ENERGY SAVING LIGHTING CONTROLS

Intelligent Lighting Controls, Inc.

Lighting Control Software for LightMaster Panels in Standard Network Applications

LIGHT Master Pro SOFTWARE

USER GUIDE

Includes setup, installation and programming LightMaster Pro software for the ILC LightMaster lighting controller in standard network applications

www.ilc-usa.com

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LIGHT Master Pro SOFTWARE

USER GUIDE

STANDARD NETWORK

Version 1B
1/1/05

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Program Description

Section 1 Program Description

1.0 Overview

Lightmaster Pro Standard Network is an ILC Corp. proprietary software package designed for use with the standard (up to 32 controller node lighting controller and 127 LightSync™ devices) network. Using this Windows based software you can program the lighting controller nodes, retrieve data from and issue commands to the controllers. You can develop the programming parameters off-line, save them to a file and then download them from your PC (personal computer) to the controller nodes. You can also retrieve parameters present in the controllers and back them up on your PC.

See Appendix A for minimum PC requirements and installation instructions.

If you are not familiar with the control features of the ILC Standard Lighting Control Network consult the LightMaster Network User Guide

1.1 Installation

This section explaind how to install LightMaster Pro on your computer and outlines what you should and can do after the installation is complete. Most customers have LightMaster 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.

Minimum System Requirements

- IBM compatible PC
- Pentium 4, 1.6GHz or greater
- 1 RS232 serial port
- CD-R drive
- Windows 2000, XP
- 100 MB Free Space
- 512 MB RAM
- SVGA monitor- 1024 x 768 recommended
- Mouse & keyboard

Performing the Installation

NOTE: You may need Administrator's privilages to install the software. Load the CD disk containing LightMaster Pro into your computer's CD drive. Exit any open applications and temporarily disable virus protection software.

1. Go to RUN from the START menu on your computer. Click BROWSE, navigate to your CD drive and select Setup for LightMaster Pro.
2. Follow the directions on the screen to complete the installation.
3. Proceed to Starting LightMaster Pro.

Troubleshooting

If LightMaster Pro installation fails, reboot and re-install the software. Call ILC Technical Support for further assistance (1-952-829-1900). Please have your system information ready.

1.2 Starting LightMaster Pro Standard Network

To start the program point and click on the ILC LightMaster SNET icon on your desktop. The Home screen will appear. See Figure 1-1.

1.3 Home Screen Menu Bar Choices

- **File** - Use FILE to create a new file, open, save current system entries/parameters to your hard drive, and to exit the program.
- **Connect** – Use to connect your PC to the lighting control network. You can set the system clock, retrieve data, issue commands and program parameters on-line via Connect.
- **Edit System** – Use Edit System to enter the system level parameters for the network. Generally time based, group and lightsync device parameters are entered at the system level.
- **Select Node** – Use Select Node to choose the node you want to program with the node level parameters.
- **Edit Node** – You use this choice to enter the node level parameters of the node you have selected. Generally speaking, individual relay, hardwired switch, LightSync/relay, pilot, timer and preset

input parameters are entered at the node level.

- **Document** - This feature allows you to organize and manipulate data for importing into other data based and spreadsheet programs.
- **About** – displays the Home screen and the software revision level and the ILC Corp. 800 number.

1.4 Edit System Options

The edit system options offered from the home screen are:

- **Configure Nodes** - use this option to configure the number of inputs, outputs and any optional add-on modules for the network nodes.
- **Group Control** – use this option to check relay status and to force relay groups ON and OFF.
- **LightSync Settings** – use this option to view LightSync device status, configure LightSync devices and pilots.
- **Timer Settings**- use this option to define normal, astro, and open/close timers. Then map each timer to the relay(s)/relay group it controls and define its response.
- **Set Times** - use this option to enable/disable daylight savings and define astro clock, open/close, OFF sweep.
- **Capture Presets** – use this option to capture, and set presets from your PC.
- **Special Functions**- use this option to customize names of timers, presets and LightSync devices and change the Photocell Filter.

Figure 1-1 LightMaster Pro Home Screen

LightMaster V.6 Firmware Menu Tree

START HERE

Main Menu Choices
- Edit System
- Edit Node
- Synchronize Settings*
- Exit

* not used if all programming is done from the Master

EDIT SYSTEM Functions
- Group Control
- LightSync Settings
- Timer Settings
- Set Times
- Capture Presets
- Special Functions

EDIT NODE Functions
- Relay Outputs
- Switch Inputs
- Switch Pilots
- Timers
- Set Times
- Presets
- Add-on Modules
- Special Functions

Group Control
- Turn Defined Relay Groups ON or OFF

LightSync Settings
- View LightSync Node Status
- Configure LightSync Node Characteristics
- Define LightSync Pilot Characteristics

Timer Settings
- Configure Timers
- Define Timer/Relay Group Control
- Define Timer/Preset Control
- Set Blink Alert, Override, and Alarm Times

Set Times
- Set System Time/Date
- Daylight Savings
- Astro Clock
- Open/Close Times
- Off Hours Sweeps
- Interval and Groups

Capture Presets
- Capture and Set Presets

Special Functions
- Edit Group, Timer, Preset & LightSync Names
- Change Password
- Change Photocell Filter

Relay Outputs
- View Relay Status
- Configure Relay Options (Blink, Power Up, etc.
- Define Relay Groups

Switch Inputs
- Local (Hardwired) Inputs: Status, Switch Type Definition, Input/Relay Control, Input/Group Control
- Network (Global) Inputs: Input/Relay Control
- LightSync Inputs: Input/Relay Control

Switch Pilots
- Hardwired Switch Pilot Configuration

Timers
- Define Timer/Relay Control
- View Timers
- View Blink Alert, Override, Alarm Times

Set Times
- VIEW: Time/Date, Daylight Savings, Astro Clock, Open/Close Times
- DEFINE: Individual Relay Output Off Hour Sweeps, Input Active Times

Presets
- Edit Presets

Add-on Module
- Used with optional cards: DMX, etc.

Special Functions
- EDIT:
  – Panel, Relay, Input Names
  – Access to Hidden Functions

Section 2
Communications

Section 2 Communications

2.1 Communication Methods

There are two possible methods for linking a LightMaster controller to a PC:

- **Direct Connect**- connect the factory supplied cable (consult factory for alterate cable) between a COM port on your computer and the RS 232 port on the LightMaster CPU board. (See Figure 2.1)
- **On-board Modem (if equipped)**- connect the LightMaster's on-board modem and your computer's modem via a direct analog telephone system (no digital systems) to enable remote communication. (See Figure 2.2)

2.2 Communication Features

Once linked with a LightMaster, you can:

- Check the current status of relays, relay groups, and switch inputs
- Turn individual relays or relay groups ON or OFF
- Sweep all relays in the LightMaster ON or OFF
- Download parameters from your PC to the LightMaster
- Download the clock settings from your PC to the LightMaster **(NOTE: make sure the time and date on your PC is appropriate for the LightMaster's location. This is a special concern when programming a remote LightMaster.)**
- Upload parameters from the LightMaster to your PC
- Trigger presets

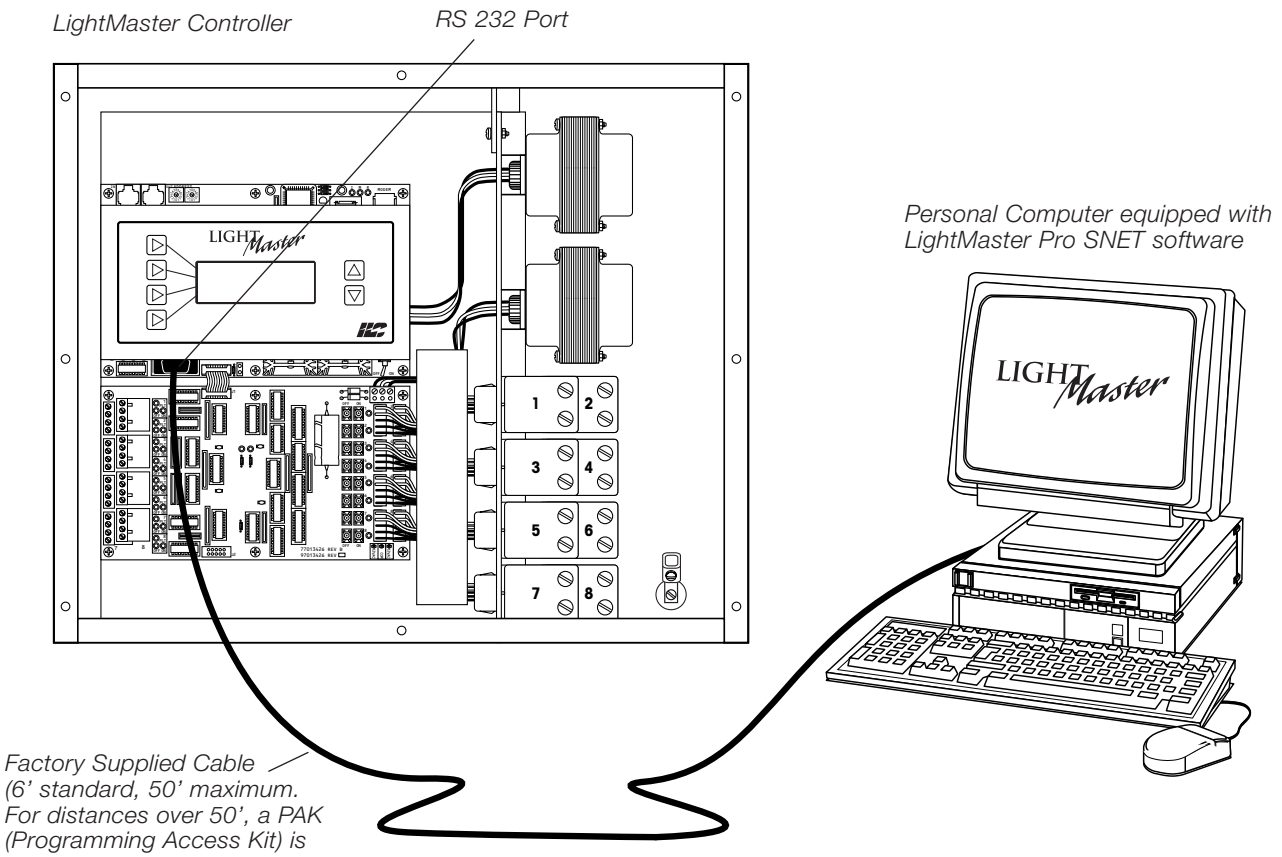

Figure 2.1 – Direct Connect Link

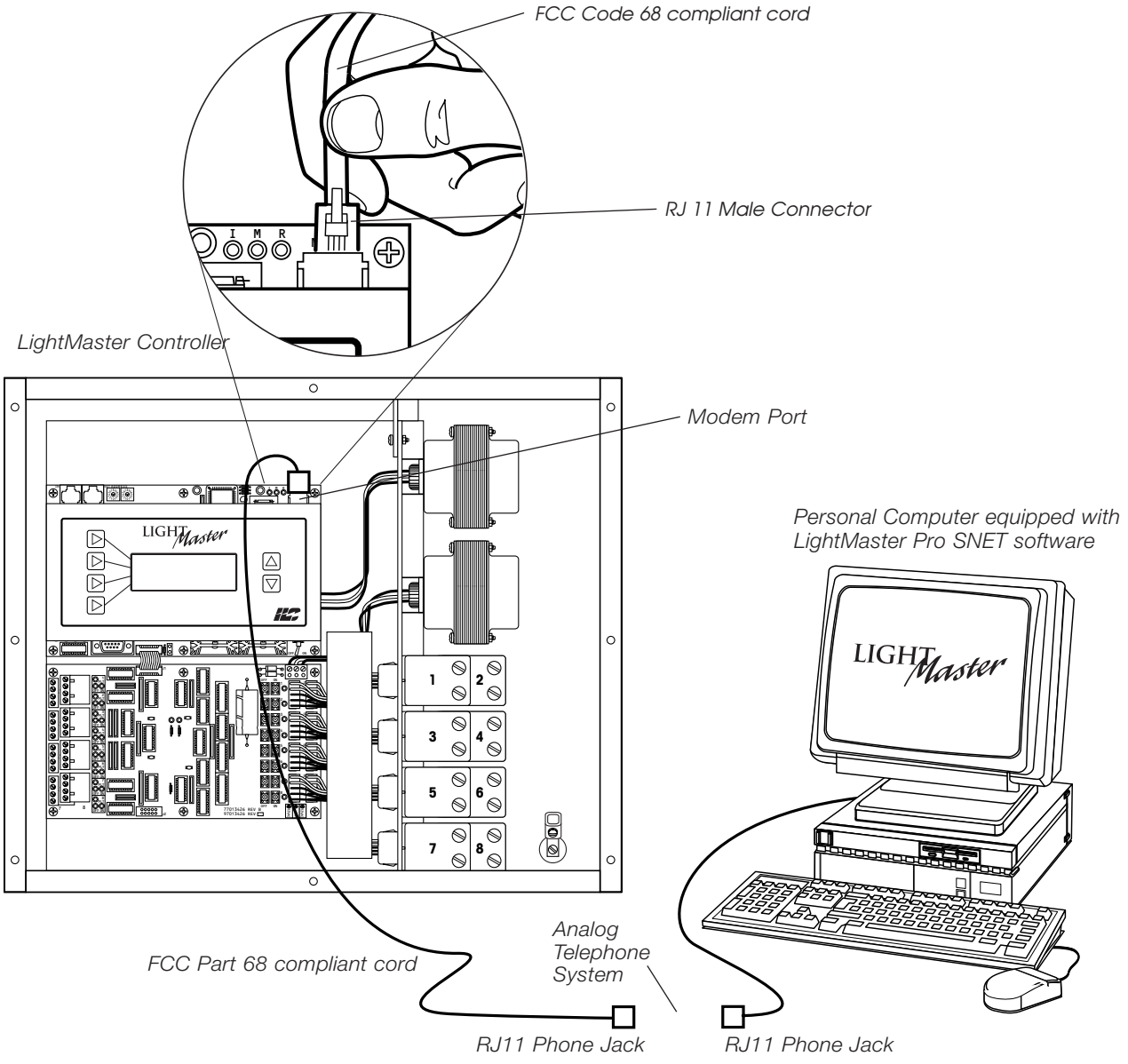

Figure 2.2 – On-board Modem Link

Section 3
Getting Started

Section 3 Getting Started

3.1 Programming a Small Network

The easiest way to become familiar with LightMaster Pro SNET is to use it. Let's program a 2 node network at a building called ABC Inc. Control will be a combination of timers and one Lightsync 6 button switch node. Refer to the control schedule in Figure 2-1.

Figure 2-1 ABC Inc. Control Schedule

Node: 01 (Master Node)

Relay#	Group#	Circuit #	Area Controlled	Timer Control	Switch Control
1	1	H1-1	Parking Lot	1, 2, 3, 4	Node 03.1
2	1	H1-3	Parking Lot	1, 2, 3, 4	Node 03.1
3	1	H1-5	Outside Lts.	1, 2	Node 03.1
4	3	H1-2	Entry	4, 5	Node 03.2
5	2	H1-4	West Office		Node 03.3
6	2	H1-6	East Office		Node 03.4
7	3	H1-7	Hall	4, 5	Node 03.2
8	2	H1-9	Conference Room		Node 03.5

Node: 02

Relay#	Group#	Circuit #	Area Controlled	Timer Control	Switch Control
1	4	H2-1	Production	4, 6	Node 03.6
2	4	H2-3	Production	4, 6	Node 03.6
3	4	H2-5	Production.	4, 6	Node 03.6
4	4	H2-2	Production	4, 6	Node 03.6
5	4	H2-4	Production	4, 6	Node 03.6
6	4	H2-6	Production	4, 6	Node 03.6
7	4	H2-7	Storage	4, 6	Node 03.6
8	4	H2-9	Shipping	4, 6	Node 03.6

Timer 1= ON 5 minutes before sunset
Timer 2= OFF 5 minutes after sunrise
Timer 3= OFF 11 PM
Timer 4= ON 6 AM
Timer 5= OFF 7 PM
Timer 6= OFF 5 PM

Program Groups 2, 3 and 4 for 2 hour after hours OFF sweeps
Program switch pilots to track associated relay groups or individual relays depending on entity controlled.

3.2 Start LightMaster Pro

Double click on the ILC LightMaster SNET icon on your desktop to bring up the LightMaster Pro Standard Network Home screen.

3.3 Program the System Level Parameters

Point and click on **Edit System** to access the system pull down menu.

Configure the Nodes (See Figures 3.1, 3.2)

1. Point & Click on **Configure Nodes**
2. Point & click on the Node 01 node type box; then point & click on the box arrow and select the number of I/O points the controller is equipped with.
3. Repeat step 2 to configure Node 02.
4. Point and click on About to return to the Home Screen.

Figure 3.1 – Configure Nodes menu choice

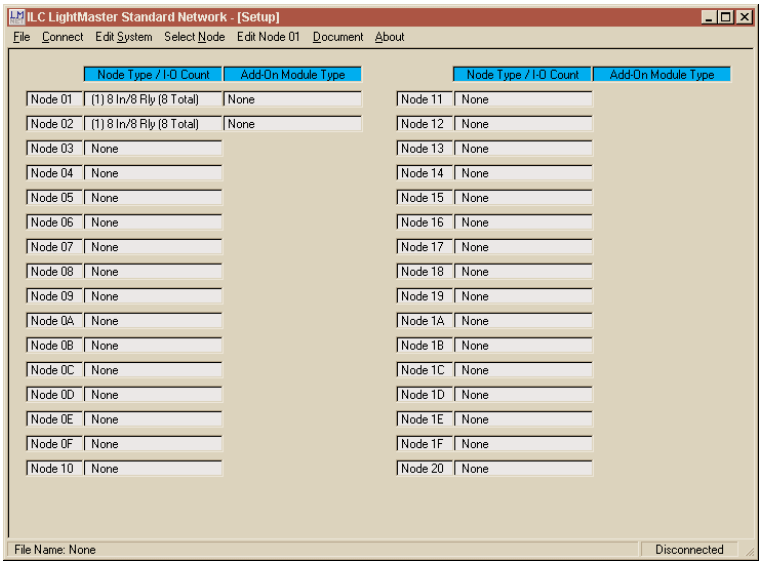

Figure 3.2, Configure Nodes screen

Define a Group (See Figures 3.3, 3.4)

1. Point & Click on **Select Node** to specify which controller is to be edited (Node 01 in this example).
2. Point & Click on **Edit Node 01**, select **Relay Grouping** from the **Relay Output** pull down sub menu.
3. Select the Group you wish to define, then click on the relays to include or exclude relays from this group.
3. Repeat step 2 to configure Node 02.
4. Point and click on **About** to return to the Home Screen.

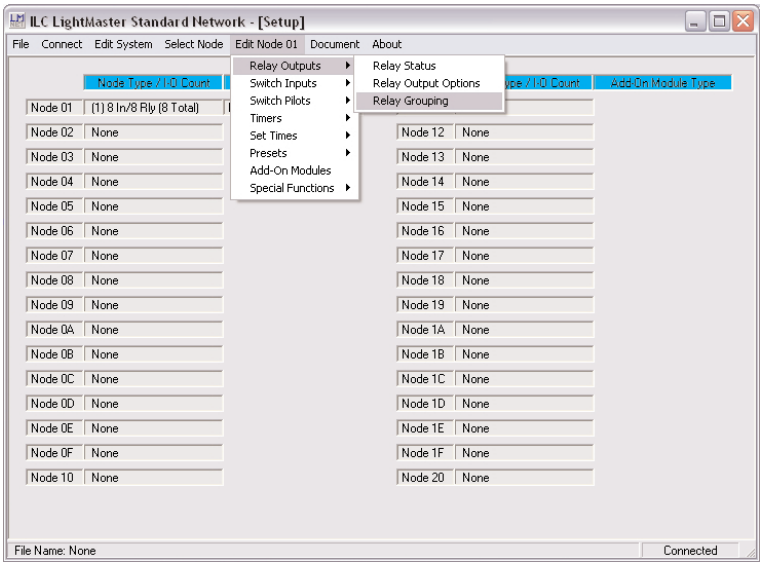

Figure 3.3 – Relay Grouping menu choice

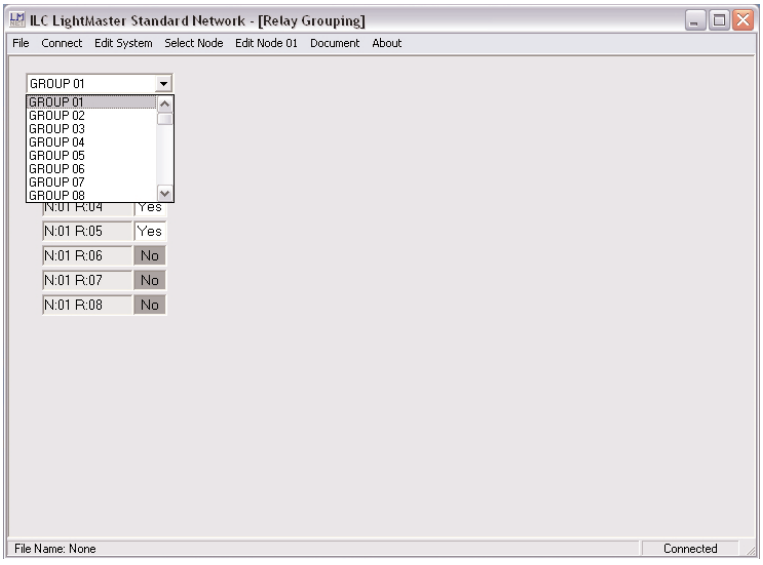

Figure 3.4 Configure Nodes screen

Configure the timers(See Figures 3.5, 3.6)

1. Point & click on **Edit System**.
2. Point & click on **Timer Settings**.
3. Point & Click on **Configure Timers**.
4. When the timer configuration screen appears, point & click on the timer number box and select the timer to be configured.
5. Point & click on the desired timer type.
6. Point & click on the time setting boxes to select the time that the timer is to occur.
7. Point & click on the desired day type; then point and click on each day you want the timer to be active.
8. Repeat steps 4-7 to configure the remaining timers

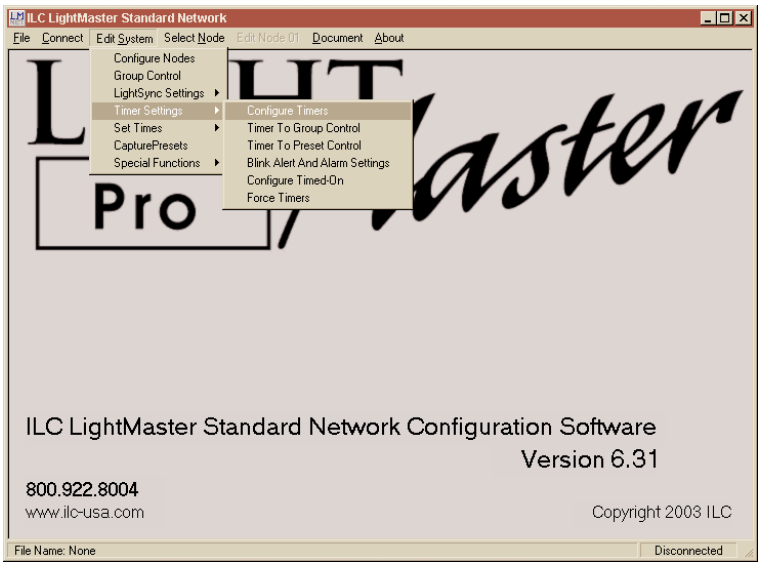

Figure 3-5 – Configure Timers menu choice

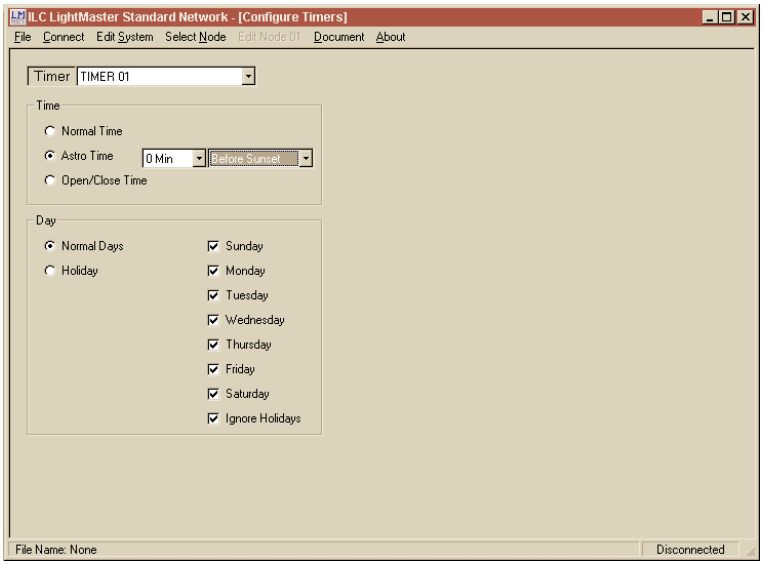

Figure 3.6, Configure Timers screen

Configure the Timer to Group Control (See Figures 3.7, 3.8)

1. From the **Edit System** menu, Point & click on **Timer Settings**.
2. Point & Click on **Timer to Group Control**.
3. Point & click on the timer number box to select a timer.
4. Point on the desired group action box and desired action.
5. Repeat steps 2-4 to define Timer to Group Control for the other timers.

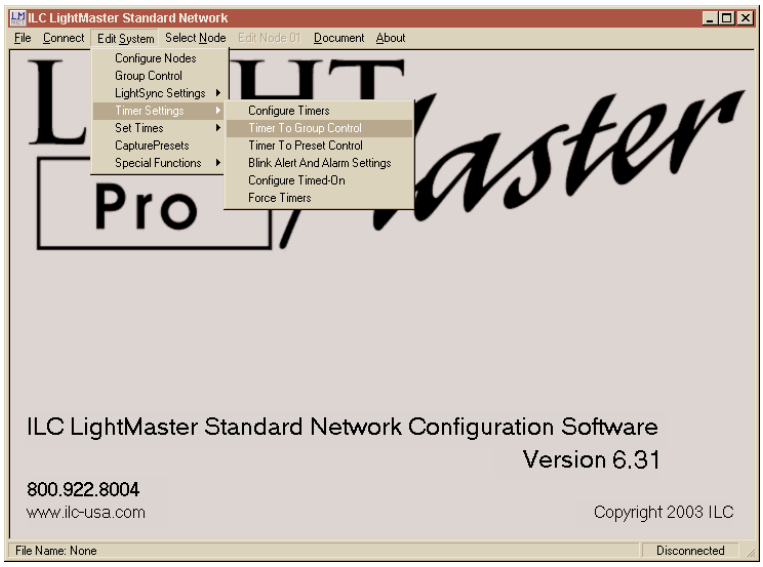

Figure 3.7– Timers to Group Control menu choice

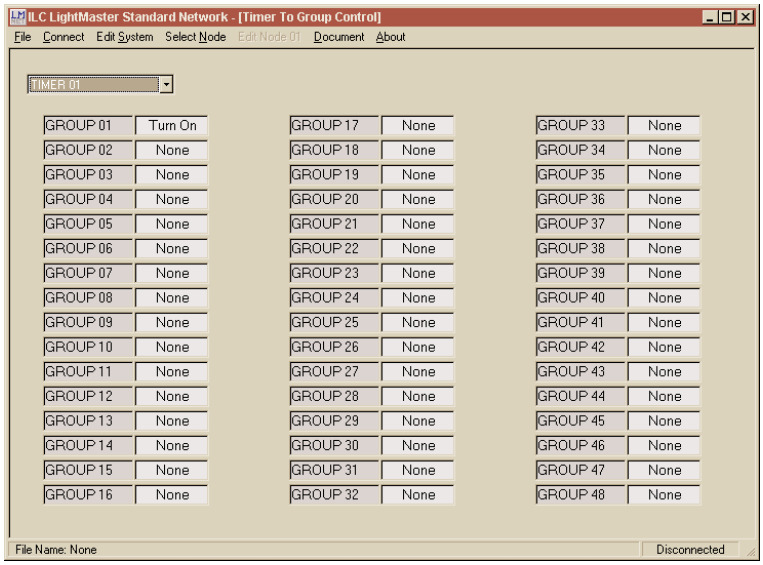

Figure 3.8 – Configure Timers to Group Control screen

Define the Astro Clock Parameters (See Figures 3.9, 3.10)

1. From the **Edit System** Menu, point & click on **Set Times**; then point & click on **Astro Clock Settings**.
2. Select the proper latitude, longitude and time zone coordinates for the project location. (If you are unsure what the coordinates should be, point & click on the Find Latitude/Longitude By City button and select the coordinates of the ciy closets to the projects location.)

Figure 3.9 – Astro Clock menu choice

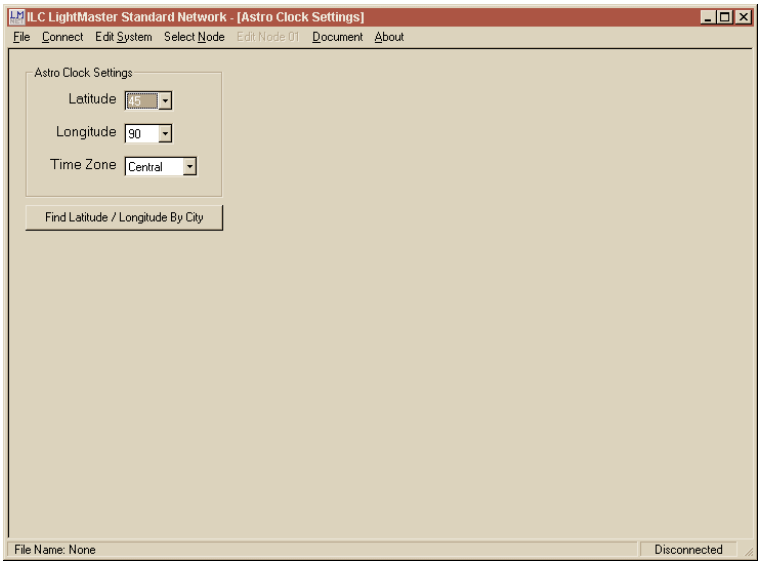

Figure 3.10 – Astro Clock Settings screen (latitude and longitude)

Define the Off Hours Sweeps Parameters
(See Figures 3.11, 3.12, 3.13, 3.14)

1. From the **Edit System** Menu, point & click on **Set Times**; then **Off Hours Sweeps**.
2. Point & Click on Interval; then point & click on 2 Hours.

Figure 3.11 – Off Hours Sweeps menu choice

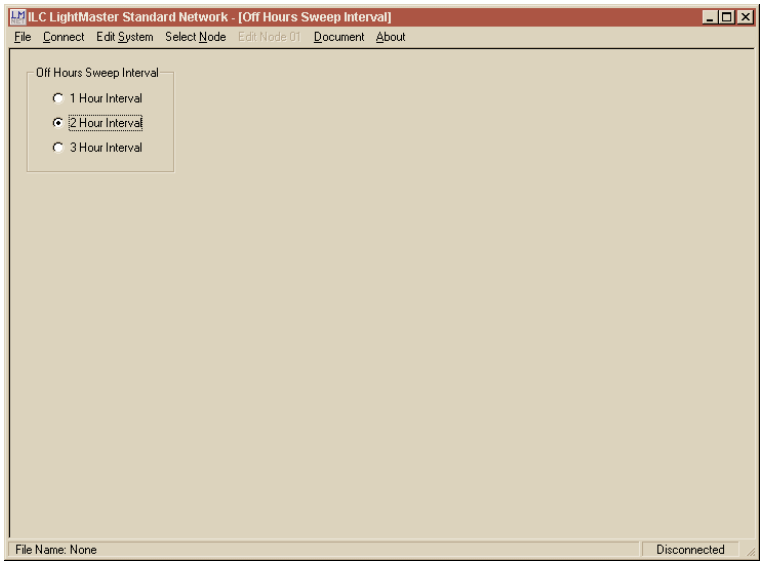

Figure 3.12 – Select Interval screen

Define the Off Hours Sweeps Parameters, continued (See Figures 3.11, 3.12, 3.13, 3.14)

3. From the **Edit System** Menu, point & click on **Set Times**; then **Off Hours Sweeps**.
4. Point & click on **Group**.
5. Point & click on the groups subject to Off Sweeps.

Figure 3.13 – Select Off Hours Sweeps/Groups menu choice

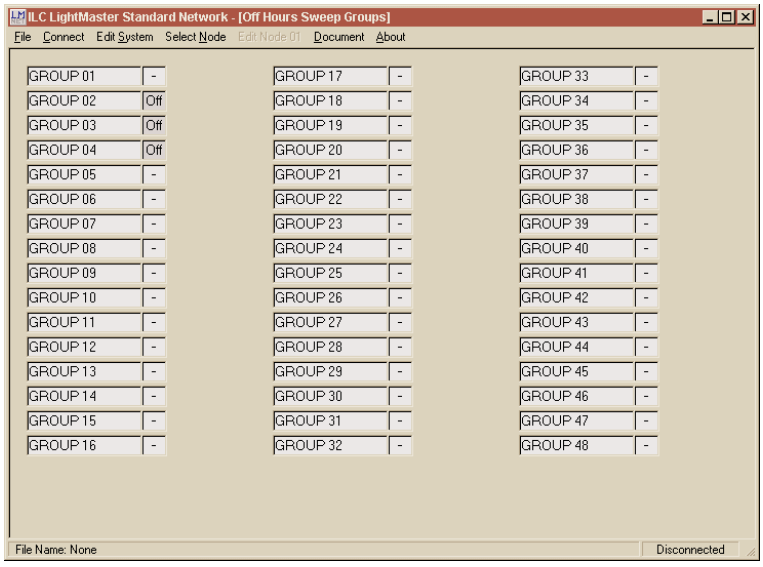

Figure 3.14 – Off Hours Sweeps Group Control screen

Define The LightSync Device Node (See Figures 3.15, 3.16)

1. From the Home screen, point & click on **Edit System**.
2. When the Edit menu appears, point & click on **LightSync Settings**.
3. Point & click on Configure **LightSync Devices**.
4. Point & click to select the device node number
5. Point & click to select the device node type.
6. Point & click to define the device input confuguration.

Figure 3.15 – Configure LightSync Devices menu choice

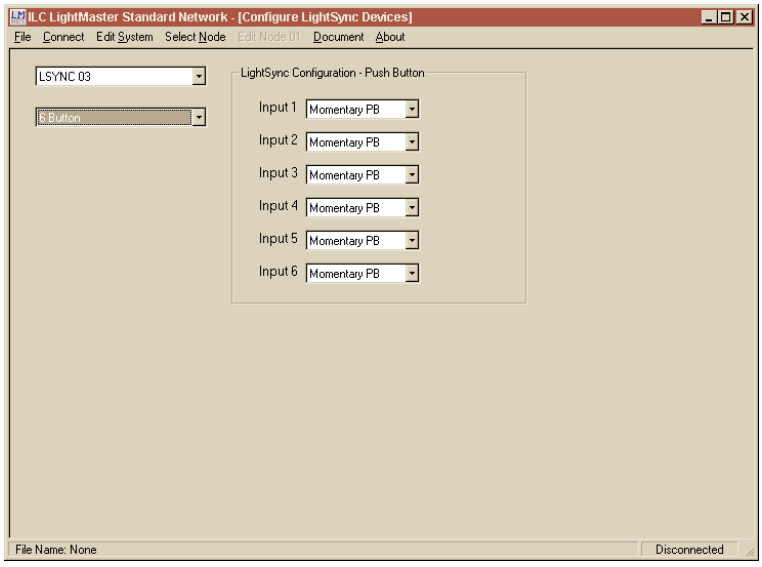

Figure 3.16 – Define LightSync device screen

Define the operation of the Device node switch pilots. (See Figures 3.17, 3.18)

1. From the Home screen, point & click on **Edit System**.
2. When the Edit menu appears, point & click on **LightSync Settings**.
3. Point & click on **Configure Lightsync Pilots**.
4. Point & click to select the device node number.
5. Point & click on each switch pilot definition box to set the operation of the switch pilots.

Figure 3.17 – Configure LightSync Pilots menu choice

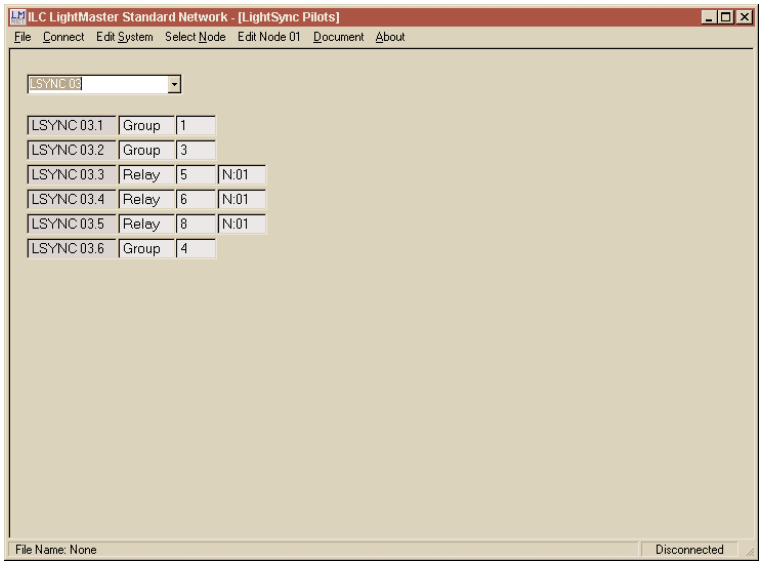

Figure 3.18 – Define LightSync Pilot screen

3.4 Define Node 01 Parameters

Define Timer to Individual Relay Control (See Figures 3.19, 3.20)

1. From the Home screen, point & click on **Select Node**.
2. Point & click on Node 01.
3. Point & click on **Edit Node 01**.
4. When the Node 01 menu appears, point & click on **Timers**, then **Timer to Relay Control**.
5. Point & click on the timer selection box to select the desired timer.
6. Point & click on each affected relay action box to set the desired action.
7. Repeat steps 5 and 6 to define additional timer to relay control.

Note:Define the Node 02 timer and Lightsync parameters in using the same procedures described for node 01.

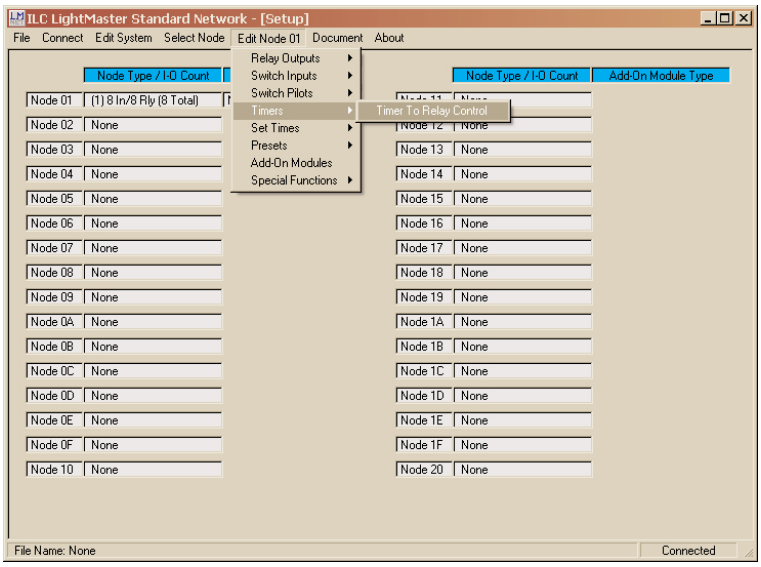

Figure 3.19 – Timer to Relay Control menu choice

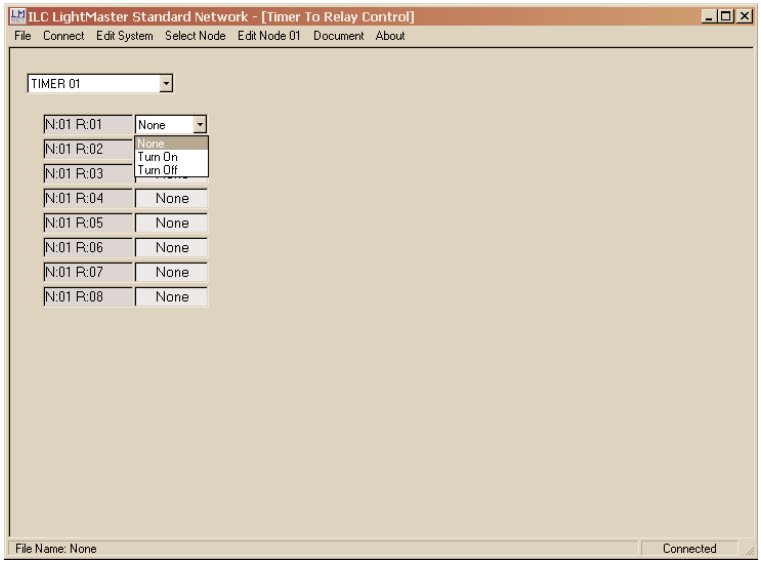

Figure 3.20 – Timer to Relay screen

Define the LightSync Device to Individual Relay Control. (See Figures 3.21, 3.22)

1. From the **Edit Node** Menu, point & click on Switch Inputs.
2. Point & click on **LightSync Inputs**.
3. Point & click on **LightSync Input to Relay Control.**
4. Point & click on the device box to select the desired switch node, then select the desired input: LSYNC 03.1 in Figure 3.22.
5. Point & click on each affected relay to define its response to the switch.

Note:Define the Node 02 timer and Lightsync parameters in using the same procedures described for node 01.

Figure 3.21 – LightSync Inputs menu choice

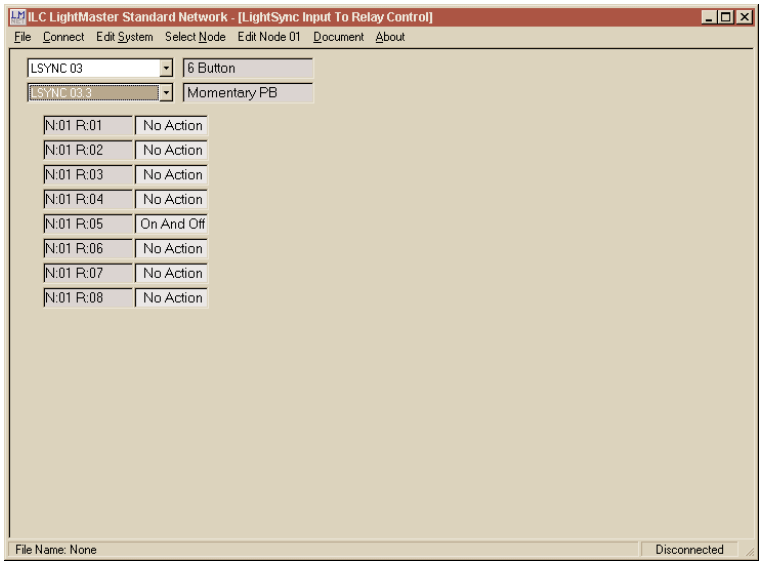

Figure 3.22 – Configure LightSync Device to Relay screen

Define the LightSync Device to Group Control (See Figures 3.23, 3.24)

1. From the **Edit Node** Menu, point & click on Switch Inputs.
2. Point & click on **LightSync Inputs**.
3. Point & click on **LightSync To Group Control**.
4. Point & click on the device box to select the desired switch node, then select the desired input: LSYNC 03.1 in Figure 3.22.
5. Point & click on each affected group to define its response to the switch.

Figure 3.23 – LightSync to Group Control menu choice

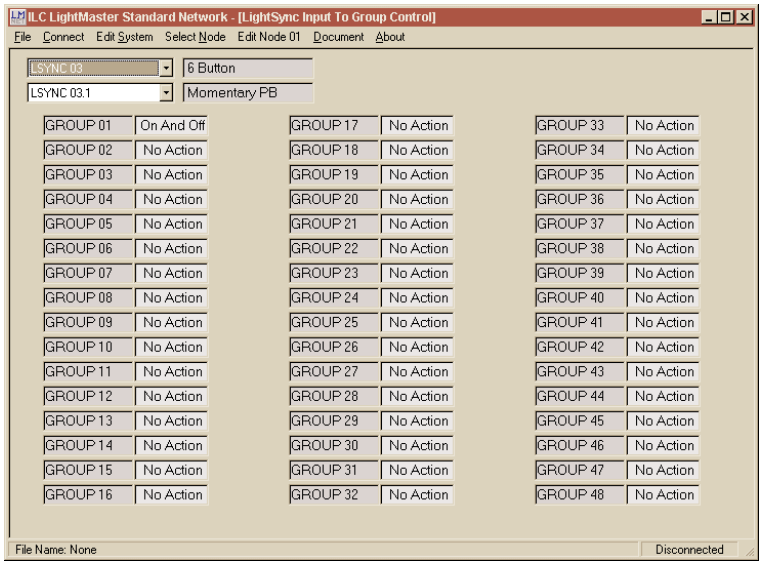

Figure 3.24 – Configure LightSync Device to Group screen

Save the Parameters you have entered to your PC hard drive or other media (See Figures 3.25, 3.26)

1. From the Home screen, point & click on **File**.
2. Point & click on **Save As**.
3. Type in the file name; then point & click on Save.

Figure 3.25 – Save As menu choice

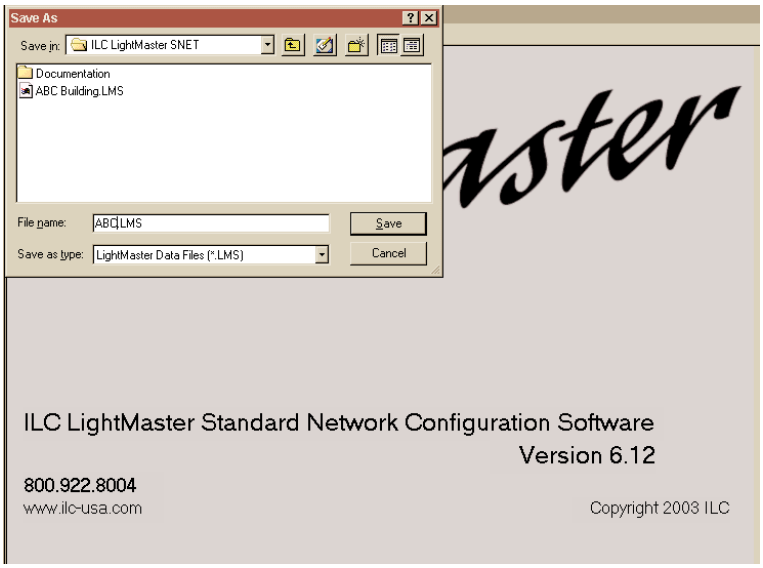

Figure 3.26 – Save Parameters to File screen

Download The Clock Setting and Programming Parameters to the Controllers (See Figures 3.27, 3.28, 3.29, 3.30)

1. From the Home screen, point & click on **Connect**.
2. Point & click on the communication port your PC is using to connect with Node 01 (the Master Controller).
3. Point & click on **Connect To LightMaster**.

Note: If you choose you can program the system on-line and then upload the parameters to your PC. You also have the option of programming in a virtual keypad format by pointing & clicking on the Virtual Keypad Button

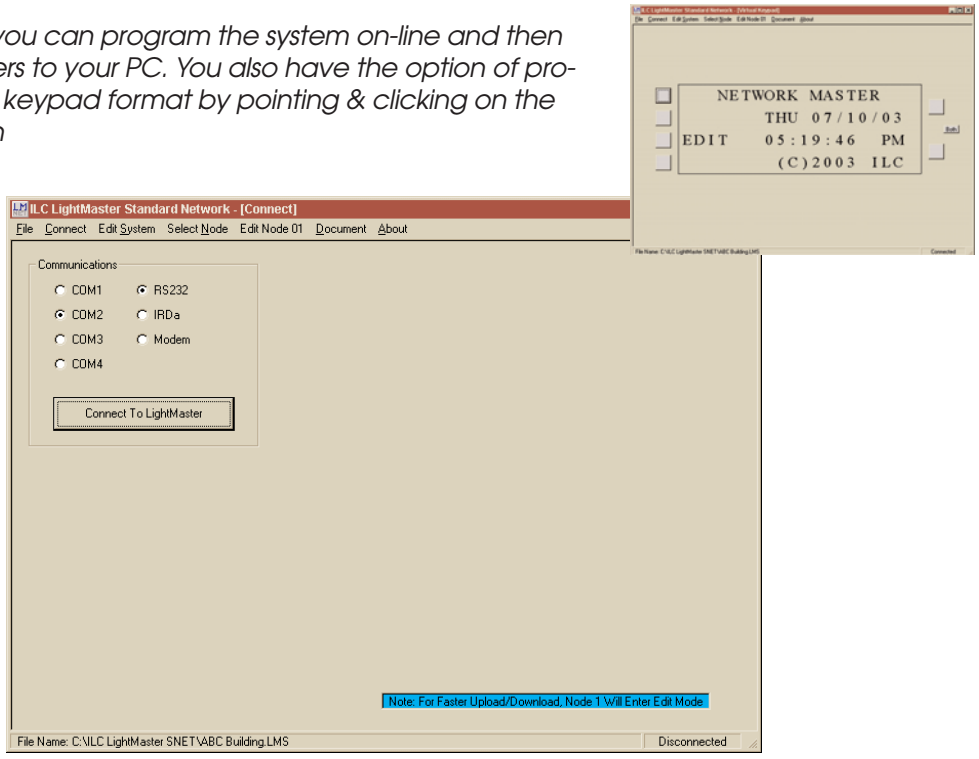

Figure 3.27 – Communication Port screen

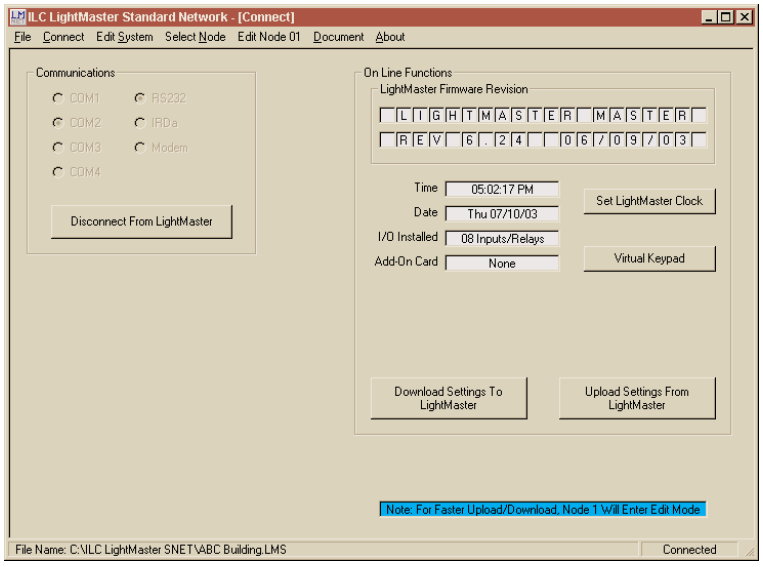

Figure 3.28 – Connect to LightMaster screen

Download The Clock Setting and Programming Parameters to the Controllers, continued (See Figures 3.27, 3.28, 3.29, 3.30)

4. Point & click on **Set LightMaster Clock**, this will set the current time & date from your PC to Node 01 and sync the other controller nodes to this time and date. **Caution:** make sure that the time and date of your PC clock is correct for the location of the controllers.
5. To down load the parameters from your PC to the controllers, point & click on **Download Settings To LightMaster**.
6. If the system is password protected, enter the password; then point & click on Continue to initiate the download of parameters to all the system controllers.

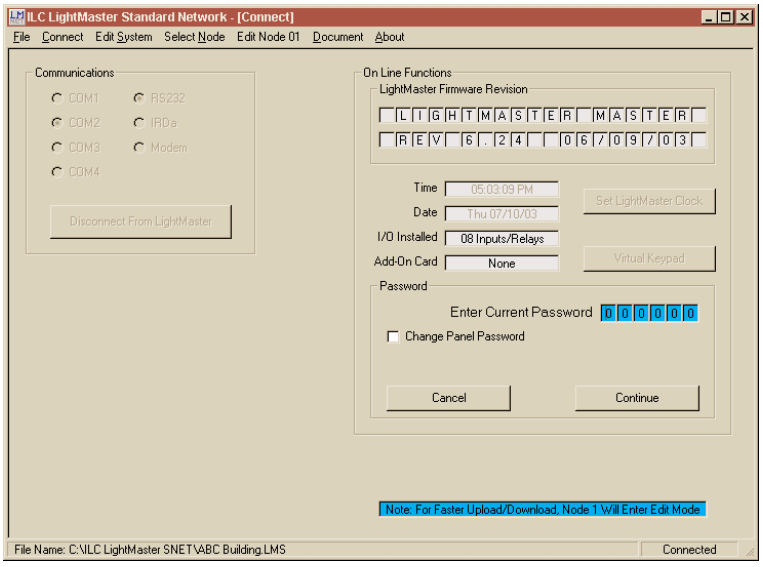

Figure 3.29 – Enter Password screen

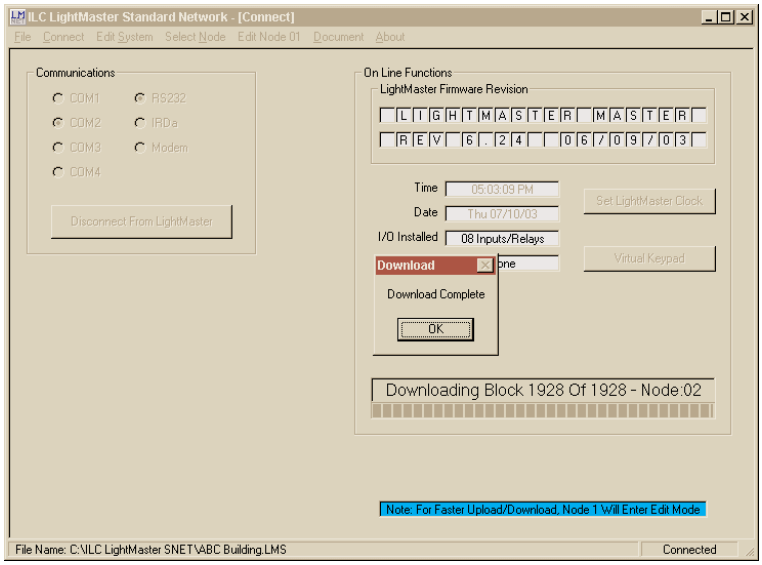

Figure 3.30 – Download Settings to LightMaster

How To Control Relays From Your PC (See Figures 3.31, 3.32)

You can turn individual relays and relay groups ON/OFF from your PC.

1. Connect to the LightMaster as described earler.
2. If necessary, point & click on **Select Node** to select the node where the relay is resident.
3. Point & click on **Edit Node 01.**
4. Point & click on **Relay Outputs**.
5. Point & click on **Relay Status**.
6. Point & click on the state you want the relay driven to.

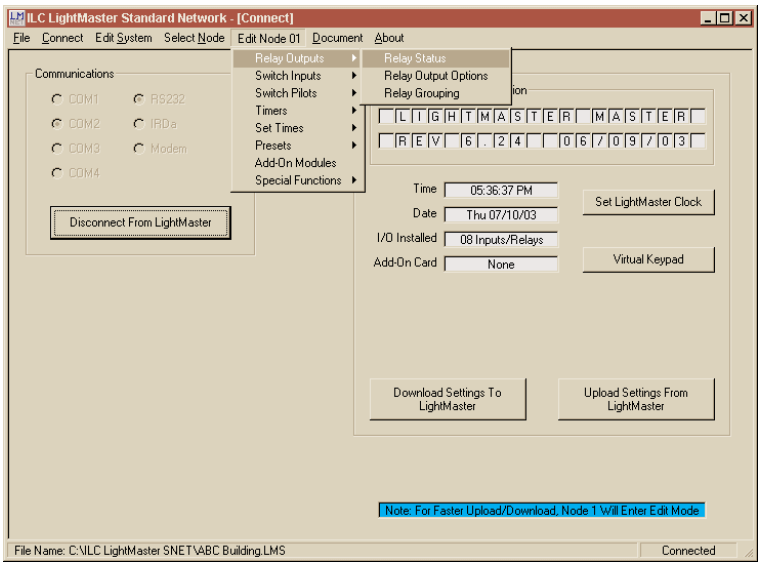

Figure 3.31 – Relay Status menu choice

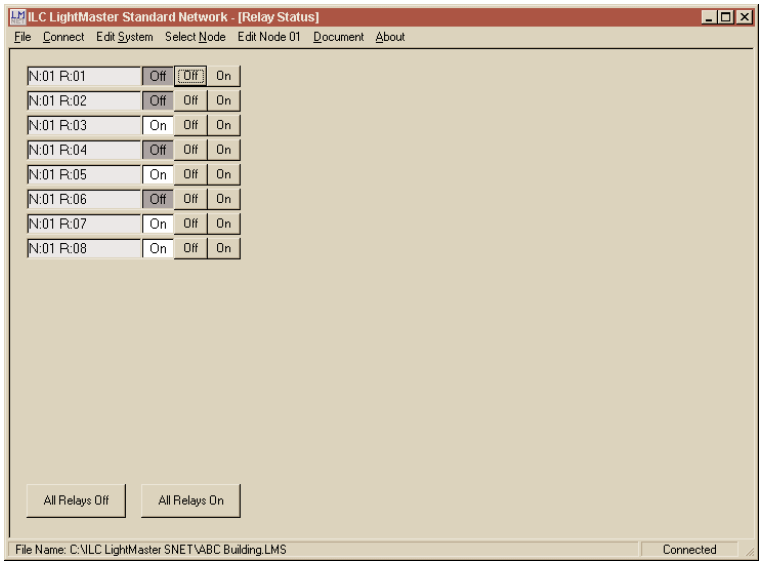

Figure 3.32 – Relay Status state screen