POWER INNOVATIONS INTERNATIONAL

LITEON GROUP

MPDU

Main Power Distribution Unit

Cold Start Guide

MNL190

Rev 2.1

Export Classification EAR99

READ THIS MANUAL CAREFULLY
SAVE ALL INSTRUCTIONS

This manual contains important information needed to cold start the MPDU™ safely and efficiently. Please read all instructions carefully before installing or operating equipment.

Keep this manual handy for easy reference.

ELECTRICAL WARNING

Applying information contained in this manual to any other product, including customized Q-LS systems with nonstandard specifications, may cause injury.

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This manual may accompany other instructional addendums about additional customizations to standard MPDS™ systems. Please contact Power Innovations if additional manuals are needed and have not been received.

Product names mentioned herein may be trademarks and/or registered trademarks of their respective companies.

Contents

1—General Instructions

1.1—Purpose

This procedure documents/demonstrates the cold start procedure to be executed for the Main Power Distribution Unit (MPDU).

1.2—Test Method

Step-by-step instructions are provided for cold starting each of the trainer's processors and configurable devices.

1.3—Required Materials

Qty	Description
	No additional tools or materials are required.

1.4—Required Hardware

Qty	Description
1	Power Strip (Sometimes required for older external hardware)
1	External USB Blu-ray drive (When using a disc instead of a USB flash drive)
1	USB keyboard
1	USB mouse
1	4-port USB hub

1.5—Initial Conditions

To initialized this process, the MPDU must be powered off.

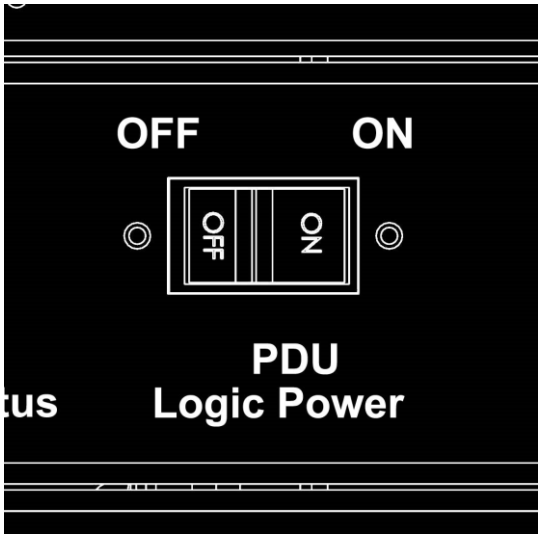
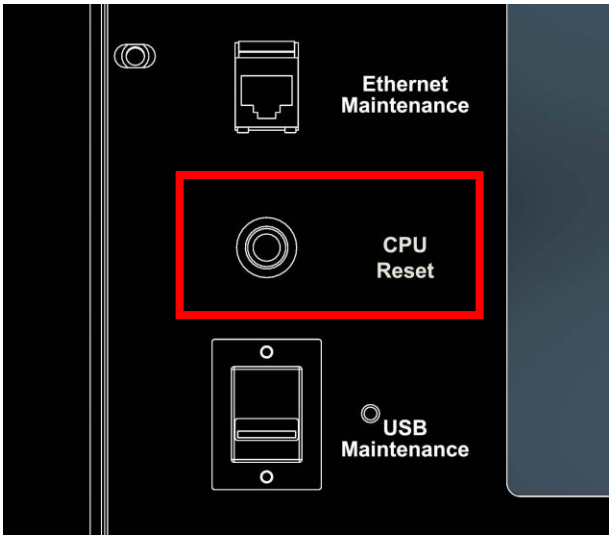
1.6—Additional Requirements

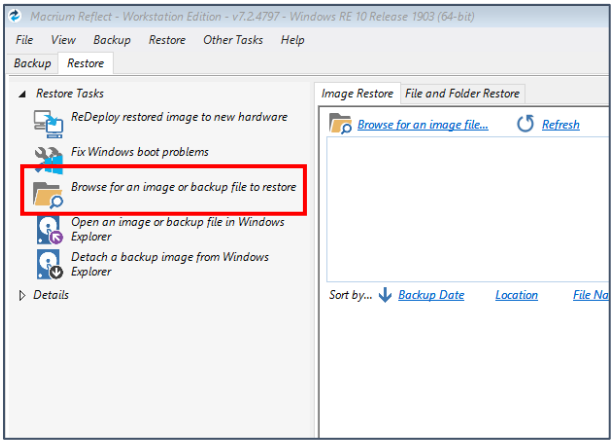
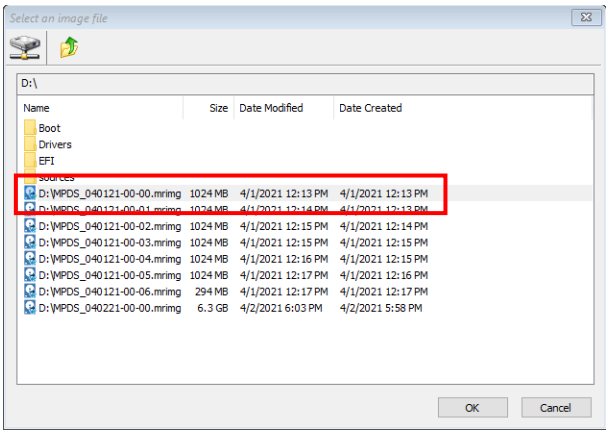
The MPDU must be properly connected. For details and hardware information, see the MPDU manual.

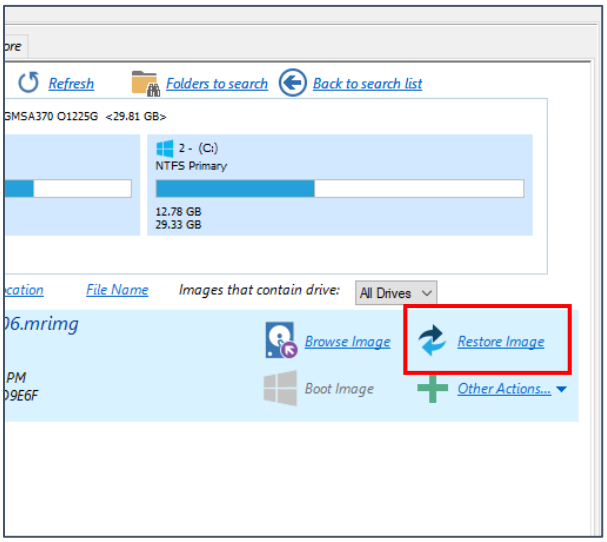
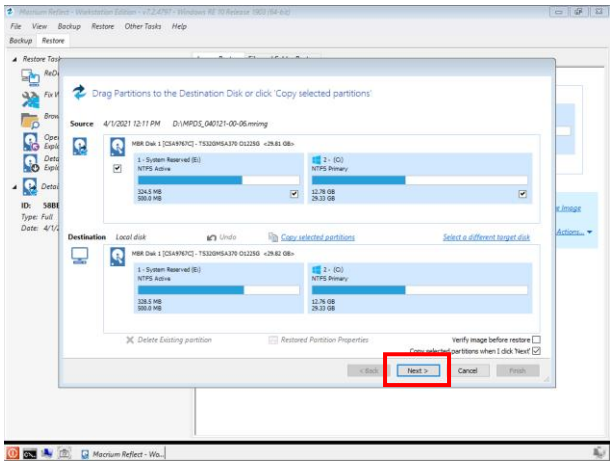
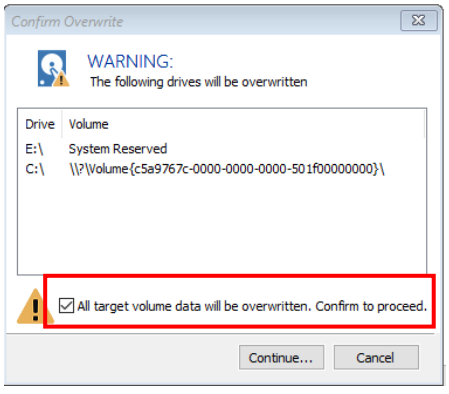
1.7—Expected Cold Start Duration

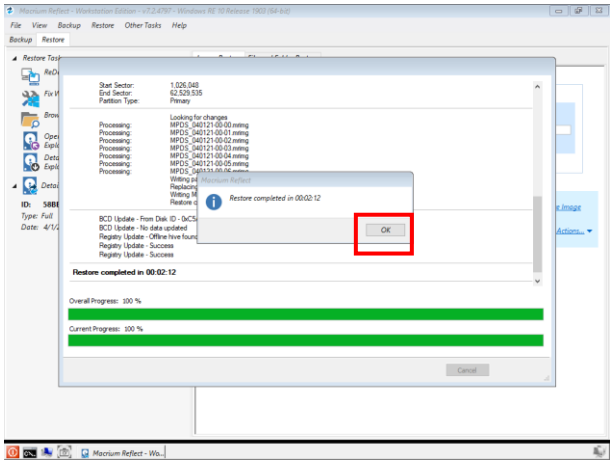
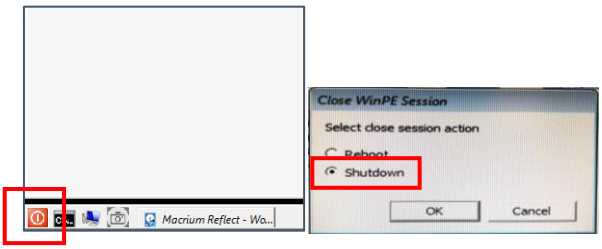
Approximately one hour.

STEP	ACTION	EXPECTED RESULTS
1.	Once all cables are properly connected and the power source is connected to the input terminals, power up the MPDU. System is now ready for operation. Before turning ON any switches or breakers, re-confirm the following important items: • All connected loads should be OFF. • All breakers should be OFF. • Ensure that there are no packaging materials, tools, or other foreign materials inside or on top of the units. • Replace side panels and gland plate.	
2.	Turn ON the Q-LS™ system.	
3.	Turn on the MPDU system in normal operating mode (refer to the MPDU User's Manual for instructions).	
4.	Connect the mouse, keyboard, and either the Blu-ray reader drive or the provided USB flash drive to the four (4) port USB hub.	
5.	Connect the (4) port USB hub to the "USB Maintenance" port located on the left side of the MPDU display.	

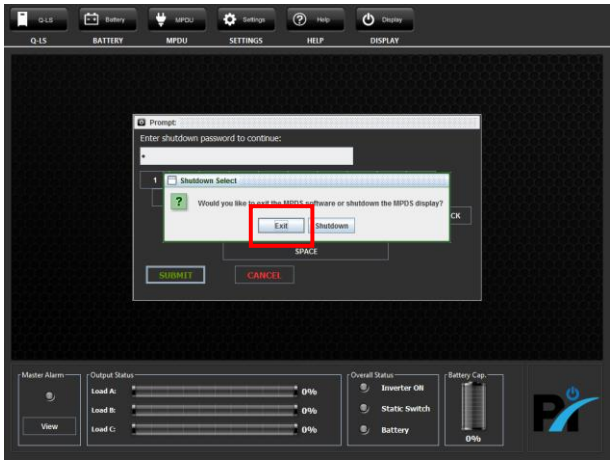
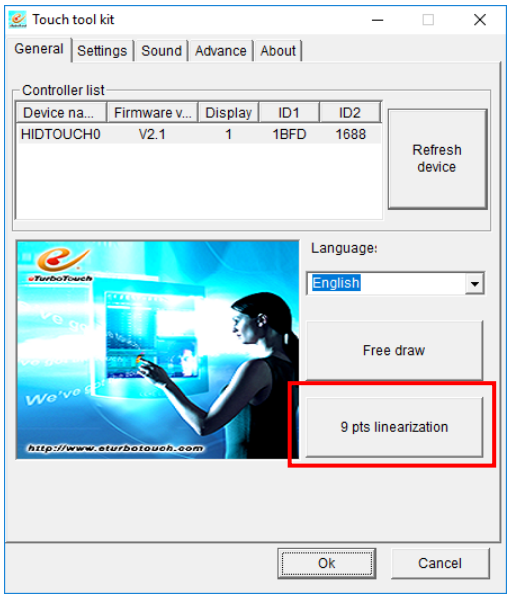
STEP	ACTION	EXPECTED RESULTS
6.	Power ON the MPDU computer by switching ON the “PDU Logic Power” switch.	
7.	Insert the MPDU Cold Start installation Blu-ray into the Blu-ray drive. (If provided with a USB flash drive, skip this step.)	
8.	On the keyboard press and hold the F7 key.	
9.	Reset the MPDU computer by pressing the “CPU Reset” button.	
10.	Continue to hold the F7 key until the boot device selection menu comes up. Select the Blu-ray drive or provided USB flash drive and press ENTER. The system will boot into the backup\restore software (Macrium Reflect).	

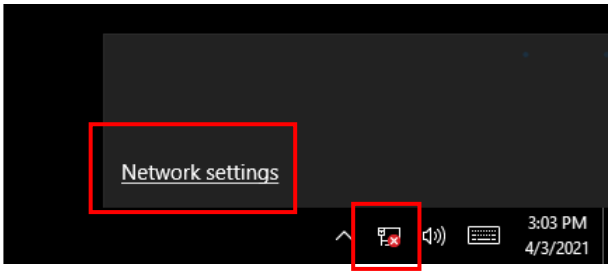
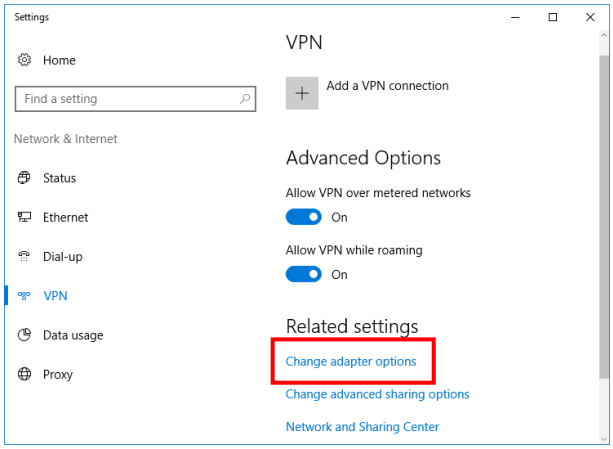
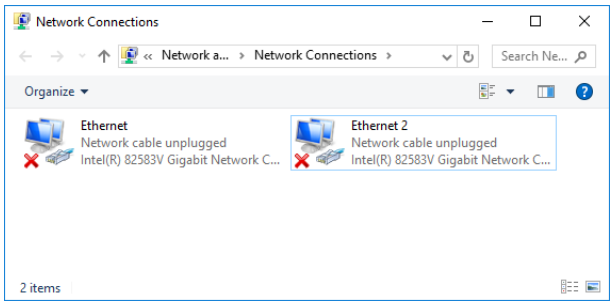
STEP	ACTION	EXPECTED RESULTS
11.	Click “Browse for an image or backup file to restore”	
12.	Navigate to the Blu-ray disc or USB flash drive and select the image name “MPDS_xxxxxx-00-00.mrimg”. Click “OK”.	

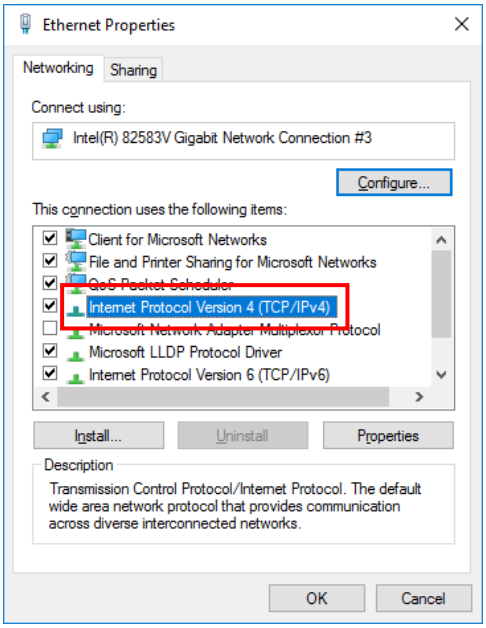
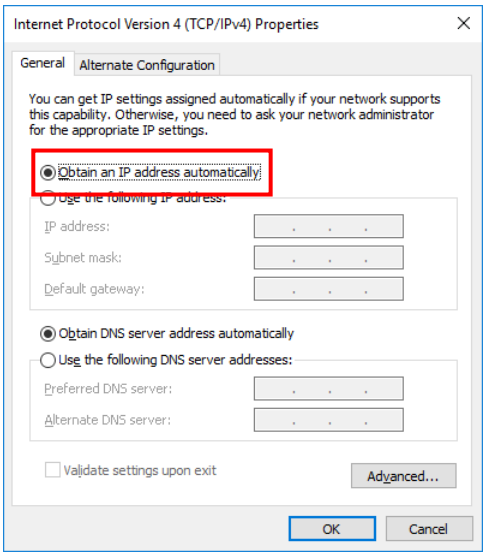
STEP	ACTION	EXPECTED RESULTS
13.	Click on “Restore Image”. If the destination section is empty, click “Select a disk to restore to…”. Select the destination disk.	
14.	Once a destination is displayed in the bottom half of the screen click “Next >”	
15.	Click “Finish”	
16.	If a “Confirm Overwrite” dialog appears: Place a check in the “All target volume data will be overwritten. Confirm to proceed.” box and click “Continue…”	
17.	The image restore will commence (it may take about 30 minutes to finish).	

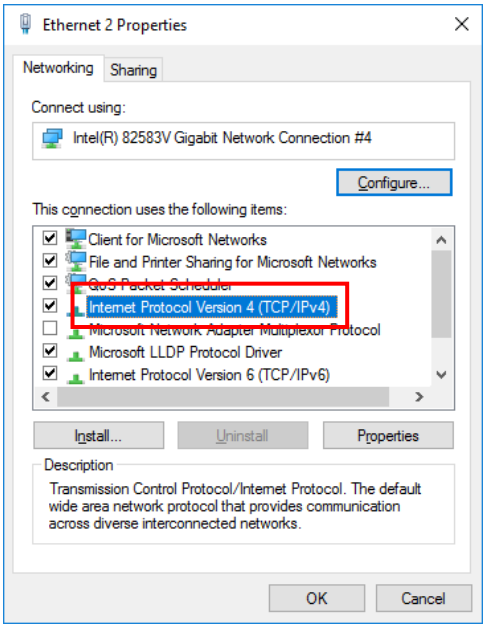
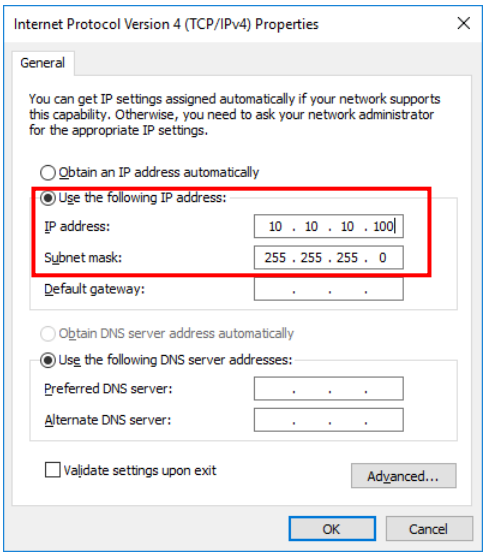
STEP	ACTION	EXPECTED RESULTS
18.	Once the installation is complete, click “OK”.	
19.	Click the red start button in the bottom left corner. Select “Shutdown” Click “OK”	
20.	Once the touchscreen computer is shut down, remove the Blu-ray drive or USB flash drive and reboot the computer by pressing the “CPU Reset” button. You may have to press it twice. You will know that it has successfully performed a reset when you hear a soft beep.	
21.	After booting, you will be prompted with the screen pictured to the right (it may take around 30 seconds to start). Select the type of MPDU system you’re working with (TSSC, PTT, WTT, VM(P)T, MOBMS, OFT/WST, UTD). Press “Allow access” when prompted for firewall exceptions.	
22.	After cold start, the touch screen drivers may need to be calibrated. To do this, first exit the MPDS software by following steps 23-26. Then follow the calibration procedure in steps 27.	

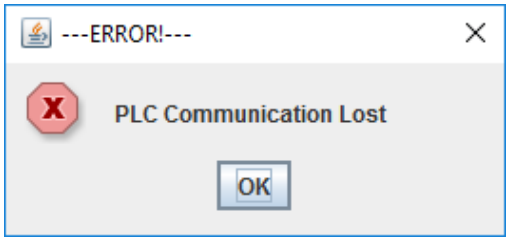
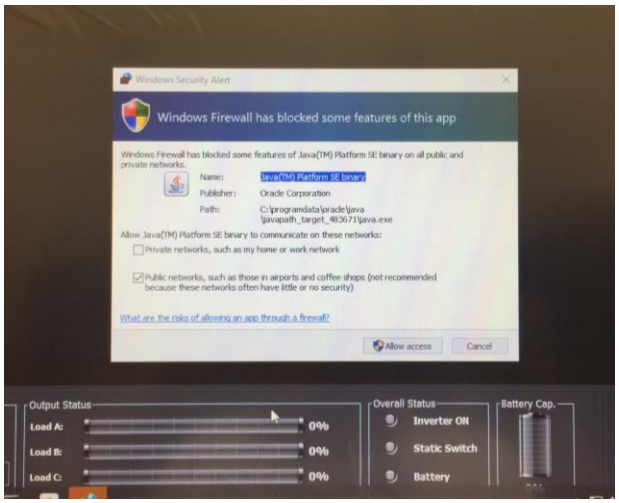
STEP	ACTION	EXPECTED RESULTS
23.	Log in to the touchscreen as “Supervisor”. The password is the letter “z”.	
24.	Shutdown the MPDU Display by selecting “Display” on the right side of the Menu Buttons, then selecting “Shutdown”.	
25.	The password is the letter “z”.	

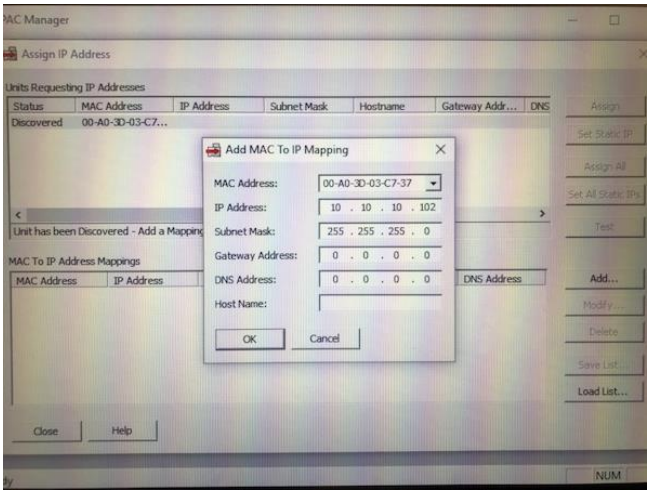
STEP	ACTION	EXPECTED RESULTS
26.	Select “Exit”.	
27.	If the touch screen needs calibration: • Launch the “Touch tool” (shortcut located on the desktop). • On the “General” tab, click “9 pts linearization”. • A grid will be presented with a flashing (green/red) mark in the bottom left corner. Touch and hold this mark until it turns yellow and a “Please lift your hand” message is displayed. Repeat this process for all 9 points. • Click “Save”. • Close the “Touch tool kit” window by clicking “OK”.	 

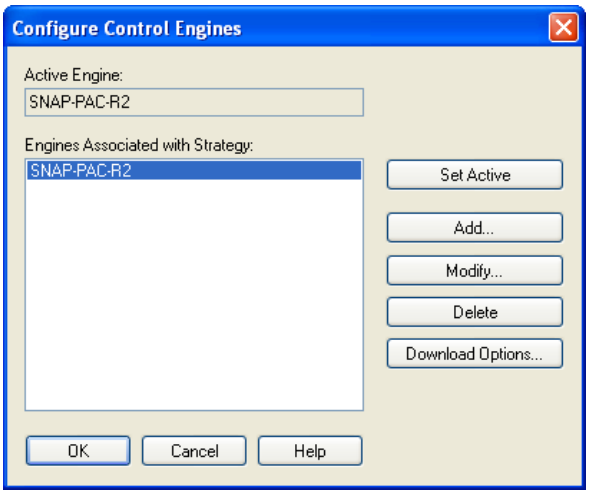
STEP	ACTION	EXPECTED RESULTS
28.	The network interfaces are already configured in the image, however, it is possible that Windows fails to associate the network connections in the image with the network adapters in the computer. If this is the case the network connections will need to be configured: Click the network icon in the system tray and select “Network Settings”.	
29.	Click “Change adapter options”	
30.	The “Network Connections” window will show two network connections. One connection is for connecting to the facilities LAN and the other connection is used internally by the MPDU to communicate with the PLC. The names of these connections may differ from what is shown here. Set up the two connections as follows:	

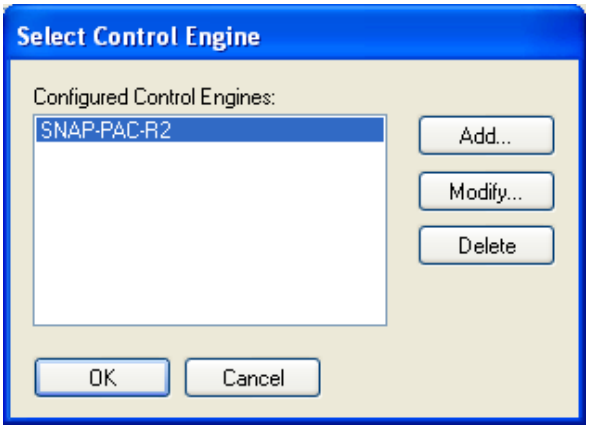
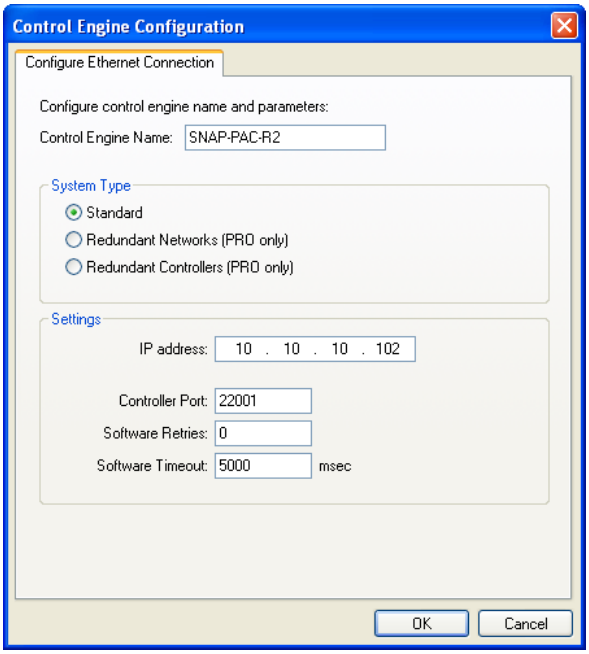
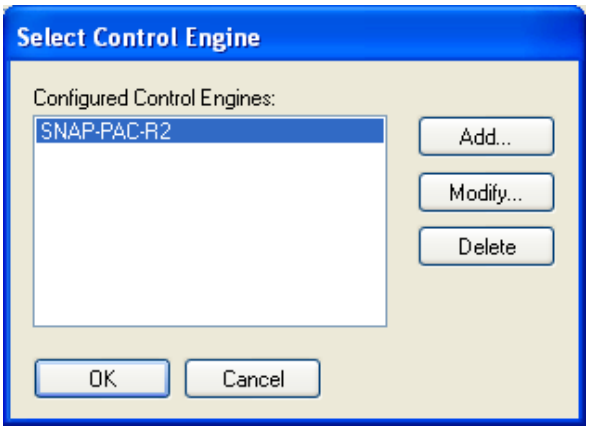
STEP	ACTION	EXPECTED RESULTS
31.	Configure the facility LAN connection: • In the “Network Connections” window double-click “Ethernet” (note: connection names may be different). • In the “Ethernet Properties” window double-click “Internet Protocol Version 4 (TCP/IPv4)” • Select “Obtain an IP address automatically” • Click “OK” • Click “OK” to close the “Ethernet Properties” window. Please note: This (DHCP) is the default configuration for the facility LAN connection. The settings for this connection may be different as directed by the facility network administrator.	 

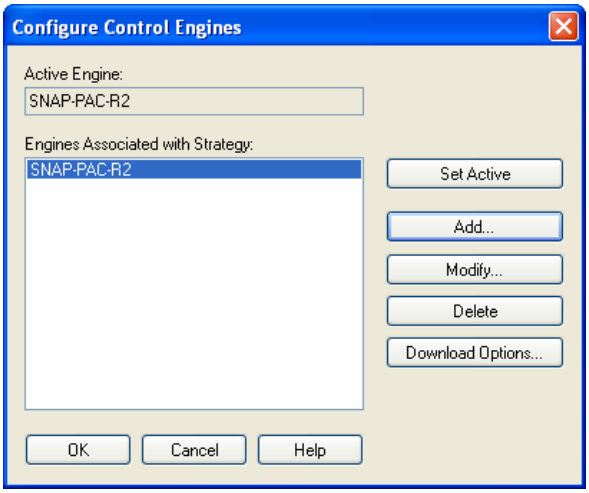
STEP	ACTION	EXPECTED RESULTS
32.	Configure the PLC network connection: • In the “Network Connections” window double-click “Ethernet 2” (note: connection names may be different). • In the “Ethernet 2 Properties” window double-click “Internet Protocol Version 4 (TCP/IPv4)” • Select “Use the following IP address:” • Set the IP address to 10.10.10.100 • Set the subnet mask to 255.255.255.0 • Click “OK” • Click “OK” to close the “Ethernet 2 Properties” window.	 

STEP	ACTION	EXPECTED RESULTS
33.	Verify network connections are configured properly: • Restart the MPDU by selecting the START menu and clicking “Restart”. • If the MPDS program launches without “PLC Communication Lost” errors, the network connections were properly configured. • If “PLC Communication Lost” errors are presented, repeat steps 31-32 to switch the facility LAN connection for the PLC network connection (i.e. configure “Network 2” for facility LAN and “Network” for PLC).	
34.	The MPDU also contains an OPTO 22 programmable logic controller (PLC) used to control the sequencing of the output power circuits this unit requires specific code download to function correctly.	
35.	Assign an IP address in PAC Manager: **NOTE: Turn off Windows firewall before proceeding.** a. If the Windows Firewall is enabled, the Windows Firewall state will be On. To turn it off, in the left navigation pane, click on “Turn Windows Firewall” on or off. b. In the Customize Settings window, select “Turn off Windows Firewall” and click OK.	

36.	Open PAC Manager 10.3 on the desktop. Select “Tools” and select “Assign IP Address”. Double-click the Discovered Address.* Assign an IP Address: IP Address: 10.10.10.102 Subnet Mask: 255.255.255.0 Select “OK”. Select “Assign”. Close the window and select “Yes”. Save the setting to the location selected. Turn Windows firewall back on. *If the field under “Units Requesting IP Addresses” is empty, you will need to access the cabinet by removing the right-side panel and ensure the Opto 22 is power up. Reset the Opto 22 Snap Pac by holding down the reset button for several seconds. The STAT light will begin blinking yellow rapidly and should cycle from green to red. Turn the Logic Power supply off and back on. The light should turn yellow.	

STEP	ACTION	EXPECTED RESULTS
37.	Open PAC Project 10.3 folder on the desktop. Double-click PAC Control Basic 10.3. Select File → Open Strategy and navigate to C:\MPDS\PLC. From the PLC folder open the relevant sub folder(s) and select the strategy file. **NOTE: Strategy file names given by the supplier and cannot be changed without risk.** **NOTE: When copying files from CD, check to verify permissions on files are Read/Write.** If files are not read/writeable, change to allow read write access to files.	
38.	Select Mode → Configure	
39.	Select Configure → Control Engines	
40.	Select Add…	

STEP	ACTION	EXPECTED RESULTS
41.	Select Add…	
42.	Even though the name of the Control Engine may already exist, perform this step. Type Control Engine name ‘SNAP-PAC-R2’. Set IP Address to 10.10.10.102. Select OK.	
43.	Highlight SNAP-PAC-R2 and hit OK.	

STEP	ACTION	EXPECTED RESULTS
44.	Highlight SNAP-PAC-R2 and hit OK.	
45.	Select File → Save Strategy. **NOTE: If files do not have read/write permissions, then the save will FAIL.**	
46.	Select Compile -> Compile All	
47.	Select Mode-> Debug, software will detect and download the strategy to the PLC. Select 'OK' then 'Yes' to the next dialogs that will appear.	
48.	Press the "Run Strategy" button at the top of the screen. Select "Start Strategy".	
49.	Select Mode → Configure to exit Debug mode	
50.	Exit PAC Control Basic. PLC is programmed	
51.	From the desktop, double-click the MPDS application, which will launch the MPDS software.	

STEP	ACTION	EXPECTED RESULTS
52.	Remove the USB connection to the USB Maintenance port.	
53.	Switch OFF the Main Power Input Breaker. Switch OFF the MPDU Logic Power Switch.	
54.	Switch the Main Input Breaker to ON position. Switch the MPDU Logic Power Switch ON. Enable the Control Key switch. The PLC will begin making the outlets available to be turned on. Note: The PLC program has pre-defined delays for turning on outlets so it may take a few minutes for all of them to be available.	
55.	Enable the Control Key switch.	Trainer powers on.