection, the FW-UL6WW10 must be equipped with a properly configured FW-SP4I card. For more information, see *FW-SP4I Serial Port Expander Card Installation Sheet* (P/N 3100897).

Figure 40: Bosch D6600/D6100 serial connection
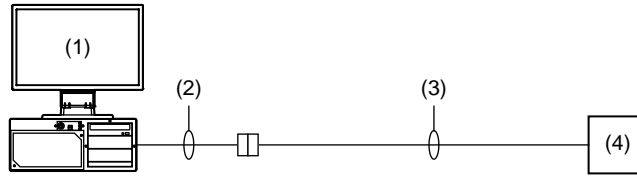
(1) FW-UL6WW10, FW-SP4I card, and FW-UL6CC1.
(2) RJ-45 to DB-9 adapter cable (supplied with FW-SP4I card). Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) DB-9, male to female, null modem cable (supplied by installer). Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(4) Bosch D6600/D6100 (COM3)

Plug the RJ-45 to DB-9 adapter cable into the FW-SP4I card, and use a DB-9, male to female, null modem cable (or equivalent) to connect the FW-SP4I card to the D6600/D6100 COM3 port. See Figure 40.

Figure 41: DB-9 serial cable wiring diagram
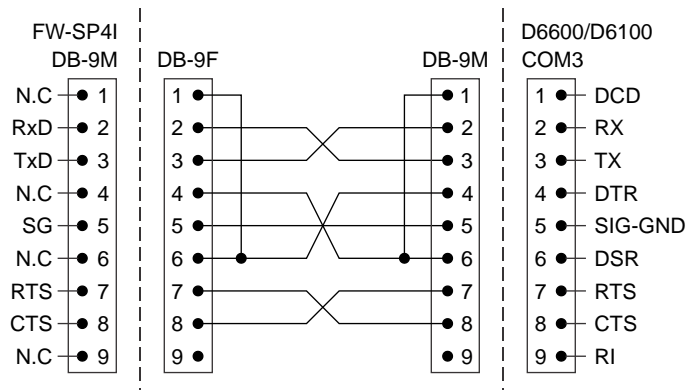
Ethernet connection using an MN-COM1S

Figure 42 shows how to connect the FW-UL6WW10 to a Bosch D6600/D6100 using an Ethernet connection. For this type of connection, the Bosch D6600/D6100 must be equipped with a properly configured MN-COM1S. For more information, see *MN-COM1S RS-232 to Ethernet Interface Installation Sheet* (P/N 3101601).

Figure 42: Bosch D6600/D6100 MN-COM1S connection
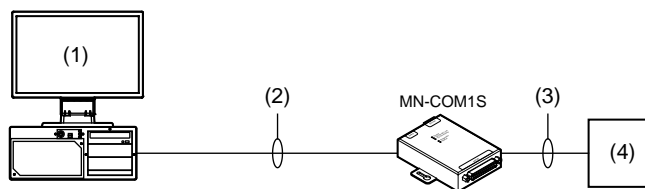
(1) FW-UL6WW10 and FW-UL6CC1.
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) DB-25 serial cable assembly (supplied with MN-COM1S). Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(4) Bosch D6600/D6100 (COM3)

Wire a DB-9 male connector to the DB-25 serial cable assembly (P/N 7140223) as shown in Figure 43. Use the DB-25 serial cable assembly to connect the MN-COM1S to the Bosch D6600/D6100 automation port (COM3).

Figure 43: DB-25 serial cable wiring diagram
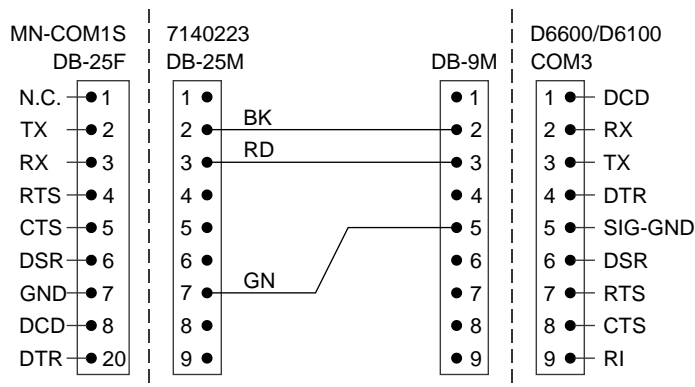
Setting up the Bosch D6600/D6100 and other equipment

Here are the steps to follow when setting up and configuring a Bosch D6600/D6100, a control unit and its dialer, and the FW-UL6WW10.

1. Set up and configure the Bosch D6600/D6100 (firmware CPU-1.2.03).

    COM port settings
    Baud: [9] (38,400)
    Data bit: [8]
    Stop bit: [1]
    Parity: [0] (none)
    BSFK fire bit: [1]
    Output format: [2] (SIA - change requires hardware reboot/cycle power)

    CPU configuration
    Enable input commands: [0] (no input commands)
    Buzzer: [1] (buzzer on for any events)
    External parallel printer: [1] (primary: all reports go to this device)

Network configuration (automation network configuration)
Network automation output format: [2]
Device: [2]

2. Set up the telephone lines for the control unit's dialer.

   Note: For telephone connections, refer to the DACT or control unit installation instructions for UL requirements.

3. Install and configure the control unit's dialer.

   You will need the account number, the protocol (4/2 or Contact ID), and the phone numbers for the receiver.

   Refer to the control panel documentation for details about configuring the dialer.

4. Once the dialer is configured, give the following information to the FireWorks programmer:

   • A detailed report that lists the protocol and the event details for the control unit (this details the event codes and their meaning)

   • A report that lists the control unit's zones, groups, and partitions

   • The address where the control unit is located and the name of the contact person

   Note: Each event type must be programmed in System Builder for FireWorks to display them properly. Unprogrammed event types are defaulted to the highest priority.

5. Configure the DACR, lines, account information, the events and their meaning, the event states, and protocol in the FireWorks Receiver Configuration Manager.

6. Map the event states in FireWorks System Builder.

7. Connect the FW-UL6WW10 to the Bosch D6600/D6100 automation port (COM3). See Figure 40 and Figure 42.

8. Test the system by initiating events on the control unit and making sure the correct event information is being sent to FireWorks through the receiver.

Note: The Bosch receiver only requires acknowledgement at the FW-UL6WW10.

For more information, refer to the documentation supplied with the Bosch D6600/D6100.

Connecting to iO64/iO1000 control units

You can connect the FW-UL6WW10 to iO64/iO1000 control units equipped with an SA-ETH card — *for monitoring purposes only*. To connect the FW-UL6WW10, you need the following:

• FW-IPMON1000

• FW-DARCOM

• A null modem emulator (com0com.sys driver 2.2.2.0). For installation instructions, see "Installing the com0com driver" on page 42.

The general steps for connecting iO64/iO1000 control units are:

1. Configure the control unit's Network, IP Dialer, and IP Account settings.

2. Export the control unit's dialer events.

3. In the Receiver Configuration Manager, add an OH Network Receiver, and then set up a Contact ID account.

   Note: The Receiver Type for an OH Network Receiver is Osborne-Hoffman OH2000E.

4. Import the control unit's dialer events. For more information, see System Builder Help.

5. Install and set up OH Network Receiver.

   Open the C:\fireworks\netrec folder, right-click OHNetRec-3.1.1.3.MR1.exe, and then click Run as administrator. Follow the on-screen instructions. Accept all defaults.

   Double-click ConfigOHReceiverServiceManu.bat. This makes the service run in manual mode versus automatically starting up.

   Double-click StopOHReceiverService.bat. This will stop the service, so it is not running.

6. Install and set up the com0com driver. For more information, see: C:\Fireworks\Documentation\Field Tech Note - IPMON1000 Virtual Null Modem Cable.pdf.

7. Connect the OH Network Receiver and the OH2000E digital receiver to the virtual COM port. For more information, see *FireWorks 9.1 Software Installation Guide* (P/N 3100034).

Installing the com0com driver

The com0com driver lets you add pairs of virtual COM ports that emulate a null modem cable. The com0com driver is an open source kernel-mode virtual serial port driver that is available freely under GPL license.

A copy of com0com is in the C:\Fireworks\Tools\Serial Port Tool folder after you install FireWorks.

Before installing the com0com driver:

• Turn off User Account Control (UAC) by changing the User Account Control setting to Never Notify.

• Open Windows Device Manager and note which communication port numbers are already used.

• Enable test signing.

To enable test signing:

1. Open the Run app.

2. In the Open box, type: `bcdedit.exe -set TESTSIGNING ON`, and then click OK.
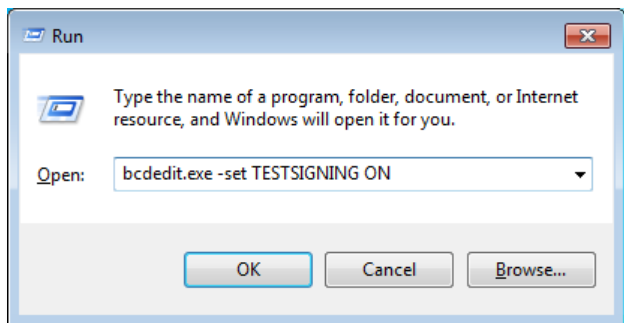
3. Restart the computer.

To install the com0com driver:

1. Open the **C:\FireWorks\Tools\Serial Port Tool** folder.

2. Open the **com0com-2.2.2.0-x64-fre-signed.zip** file, and then click **Unzip**.

3. Open the **com0com-2.2.2.0-x64-fre-signed** folder, double-click **setup.exe**, and then follow the on-screen instructions.

4. On the **Start** menu, open the **com0com** folder, and then double-click **Setup**.

5. In the **Setup for com0com** dialog box, rename the virtual COM port pair to two *unused* Windows COM port numbers.

    For example, rename the virtual COM ports to COM10 and COM11 as shown below.
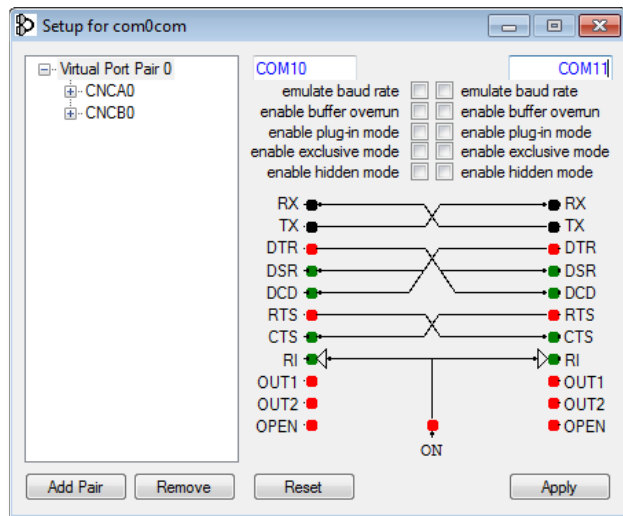
    If all ports are used, add a new pair of ports and use them in OH Lite.

6. Click **Apply**, and then click **Close**.

Connecting the OH Network Receiver to the virtual COM port

1. On the **Start** menu, expand the **Carrier** folder, and then click **OH Network Receiver**.

2. On the **Setup** menu, click **Serial ports**.

3. In the **Port Name** list, select the lower-numbered virtual COM port as shown below.
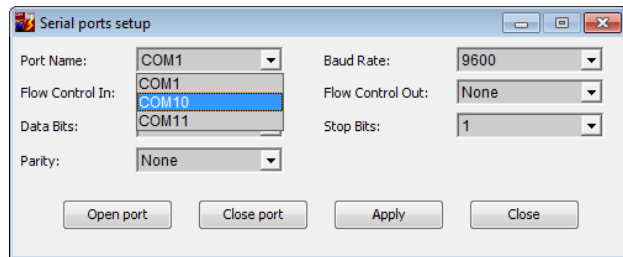
4. Click **Apply**, and then click **Close**.

Connecting the OH2000E digital receiver to the virtual COM port

1. On the **System Builder Applications** menu, click **Communications Manager**.

2. Select an unassigned port from the **Ports** list.

3. Select the OH2000E digital receiver from the **Assigned Node** list.

4. Under **Serial Port Properties**, select the higher-numbered virtual COM port from the **Com Port** list as shown below.
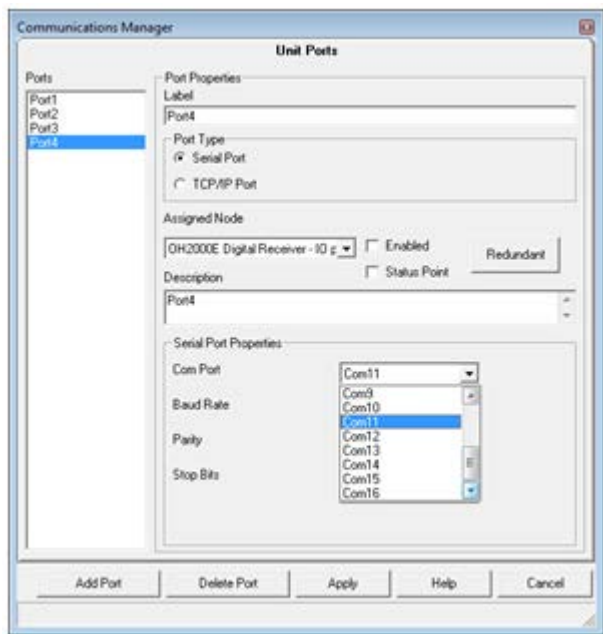
5. Set **Baud Rate**, **Parity**, and **Stop Bits** to the same values as the OH Network Receiver serial port settings.

6. Click **Apply**, and then click **Close**.

7. Start System Control and test the OH Network Receiver.

Connecting to an FW-HSSX1 VESDA Modbus High Level Interface

You can connect a FW-UL6WW10 to an FW-HSSX1 VESDA Modbus High Level Interface through an Ethernet connection using an MN-COM1S connected to the FW-HSSX1 interface's serial port. For more information, see *FW-HSSX1 VESDA Modbus High Level Interface Installation Sheet* (P/N 3102240).

Figure 44 shows how you connect an FW-UL6WW10 to an FW-HSSX1 using an Ethernet connection. For this type of connection, the FW-HSSX1 must be equipped with a properly configured MN-COM1S. For more information, see *MN-COM1S RS-232 to Ethernet Interface Installation Sheet* (P/N 3101601).

This type of connection also requires Lantronix CPR Manager 4.3.0.3. For installation instructions, see Appendix D "Lantronix CPR Manager" on page 77 and *FireWorks 9.1 Software Installation Guide* (P/N 3100034).

FireWorks allows up to 5 or up to 20 FW-HSSX1 (Vesda) node connections depending on which software product option is installed. See Table 1 on page 4.

Figure 44: FW-HSSX1 connection
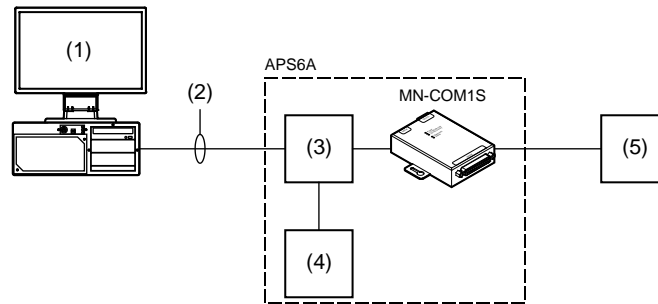
(1) FW-UL6WW10 and FW-UL6CC1.
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) MN-NETSW1 or MN-FNS series Ethernet switch
(4) MN-NETRLY module.
(5) FW-HSSX1. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.

Chapter 4
UL/ULC programming instructions

Summary

This chapter provides instructions for programming FW-UL6WW10 workstation computers to comply with UL and ULC requirements.

Content

UL/ULC programming requirements

NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISIDICTION, AND OTHER INVOLVED PARTIES

This product incorporates field-programmable software. In order for the product to comply with UL and ULC standards, certain programming features or options must be limited to specific values or not used at all as indicated in Table 8 below.

Table 8: UL/ULC programming requirements

Programmable feature or option	Possible settings	Permitted UL settings	Permitted ULC settings
24-hour trouble re-sound	Enabled (checked) Disabled (cleared)	Enabled (checked)	Enabled (checked)
Adjustable trouble signal re-sound timer	0 to 99 (hours)	1 to 24 (hours)	1 to 24 (hours)
Automatic workstation silence cancel	0 to 999,999,999 minutes	0 to 240 minutes	0 to 240 minutes
Control unit local AC power fail event delay	0 to 45 hours	1, 2, 3 hours	1, 2, 3 hours
Automatically restoring the default screen layout	On all events Only on alarm events	On all events	On all events
Default screen layouts	N/A	Any arrangement that does not obscure the Event List and Event Action windows	Any arrangement that does not obscure the Event List and Event Action windows
Event selection method	Maintain Selected Event Select High Priority Select Newest Select Newest (if Higher or Equal Priority)	Select High Priority	Select High Priority
Clear all receiver account events	Enabled (checked) Disabled (cleared)	Disabled (cleared)	Disabled (cleared)
Event display filters (all events)	Allow (checked) Block (cleared)	Allow (checked)	Allow (checked)
Event print filters (all events)	Allow (checked) Block (cleared)	Allow (checked)	Allow (checked)
Event history filters (all events)	Allow (checked) Block (cleared)	Allow (checked)	Allow (checked)
Partition display filter	Allow (checked) Block (cleared)	Allow (checked) Block (cleared)	Allow (checked) Block (cleared)
Partition print filter	Allow (checked) Block (cleared)	Allow (checked) Block (cleared)	Allow (checked) Block (cleared)
Partition history filter	Allow (checked) Block (cleared)	Allow (checked) Block (cleared)	Allow (checked) Block (cleared)
Local mode of operation	Proprietary Local	Proprietary Local	Proprietary

Programmable feature or option	Possible settings	Permitted UL settings	Permitted ULC settings
Status points	True False	False	False
Event List operation	UL 864 compliant (US) ULC-S527 compliant (Canada)	UL 864 compliant (US)	ULC-S527 compliant (Canada)
Emergency event indicator color	Red Black Blue Brown Cyan Grey Gold Orange White Yellow	Red Black Blue Brown Cyan Grey Gold Orange White Yellow	Yellow
Supervisory event indicator color	Black Blue Brown Cyan Grey Gold Orange White Yellow	Black Blue Brown Cyan Grey Gold Orange White Yellow	Yellow
Building event indicator color	Black Blue Brown Cyan Grey Gold Orange White Yellow	Black Blue Brown Cyan Grey Gold Orange White Yellow	Yellow
Trouble event indicator color	Black Blue Brown Cyan Grey Gold Orange White Yellow	Black Blue Brown Cyan Grey Gold Orange White Yellow	Yellow
Monitor event indicator color	Black Blue Brown Cyan Grey Gold Orange White Yellow	Black Blue Brown Cyan Grey Gold Orange White Yellow	Yellow

Programmable feature or option	Possible settings	Permitted UL settings	Permitted ULC settings
International Vesda settings [1]	Enabled (checked) Disabled (cleared)	Disabled (cleared)	Disabled (cleared)
Allow passing commands to VM-1 fire alarm control units	Enabled (checked) Disabled (cleared)	Disabled (cleared)	Disabled (cleared)

[1] Only US / Canadian VESDA Settings are allowed.

Disabling the 24-hour trouble re-sound timer

By default, the local trouble signal automatically re-sounds if you do not clear all events from the system within 24 hours after you acknowledge them. If you do not want the local trouble signal to automatically re-sound after 24 hours, you can disable the timer or you can adjust the trouble signal re-sound timer for an interval other than 24 hours.

Notes

- UL/ULC requires the local trouble signal to re-sound within 24 hours. Setting the adjustable trouble signal re-sound timer for more than 24 hours violates UL/ULC requirements.

- The adjustable trouble signal re-sound timer setting overrides the 24-hour trouble re-sound timer setting.

To disable the 24-hour trouble re-sound timer:

1. On the **Applications** menu, click **System Configuration**.

2. On the **UL** tab, under **Property**, select **SYSCONTROL_RESOUND_24_HOUR**.

3. In the **Value** box, clear the **Enabled** check box.

4. Click **Apply**.

Automatically canceling workstation silence

Silencing the workstation gives you time to acknowledge new events posted on the system without the local trouble signal sounding in the background. You can configure FireWorks to automatically re-sound the local trouble signal in the event you get pulled away from the workstation or get distracted while you are acknowledging events. By default, FireWorks automatically re-sounds the local trouble signal after five minutes.

Note: The local trouble signal silence timer setting may conflict with UL/ULC requirements. To comply, set SYSCONTROL_BELL_SILENCE_MINUTES for a value between 0 and 240.

To automatically cancel workstation silence:

1. On the **Applications** menu, click **System Configuration**.

2. On the **System Control** tab, under **Property**, select **SYSCONTROL_BELL_SILENCE_MINUTES**.

3. In the **Value** box, type the duration in minutes.

4. Click **Apply**.

Delaying control unit local AC power fail events

By default, control unit local AC power fail events are not posted on the system until after 3 hours. This is to prevent power fluctuations from becoming a nuisance.

Note: UL/ULC requires that you post control unit AC power fail events after a delay of between 1 and 3 hours.

To delay control unit AC power fail events:

1.   On the **Applications** menu, click **System Configuration**.

2.   On the **UL** tab, under **Property**, select **UL_NINTH_EDITION_ACPOWER_TIMEOUT_HOURS**.

3.   In the **Value** box, enter the amount of delay in hours.

4.   Click **Apply**.

Changing the event selection method

The event selection method determines which event is automatically selected (has focus) when FireWorks posts a new event. Your options are:

- Maintain Selected Event: The currently selected event remains selected. It does not change when a new event is posted.

- Select High Priority (default): The new event is automatically selected only if it has a higher priority. Select this setting if you want the system to display the oldest, highest priority event.

- Select Newest: The new event is automatically selected regardless of its priority.

- Select Newest (if higher or equal priority): The new event is automatically selected only if its priority is higher than or is equal to the current event. Select this setting if you want the system to display the most recent highest priority event.

Note: The event selection method setting may conflict with UL/ULC requirements. To comply, set the event selection method for Select High Priority for all user accounts.

To change the event selection method:

1.   In **System Control**, click the **Function** menu.

2.   Point to **Event Selection Method**, and then click one of the choices described above.

Assigning user rights to clear all receiver account events

To clear all events from the same receiver account at the same time you must be assigned the Clear All Account Events user right. Typically, this user right is only assigned to administrator user accounts.

Note: The event selection method setting may conflict with UL/ULC requirements. To comply, clear the Clear All Account Events check box.

To assign the Clear All Account Events user right:

1.   On the **Applications** menu, click **User Manager**, and then click the **Access Group Configuration** tab.

2.   In the **Access Groups** list, click the access group.

3. Under **Configuration Items**, click **System Control**.

4. Select the **Clear All Account Events** check box.

Filtering events

The FireWorks event filters let you determine which events are displayed, printed, and saved in the history file. By default, all events are displayed, printed, and saved.

Note: The event filter settings may conflict with UL/ULC requirements. To comply, set the Display, Printer, and History filters to allow all events.

To filter events:

1. In **System Builder**, on the **Applications** menu, click **Set Filtering Parameters**.

2. In the **Set Filtering Parameters** dialog box, select the **Enable Filtering** check box.

3. For each event type, do one of the following under **Display**, **Printer**, and **History**:

   Select the check box to allow the event.

   — or —

   Clear the check box to block the event.

4. Click **Apply**.

Changing to local mode of operation

Local mode of operation automatically acknowledges activation events and restoration events from the same point — *if both are present in the New Events list after 5 to 30 minutes.* By default, FireWorks is set for proprietary mode.

To change to local mode operation:

1. In **System Builder**, on the **Applications** menu, click **Local Mode of Operation**.

2. In the **Local Mode of Operation** dialog box, under **Operational Modes**, click **Local**.

3. Set **Local Mode Acknowledged Time** for between 5 and 30 minutes.

4. Click **Apply**.

Adjusting the trouble signal re-sound timer

By default, the local trouble signal automatically re-sounds if you do not clear all events from the system within 24 hours after you acknowledge them. You can adjust the trouble signal re-sound timer to re-sound at an interval other than 24 hours. By default, the trouble signal re-sound timer is disabled (set to 0).

Notes

- UL/ULC requires the local trouble signal to re-sound within 24 hours. Setting the adjustable trouble signal re-sound timer for more than 24 hours violates UL/ULC requirements.

- The adjustable trouble signal re-sound timer setting overrides the 24-hour trouble re-sound timer setting.

To adjust the trouble signal re-sound timer:

1. On the **Applications** menu, click **System Configuration**.

2. On the **System Control** tab, under **Property**, select **SYSCONTROL_RESOUND_HOUR_CONFIGURABLE**.

3. In the **Value** box, type the duration in hours.

4. Click **Apply**.

Changing Event List operation

The EventList property determines how System Control handles Security events based on agency requirements. By default, System Control groups Security events with Building events (UL 864 operation). You can also keep Security events separate (CAN/ULC-S527-11 operation).

Note: To comply with CAN/ULC-S527-11, set the EventList property for ULC-S527 compliant (Canada).

To change Event List operation:

1. On the **Applications** menu, click **System Configuration**.

2. On the **Basic** tab, under **Property**, select **EventList**.

3. In the **Value** box, click the required agency standard.

4. Click **Apply**.

Changing the color used for Emergency events

FireWorks uses colors to help the system operator distinguish between Emergency events and other event types. By default, FireWorks uses the color yellow for Emergency events.

Changing the color used for Emergency events affects the following System Control screen elements:

- The background color that the Event List window uses to identify active Emergency events

- The color that the Alarm/Emergency LED uses to indicate active Emergency events

- The border color that Device TSAs and Device icons use to indicate active Emergency events

Note: To comply with CAN/ULC-S527-11, set the SYSCONTROL_COLOR_FOR_EMERGENCY property for Yellow.

To change the color used for Emergency events:

1. On the **Applications** menu, click **System Configuration**.

2. On the **UL** tab, under **Property**, select **SYSCONTROL_COLOR_FOR_EMERGENCY**.

3. In the **Value** box, click the arrow, and then click the color that you want.

4. Click **Apply**.

Changing the color used for Supervisory events

FireWorks uses colors to help the system operator distinguish between Supervisory events and other event types. By default, FireWorks uses the color yellow for Supervisory events.

Changing the color used for Supervisory events affects the following System Control screen elements:

- The background color that the Event List window uses to identify active Supervisory events

- The color that the Supervisory/Building LED uses to indicate active Supervisory events

- The border color that Device TSAs and Device icons use to indicate active Supervisory events

Note: To comply with CAN/ULC-S527-11, set the SYSCONTROL_COLOR_FOR_SUPERVISORY property for Yellow.

To change the color used for Supervisory events:

1. On the **Applications** menu, click **System Configuration**.

2. On the **UL** tab, under **Property**, select **SYSCONTROL_COLOR_FOR_SUPERVISORY**.

3. In the **Value** box, click the arrow, and then click the color that you want.

4. Click **Apply**.

Changing the color used for Building events

FireWorks uses colors to help the system operator distinguish between Building events and other event types. By default, FireWorks uses the color yellow for Building events.

Changing the color used for Building events affects the following System Control screen elements:

- The background color that the Event List window uses to identify active Building events

- The color that the Supervisory/Building LED uses to indicate active Building events

- The border color that Device TSAs and Device icons use to indicate active Building events

Notes

- To comply with CAN/ULC-S527-11, set the SYSCONTROL_COLOR_FOR_BUILDING property for Yellow.

- The SYSCONTROL_COLOR_FOR_BUILDING property also determines the color used for Security events when Event List operation is configured to comply with UL 864.

To change the color used for Building events:

1. On the **Applications** menu, click **System Configuration**.

2. On the **UL** tab, under **Property**, select **SYSCONTROL_COLOR_FOR_BUILDING**.

3. In the **Value** box, click the arrow, and then click the color that you want.

4. Click **Apply**.

Changing the color used for Trouble events

FireWorks uses colors to help the system operator distinguish between Trouble events and other event types. By default, FireWorks uses the color yellow for Trouble events.

Changing the color used for Trouble events affects the following System Control screen elements:

- The background color that the Event List window uses to identify active Trouble events

- The color that the Trouble/Disabled LED uses to indicate active Trouble events

- The border color that Device TSAs and Device icons use to indicate active Trouble events

Note: To comply with CAN/ULC-S527-11, set the SYSCONTROL_COLOR_FOR_TROUBLE property for Yellow.

To change the color used for Trouble events:

1. On the **Applications** menu, click **System Configuration**.

2. On the **UL** tab, under **Property**, select **SYSCONTROL_COLOR_FOR_TROUBLE**.

3. In the **Value** box, click the arrow, and then click the color that you want.

4. Click **Apply**.

Changing the color used for Monitor events

FireWorks uses colors to help the system operator to distinguish between event types. By default, FireWorks uses the color yellow for Monitor events.

Changing the color used for Monitor events affects the following System Control screen elements:

- The background color that the Event List window uses to identify active Monitor events

- The color that the Maintenance Alert/Monitor LED uses to indicate active Monitor events

- The border color that Device TSAs and Device icons use to indicate active Monitor events

Note: To comply with CAN/ULC-S527-11, set the SYSCONTROL_COLOR_FOR_MONITOR property for Yellow.

To change the color used for Monitor events:

1. On the **Applications** menu, click **System Configuration**.

2. On the **UL** tab, under **Property**, select **SYSCONTROL_COLOR_FOR_MONITOR**.

3. In the **Value** box, click the arrow, and then click the color that you want.

4. Click **Apply**.

International Vesda settings

FireWorks allows up to 5 or up to 20 FW-HSSX1 (Vesda) node connections depending on which software product option is installed. See Table 1 on page 4. Some jurisdictions may allow more than twenty FW-HSSX1 nodes, but twenty is the tested limit.

To comply with UL/ULC, do not allow more than twenty FW-HSSX1 nodes (i.e., do not select the SYSTEM_CONTROL_ALLOWEXCEED_20_HLI_NODES property's Enabled check box, unless approved by the local authority having jurisdiction.

To allow more than twenty FW-HSSX1 nodes:

1. On the **Applications** menu, click **System Configuration**.

2. Enter the system configuration password.

3. On the **UL** tab, under **Property**, select **SYSTEM_CONTROL_ALLOWEXCEED_20_HLI_NODES**.

4. In the **Value** box, select the **Enabled** check box.

5. Click **Apply**.

Chapter 5
Troubleshooting and maintenance

Summary

This chapter covers problems that you may experience while setting up and using your FW-UL6WW10 and gives you possible solutions.

Content

Fire alarm control unit to workstation communication problems

In this section, we assume that your fire network already operates correctly on its own. Refer to the appropriate technical reference manual for additional information about your fire alarm control unit and network.

Workstation communication

Problem

The workstation is not communicating with a fire alarm control unit.

Check the status bar. The LED indicators in the status bar turn from green to yellow when there is an RS-232 port communication problem.

When multiple fire networks are connected to a single workstation, you can identify which node has a problem by displaying the Node Status window.

Causes and solutions

RXD and TXD connections are crossed. Verify correct connections using the system control menu or the F2 quick key. Is the cable correct? Is the panel connection correct?

Communication port configuration is wrong. Use System Builder to check and correct the hardware, node, and port settings for the node with trouble. Check for:

- Incorrect port selection or wiring
- Baud rate mismatch between the workstation and fire network

The wrong drivers are installed. The COM ports should not be configured for WinRT communications; they should be configured for serial communications.

EST3 or EST3X serial communication

Problem

The control unit is not communicating with the workstation.

A communication failure between the control unit and the workstation network appears as an internal trouble on zone 0607 (port 1 on EST3 or EST3X) or 0608 (port 2 on EST3).

Different events can cause the 0607/0608 trouble state. Failure of the auxiliary port is identified on the control unit and on the FireWorks displays.

Causes and solutions

RXD and TXD connections are crossed. Verify correct connections. Is the cable correct? Is the control unit connection correct?

The gateway port on the control unit is not configured, or the FireWorks and control unit gateways are set differently. Use the SDU configuration software to configure the control unit port as Gateway 3. Make sure the port is not configured for a printer. Make sure the gateway settings are correctly set and are the same in both FireWorks and the control unit.

Communication baud rates for the control unit and the workstation do not match. Set the control unit baud rate using the SDU program. Set the workstation baud rate from the System Builder software to define the node (port) connected to the control panel. The suggested baud rate is 19,200.

Workstation hard drive failure

The benefit of a FW-UL6WW10 workstation is that the system remains operational if one of the hard drives fail. If a hard drive fails, the screen displays a message to tell you of a degraded RAID volume.

Figure 45: RAID volume degraded message
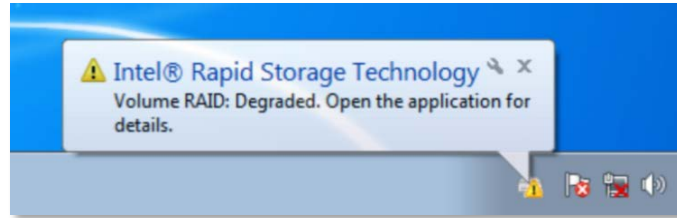
FireWorks continues to operate using the good hard drive, but the fault-tolerant RAID functionality will not work until the failed hard drive is replaced. Once the failed hard drive is replaced, the RAID system rebuilds the data on the replaced drive and your system is back to full operation.

Order a replacement RAID hard drive and follow the installation instructions included with the drive.

To identify the failed hard drive:

1. Start Intel Rapid Storage Technology Enterprise.

    Click the Intel Rapid Storage Technology Enterprise icon in the icon tray.

    — or —

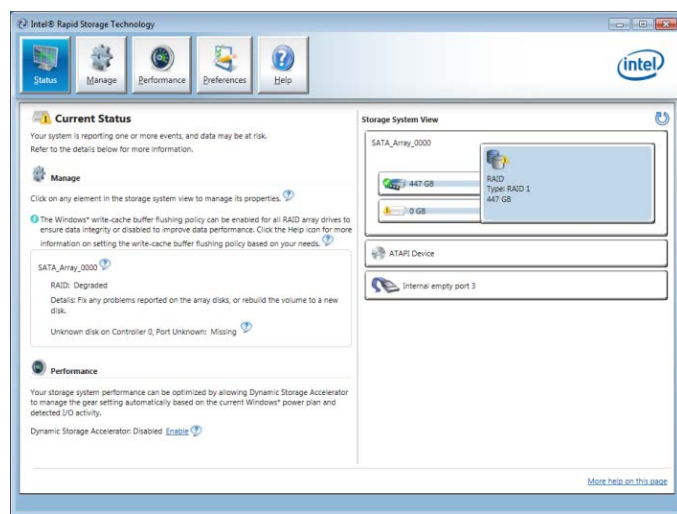   On the Start menu, under Intel, click Intel Rapid Storage Technology Enterprise.

2. Under Current Status, note which hard drive is missing. See Figure 46.

    Typically, Drive 1 is connected to Port 0 (SATA 0). Drive 2 is connected to Port 1 (SATA 1).

Figure 46: Intel Rapid Storage Technology Enterprise

Note: Click the Help button for information on using Intel Rapid Storage Technology Enterprise.

Cleaning the filter

Clean the filter once a year or more often if needed. Replace the filter if cleaning by itself does not achieve satisfactory results.

For more information, see *FW-FILTER FireWorks Workstation Air Filter Installation Sheet* (P/N 3100780).

Caution: Equipment damage hazard. Do not use chemical solvents of any kind to clean the filter.

To clean the filter:

1. Remove the filter and filter cover. See Figure 47.

2. Vacuum the debris from the filter or rinse the filter with clean fresh water.

3. Dry thoroughly, and then replace.

Figure 47: Filter assembly exploded view
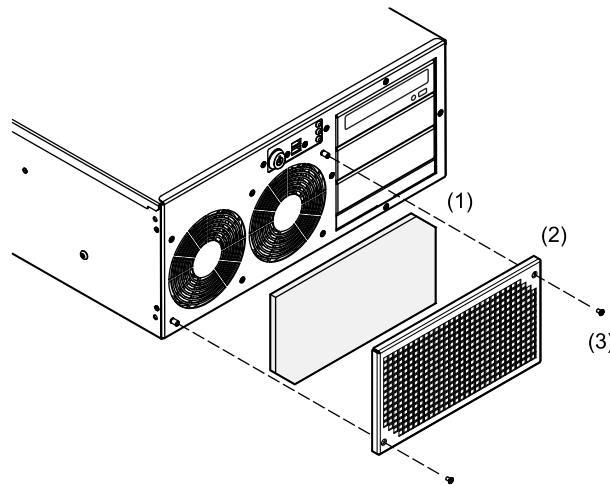
(1) Filter
(2) Filter cover
(3) #6-32 × 1/2 tapered machine screws (2x)

Cleaning the monitors

Clean the monitors periodically to remove dust and other particles that can scratch the screen. Use a soft, clean, lint-free cloth or a camel hair brush.

Appendix A
System calculations

Summary

This appendix provides instructions for sizing a UPS.

Content

UPS sizing calculations
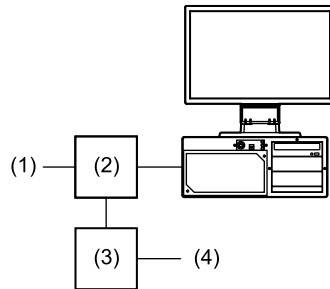
NFPA guidelines require the use of a UL 1481 Listed uninterruptible power supply (UPS) for FireWorks workstations. The UPS must be UL Listed for Fire Protection Signaling applications (UTRZ). It must provide 120 V at 60 Hz as required by code or the local authority having jurisdiction.

Figure 48: UPS block diagram

(1) Permanent mains connection to UPS   (3) UL/ULC Listed trouble signal initiating device circuit
(2) UL 1481 Listed UPS   (4) Fire alarm control unit

Use Table 9 to calculate the volt-amp (VA) requirements for the uninterruptible power supply to be used with the FW-UL6WW10.

To calculate UPS size:

1. List the equipment to be protected by the UPS in the Equipment column.

2. Record the power requirement for each piece of equipment in the Volts and Amperes columns.

    You can find this information on the equipment tags.

3. Multiply the volts and amps for each piece of equipment and write the result in the Power column.

    The power on some equipment may be listed in watts. You can use the following formula to convert watts to VA. Use a power factor of 0.7, which is typical for computer equipment.

    VA = Watts x Power factor

4. Add the Power column and enter the result in Subtotal.

5. Multiply the Subtotal by 0.25 and enter the result in Derating.

6. Add the Derating to the Subtotal and enter the result in Required VA.

7. The required standby power (VA) you just calculated must be maintained for the time period required by NFPA code.

8. Calculate the required standby battery size in ampere-hours according to the following equations.

You will need to know the UPS conversion efficiency (EC) and battery voltage (VB). You'll calculate the DC power required by the UPS and the battery current. These yield the battery size in ampere-hours.

PDC = VA / EC

Where:
PDC = DC power required by UPS
VA = Volt-amps you calculated
EC = UPS conversion efficiency

IB = PDC / VB

Where:
IB = Battery current
PDC = DC power required by UPS
VB = UPS battery voltage

CB = IB x BP

Where:
CB = Battery capacity in amp-hours
BP = Backup period from table

Note: Consult UPS manufacturer's instructions for specific battery sizing instructions. Remember that you must provide for bypassing the UPS for servicing.

Table 9: UPS sizing worksheet

Equipment	Volts	Amperes	Power (volts × amperes)
FW-UL6WW10	120	5.0	600
Monitor 1 [1]	120		
Monitor 2	120		
PT-1S	120	1.0	120
		Subtotal	
		Derating (25% of subtotal)	
		Required VA	

[1] Refer to the monitor installation sheet for rating specifications.

Appendix B
Agency requirements

Summary

This appendix lists the requirements you must meet for agency listings and approvals.

Content

UL/ULC listing requirements

To meet the requirements for UL and ULC listings, see Table 10 below.

Table 10: UL/ULC listing requirements

UL	ULC	Requirement
		Workstation computer
X	X	Any device connected to the workstation by copper wiring must limit connections to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury. To connect devices outside the room you must use fiber optic cable.
X	X	The workstation must be supervised by an internal watchdog card.
X	X	Each workstation requires a permanent connection to a dedicated fire alarm branch-circuit supply by way of a UL 1481 Listed uninterruptible power supply (UPS) and a UL 1449 Listed Type 1 surge protection device installed at the power junction box. The UPS must be UL Listed for fire protection (UTRZ), must provide 120 V at 60 Hz for a minimum of 24 hours in normal (standby) and 15 minutes in alarm, and must be supervised.
	X	For proprietary installations, the workstation must be installed in a rack and locked to protect it from tampering. See Table 5 on page 10 for a list of rack mounting accessories. No other equipment may be installed in the rack.
		For annunciator installations, the workstation does not need to be rack mounted and may be installed on a bench.
X	X	When mounting the workstation on a bench, place the workstation horizontally on the surface along with the monitors, keyboard, and mouse. When mounting the workstation on a bench, you must use an FW-UL6CC1 to secure cables and connect conduit.
		ULC only allows bench mounting in applications where the workstation is ancillary (no common controls).
X	X	UL 1076 and UL 1610 require an acknowledgement signal from the proprietary/central station. This is sometimes called "closing confirmation" or "ring-back."
		To comply with UL 1076, connect FireWorks to the EST3 RS-232 serial port by way of a direct connection or by way of an MN-COM1S interface module. In this configuration FireWorks functions as a "multiplex central station." Program the sub-states so that the security partitions activate an audible and visual signal at the security location. See FireWorks System Builder Help for more information.
		To comply with UL 1610, the EST3 communicates with the proprietary/central station by way of a 3-MODCOM(P) Digital Alarm Communicator Transmitter (DACT). Program the EST3 to activate an audible and visual signal at the security location after it confirms that the proprietary/central station received a partition arming (closing) message. See 3-SDU Help for more information.
X	X	Security: A COM fault trouble to an EST3 system must be investigated immediately because it comes in as a COM fault and not a security compromise.
X		Security: The FireWorks receiving equipment is suitable for proprietary burglar alarm service, central station service, hold up alarm service, and police station connect service with basic line security. For holdup alarm service, the CMS or FireWorks must be manned 24 hours a day.
	X	Security: Limited to Local applications only
	X	For ULC applications, all wiring must be mechanically protected.

UL	ULC	Requirement
X	X	When applied per section "Connecting to a Bosch/Radionics D6600/D6100 Communications Receiver" on page 38, FireWorks is suitable for the following: UL/ULC Proprietary and Central Station Receiver for fire applications (one DACR per workstation), UL/ULC Central Station Receiver for security applications (one D6600/D6100 per workstation). If more than one Osborne Hoffman DACR is connected to a single FireWorks workstation in either application this configuration is considered ancillary and requires acknowledgement at the DACR. These configurations are not suitable for use as Central Station Automation Equipment.
X		FireWorks with common controls can be used on standard LAN/WAN Ethernet networks for communication to the EST3 system as long as the EST3 system is used as the firefighter's interface. For fire applications only.
		Remote clients and ancillary fiber switches connected directly to the EST3 and to FireWorks must be UL Listed for ITE or fire and must be installed within the protected premises or per the authority having jurisdiction. For ULC applications, the use of secure protocols needs to be applied, such as HTTPS, VPN, or another similar encryption method.
X		When applied per section "Passing commands between EST control " on page 72, the control units must be mounted in the same room and positioned so both can be simultaneously observed. For use in UL 864 applications only.
		Proprietary Fire Signal Receiving Centre Applications
	X	For CAN/ULC-S559 compliant proprietary fire signal receiving center applications, see *Edwards Canada Marketplace Manual* (P/N 3102245).
		PT-1S printer
X	X	Event messages must be recorded so users can review them.
		Each system must include at least one PT-1S printer for printing event messages.
		FireWorks Remote Client connections
X	X	FireWorks Remote Client connections must be made using fiber optic cables.
X	X	**Signal Silence Inhibit feature on EST3 and EST3X systems**
		The FireWorks Alarm Silence command overrides the signal silence inhibit feature on EST3 and EST3X control units. When FireWorks is connected to an EST3 or EST3X system, using the signal silence inhibit feature is prohibited.

In order to meet CAN/ULC-S527 requirements for Local applications, the FireWorks workstation requires a hardened enclosure to protect all wiring and cables, including the mouse, the keyboard, and the monitors. Additionally, the prioritization of signals is required to meet CAN/ULC-S527-99 Table 1 and CAN/ULC-S527-11 Table 4.

In lieu of the above requirements for hardened enclosure (see item c) and priority of signals (see items a, b, c & d):

a) When Local Security Services is installed in FireWorks, the main FireWorks workstation shall be installed adjacent to the EST3.

b) When Local Security Services is installed in FireWorks, client workstations and remote clients shall be classified for ancillary display purposes only and shall have no control capabilities.

c) The FireWorks workstation is not listed as the only means of annunciation (see CAN/ULC-S527-11, 4.11.3.2, and 4.11.3.3).

d) CO events shall be programmed as Monitor events only.

In order to meet CAN/ULC-S559 requirements, no action is required for both Central Station and Proprietary Fire Signal Receiving Centre and Systems as the FireWorks is listed for ULC Fire Only. Note: FireWorks is listed for Emergency Signaling, US Only and Security, US Only.

FM approval requirements

To meet the requirements for FM approval (Proprietary Signaling Systems and Local Protective Signaling, US only):

- The FireWorks workstation must monitor and supervise the trouble contacts on the UPS (uninterruptible power supply). If the UPS can report multiple trouble condition (e.g., UPS Trouble and UPS On Battery), then FireWorks must distinctly annunciate each trouble condition.

- Plug the software key into one of the USB ports on the back of the workstation and install a FW-UL6CC1 cable cover to protect it.

Appendix C
Applications

Summary

This appendix describes typical FW-UL6WW10 applications.

Content

Ethernet network application

FireWorks can communicate with EST3 and EST3X control units over an Ethernet network (LAN or WAN).

Notes

- When connecting FireWorks over a network to an EST3 or EST3X control unit that does not have a firefighter interface, the FireWorks connection is considered ancillary, meaning that it cannot have common controls capability with the control unit.

- When connecting FireWorks over a network to an EST3 or EST3X control unit that does have a firefighter interface, the FireWorks can have common controls capability with the control unit. This is a fire-only UL/ULC proprietary application and is not suitable for UL/ULC security applications.

Figure 49 shows a typical Ethernet network application.

Figure 49: Typical Ethernet network application
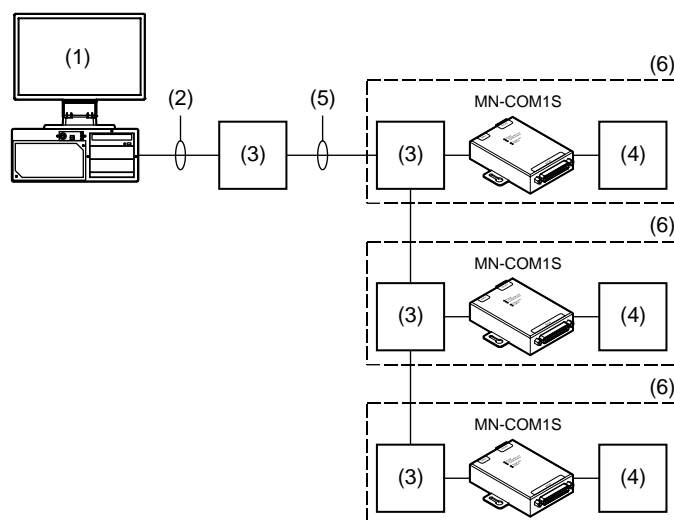
(1) FW-UL6WW10 and FW-UL6CC1.
(2) Ethernet connection. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) MN-NETSW1 or MN-FNS series Ethernet switch
(4) EST3/EST3X CPU card and RS-232 option card.
(5) Dedicated fiber network. See *MN-FNSx Fiber Optic Transceiver Module Installation Sheet* (P/N3102138) for distance and cable specifications.
(6) Dashed line indicates the same enclosure (or equivalent).

Redundant serial communications

In redundant serial communications, FireWorks uses two serial ports to connect to the EST3/EST3X fire alarm system. If the primary port connection breaks, FireWorks can still communicate using the redundant port connection. See Figure 50.

Figure 50: Typical EST3/EST3X redundant serial application
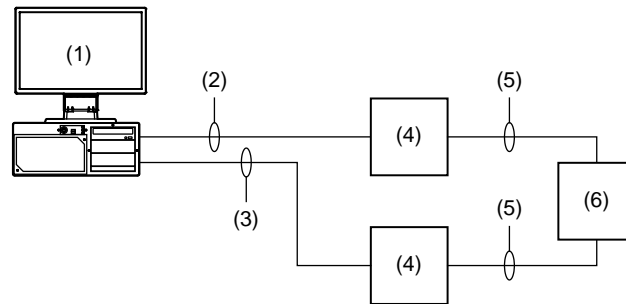
(1) FW-UL6WW10, FW-SP4I card, and FW-UL6CC1.
(2) Primary serial connection to EST3 COM port 1. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) Secondary serial connection to EST3 COM port 2. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(4) EST3/EST3X control unit with RS232 option card.
(5) EST3/EST3X RS-485 network.
(6) Other EST3/EST3X control units on the same fire alarm network.

Redundant Ethernet communication application

In a redundant Ethernet communication application, FireWorks uses two TCP/IP ports to connect to the EST3/EST3X fire alarm system. If the primary port connection breaks, FireWorks can still communicate using the redundant port connection. See Figure 51.

Figure 51: Typical EST3/EST3X redundant Ethernet application
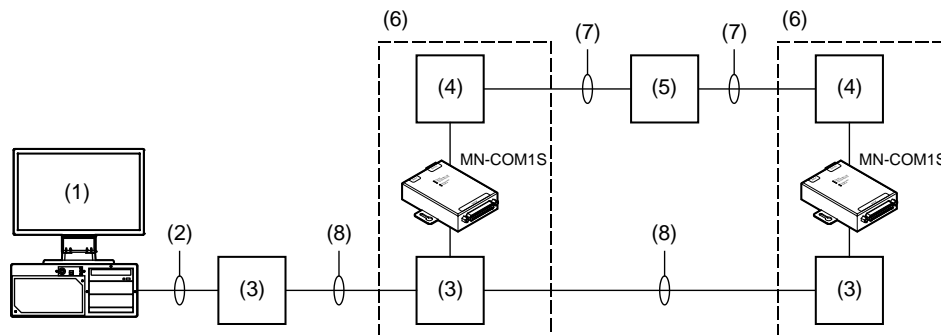
(1) FW-UL6WW10 and FW-UL6CC1.
(2) Ethernet connection. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) MN-NETSW1 or MN-FNS series Ethernet switch
(4) EST3/EST3X CPU and RS-232 option card.
(5) Other EST3/EST3X control units in the same fire alarm network.
(6) Dashed line indicates the same enclosure (or equivalent).
(7) EST3/EST3X RS-485 network.
(8) Dedicated fiber network.
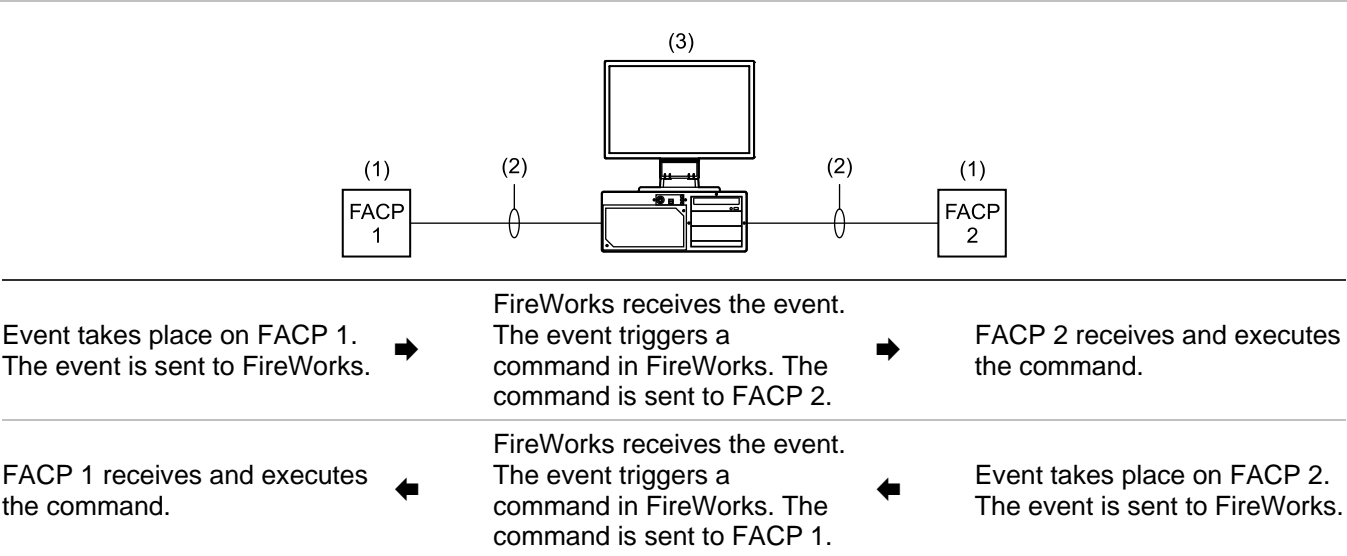
Passing commands between EST control units

The FW-UL6WW10 workstation computer can pass commands between it and the following EST control units:

- EST3
- EST3X
- EST4

FireWorks acts like a control unit by receiving the command or event (e.g. reset command or alarm event) from one control unit, processing that command or event, and then sending a command to another control unit.

In the example below, the terms fire alarm control panel (FACP) and fire alarm control unit (FACU) are used interchangeably.

Figure 52: Command passing flow diagram

Event takes place on FACP 1. The event is sent to FireWorks.	➡	FireWorks receives the event. The event triggers a command in FireWorks. The command is sent to FACP 2.	➡	FACP 2 receives and executes the command.
FACP 1 receives and executes the command.	⬅	FireWorks receives the event. The event triggers a command in FireWorks. The command is sent to FACP 1.	⬅	Event takes place on FACP 2. The event is sent to FireWorks.

(1) Locate the fire alarm control panels (FACP) in the same room and position them so both can be viewed at the same time. For use in UL 864 applications only.
(2) Serial or Ethernet connection. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) FW-UL6WW10 and FW-UL6CC1. An FW-SP4I card is required for serial connections.

Example 1: An alarm event on FACP 1 triggers a command in FireWorks, which turns on the strobes on FACP 2.

Example 2: An alarm event on FACP 2 triggers a command in FireWorks, which turns on the strobes on FACP 1.

Example 3: Reset is pressed on FACP 1, which triggers a command in FireWorks that resets FACP 2.

For commands like Reset or Signal Silence, program the command to execute in one direction only. For example, do not configure your system so that pressing Reset on FACP 1 resets FACP 2 and pressing Reset on FACP 2 resets FACP 1. Programming the command to execute in both directions can result in an infinite loop condition in which both panels reset each other continuously.

EST control unit programming

When sending a reset command to another control unit, additional programming is required in FireWorks.

Desired operation: When reset is pressed on an EST control unit, FireWorks receives the event and sends a reset command to the other EST control units.

This is accomplished by:

- Creating an "other panel" reset command using Command Browser in FireWorks System Builder
- Assigning the "other panel" reset command to the source EST control unit's Reset pseudo point's Reset Activation-Activate state-substate.

Table 11 below summarizes the command passing capabilities of FW-UL6WW10 workstation computers.

Table 11: FW-UL6WW10 command passing summary

Function	System passing commands	System receiving commands		
		EST4	EST3	EST3X
General – Alarm, Supervisory, Trouble, Monitor, Other [1]	EST4	Yes	Yes	Yes
	EST3	Yes	Yes	Yes
	EST3X	Yes	Yes	Yes
Emergency Communications (Voice)	EST4	No	No [2]	No [2]
	EST3	No	No	No
	EST3X	No	No	No
Releasing (Vesda)				
Alarm 1 - Prerelease	Vesda	Yes	Yes	Yes
Alarm 2 - Release	Vesda	Yes	Yes	Yes
FSCS - Smoke Control (Stand-alone, dedicated)	Not used	Yes	Yes	Yes
Mass Notification	EST4	No	No [2]	No [2]
	EST3	No	No	No
	EST3X	No	No	No
Security	EST4	No	No	No
	EST3	No	No	No
	EST3X	No	No	No

[1] Other includes CO alarm commands that can only be passed between an EST3 or EST3X to an EST4, but not between an EST3 and EST3X.

[2] EST4 does not support VoIP audio.

Security applications

The following applications are UL/ULC Listed for use with EST control units and can be used in a rack-mount or bench-mount configuration:

- Police station connection with basic line security
- Central station alarm
- Proprietary
- Holdup alarm

Note: For information about these applications, refer to the EST control unit's documentation.

The following is optional equipment when bench mounting or rack mounting your system for *annunciator only* applications:

- PT-1S system event printer
- UL 1481 Listed UPS
- FW-UL6CC1

Fire applications

The following applications are UL Listed for use with all systems and can be used in a rack-mount or bench-mount configuration:

- Signaling device accessory
- Signaling system control unit

The following is optional equipment when bench mounting or rack mounting your system for *annunciator only* applications:

- PT-1S system event printer
- UL 1481 Listed UPS
- FW-UL6CC1

Firefighter Smoke Control Station (FSCS)

This section describes how to configure an FW-UL6WW10 for use as a UL/ULC Listed Firefighter Smoke Control Station (FSCS). Figure 53 shows a typical EST3 FSCS application.

This application may only be used with EST3, EST3X, and EST4 fire alarm systems. For general information about EST control units and smoke management applications, see:

• *EST3 Smoke Management Application Manual* (P/N 270913)

• *EST3X Smoke Management Application Guide* (P/N 3101805)

• *EST4 Smoke Management Application Guide* (P/N 3102303).

Figure 53: Typical FSCS application
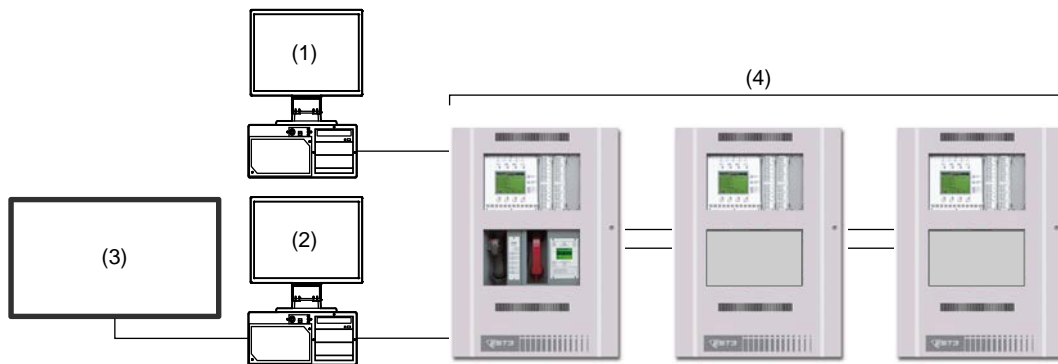
(1) FireWorks fire alarm/emergency communication workstation
(2) FireWorks FSCS (FW-UL6WW10)
(3) Second UL Listed monitor (optional)
(4) EST3 fire alarm system

To meet UL/ULC listing requirements:

• The FireWorks FSCS may only operate as a stand-alone FireWorks workstation (i.e., only FW-CGSUL installed). You *may not* install any other software options or use FireWorks versions earlier than 8.2.

• The FireWorks FSCS may be used for dedicated or nondedicated smoke control systems.

• The FireWorks FSCS may only be used for operating smoke control functions (e.g, open/close dampers, turn fans on/off). The FireWorks FSCS *may not* be used to operate any fire alarm or emergency communication control functions (e.g., silence fire alarm signals, reset control units).

• The FireWorks FSCS display must be visible at all times (e.g., no screen savers). Text on map display graphics must be legible.

• The FireWorks FSCS must be configured to require log on credentials.

• System operation, graphics, text, and other displayed information must be approved by the local authority having jurisdiction.

• Communication faults between the FireWorks FSCS and the fire alarm system must be displayed on both systems.

• For Canadian operation, fire alarm status indicators must be red and trouble status indicators must be yellow.

• The FireWorks FSCS must display the status of electrical or personal protection devices (e.g., electrical disconnects, static pressure sensors) that are part of and are monitored by the fire alarm system.

When model FW-UL6WW10 is configured as a graphical FSCS, it is required to be connected to a UL 864 Listed monitor using an HDMI or DVI video cable that does not exceed eight feet in length.

Model FW-UL6WW10 is also permitted to additionally utilize an available HDMI or DVI video port to connect a second monitor that is UL 864 Listed using an HDMI or DVI video cable that does not exceed eight feet in length.

Building System Information Unit (BSIU)

This section describes how to configure an FW-UL6WW10 for use as a UL Listed Building System Information Unit (BSIU). Figure 54 shows a typical EST3 BSIU application.

This application may only be used with EST3, EST3X, and EST4 fire alarm systems.

Figure 54: Typical BSIU applications
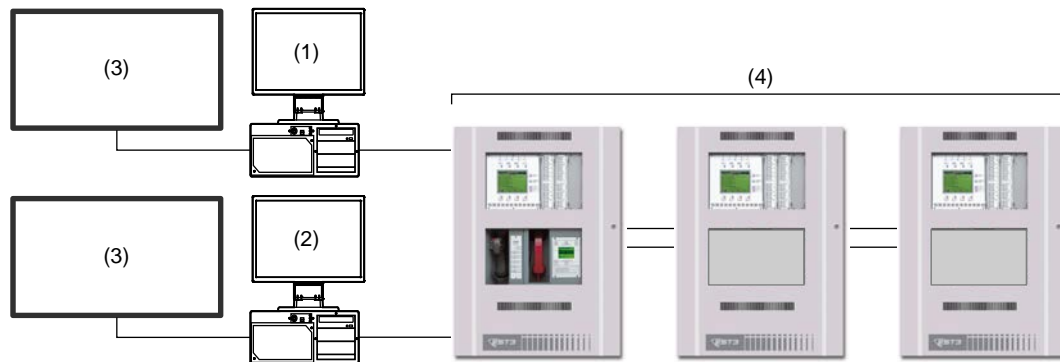
(1) FireWorks fire alarm/emergency communication workstation
(2) FireWorks BSIU (FW-UL6WW10)
(3) Second UL ITE Listed monitor (optional)
(4) EST3 fire alarm system

To meet UL listing requirements:

• The FireWorks BSIU may only operate as a stand-alone FireWorks workstation (i.e., only FW-CGSUL installed). You *may not* install any other software options or use FireWorks versions earlier than 8.2.

• The FireWorks BSIU may be used for dedicated or nondedicated smoke control systems

• The FireWorks BSIU may only be used for operating smoke control functions (e.g., open/close dampers)

When model FW-UL6WW10 is configured as a BSIU, it is required to be connected to a UL 864 Listed monitor using an HDMI or DVI video cable that does not exceed eight feet in length. Model FW-UL6WW10 may also use an available HDMI video port to connect a second UL ITE Listed monitor.

Second UL ITE Listed monitor:

• Shall meet the requirements of the Standard for Information Technology – Safety – Part 1: General Requirements, UL 60950-1 or the Standard for Audio/Video Information and Communication Technology Equipment – Part 1: Safety Requirements, UL 62368-1.

• Shall not be permitted to perform fire alarm system control features that cannot be accomplished by the interconnected fire alarm control panel within the same room where a BSIU provides control of the interconnected fire alarm control unit.

• The source of power for the equipment shall be within the rated range of the equipment.

• The ITE listed monitor is not permitted to initiate and process live voice paging

Appendix D
Lantronix CPR Manager

Summary

This appendix provides instructions for installing Lantronix CPR Manager and setting up serial ports for use with select serial devices.

Content

Introduction

Lantronix CPR Manager (also known as COM Port Redirector) lets FireWorks communicate with select serial devices using an Ethernet connection and an MN-COM1S.

A copy of Lantronix CPR Manager is in the C:\Fireworks\Tools\Serial Port Tool folder after you install FireWorks.

Note: If the host is on the other side of a router or a firewall, then 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

Installing CPR Manager

1. On the **Start** menu, click **Computer**, and then open the **C:\Fireworks\Tools\Serial Port Tool** folder.

2. In the **Serial Port Tool** folder, double-click **CPRSetup.exe**.

3. Click **Install**, and then follow the on-screen instructions.

Creating the Lantronix CPR port

1. On the **Start** menu, under the **Lantronix** folder, click **CPR Manager**.
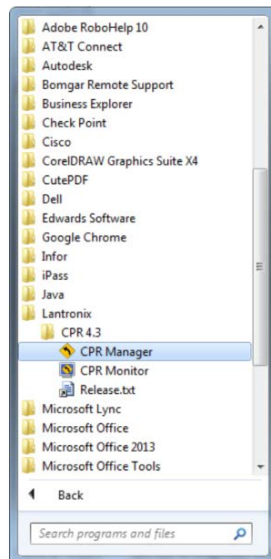
2. On the **Device** menu, click **Search** or click the **Search For Devices** button to add existing COM ports to the Com Port List.
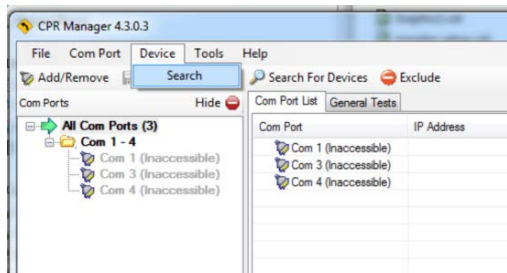
3. On the **Com Port** menu, click **Add and Remove** or click the **Add/Remove** button to add a virtual COM port.
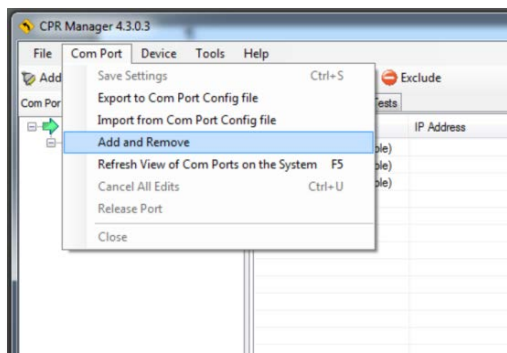
4. In the **Com Ports** dialog box, check the check box for the COM port you want to add, and then click **OK**.

   Note: FireWorks Communication Manager supports up to 25 serial ports. Do not select Com26 or higher.
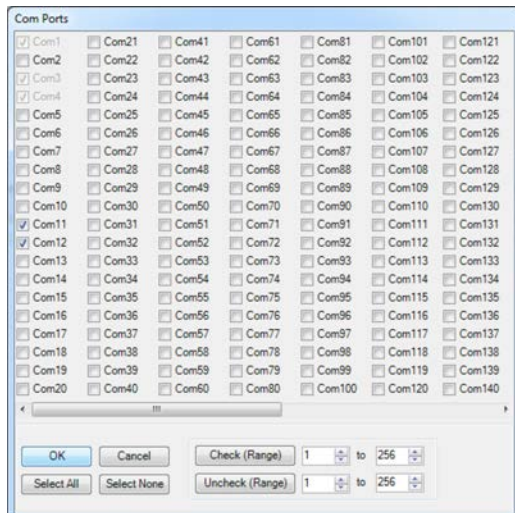
5. In the device navigation pane, select the COM port, that you just created.

6. On the **Settings** tab, do the following:

   In the **Host** box, type the IP address of the MN-COM1S connected to the target serial device.

   In the **TCP Port** box, type: **10001**.

7. Click **Save**.

Configuring the FireWorks COM port

1. On the **System Builder Applications** menu, click **Communications Manager**.

2. In the **Communications Manager** dialog box, select a port in the **Ports** list or click **Add Port**.

3. Under **Port Properties**, do the following:

   In the **Label** box, type a label for the port.

   Under **Port Type**, select **Serial Port**.

   In the **Assigned Node** list, select the target node, and then check the **Enabled** check box.

   In the **Description** box, type a description.

   Under **Serial Port** properties, in the **Com Port** list, select the Lantronix CPR port.

4. Click **Apply**.

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:

1. Start **Lantronix CPR Manager**.

2. In the navigation panel, click the COM port that you want to test.

3. 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

4. Click **Open**.

5. Verify that Com Status is Open and that the Network Status indicates you are connected to the correct IP address.

6. Click **Close**.

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