FW-UL7MC FireWorks Workstation Minicomputer Installation Manual

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Version This document applies to FW-UL7MC workstation computers running FireWorks V9.3 software and later.

FCC compliance This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Contact information For contact information, see www.edwardsfiresafety.com.

Content

Important information

References

Install this device in accordance with applicable national and local codes, ordinances, and regulations. For more information, refer to the following documents:

- CAN/ULC S527 *Standard for Control Units for Fire Alarm Systems, fourth edition*
- ULC S559 *Standard for Equipment for Fire Signal Receiving Centres and Systems, third edition*
- CSA C22.1-12 *Canadian Electrical Code, Part 1*
- UL 864 *Standard for Control Units and Accessories for Fire Alarm Systems, tenth 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 2001 *Standard on Clean Agent Fire Extinguishing Systems, 2012 edition*
- FM 3010 *Approval Standard for Fire Alarm Signaling Systems, 2010 edition*

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 the FW-UL7MC FireWorks workstation computer.

Content

Introduction

This manual provides instructions for installing FW-UL7MC FireWorks 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.

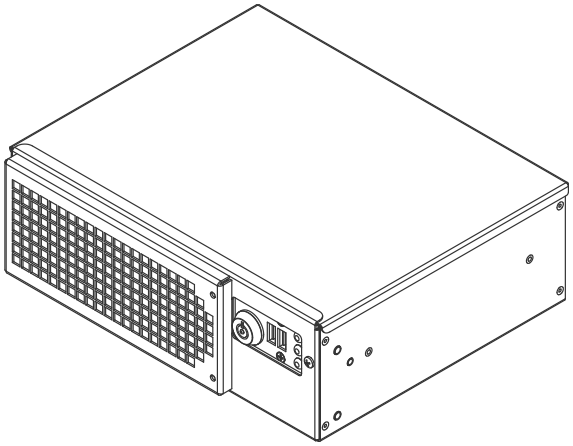
In this manual:

- “EST control unit” refers to EST3, EST3X, and EST4 control units
- “Windows 10” refers to “Windows 10 IoT Enterprise LTSC.” Unless stated otherwise, no other edition of Windows 10 is supported.
- “4-FWAL” refers to 4-FWAL1, 4-FWAL2, 4-FWAL3, and 4-FWAL4 cards
- “3X-ETH” refers to 3X-ETH1, 3X-ETH2, and 3X-ETH3 cards

Description

FW-UL7MC computers provide the hardware platform for a FireWorks life safety network. See Figure 1 below.

Figure 1: FW-UL7MC FireWorks workstation computer

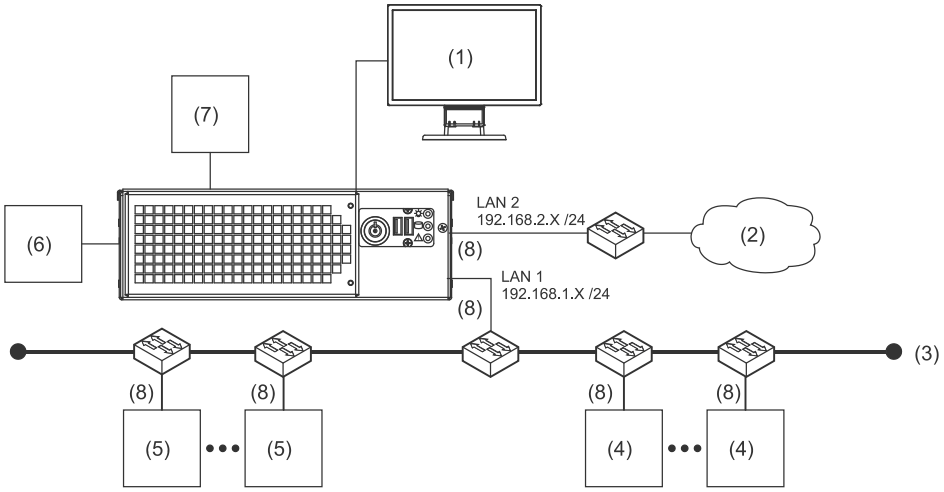


The FW-UL7MC workstation computer is powered by an APS6A or by a filtered, regulated, 24 VDC auxiliary power supply that is UL/ULC listed for fire protective signaling service.

The FW-UL7MC workstation computer 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.

The FW-UL7MC workstation computer is suitable for use as a stand-alone workstation computer running FireWorks software and a central station receiver.

Figure 2: Typical FireWorks stand-alone network



(1) FW-24LCDUL monitor
(2) Optional Ethernet connection to a corporate intranet or to the Internet
(3) Dedicated fiber optic network
(4) FireWorks remote client computer (15 max.)
(5) FireWorks nodes (up to 50 EST4 nodes and up to 100 EST3/EST3X nodes)
(6) System event printer (if required)
(7) APS6A or filtered, regulated, 24 VDC auxiliary power supply that is UL/ULC listed for fire protective signaling service
(8) 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.

Software options

Table 1 lists the software that you can install on FW-UL7MC workstation computers. Software options are ordered separately.

Access to the software is controlled by a USB software key that has been activated with your personal initialization numbers (PINs). The software PINs are issued to you by way of a Software Key Certificate and are matched to your specific USB software key.

Table 1: FireWorks software product descriptions

Product	Description
FW-CGSUL [1]	Edwards FireWorks system software with command and control (includes FIREKEYUSB and Software Key Certificate).
FW-CGS [1]	Edwards FireWorks system software without command and control (includes FIREKEYUSB and Software Key Certificate).
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, VS1/VS4, or FX-64/FX1000 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.

Product	Description
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.
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-FAST	Automatically populate device maps with device information from AutoCAD files

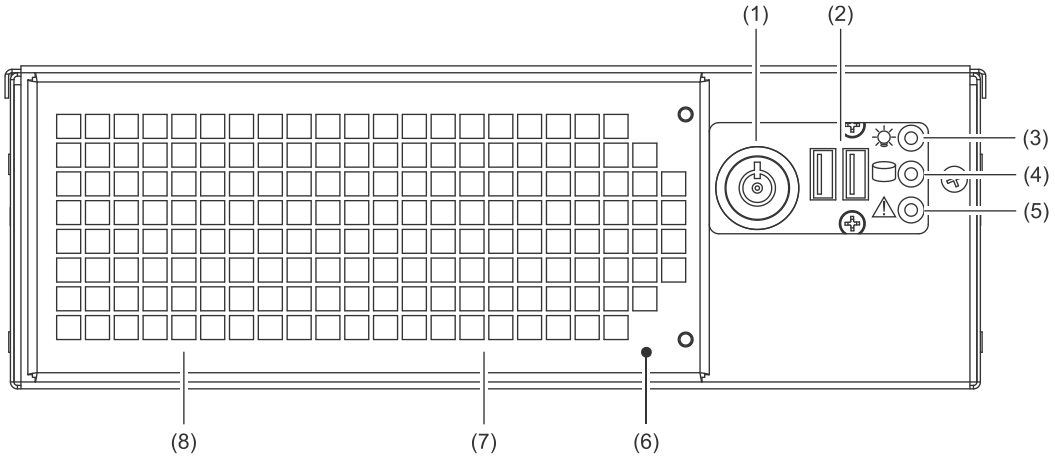
[1] UL Listed when installed on UL 864 Listed FireWorks computers.

[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-UL7MC.

Figure 3: Front panel features

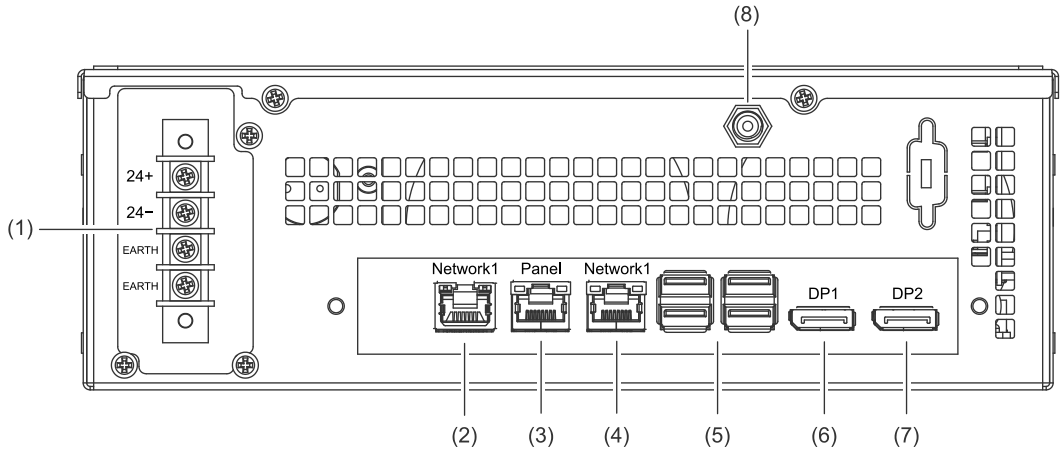


(1) ON/OFF key switch
(2) USB 2.0/1.1 ports (2X)
(3) Power ON indicator
(4) SSD activity indicator
(5) Fault indicator
(6) Filter assembly
(7) Fan 2
(8) Fan 1

Rear panel features

Figure 6 shows the features found on the rear panel of the FW-UL7MC.

Figure 4: Rear panel features



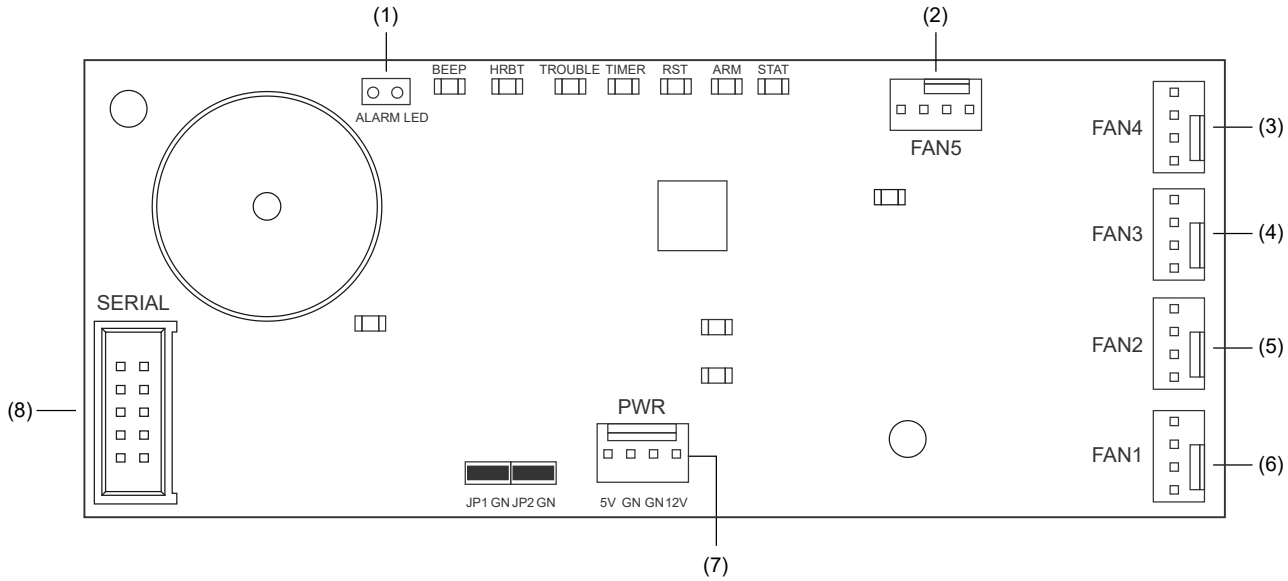
(1) Power terminal block
(2) 2.5 GB Ethernet port (Network 1)
(3) 1 GB Ethernet port (Panel)
(4) 1 GB Ethernet port (Network 2)
(5) USB 3.0 Gen2 ports (4X)
(6) DP++ video port (DP1)
(7) DP++ video port (DP2)
(8) 1/4-inch audio jack

FW-PCWD7 cable connections

Figure 5 on page 6 lists the FW-PCWD7cable connections inside the FW-UL7MC.

For additional information, see *FW-PCWD7 Replacement FW-UL7 Watchdog Card Installation Sheet* (P/N 3102882).

Figure 5: FW-PCWD7 cable connections



(1) From front panel Remote Trouble LED (BK/RD)
(2) From CPU fan
(3) From power supply fan (BK/WH)
(4) From rear chassis fan
(5) From right front chassis fan (Fan 2)
(6) From left front chassis fan (Fan 1)
(7) From power supply
(8) From motherboard COM3 connector

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-UL7MC workstation computers, unless noted otherwise.

Table 2: Computer accessories

Model	Description
FW-24LCDUL	24-inch widescreen LCD monitor with a base, a capacitive USB touch screen, and built-in speakers
FW-PCWD7	Replacement watchdog card
FW-UL6SSSD1TB	Replacement blank 1 terabyte solid-state hard drive
FW-FILTER	Replacement filter
FW-UL7MC-CP	Cable cover plate
PT-1S+	System event printer
MN-COM1S	RS-232 to Ethernet interface module. Edwards systems only.
MN-FVPN	VoIP encoder/decoder module. Edwards systems only.
MN-NETRLY4	Network relay module. Edwards systems only.
MN-NETSW1 [1]	Unmanaged Ethernet switch, four copper connections and two fiber optic connections. For use with EST3 and EST3X systems only.

Model	Description
MN-FNS4C2F3	Managed Ethernet switch, four copper connections and two fiber optic connections. Edwards systems only.
MN-FNS8C2F3	Managed Ethernet switch, eight copper connections and two fiber optic connections. Edwards systems only.
Bosch D6600/D6100	Digital alarm communications receiver
FW-HSSX1	VESDA Modbus High Level Interface. Edwards systems only.

[1] Discontinued. Included here for retrofit applications.

Table 3: 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
FW-22LCDRMK1	Rack mount kit for 22-inch widescreen LCD monitors
FW-UL7MC-RACK	Rack mount kit for FW-UL7MC
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

- FW-UL7MC with FW-PCWD7, 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 Receiving

- FW-UL7MC with FW-PCWD7, keyboard, and mouse
- UL 864 Listed compatible monitor (see Table 4)
- PT-1S+ system event printer (if required)
- Bosch D6600/D6100 (one per workstation)

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 4 below.

Table 4: 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.

Specifications

Operating system	Windows 10 IoT Enterprise LTSC, 64-bit, Version 21H2
Processor	Intel Core i7-10700E
Memory	32 GB
Solid state drives	Dual 1 TB SATA, RAID 1
Video ports	2 DP++ 4K, isolated
USB ports Front Rear	 2 USB 2.0 ports 4 USB 3.0 Gen2 ports
Ethernet ports	2 10/100/1000 Mbps, RJ-45 1 10/100/1000/2500 Mbps, RJ-45
Watchdog card	Yes (FW-PCWD7)
ON/OFF key switch	Yes
Status LEDs	Yes
Input voltage	24 VDC, nominal
Operating current	750 mA
Dimensions	Width:10.0 in. (25.4 cm) Height: 3.25 in. (8.26 cm) Depth: 8 in. (20.3 cm)
Weight	5 lbs. (2.27 kg)
Operating environment Temperature Relative humidity	 32 to 120°F (0 to 49°C) 0 to 93% noncondensing

Chapter 2
Installation

Summary

This chapter provides instructions for installing an FW-UL7MC workstation computer.

Content

Package contents

The following items are included with the FW-UL7MC:

- Cabinet mounting bracket and hardware
- Monitor mounting bracket and hardware
- Keyboard and mouse
- Motherboard driver CD
- Windows media DVD and Certificate of Authenticity sticker
- Audio cable
- Two barrel-keys

Installation

Install the FW-UL7MC in accordance with applicable national and local codes, ordinances, and regulations.

Installation options

You can install the FW-UL7MC as follows:

- Horizontally or vertically on a workbench, or horizontally underneath the workbench. Mounting the FW-UL7MC underneath the workbench requires the cabinet mounting bracket shipped with the computer. See Figure 6 on page 13.

  Position the workbench far enough from walls and other obstacles to allow air to move freely around the workstation.

  Position the auxiliary power supply in the same room as the FW-UL7MC. Limit connections within 20 ft. (6.1 m) and enclose in conduit or equivalent protection against mechanical injury.
- On the back of an FW-24LCDUL monitor. Mounting the FW-UL7MC on the back of a monitor requires the monitor mounting bracket and the cabinet mounting bracket, both shipped with the computer.

  Enclose connections in conduit or equivalent protection against mechanical injury.
- In an APS6A auxiliary power supply dedicated to only powering the FW-UL7MC and its monitors. Mounting the FW-UL7MC in an APS6A auxiliary power supply requires the cabinet mounting bracket shipped with the computer. See Figure 6 on page 13.

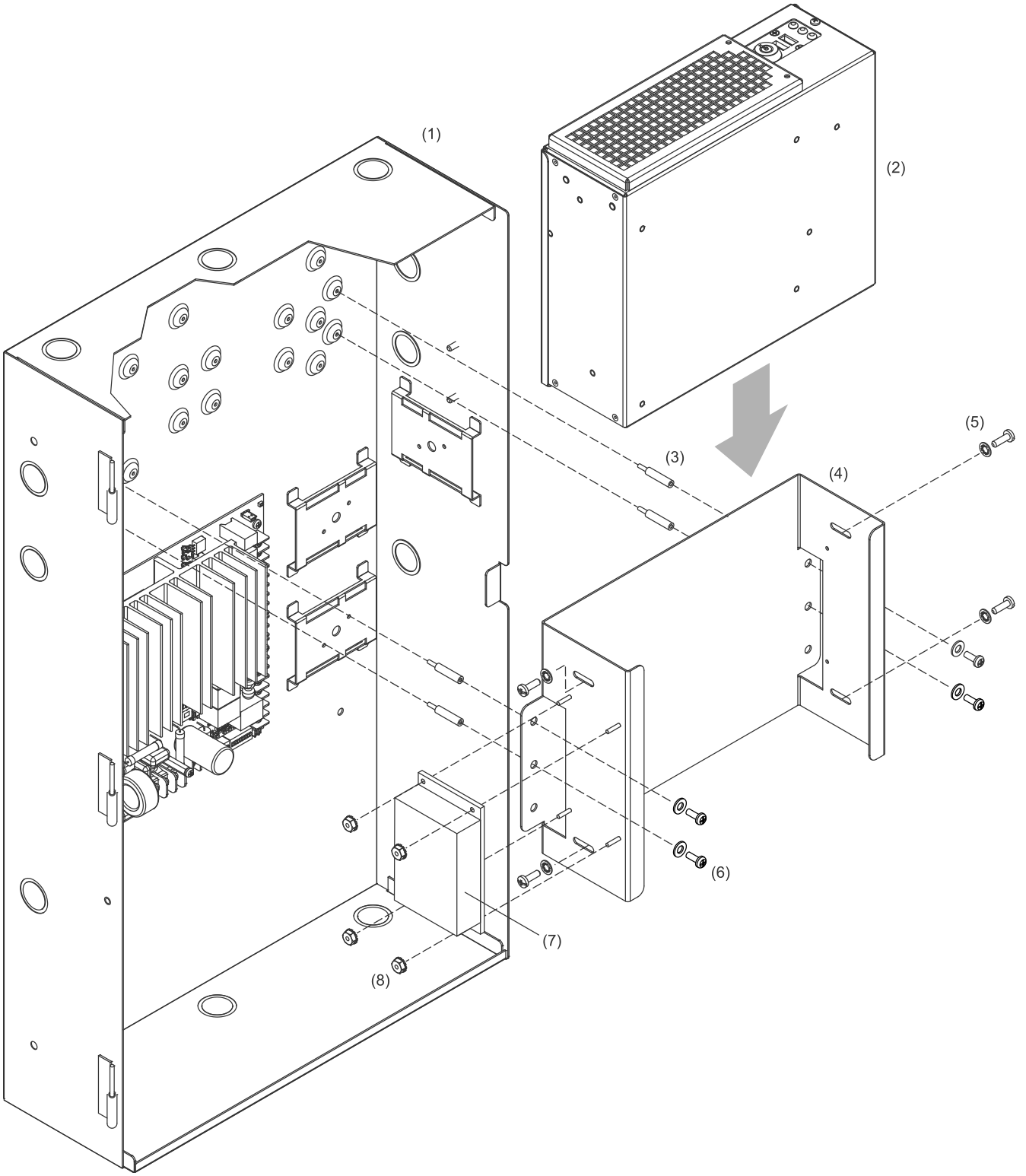
  Position the auxiliary power supply within 8 ft. (2.4 m) of the monitors, keyboard, and mouse. Enclose connections in conduit or equivalent protection against mechanical injury.
- In a standard EIA 19-inch rack. Mounting in a 19-inch rack requires an FW-UL7MC-RACK mounting bracket. See Table 3 on page 7 for other rack mounting accessories.

  The rack must be dedicated to the FW-UL7MC. No other equipment may be installed in the rack.

  Position the auxiliary power supply in the same room as the FW-UL7MC. Limit connections within 20 ft. (6.1 m) and enclose in conduit or equivalent protection against mechanical injury.

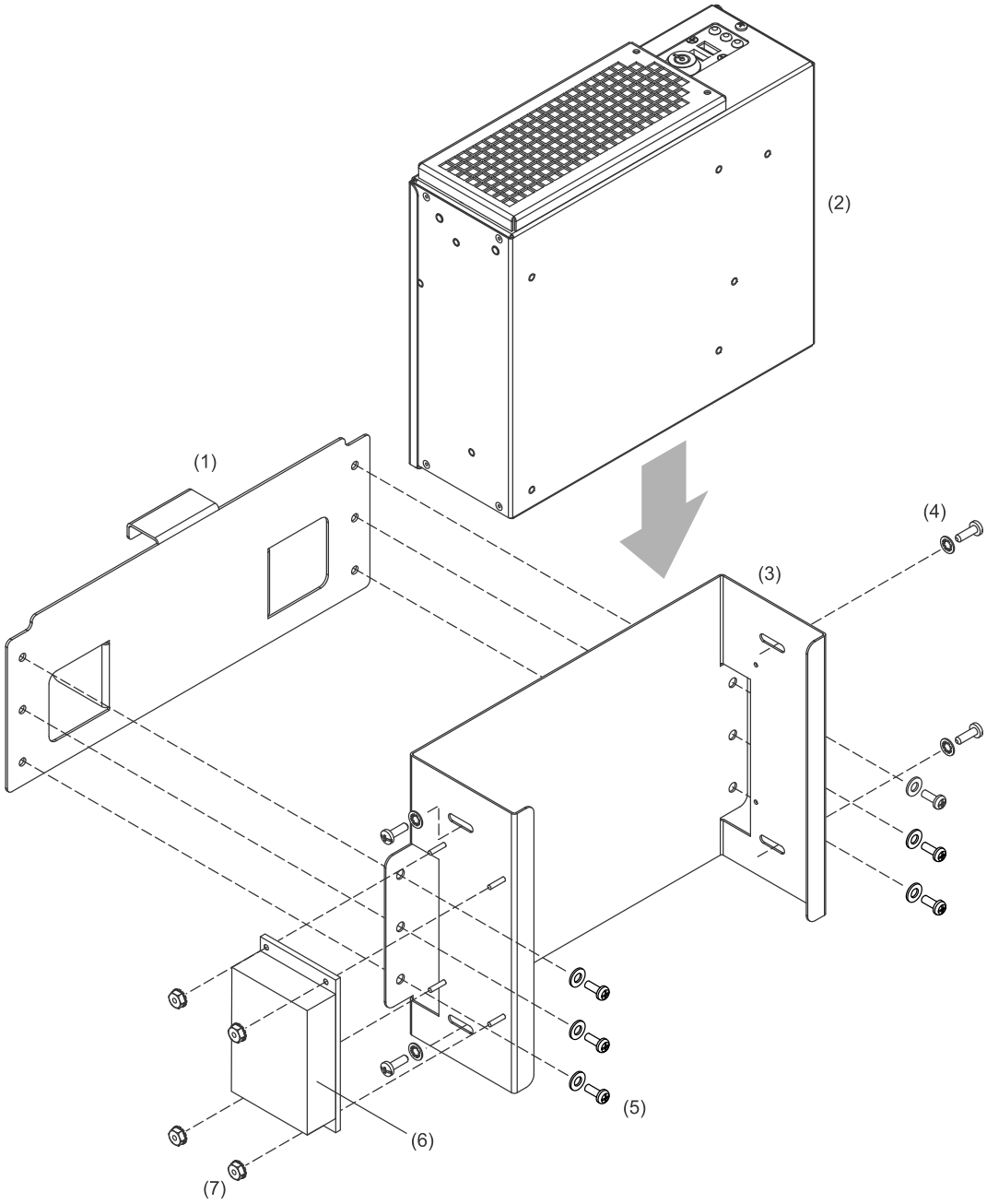
For ECS/MNS (emergency signaling) applications, the FW-UL7MC must be in the same room as the EST control unit to which it is connected and positioned so that both can be viewed at the same time.

Figure 6: Installation in APS6A cabinet



(1) APS6A power supply	(4) FW-UL7MC cabinet bracket	(7) FW-2412DC-CONV
(2) FW-UL7MC computer	(5) #6-32× 0.25 screw and washer (4X)	(8) #6 nut and star washer (4X)
(3) #6-32 × 1.25 standoff (4X)	(6) #6-32× 0.25 screw and washer (4X)	

Figure 7: Installation on an FW-24LCDUL monitor



(1) Monitor bracket
(2) FW-UL7MC computer
(3) Cabinet bracket
(4) #6-32× 0.25 screw and washer (4X)
(5) #6-32× 0.25 screw and washer (6X)
(6) FW-2412DC-CONV
(7) #6 nut and start washer (4X)

Wiring

Wire the FW-UL7MC in accordance with applicable national and local codes, ordinances, and regulations.

Wire as shown in Figure 8 on page 16.

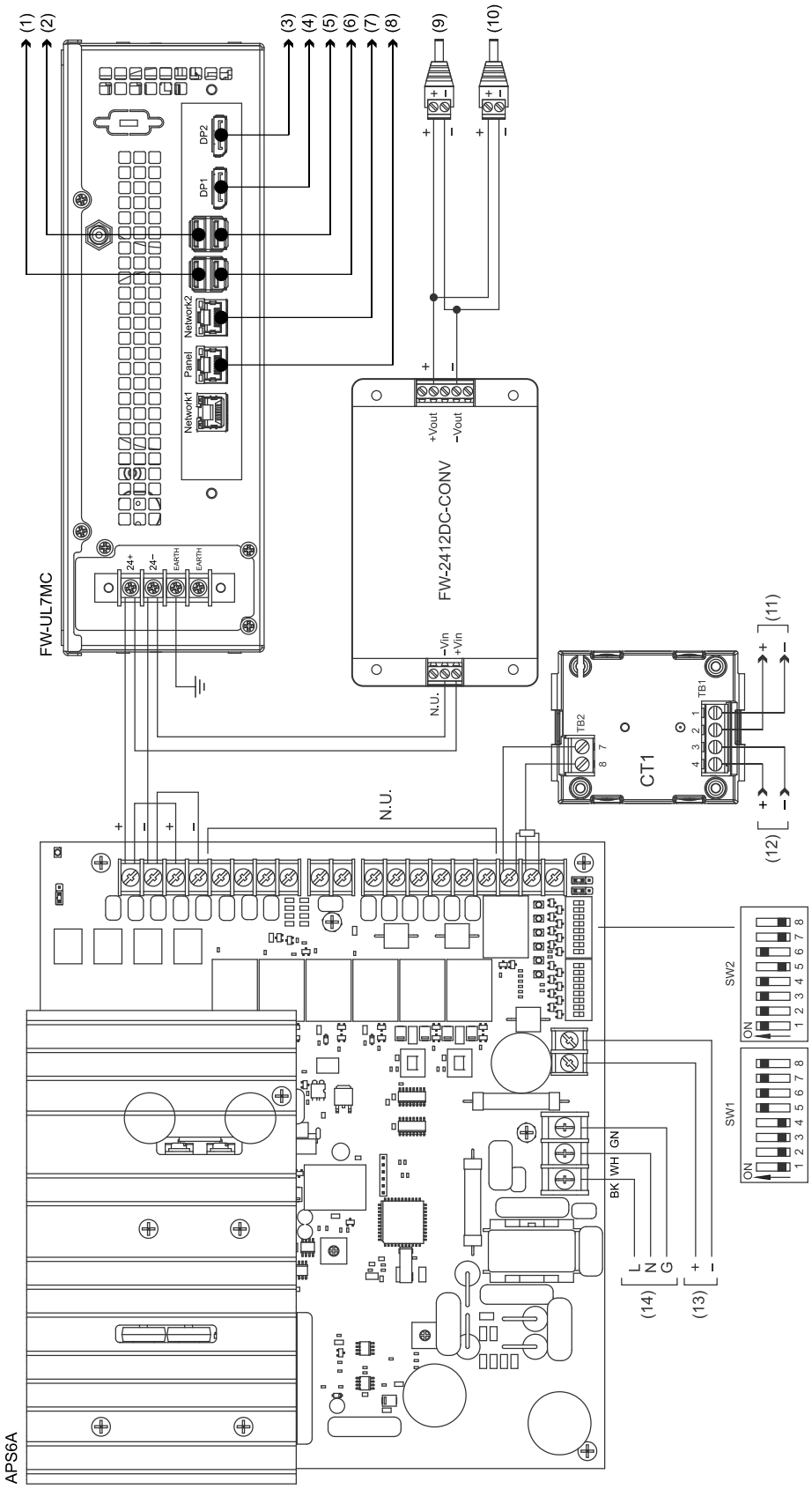
Wiring notes

- Mains AC, standby battery, and AUX power wiring is nonpower-limited. Monitor power wiring is power-limited.

Legend for Figure 8 on page 16

(1) USB cable to touch screen on Monitor 1. Max length 8 ft. (2.4 m).
(2) USB cable to touch screen on Monitor 2. Max length 8 ft. (2.4 m).
(3) Display port video cable to Monitor 2. Max length 8 ft. (2.4 m).
(4) Display port video cable to Monitor 1. Max length 8 ft. (2.4 m).
(5) Mouse cable.
(6) Keyboard cable.
(7) Ethernet cable to connected IP enabled device
(8) Ethernet cable to corporate LAN
(9) DC power cable to Monitor 2 (FW-24LCDUL only). Max length 8 ft. (2.4 m).
(10) DC power cable to Monitor 1 (FW-24LCDUL only). Max length 8 ft. (2.4 m).
(11) SLC to next device
(12) SLC from previous device
(13) From APS6A standby batteries.
(14) From dedicated branch circuit. 15 A, max.

Figure 8: Typical wiring diagram



Setting up the FW-UL7MC

The general steps for setting up an FW-UL7MC are:

1. Turn on the computer.
2. Log on to the computer.
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 computer

The FW-UL7MC automatically starts up when power is applied. To turn the FW-UL7MC off you have to remove power.

Logging on to the computer

The FW-UL7MC 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-UL7MC 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 5 lists the default passwords.

Table 5: Windows user account default passwords

User account name	Password	Privilege Group
Administrator	ESTFWest12#	Administrators
Maintenance	ADMINadmin12#	Users
FWUSER	USERuser12##	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 computer:

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-UL7MC 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-UL7MC computers support the use of one or two monitors. When you power up the FW-UL7MC, Windows automatically sets your monitors for their optimal resolution. See Table 6. FireWorks software native resolution is 1280 × 1024.

Table 6: Monitor optimal resolutions

Monitor	Resolution
FW-24LCDUL	1920 × 1080

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%**.

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. Monitor touch screens are plug-and-play and do not require calibration or extra drivers.

Connect the monitor touch screens to any of the USB ports on the back of the workstation. See Figure 4 on page 5. Connections are unsupervised and power limited. Limit connections to the same room, and within 8 ft. (2.4 m).

Connecting a PT-1S+ system event printer

Connect a PT-1S+ printer to one of the USB ports on the back of the workstation.See Figure 8 on page 16. Use the Windows Add Printer wizard to add the printer and select Generic/Text Only when prompted to install a printer driver.

Notes

- Wiring is supervised and power-limited. Limit connections to the same room.
- 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-UL7MC to the following:

Edwards channel	Kidde channel
EST3 control units	
EST3X control units	VS1/VS4 control units
EST4 control units	Bosch D6600/D6100 communications receivers
iO64/iO1000, VS1/VS4, or FX-64/FX-1000 control units	
Bosch D6600/D6100 communications receivers	

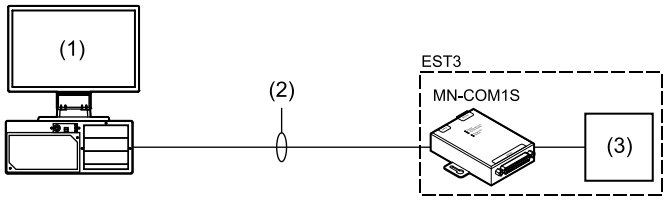
Connecting to an EST3 control unit

You can connect an FW-UL7MC to an EST3 control unit through an Ethernet connection using an MN-COM1S connected to the EST3 control unit's serial port

Ethernet connection using an MN-COM1S

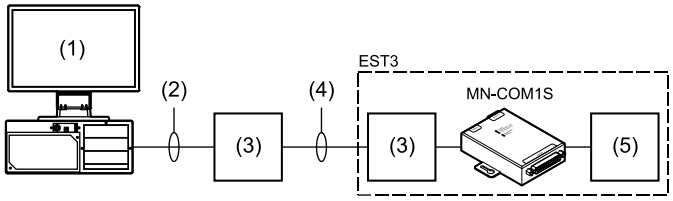
Figure 9 and Figure 10 show how to connect an FW-UL7MC to an EST3 control unit using an Ethernet connection. For this type of connection, the EST3 control unit must be equipped with a properly configured MN-COM1S. For more information, see *MN-COM1S RS-232 to Ethernet Interface Installation Sheet* (P/N 3101601).

Figure 9: Local MN-COM1S connection



(1) FW-UL7MC
(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.

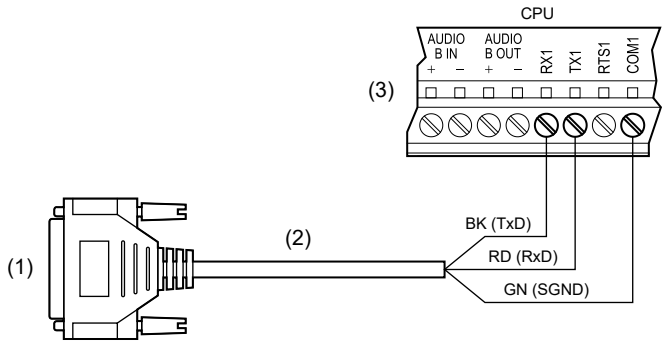
Figure 10: Remote MN-COM1S connection



(1) FW-UL7MC
(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 11.

Figure 11: EST3 serial port field wiring



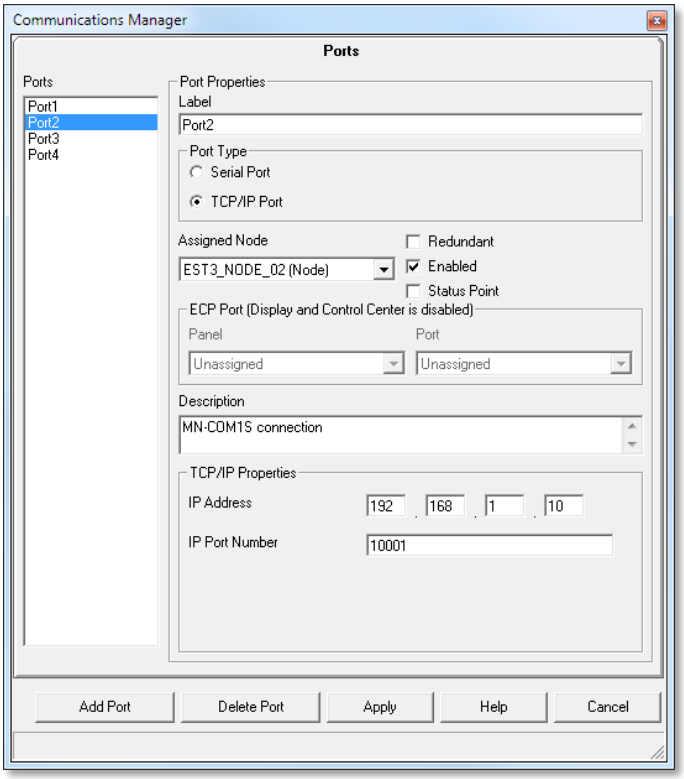
(1) To the MN-COM1S
(2) DB-25 serial cable supplied with the MN-COM1S
(3) EST3 CPU card serial port

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 12.

Figure 12: FireWorks TCP/IP port settings



Connecting to an EST3X control unit

You can connect an FW-UL7MC to an EST3X control unit as follows:

- 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-ETH card installed in the EST3X control unit (requires 3-SDU V5.32 and C-CPU application code V1.31)

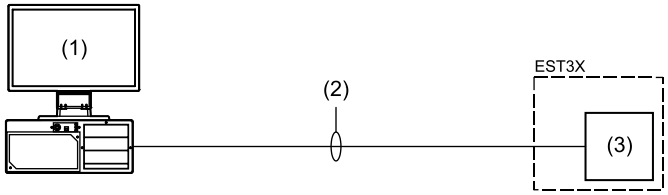
Ethernet connection using an MN-COM1S

Connect the FW-UL7MC 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 22.

Ethernet connection using a 3X-ETH card

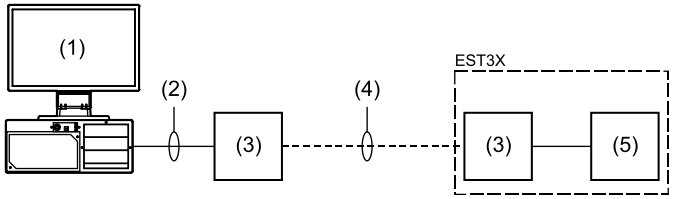
Figure 13 and Figure 14 show how to connect an FW-UL7MC to an EST3X control unit using an Ethernet connection. For this type of connection, the EST3X control unit must be equipped with a properly configured 3X-ETH card. For more information, see *3X-ETH Ethernet Adapter Card Installation Sheet* (P/N 3101775).

Figure 13: Local 3X-ETH card connection



(1) FW-UL7MC
(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-ETH card.

Figure 14: Remote 3X-ETH card connection

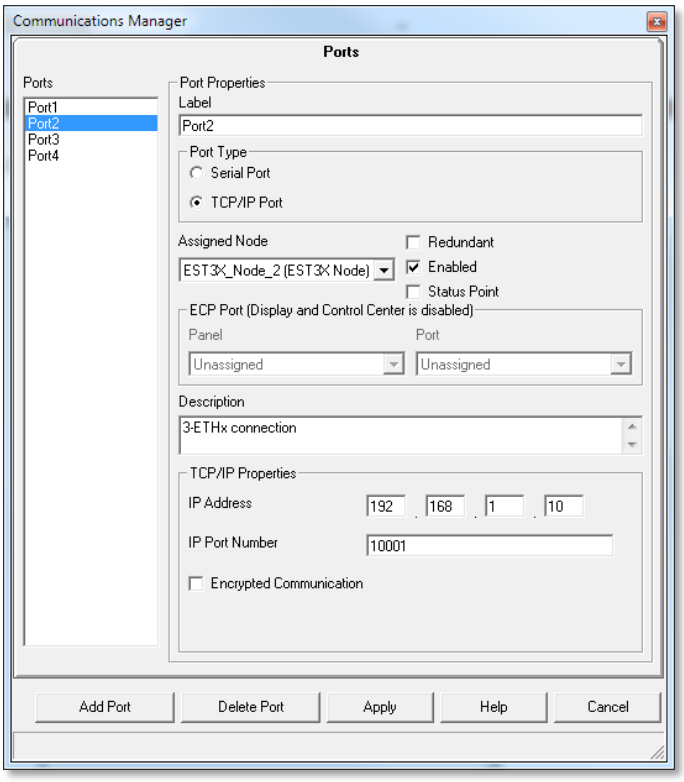


(1) FW-UL7MC
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) MN-NETSW1 or MN-FNS series Ethernet switch
(4) Dedicated fiber network.
(5) EST3X CPU card and 3X-ETH card.

Configure a FireWorks TCP/IP port as shown in Figure 15.

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

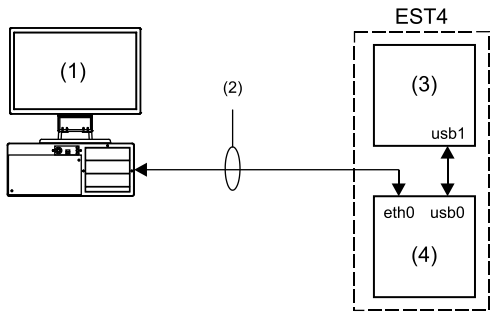


Connecting to an EST4 control unit

You can connect a FW-UL7MC to an EST4 control unit through an Ethernet connection using a 4-FWAL card.

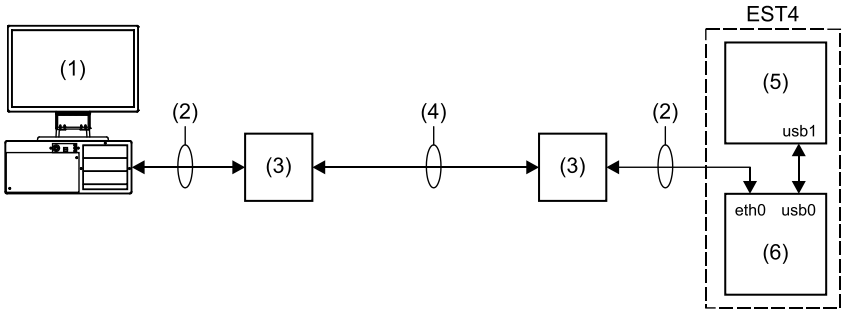
Figure 16 and Figure 17 show how to connect an FW-UL7MC to an EST4 control unit using an Ethernet connection. For this type of connection, the EST4 control unit must be equipped with a properly configured 4-FWAL card, a 4-FWAL-CAT SFP module, and an ECP communication service.

Figure 16: Local EST4 Ethernet connection



(1) FW-UL7MC
(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-FWAL card and 4-FWAL-CAT SFP module.

Figure 17: Remote EST4 Ethernet connection

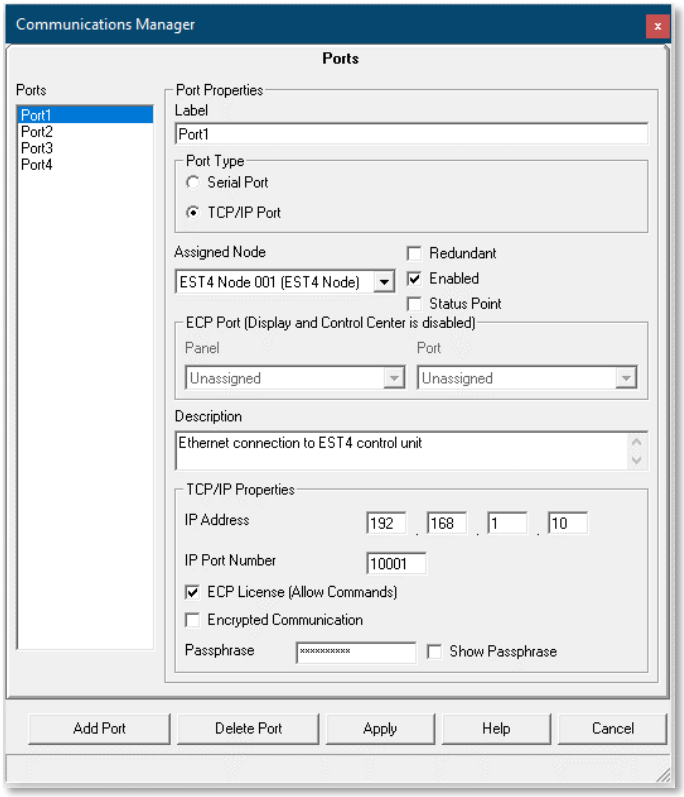


(1) FW-UL7MC
(2) RJ-45 Ethernet patch cable, Cat 5e or better. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) MN-FNS series Ethernet switch
(4) Dedicated fiber network.
(5) EST4 CPU card (e.g., 4-CPU, 4-ANNCPU, 4-CPUGRPH).
(6) 4-FWAL card and 4-FWAL-CAT SFP module.

Configure a FireWorks TCP/IP port as shown in Figure 18.

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

Figure 18: FireWorks TCP/IP port settings for EST4 connection



Connecting to a Bosch D6600/D6100 Communications Receiver

You can connect a FW-UL7MC 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 to redirect the FireWorks COM port). For more information, see Appendix D “Lantronix CPR Manager” on page 51).

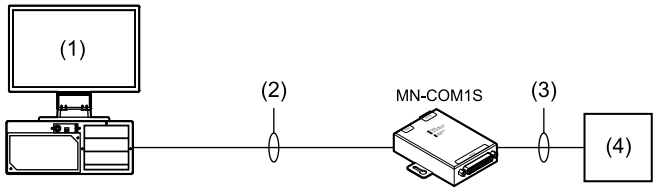
Note:

- You can only connect one Bosch D6600/D6100 to the FW-UL7MC.
- The Receiver Type setting for an OH Network Receiver is: Radionics D6600.

Ethernet connection using an MN-COM1S

Figure 19 shows how to connect the FW-UL7MC 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).

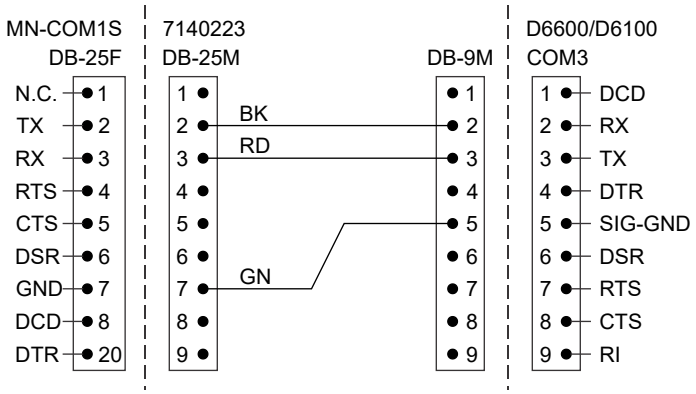
Figure 19: Bosch D6600/D6100 MN-COM1S connection



(1) FW-UL7MC
(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 20. Use the DB-25 serial cable assembly to connect the MN-COM1S to the Bosch D6600/D6100 automation port (COM3).

Figure 20: 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-UL7MC.

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-UL7MC to the Bosch D6600/D6100 automation port (COM3). See Figure 19 and Figure 20.
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-UL7MC.

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

Connecting to iO64/iO1000, VS1/VS4, or FX-64/FX-1000 control units

You can connect the FW-UL7MC to iO64/iO1000, VS1/VS4, or FX-64/FX-1000 control units equipped with an SA-ETH card for monitoring purposes only. To connect the FW-UL7MC, 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 31.

The general steps for connecting iO64/iO1000, VS1/VS4, or FX-64/FX-1000 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-4.0.1.3.exe, and then click Run as administrator. Follow the on-screen instructions. Accept all defaults.

   Double-click ConfigOHReceiverServiceManul.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 9.3 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.

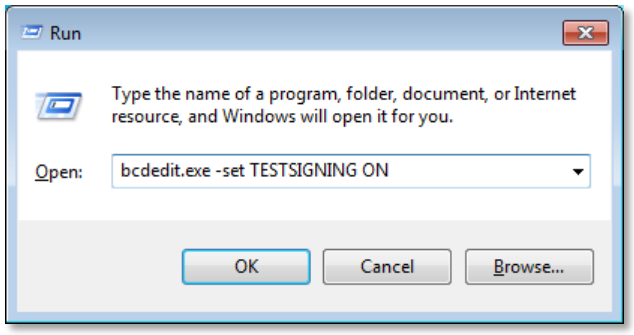
A copy of com0com is in the C:\Fireworks\Tools\Serial Port Tool folder after you install FireWorks.

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.



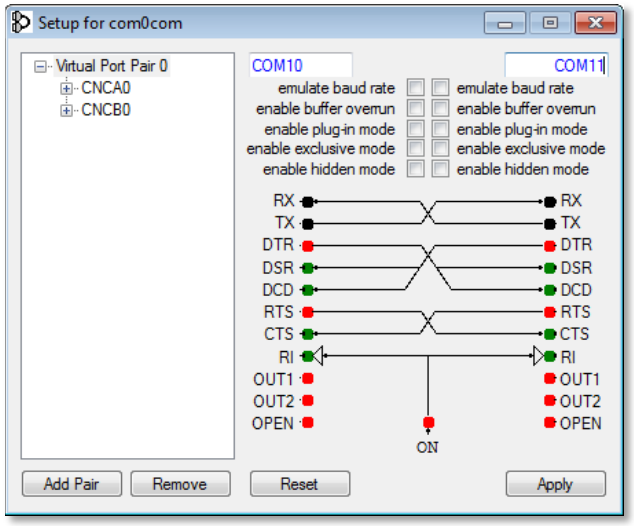
3. Restart the computer.

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.

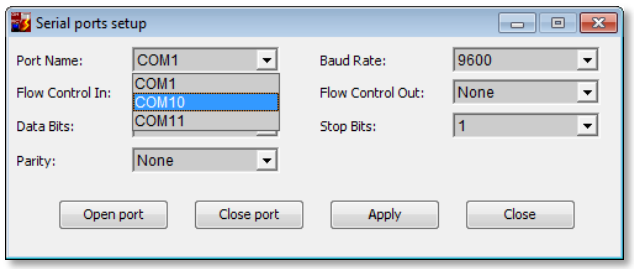


   If all ports are used, add a new pair of ports and use them in OH Lite.

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.

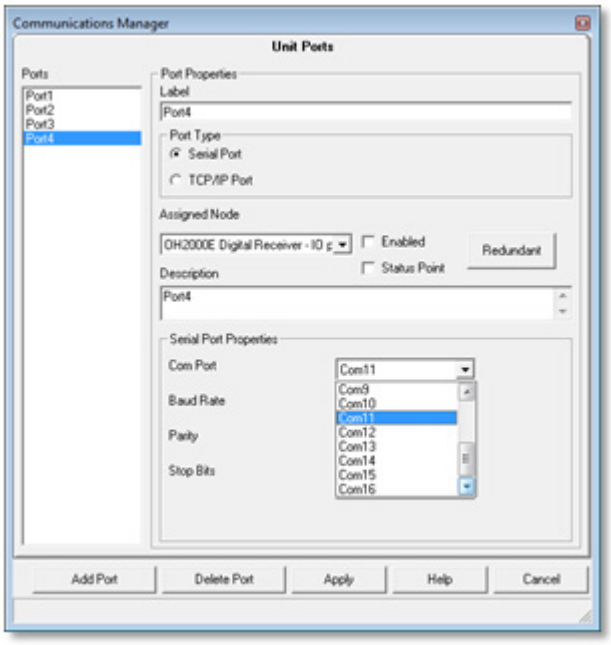


4. Click **Apply**, and then click **Close**.

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.

Chapter 4
Troubleshooting and maintenance

Summary

This chapter covers problems that you may experience while setting up and using your FW-UL7MC computer 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:

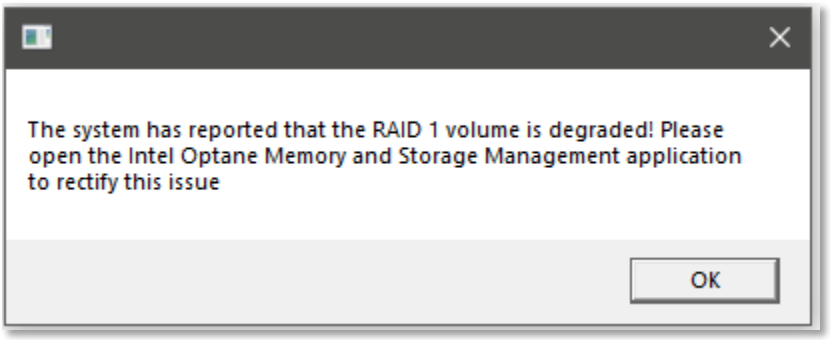
- Incorrect port selection or wiring
- Baud rate mismatch between the workstation and fire network

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

Workstation hard drive failure

The benefit of a FW-UL7MC computer is that the system remains operational if one of the hard drives fail. If a hard drive fails, the operating system sends you a notification to tell you of a degraded RAID volume. To see the message, you may have to click the Notification icon in the Notification area on the Windows taskbar.

Figure 21: 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.

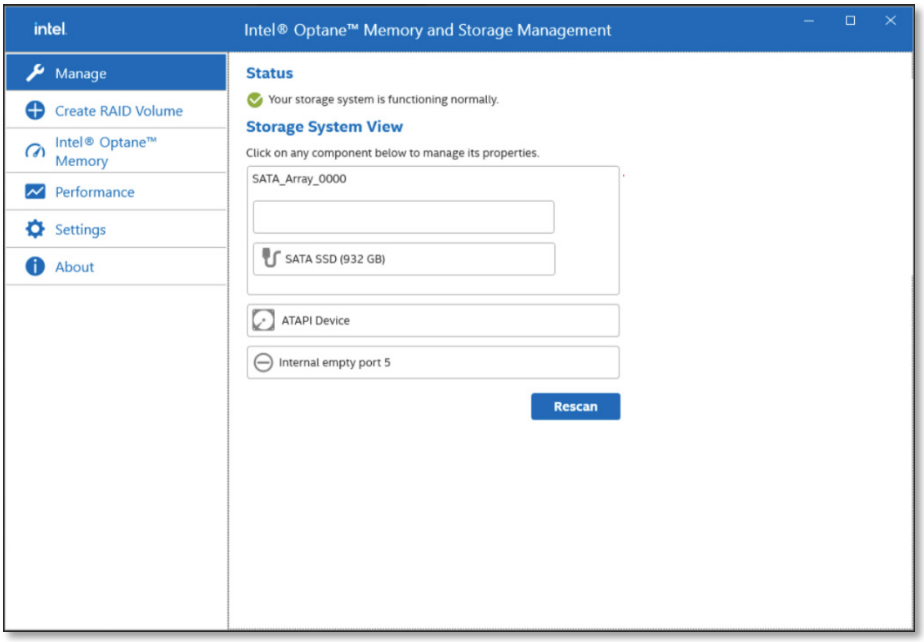
To identify the failed hard drive:

1. Start the Intel® Optane™ Memory and Storage Management app.

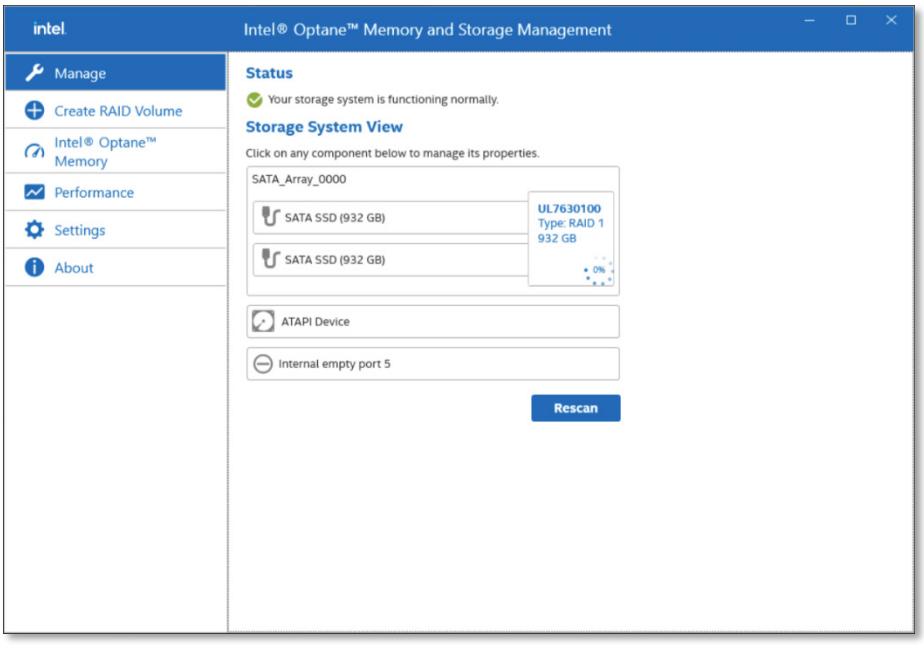
   On the Start menu, click Intel® Optane™ Memory and Storage Management.

2. On the Manage page, under Status, note which hard drive is missing.

   Typically, the first box is SATA 0 (Drive 0) and the second box is SATA 1 (Drive 1). Facing the front of the computer, Drive 0 is on the left and Drive 1 is on the right.



3. Replace the failed hard drive, and then reboot the computer. It should take about 2.75 hours for the new hard drive to rebuild. To monitor the progress, restart the Intel® Optane™ Memory and Storage Management app



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.

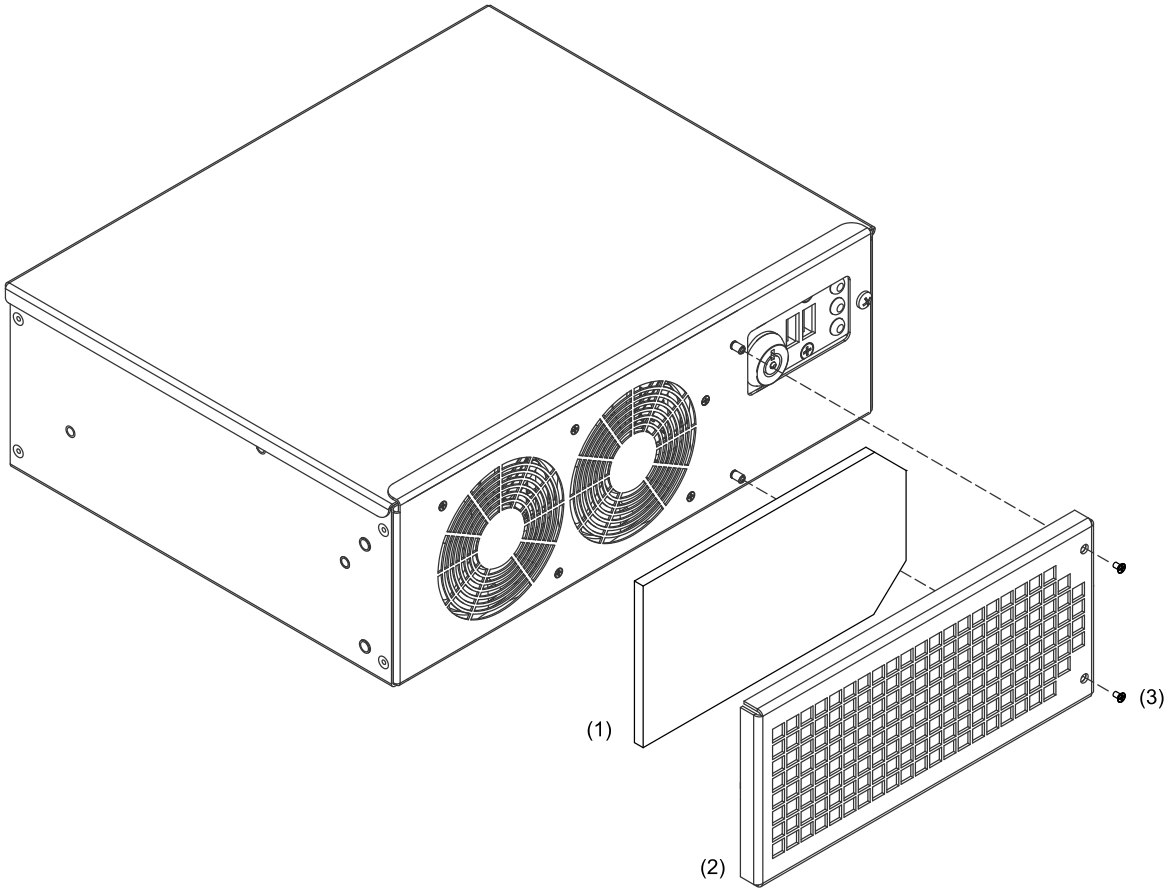
For more information, see *FW-FILTER FireWorks Workstation Air Filter Installation Sheet* (P/N 3100780).

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 22.
2. Vacuum the debris from the filter or rinse the filter with clean fresh water.
3. Dry thoroughly, and then replace.

Figure 22: 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
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 7 below.

Table 7: UL/ULC listing requirements

Requirement	UL	ULC
Workstation computer		
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
For proprietary installations, the workstation must be installed in a rack and locked to protect it from tampering. See Table 5 on page 7 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
When mounting the workstation on a bench, place the workstation horizontally or vertically on or below the bench surface along with the monitors, keyboard, and mouse. ULC only allows bench mounting in applications where the workstation is ancillary (no common controls).	X	X
For ULC applications, all wiring must be mechanically protected.		X
When applied per section “Connecting to a Bosch/Radionics D6600/D6100 Communications Receiver” on page 28, FireWorks is suitable for the following: UL/ULC Proprietary and Central Station Receiver for fire applications (one DACR per workstation). If more than one Osborne Hoffman DACR is connected to a single FireWorks workstation, this configuration is considered ancillary and requires acknowledgement at the DACR. These configurations are not suitable for use as Central Station Automation Equipment.	X	X
FireWorks with common controls can be used on standard LAN/WAN Ethernet networks for communication to the EST3 system if 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 47, 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.	X	

Requirement	UL	ULC
Proprietary Fire Signal Receiving Centre Applications		
For ULC S559, third edition, compliant proprietary fire signal receiving center applications, see *Edwards Canada Marketplace Manual* (P/N 3102245).		X
PT-1S+ printer		
Event messages must be recorded so users can review them.	X	X
Each system must include at least one PT-1S+ printer for printing event messages.		
FireWorks Remote Client connections		
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.	X	X

To meet CAN/ULC S527, fourth edition, 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.

In lieu of the above requirements for hardened enclosure and priority of signals:

- The FireWorks workstation is not listed as the only means of annunciation.
- CO events shall be programmed as Monitor events only.

To meet ULC S559, third edition, 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.

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 an FW-UL7MC-CP cover plate to protect it.

EST4 fire network node counts

To meet FireWorks timing requirements, the number of nodes allowed on a Class B EST4 fire network varies with the SFP network controller modules used to connect the nodes. See the table below.

SFP network controller modules	Media speed	EST4 network nodes
4-NET-MM, 4-NET-SM, 4-NET-SMU, 4-NET-SMD, 4-NET-SMH, 4-NET-TP	Fast	150
4-NET-TP-HC	Medium	39
4-NET-XT	Slow	25

Appendix B
Applications

Summary

This appendix describes typical FW-UL7MC computer applications.

Content

Ethernet network application

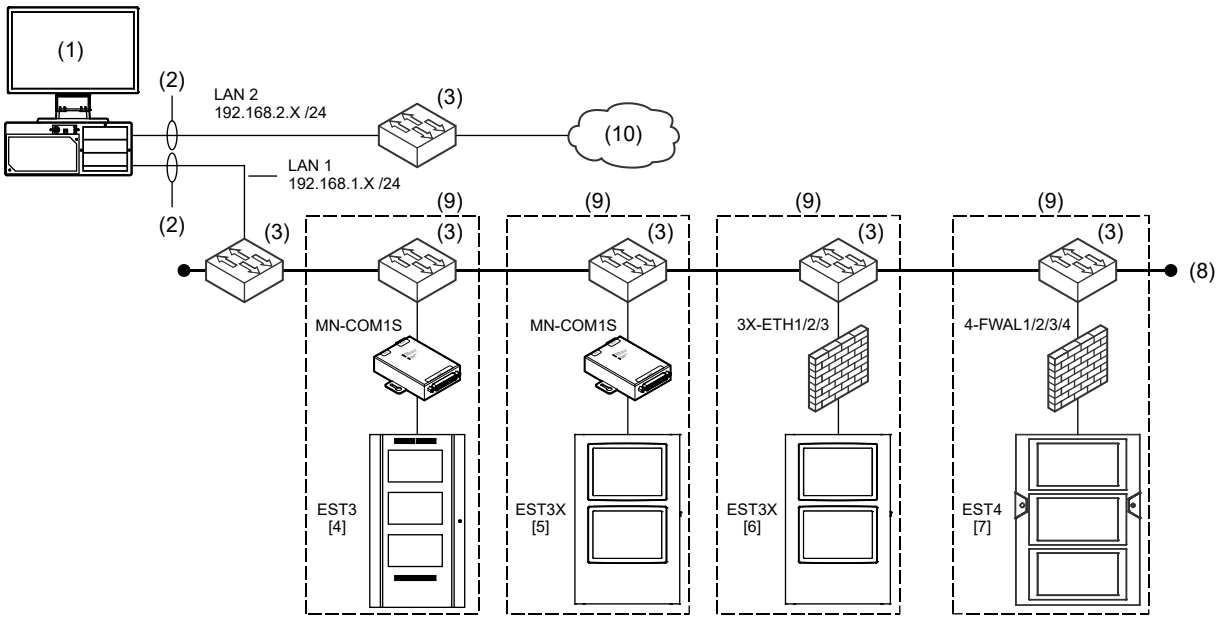
FireWorks can communicate with EST control units over an Ethernet network (LAN or WAN).

Notes

- When connecting FireWorks over a network to an EST 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 EST 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.

Figure 23 shows a typical Ethernet network application.

Figure 23: Typical Ethernet network application

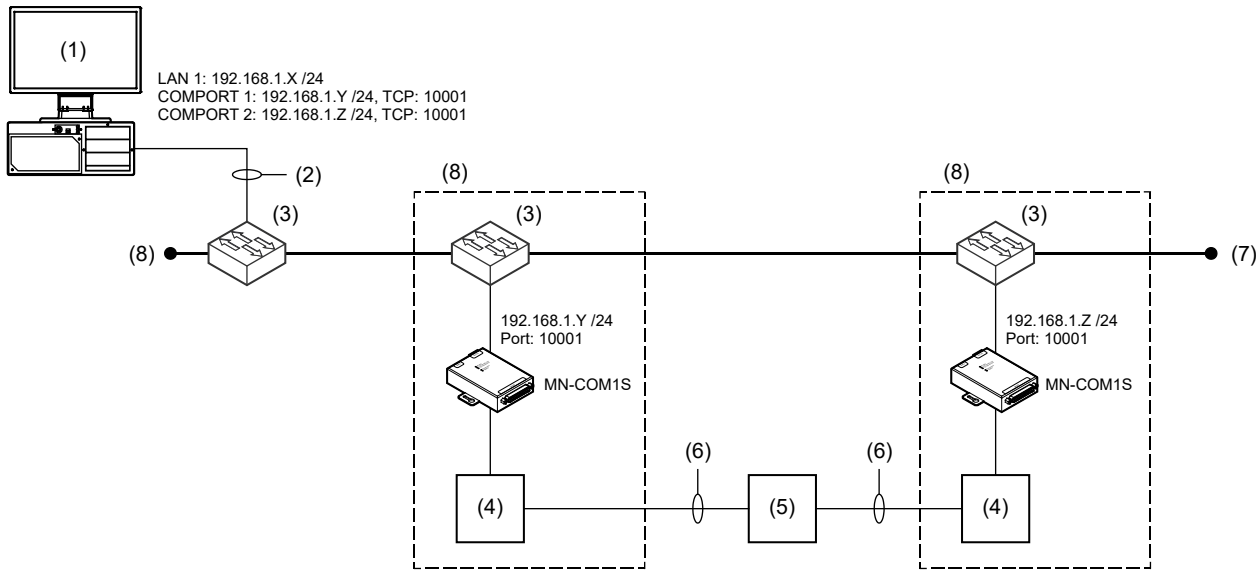


(1) FW-UL7MC
(2) Ethernet connection. Limit connection to the same room, within 20 ft. (6.1 m) for UL or 59 ft. (18 m) for ULC and enclose in conduit or equivalent protection against mechanical injury.
(3) MN-NETSW1 or MN-FNS series Ethernet switch
(4) EST3 control unit with RS-232 option card.
(5) EST3X control unit with onboard RS-232.
(6) EST3X control unit with 3X-ETH card.
(7) EST4 control unit with 4-FWAL card, a 4-FWAL-CAT SFP module, and an ECP communication service
(8) Dedicated fiber network. See *MN-FNSx Fiber Optic Transceiver Module Installation Sheet* (P/N3102138) for distance and cable specifications.
(9) Dashed line indicates the same enclosure (or equivalent).
(10) Optional Ethernet connection to corporate intranet or to Internet.

Redundant Ethernet communication application

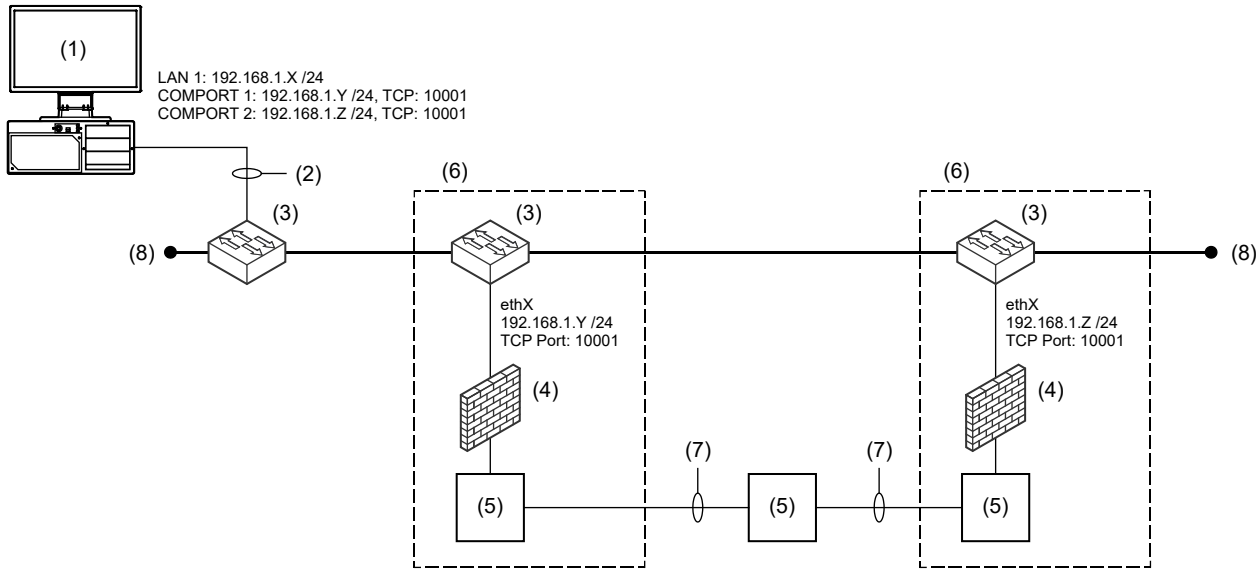
In redundant Ethernet communication applications, the FW-UL7MC uses two TCP/IP ports to connect to the fire alarm system. If the primary TCP/IP port connection breaks, FireWorks can still communicate using the redundant TCP/IP port connection. See Figure 24 and Figure 25.

Figure 24: Typical EST3/EST3X Ethernet redundant COMs



(1) FW-UL7MC.
(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 CPU card with RS-232 option card or EST3X CPU card with onboard RS-232.
(5) Other EST3/EST3X control units in the same fire alarm network.
(6) EST3/EST3X RS-485 network.
(7) Dedicated FireWorks fiber network.
(8) Dashed line indicates the same enclosure (or equivalent).

Figure 25: Typical EST4 Ethernet redundant COMs



(1) FW-UL7MC.
(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-FNS series Ethernet switch.
(4) 4-FWAL card, 4-FWAL-CAT SFP module, and ECP communication service.
(5) EST4 control unit nodes in the same fire alarm network.
(6) Dashed line indicates the same enclosure (or equivalent).
(7) EST4 fiber network
(8) Dedicated FireWorks fiber network.

Passing commands between fire alarm systems

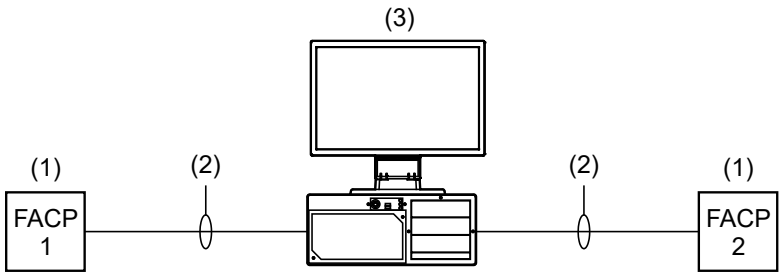
The FW-UL7MC computer can pass commands between it and the following fire alarm systems:

- EST3
- EST3X
- EST4

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

Note: Command passing is only supported with FW-CGSUL software license.

Figure 26: Command passing flow diagram



Event takes place on FACP 1. The event is sent to FireWorks.	Æ	FireWorks receives the event. The event triggers a command in FireWorks. The command is sent to FACP 2.	Æ	FACP 2 receives and executes the command.
FACP 1 receives and executes the command.	Å	FireWorks receives the event. The event triggers a command in FireWorks. The command is sent to FACP 1.	Å	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-UL7MC

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 Alarm 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 8 on page 50 summarizes the command passing capabilities of FW-UL7MC computers (requires FW-CGSUL).

Table 8: FW-UL7MC command passing summary

		System receiving commands		
Function	**System passing 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

[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.

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

Appendix C
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.

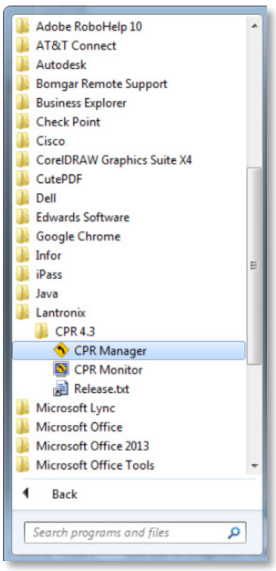
Note: If the host is on the other side of a router or a firewall, then you may have to add UDP ports 30718, 43282, and 43283 to the firewall exception list. You may experience trouble in opening this COM port if these UDP ports are not excluded. For VESDA applications, use TCP port 10001

Installing CPR Manager

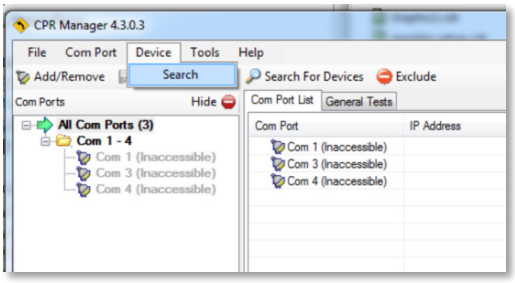
1. On the **Start** menu, click **Computer**, and then open the **C:\Fireworks\Tools\Serial Port Tool** folder.
2. In the **Serial Port Tool** folder, double-click **CPRSetup.exe**.
3. Click **Install**, and then follow the on-screen instructions.

Creating the Lantronix CPR port

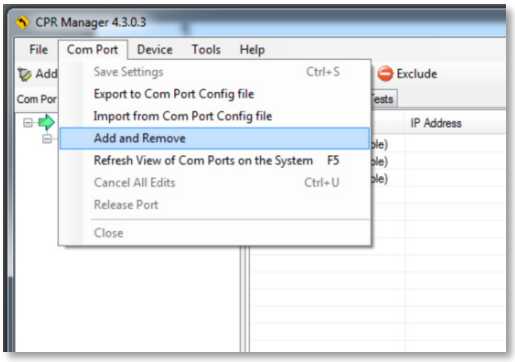
1. On the **Start** menu, under the **Lantronix** folder, click **CPR Manager**.



2. On the **Device** menu, click **Search** or click the **Search For Devices** button to add existing COM ports to the Com Port List.

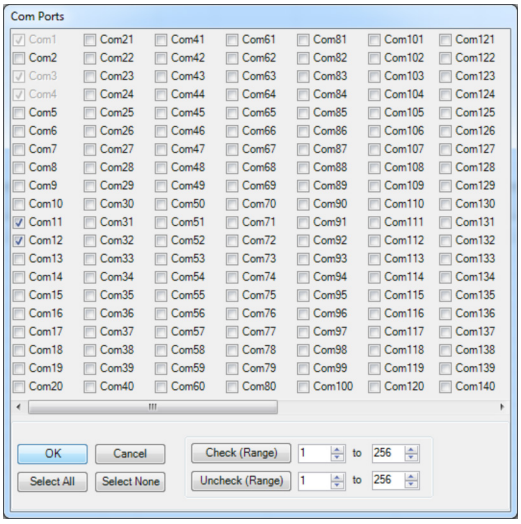


3. On the **Com Port** menu, click **Add and Remove** or click the **Add/Remove** button to add a virtual COM port.



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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