

QUANTA *Pro*

USER GUIDE

Version 1A
2/8/00



INTELLIGENT LIGHTING CONTROLS, INC.

5229 Edina Industrial Boulevard
Minneapolis, Minnesota 55439
Phone 612 829 1900
FAX 612 829 1901
1-800-922-8004

Section 1 Program Description

1.0 Description 1-1
1.1 Starting Quanta Pro 1-1
1.2 Menu Bar Options 1-1
1.3 Folder Options 1-1
1.4 Elite Controller Setup Functions 1-1
1.5 Feature Selection Buttons 1-3

Section 2 Getting Started

2.1 Overview 2-1
2.2 Project Description 2-1
2.3 Conventions 2-1
2.4 Configure the Network 2-2
2.5 Configure the Node 1 Manual Switches and
Map Them to the Desired Relay Outputs 2-2
2.6 Configure the Photocell Output as a Global Switch 2-2
2.7 Configure the Node 2 Manual Switches and
Map Them to the Desired Relay Outputs 2-2
2.8 Set the Controller Clocks 2-6
2.9 Configure the Node 1 Timers and
Map Them to the Desired Relay Outputs 2-6
2.10 Configure the Node 2 Timers and
Map Them to the Desired Relay Outputs 2-6
2.11 Starting the Network 2-6

Section 3 Advanced Operations

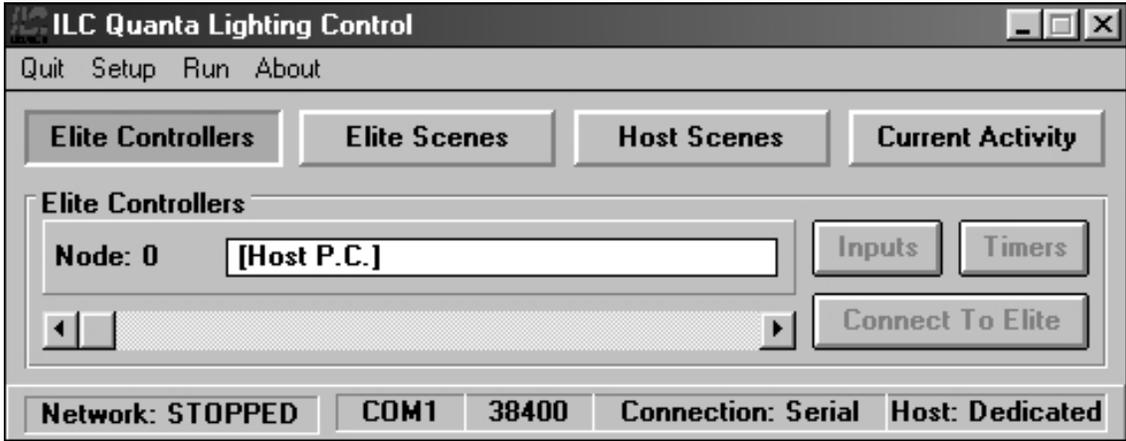
3.1 Overview 3-1
3.2 Scenes 3-1
3.3 Define and Invoke the Scene 3-1
3.4 Conditional Statements 3-1
3.5 Program This Conditional Statement 3-1

Section 4 Appendix

A Installing *Quanta Pro* A-1
A.1 Introduction A-1
A.2 Minimum Computer Requirements A-1
A.3 Recommended Installation Procedure A-1
A.4 Configuration A-1

Section 1-

Program Description



Section 1 Program Description

1.0 Description	1-1
1.1 Starting Quanta Pro.....	1-1
1.2 Menu Bar Options.....	1-1
1.3 Folder Options.....	1-1
1.4 Elite Controller Setup Functions.....	1-1
1.5 Feature Selection Buttons.....	1-3

1.0 Overview

Quanta Pro is a windows based lighting control software package. Using point and click commands you can quickly and easily program Quanta lighting controllers for any required application, obtain current I/O status and upload /download operating parameters between the controllers and your personal computer (PC).

You can program a single controller from your PC via RS232 connection to the controller serial port or a network of controllers via interface with the RS485 network. You can also program offsite via standard phone lines and modems.

1.1 Starting Quanta PRO

To Start Quanta Pro, "double click" on the Qe-LAN Icon. The home screen shown in Figure 1-1 will appear.

1.2 Menu Bar Options

The menu bar across the top of the screen, offers the following options (point & click on the option you want to invoke):

- **Quit** - allows you to exit the program
- **Setup** – permits you to configure the lighting control system and enter certain system parameters
- **DMX** – permits you to set DMX individual control channel function for either no action, relay or scene control
- **Run** – starts the lighting control network (LAN)
- **About** – lists the software Rev. level

1.3 Folder Options

The folder options offered on the home screen are:

- **Elite Controllers** - used to define individual controller parameters like switches, timers, and I/O mapping and certain network and communications parameters

- **Elite Scenes** – used to define and invoke user defined ON/OFF patterns executed by parameters resident in the Quanta (RSX) lighting controllers.
- **Host Scenes** – used to define and invoke user defined ON/OFF patterns executed by parameters resident in your PC.
- **Current Activity**- used to bundle field initiated events like switch closures into set operational sequences.

1.4 Elite Controller Setup Functions

- **Controllers** – lets you define certain network wide parameters common to all the controller nodes such as latitude/longitude coordinates, time zones, blink alerts, override times
- **Network** – lets you define the number of nodes in the network, the number of I/O points in each controller, certain other specialty functions like phone communication and DMX parameters.
- **Conditional Statements** – allows you to define If...Then statements used as control mechanisms
- **Host Timers** – allows you to define timers whose parameters are resident in your PC and which are used to invoke network wide control scenarios.
- **Open-Close Times** – permits you to enter the opening and closing times of a facility to which timers may be keyed.
- **Set Elite Clocks**- allows you to synchronize the clocks in all the controller nodes to the clock in your PC.
- **Reload Each Controller** – downloads operational parameters currently resident on your PC to the controllers
- **Work Offline** – allows you to enter parameters while not being linked to a controller
- **Upload Settings** – permits you to transfer the current parameters resident in a controller to your PC.
- **Direct Connect** – used when programming an individual controller from your PC by means of a RS232 cable between the PC and controller serial ports.

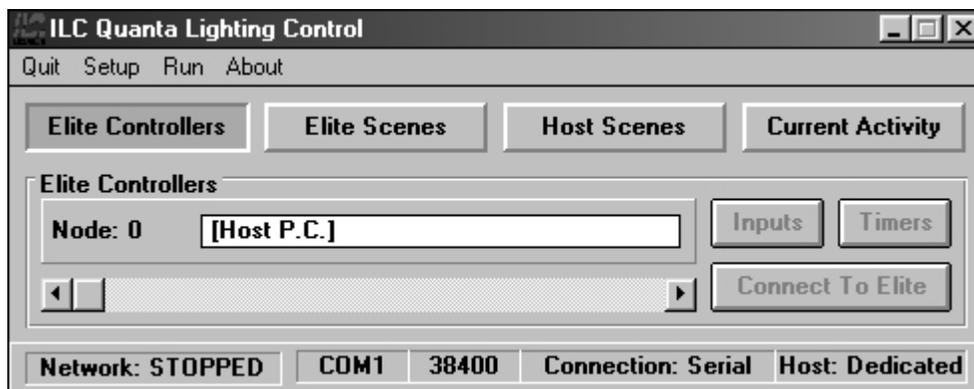


Figure 1-1 Quanta Pro Home Screen

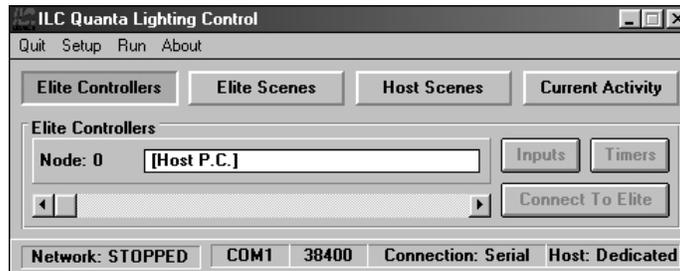
1.5 Feature Selection Buttons

The home screen features the following feature selection buttons:

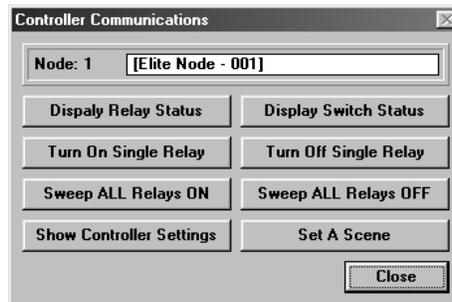
- **Inputs**- Point & click on Inputs to define switches, relay outputs and map switch inputs to relay outputs. (See Section 2 for details)
- **Timers**- point & click on Timers to define timers and map timers to relay outputs (See Section 2 for details)
- **Connect To Elite**- Point and click on **Connect To Elite** to link with the currently selected controller node & perform the operations listed in Table 1-1. Point & click on the desired operation. See Figure 1-2.

Operation	Comment
Display Relay Status	Displays current status of the node's relay outputs
Display Switch Status	Displays current status of the node's switch inputs
Turn On Single Relay	Turn ON a selected relay output
Turn OFF Single Relay	Turn OFF a selected relay output
Sweep All Relays On	Turns ON all the node's relay outputs
Sweep All relays OFF	Turns OFF all the node's relay outputs
Show Controller Settings	Displays Node's current time/date, time zone, # of I/O points, blink alert, override settings, and firmware revision
Set A Scene	Invokes a previously defined scene

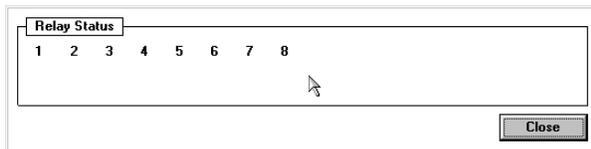
Table 1-1



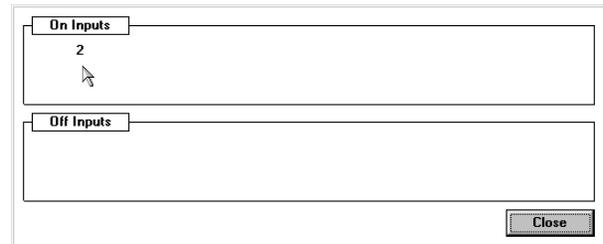
Home Screen



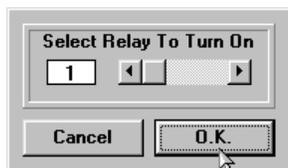
Top Level Communication Screen



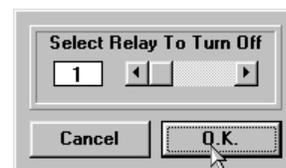
Relay Status



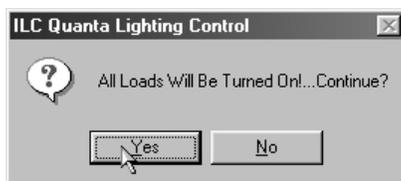
Switch Status



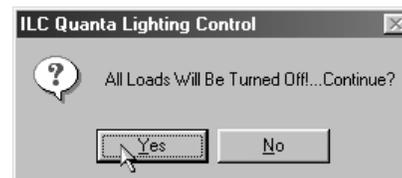
Turn ON Single Relay



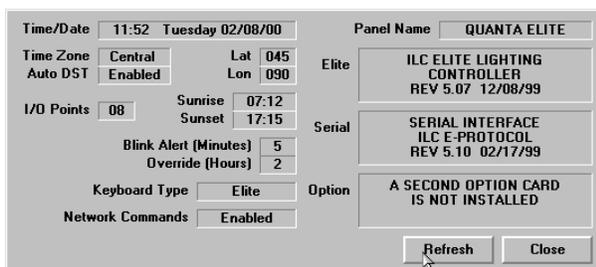
Turn OFF Single Relay



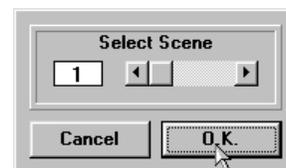
Sweep ON



Sweep OFF



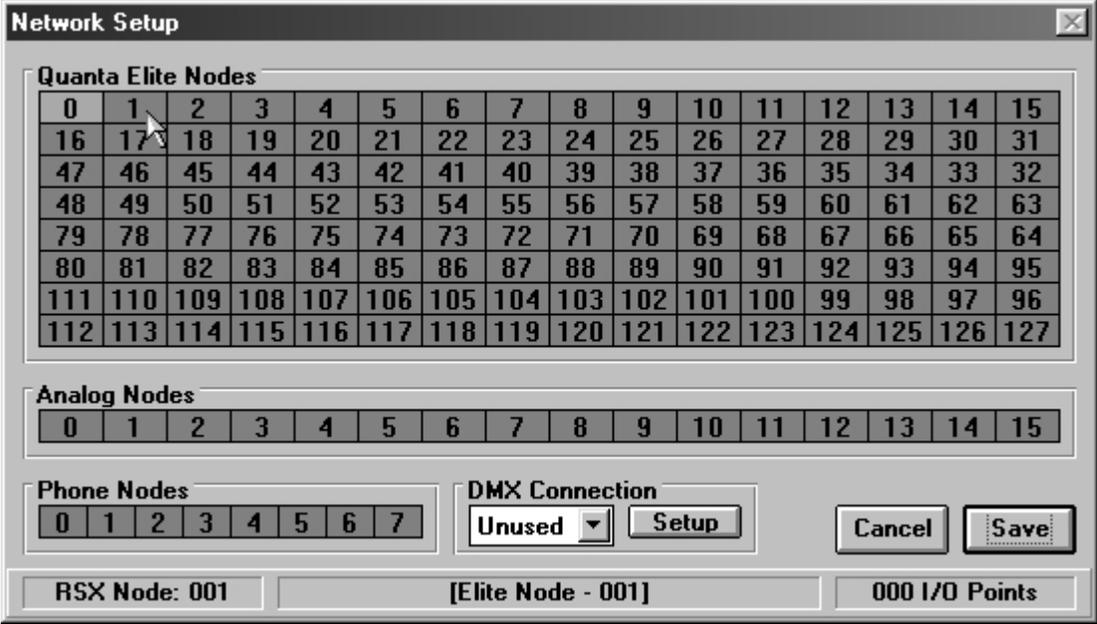
Controller Settings



Set a Scene

Section 2

Getting Started



Section 2 Getting Started

2.1 Overview	2-1
2.2 Project Description	2-1
2.3 Conventions	2-1
2.4 Configure the Network	2-2
2.5 Configure the Node 1 Manual Switches and Map Them to the Desired Relay Outputs.....	2-2
2.6 Configure the Photocell Output as a Global Switch.....	2-2
2.7 Configure the Node 2 Manual Switches and Map Them to the Desired Relay Outputs.....	2-2
2.8 Set the Controller Clocks	2-6
2.9 Configure the Node 1 Timers and Map Them to the Desired Relay Outputs.....	2-6
2.10 Configure the Node 2 Timers and Map Them to the Desired Relay Outputs.....	2-6
2.11 Starting the Network	2-6

2.1 Overview

The easiest way to develop proficiency in using Quanta Pro is to practice. Let's program a two node system using Quanta Pro. The control schedule we will be implementing appears in Tables 2-1 and 2-2.

2.2 Project Description

The project features two controllers each with 8 switch inputs and 8 relay outputs. The basic control strategy is to turn most of the lighting ON with switches (the outside lights by photocell) and turn the lights OFF by time schedule with multiple OFF sweeps to account for situations when the lights are turned back on after hours.

2.3 Conventions

The following terms are used in the programming procedures:

- **Point & click** = place the mouse pointer on an object and push the left mouse button
- **Double click** = place the mouse pointer on an object and push the left button twice.
- Actual entries or menu choices are bold/italics for example- **Save**.

Control Schedule RP1

Relay#	Circuit#	Area Controlled	Controlled By:
1	H2-1	East Hall	Switch Slv1 and timers 1 & 5
2	H2-2	West Hall	Switch Slv2 and timers 1 & 5
3	H2-3	East Office Bay	Switch Slv3 and timers 1, 2, 3
4	H2-4	East Office Bay	Switch Slv3 and timers 1, 2, 3
5	H2-5	West Office Bay	Switch Slv4 and timers 1, 2, 3
6	H2-6	West Office Bay	Switch Slv4 and timers 1, 2, 3
7	H2-7	North Parking Lot	Photocell and timer 4
8	H2-8	North Parking Lot	Photocell and timer 4

Switches: Land Slv1 on input 1, Land Slv2 on input 2, Land Slv3 on input 3, Land Slv4 on input 4, Land photocell on input 5. Slv1-4 are 3 wire momentary, photocell is 2 wire maintained.

Timers: timer 1=OFF at 10:30 PM, timer 2=OFF at 6:30 PM, timer 3=OFF at 8:30 PM, timer 4 = OFF at 11:30 PM, timer 5=ON at 7 AM.

Control Schedule RP2

Relay #	Circuit #	Area Controlled	Controlled By:
1	H2-9	South Parking Lot	Photocell and timer 1
2	H2-10	Cafeteria	Switch Slv5 and timers 2, 3, 4
3	H2-11	Cafeteria	Switch Slv5 and timers 2, 3, 4
4	H2-12	Shop	Switch Slv6 and timers 5, 6
5	H2-13	Shop	Switch Slv6 and timers 5, 6
6	H2-14	Shop	Switch Slv7 and timer 6
7	H2-15	Shop	Switch Slv7 and timer 6
8	H2-16	Shop	Switch Slv7 and timer 6

Switches: Land Slv5 on input 1, Land Slv6 on input 2, Land Slv7 on input 3, Slv5, 6, 7 are 3 wire momentary, photocell is global switched from RP1.

Timers: timer 1=OFF at 11:30 PM, timer 2=OFF at 6:30 PM, timer 3=OFF at 8:30 PM, timer 4 = OFF at 10:30 PM, timer 5 = ON at 6:00 AM, timer 6 = OFF at 5:00 PM.

2.4 Configure the Network

1. After starting Quanta Pro and powering up the two controllers, select the Elite Controller folder and point & click on **Setup**. (See Figure 2-1.)
2. When the pull down menu appears, point & click on **Network**.
3. When the node grid screen appears, point & click on **Node 001**.
4. When the node 1 configuration screen appears, point & click on the scroll box up or down arrow and then point & click on **8 I/O**.
5. Configure node 2 by following steps 3 and 4 for node 2.
6. Point & click on **Save** to return to the home screen and download the data to the controllers.

2.5 Configure the Node 1 Manual Switches and Map Them to the Desired Relay Outputs

1. While on the home screen, point & click on **Inputs**.
2. When the I/O mapping grid appears, point and click on **Input 1**. (See Figure 2-2)
3. When the input type scroll box appears, click on the up or down arrow until **Momentary On/Off** appears; then point and click on it.
4. Point & click on the input description field and type in **Slv1**.
5. Point & click on **Save** to return to the I/O grid.
6. Point & click on **Output 1**.
7. When the output definition screen appears, point & click on the output description field and type in **East Hall**. (Note the other two parameters configured on this screen are **Timer Output Style** & **Power On Settings**, the default values are OK for this application.
8. Point & click on **Save** to return to the I/O mapping grid.
9. Point & click on the grid cell where Input 1 and Output 1 intersect. Point and click

until **Both** appears in the cell grid indicating that the switch will turn the relay ON and OFF.

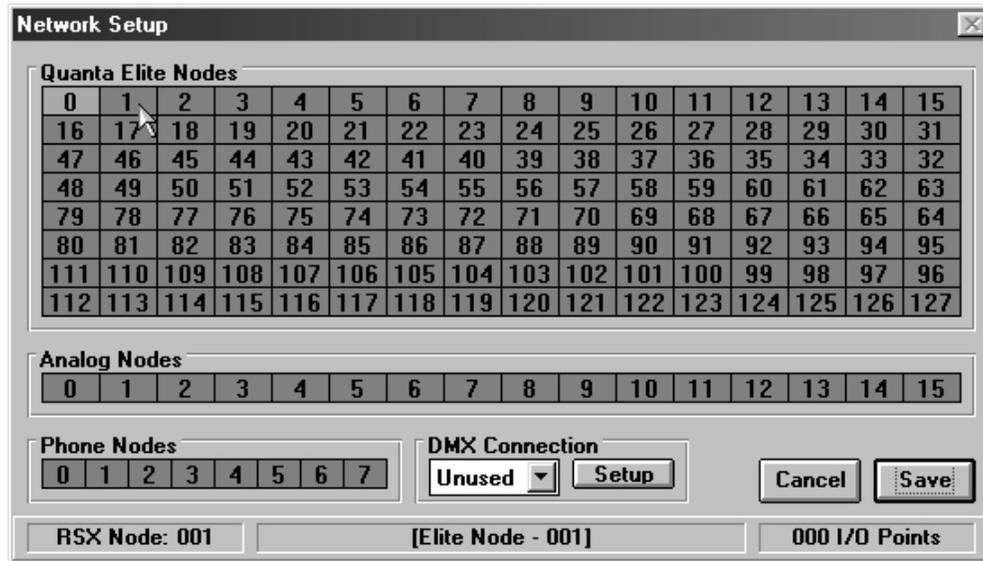
10. Repeat steps 2-9 for the other manual switches (Slv2-4) wired to Panel RP1
11. Point & click on **Save** to download the data to node 001.

2.6 Configure the Photocell Output as a Global Switch

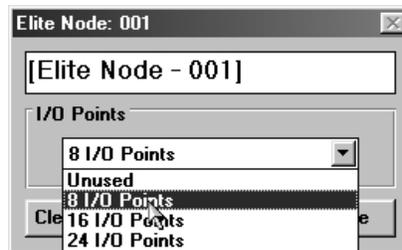
1. Point & click on **Inputs**
2. When the I/O grid appears, point & click on **Input 5**.
3. Point & click on the input description field; then type in **photocell**.
4. Point & click on the input type scroll box ; then point & click on **Maintained On/Off**
5. Point & Click on **Save**.
6. Point & click on **Output 7**.
7. Type in **North Parking Lot** in the output description field.
8. Point & click on the output style scroll box; then point & click on **No Blink Alert**.
9. Point & click on **Save** to return to the I/O grid.
10. Repeat steps 6-9 for output 8
11. Point & click on the black dot to the left of **Input 5**
12. When the node and output matrix screen appears (see Figure 2-3), point & click on **Output 7, node 001** until **Both** appears in the action box.
13. Repeat step 12 for output 8.
14. Point & click on **Save** to return to the I/O grid screen.
15. Repeat steps 11-14 for output 1 Node 002.

2.7 Configure the Node 2 Manual Switches and Map Them to the Desired Relay Outputs

1. From the home screen, point & click on the node scroll box; then point & click on **Node 002**.
2. Define Node 002, switches, outputs, and I/O mapping using the techniques covered in 2.5.



Node Grid Screen



Node 1 Configuration Screen

Figure 2-1, Network Configuration

I/O Mapping Grid

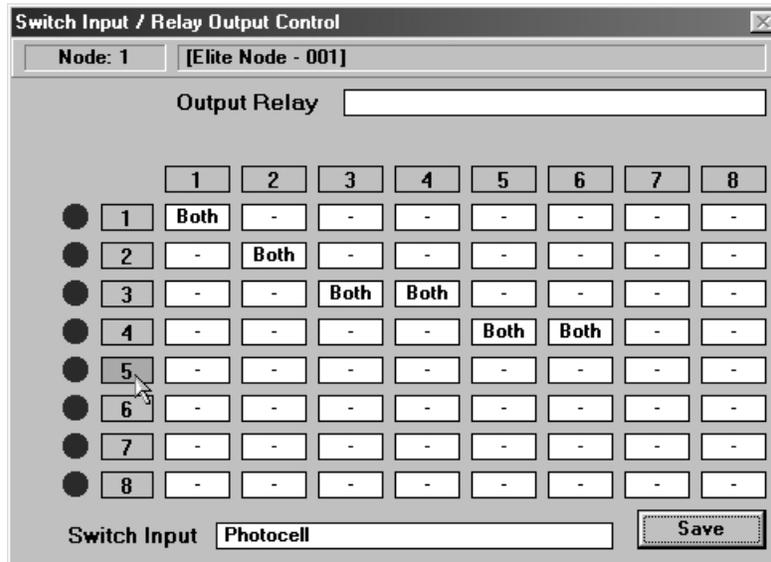
Input Type

Output Definition

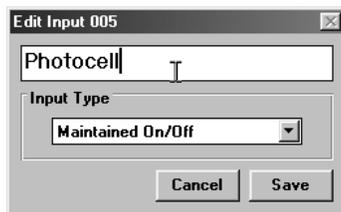
I/O Mapping (Input 1)

I/O Mapping (Inputs 1-4)

Figure 2-2, I/O Configuration & Mapping



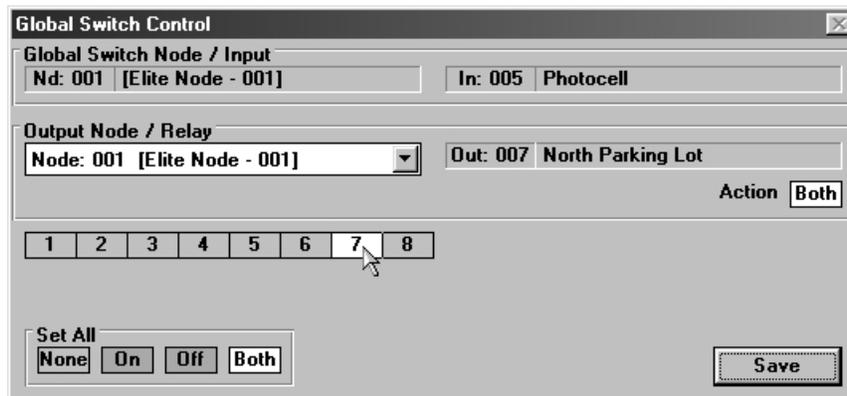
I/O Mapping Grid



Input Type



Output Definition



I/O Mapping (Input 1)

Figure 2-3, Global Switch Programming

2.8 Set the Controller Clocks

Follow this procedure to synchronize the controller clocks to the clock in your PC. This is important for implementing time based control. (See Figure 2-4)

1. Be sure your PC is set to the correct time.
2. From the home screen, point & click on **Setup**
3. Point & click on **Set Elite Clocks**

2.9 Configure the Node 1 Timers and Map Them to the Desired Relay Outputs

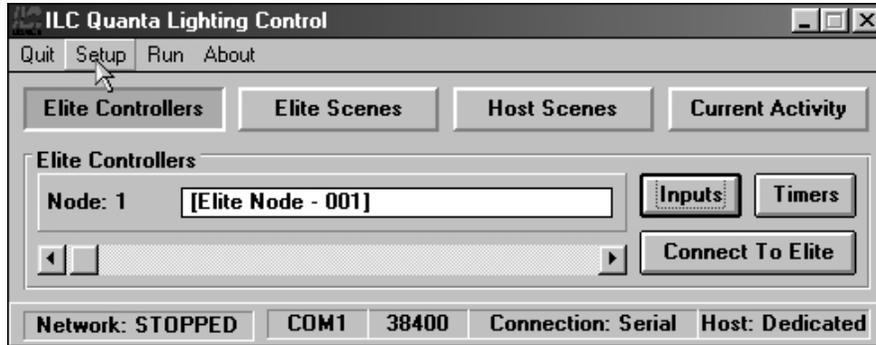
1. From the home screen, ensure that the **Elite Controller** envelope and **Node 001** are selected.
2. Point & click on **Timers** to access the timer/output grid. (See Figure 2-5)
3. Point & click on **timer 1**.
4. Type in **OFF at 10:30 PM** in the timer description field.
5. Point & click on the appropriate hour arrow until **10:00 PM** appears in the time box.
6. Point & click on the appropriate minute arrow until **10:30 PM** appears in the time box.
7. Point & click on the day of the week check boxes to pick the days on which you want timer 1 to occur.
8. Point & click on **Save** to return to the timer/output grid.
9. Point & click on the grid cell where timer 1 and output 1 intersect until **Off** appears in the cell.
10. Repeat step 9 for outputs 2-6.
11. Repeat Steps 2-10 to define timers 2-5 and map them to the correct outputs
12. Point & click on **Save** to download the data to Node 001 and return to the home screen.

2.10 Configure the Node 2 Timers and Map Them to the Desired Relay Outputs

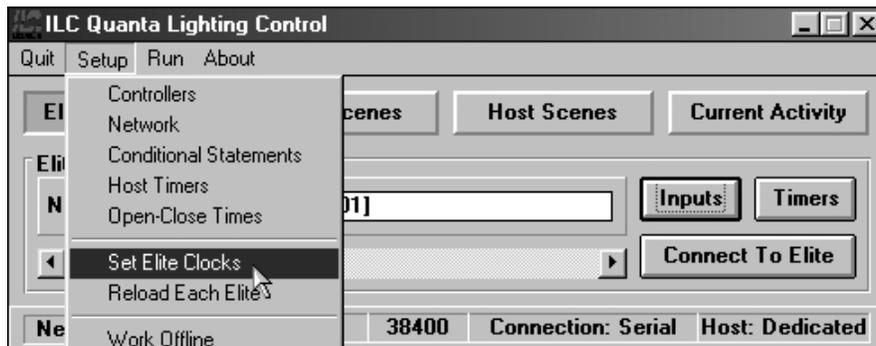
1. From the home screen, ensure that the **Elite Controller** envelope and **Node 002** are selected,
2. Follow the procedure detailed in 2.9.

2.11 Starting The Network

To make the LAN operational; from the home screen, point & click on **Run**. (See Figure 2-6)

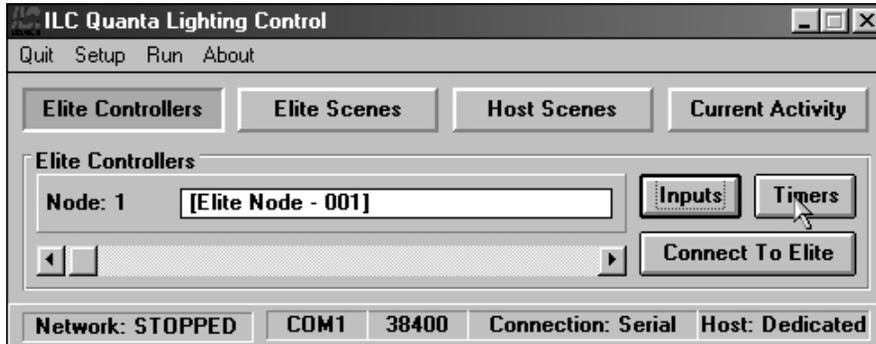


Home Screen

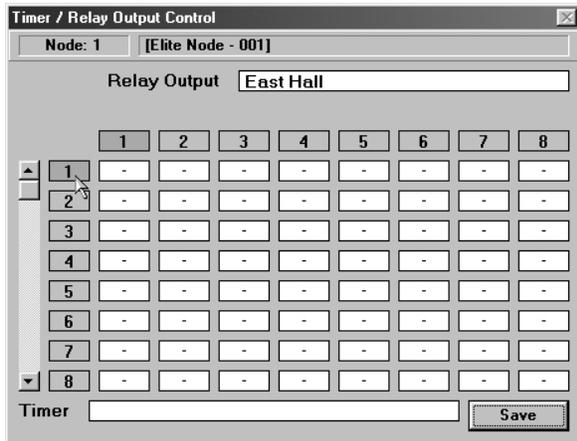


Pull-Down Menu

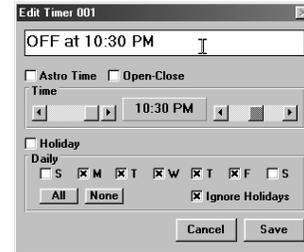
Figure 2-4, Setting The Controller Clocks



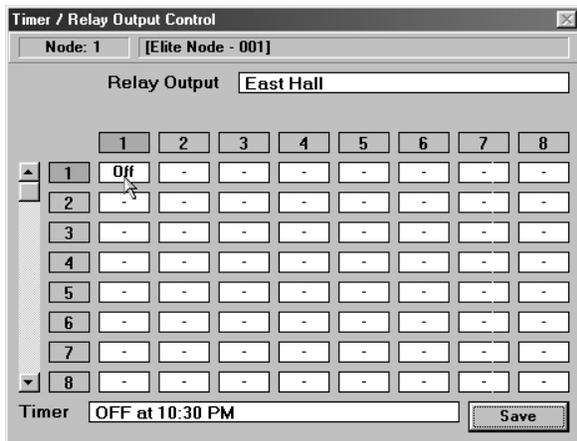
Home Screen



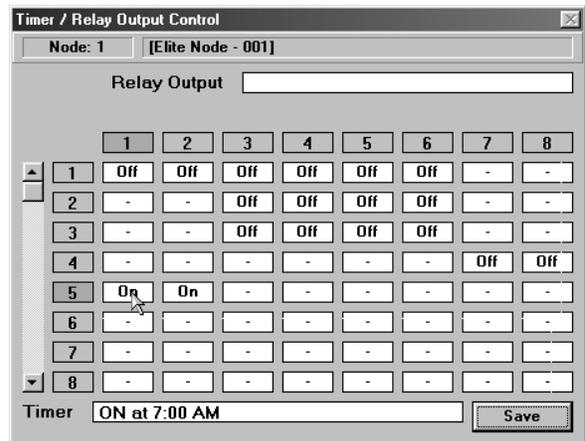
Timer/Output Grid



Timer Definition

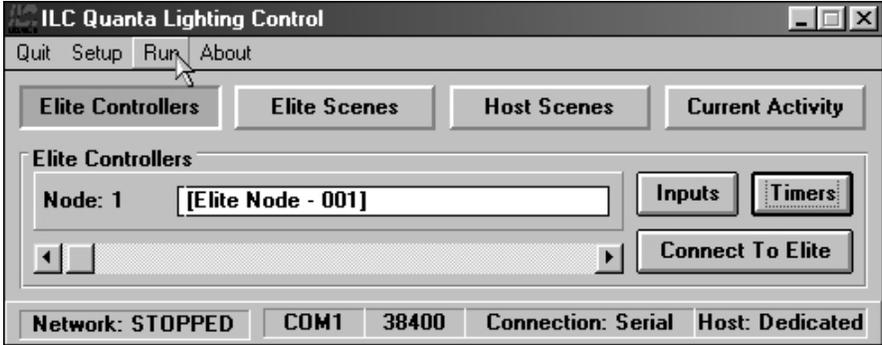


Timer/Output Mapping (Getting Started)

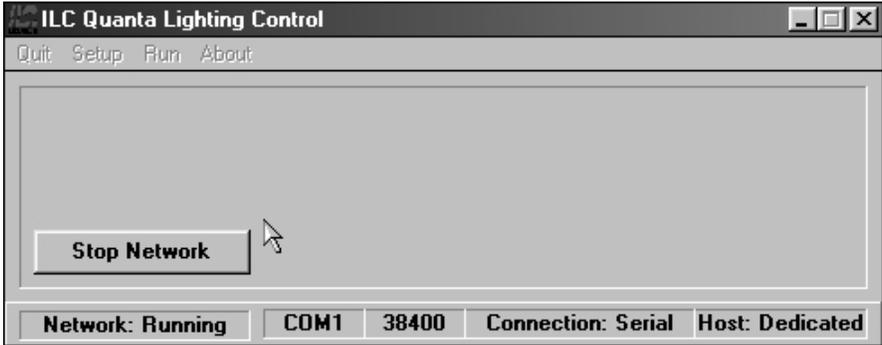


Timer/Output Mapping (Complete)

Figure 2-5, Timer Configuration/Mapping



Home Screen

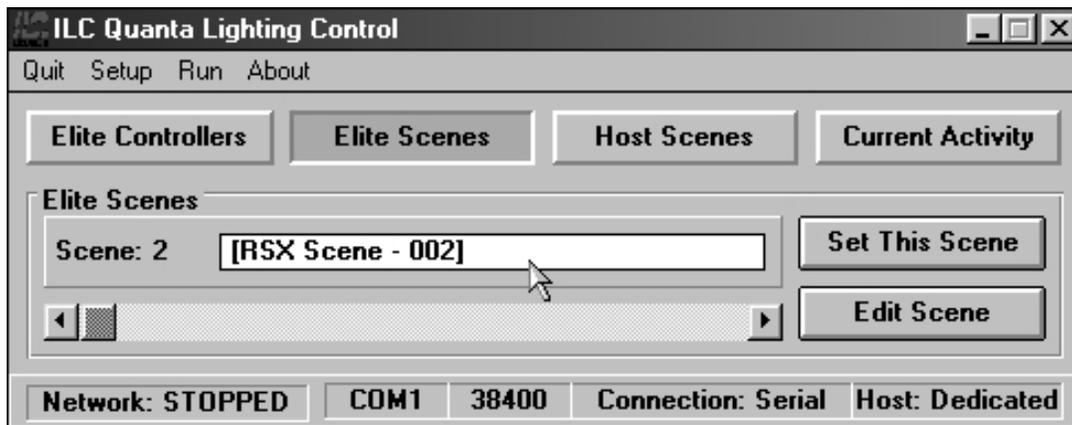


Network Running

Figure 2-6, Starting The Network

Section 3

Advanced Operations



Section 3 Advanced Operations

3.1 Overview	3-1
3.2 Scenes	3-1
3.3 Define and Invoke the Scene	3-1
3.4 Conditional Statements	3-1
3.5 Program This Conditional Statement.....	3-1

3.1 Overview

This section covers operations that should be undertaken only after you have mastered the operations discussed in Section 2.

3.2 Scenes

Scenes are user defined On/Off load patterns. There are two types. Elite (RSX) Scenes, the definition of which resides in the controller and host scenes that reside in your PC. You can define up to 256 Elite Scenes. Elite Scenes are recommended over Host Scenes because they can be more rapidly executed.

The easiest way to illustrate how to define an Elite Scene is by example. Let's define the following scene as Elite Scene 2
Node 001 outputs 2, 4, 6, 8 turn ON
Node 001 outputs 1, 3, 5, 7 turn OFF

3.3 Define and Invoke the Scene

1. Point & click on the **Elite Scene** folder.
2. Point & click on the appropriate scene selection arrow; then point & click on **RSX Scene 002**. (See Figure 3-1) (If you double click on the scene title field you can enter you own name for this scene.)
3. Point & click on **Edit Scene**.
4. Point & click on the node selection scroll box; then point & click on **Node 001**.
5. Point & click on **Output 2** until **Off** appears in the action box.
6. Repeat step 5 for outputs 4, 6, 8,
7. Point & click on **Output 1** until **On** appears in the action box.
8. Repeat step 7 for outputs 3, 5, 7.
9. Point & click on close.
10. Point & Click on **Set This Scene** to invoke the scene.

3.4 Conditional Statements

You can implement unique control scenarios by developing conditional statements. With a conditional statement, the controller evaluates whether or not certain criteria

you have specified are true or false and then signals specified relay output(s) to switch ON/OFF or sets a scene you have programmed.

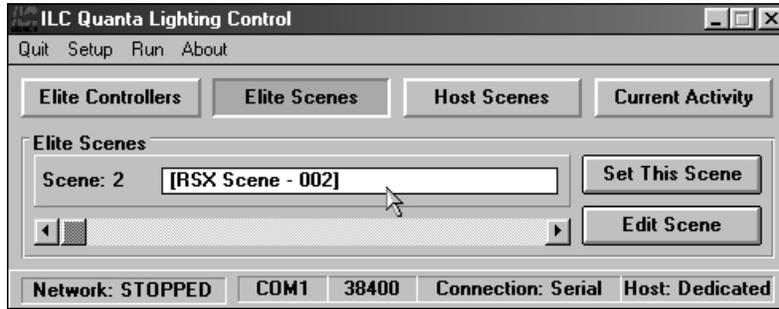
Let's program the following conditional statement:

Conditional Statement 001:

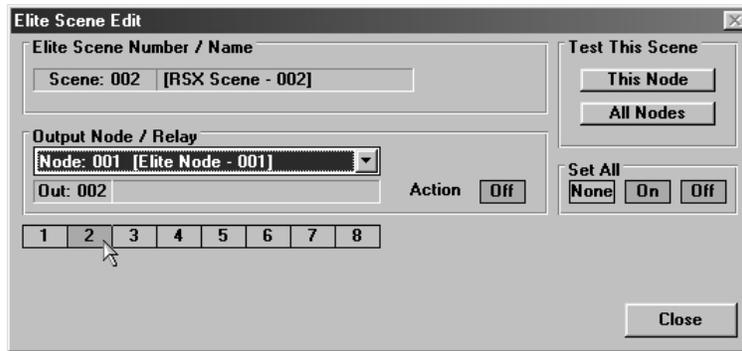
```
If Input 4, node 2 is closed
    And
    If Output 5, node 1 is ON
    Then
    Set RSX Scene 3
```

3.5 Program This Conditional Statement

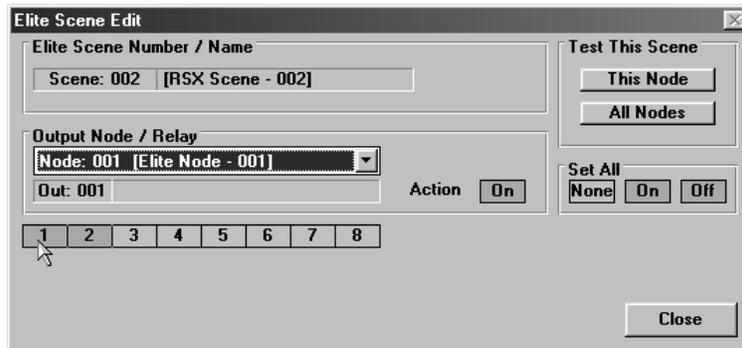
1. Point & Click on the Elite Controllers folder.
2. Point & click on **Setup**.
3. Point & click on **Conditional Statements**.
4. When the conditional statement editor appears, point & click on Row 01 column 01. (See Figure 3-2)
5. Point & click on the scroll box; then point & click on **On Input Closed**.
6. Point & click on the Node scroll box; then point & click on **Node: 002**.
7. Point & click on the Input scroll box; then point & click on **Input: 004**.
8. Point & click on **Save** to return to the conditional statement editor.
9. Point & click on row 02, column 01.
10. Point & click on the scroll box; then point & click on **Output On**.
11. Point & click on the Node scroll box; then point & click on **Node: 001**
12. Point & click on the Output scroll box; then point & click on **Output: 005**.
13. Point & click on **Save** to return to the conditional statement editor.
14. Point & click on True, column 01.
15. Point & click on the scroll box; then point & click on **Set RSX Scene**.
16. Point & click on the RSX Scene scroll box; then point & click on **Scene: 003**
17. Point & click on **Save** to return to the conditional statement editor.
18. Point & click on **Close** to return to the Home Screen.



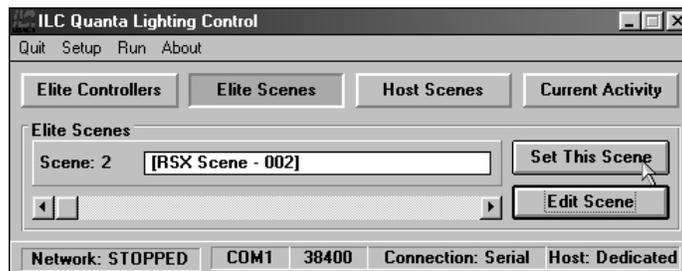
Elite Scenes, Top Level Screen



Editing the Scene (OFF Relays)

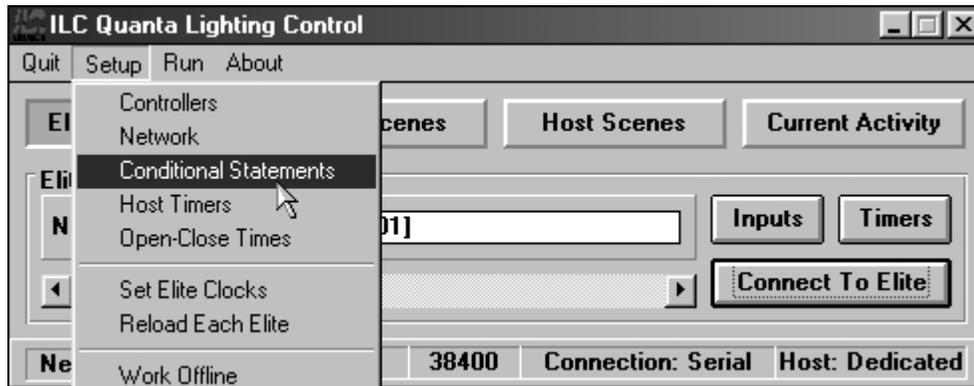


Editing the Scene (ON Relays)

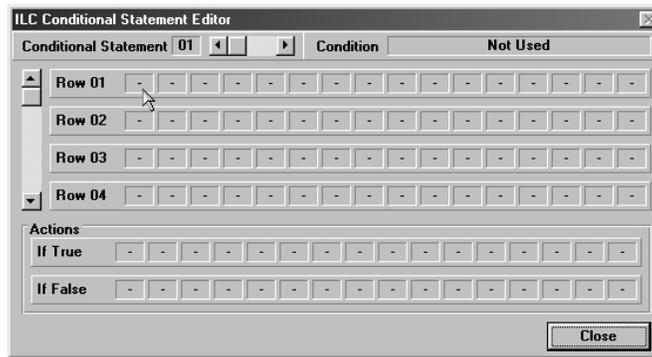


Setting the Scene

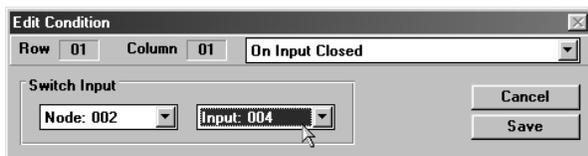
Figure 3-1, Scene Configuration



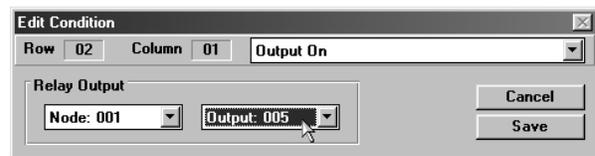
Set up Pull Down Menu



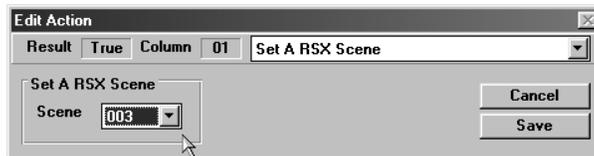
Conditional Statement Editor



Defining Criteria 1



Defining Criteria 2



Defining the Action if Criteria Are True

Figure 3-2, Conditional Statements

Section 4

Appendix

Time/Date	11:52 Tuesday 02/08/00	Panel Name	QUANTA ELITE
Time Zone	Central	Lat	045
Auto DST	Enabled	Lon	090
I/O Points	08	Sunrise	07:12
		Sunset	17:15
	Blink Alert (Minutes)		5
	Override (Hours)		2
Keyboard Type	Elite	Elite	ILC ELITE LIGHTING CONTROLLER REV 5.07 12/08/99
Network Commands	Enabled	Serial	SERIAL INTERFACE ILC E-PROTOCOL REV 5.10 02/17/99
		Option	A SECOND OPTION CARD IS NOT INSTALLED
			<input type="button" value="Refresh"/> <input type="button" value="Close"/>

Section 4 Appendix

A Installing <i>Quanta Pro</i>	A-1
A.1 Introduction	A-1
A.2 Minimum Computer Requirements.....	A-1
A.3 Recommended Installation Procedure.....	A-1
A.4 Configuration.....	A-1

A.1 Introduction

Most customers have Quanta Pro installed on their computer at the factory or by an ILC field service technician during the system start-up. If you have elected to install the software yourself, follow these instructions. Call ILC tech support if you need help (1-612-829-1900).

A.2 Minimum Computer Requirements

- IBM compatible PC
- 486DX 66 or faster (Pentium recommended)
- 1 RS232 serial port
- CDROM or CDROM R/W drive
- Windows 95, 98 or newer
- 8 MB RAM
- VGA or SVGA monitor- 640 x 480 min 800 x600 recommended
- Mouse & keyboard or Touch Screen

A.3 Recommended Installation Procedure

Place the CDROM disk containing Quanta Pro, Quanta Pro into your computer's drive.

1. Go to RUN on your computer and Browse and select Setup for Qe-LAN.
2. Follow the online instructions.

A.4 Configuration

Open **Qe-LAN.ini** and enter the COMM port supporting communications with the ILC lighting