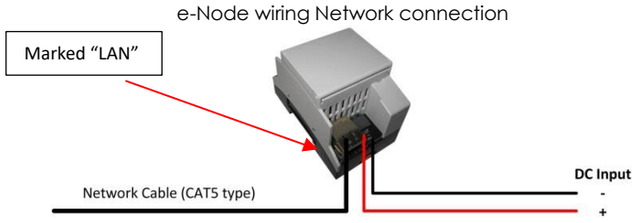
e-Node™ Quick Reference Installation Guide-Using Built-in Web Pilot Setup Feature (FW v02.03.22 and later).

The Converging Systems e-Node™ is a network gateway/webserver enabling up to 254 connected ILC-xxx family controllers to be controlled from third-party automation and lighting systems. The built-in web Pilot application is used to set various setup and addressing parameters to enable Converging Systems' Zone/Group/Node (**Z/G/N**) addresses to be controlled typically with bi-directional communication. For links referenced below, see http://www.convergingsystems.com/lighting_install_library.php for available documents.

HARDWARE SETUP of e-Node Controller and ILC-xxx Controllers

Step 1

e-Node wiring Network connection



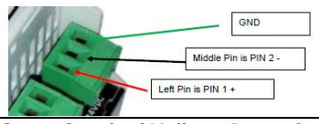
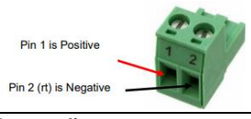
e-Node to Network connections. Interconnect the **LAN (silver)** port on your e-Node next to the 2-pin power connector to your network switch using standard CAT5 or better cabling. The maximum distance from the switch to the e-Node is 100m (328ft).

Note: The RJ-45 marked Port 1 or Port 2 is **not** the LAN port and should not be used here.

Optional WI-FI Adapter. See separate e-Node WI-FI Option Quick Start Guide for information on this adapter.

Step 2

e-Node/ILC-xxx Power Input Connections

ILC-xxx controllers	e-Node
	

ILC-xxx Constant Voltage Power Supply Connection

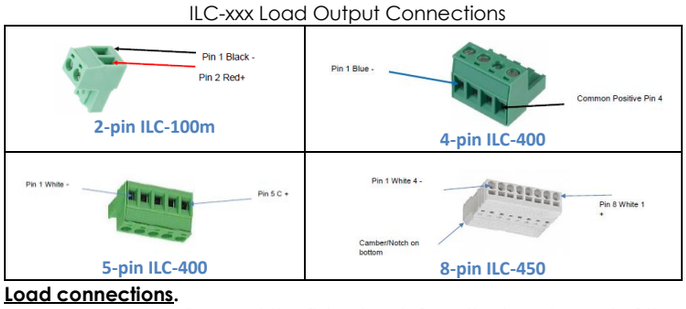
-ILC-100/300/400 (constant voltage). Connect power supply which provides the same voltage as the FLLA LED rating (typically 24vdc).
-ILC-450 (constant current). Connect 48vDC 100w to controller.

Obey the polarity printed on the ILC-x00 case. Connect a separate GND lead from the earth ground to the GND pin on the input power connector on each ILC-xxx controller.

e-Node power connection. Connect the e-Node to an available DC power source (12v-24vdc 90 ma) using two-conductor cabling (22 AWG or larger). Pay attention to the polarity markings on the e-Node. If you have obtained the optional e-Node DC power supply, simply plug in the supplied two-pin connector into the e-Node. With the optional POE daughtercard, no external power adapter is required.

Step 3

ILC-xxx Load Output Connections



Load connections.

-ILC-100/300/400 - Connect the flying leads from the header end of the FLLA device to the ILC-x00 controller using connector plugs as shown
-ILC-450 – Connect wire to fixture & controller using recommended cabling and pinouts below. Also see ILC-450 Quick Start Guide (QSG) for wiring shunt plug and other details.

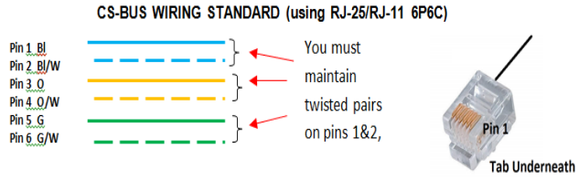
Wire gauge.

-FLLA (typically 16 AWG or 18 AWG). See Voltage Drop table. http://www.convergingsystems.com/marketinginfotoc.php
-Absolute Light (20/8 solid) runs up to 230 feet. See above QSG.

RGB (4 pin)	ILC-100c (**C, G, R, B**) Note: **C** is positive common ILC-400m (**C, G, R, B, W**)
RGBW (5 pin)	ILC-400 (**C,G,R,B, W**) Note: **C** is positive common
Mono (2 pin)	ILC-400 (**C,1**) &/or (**C,2**) &/or (**C,3**) &/or (**C,4**) ILC-100m (**C,W**) Note: **C** is positive common
Absolute Light	ILC-450 (W-,W+,B-, B+, R-, R+, G-,G+)

Step 4

CS-Bus Data Communication Connections



ILC-x00 to ILC-x00 interconnections. Interconnect LED lighting controllers sequentially in a daisy-chain fashion (without "Y"s or "T"s) by connecting Port **1** of one device to Port **0** of the next sequential device. Utilize standard CAT5 (or better) wiring and maintain 1/1 pinouts between ends (see **CS-Bus Wiring Standard** above). **Also maintain twisted pairs as shown above (1&2, 3&4, 5&6).** Do not use 568A or 568B without modifying twisted pairs as above. Use CAT 5 or better. **Failure to follow the CS-BUS wiring standard will void your warranty**

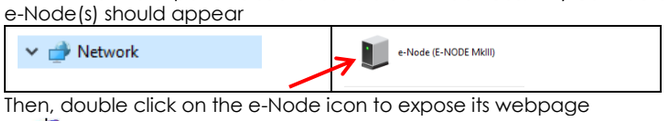
e-Node connections. Interconnect **Port 0**-CS-Bus (RJ-25 not RJ-45) port on the e-Node to an available/unused CS-Bus on the first or last ILC-x00 controller using a fabricated CAT 5(or better) cable wired as per the **CS-Bus Wiring Standard**. Connect a standard Ethernet wire from your network switch to the RJ-45 connector on the e-Node.

SOFTWARE SETUP-Commissioning Requires the e-Node embedded Web Pilot application (not traditional PC Pilot standalone application).

Step 5

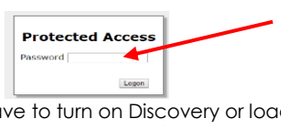
New uPnP Discovery Mechanism

Use a Windows computer and open File Explorer and search for the **Network** tab to expand to see available uPnP* devices. Any connected e-Node(s) should appear



Then, double click on the e-Node icon to expose its webpage

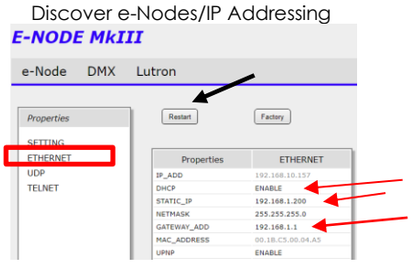
Next, click on the triple dash menu icon and you **may** be asked for a **Password**. Unless the Password has been changed or blanked out, enter **Admin** and select **Logon**



*__Note on uPnP__. You may have to turn on Discovery or load the uPnP service within Windows to enable this type of Discovery

Step 6

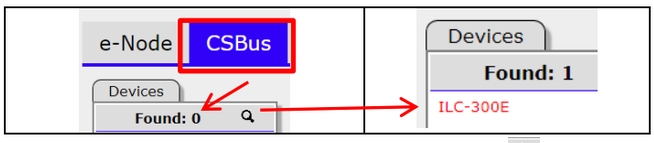
Discover e-Nodes/IP Addressing



e-Node Network Parameters. By default, the e-Node is set to **DHCP** ENABLED. To change to a Static IP address, select the **e-Node** tab to reveal the above setup screen. Select the **ETHERNET** tab and enter a static IP addresses under **STATIC_IP**. Then, enter gateway IP address under **GATEWAY_ADD**. Next, select **DHCP** DISABLED and hit **Restart** to reboot the e-Node to establish the new parameters.

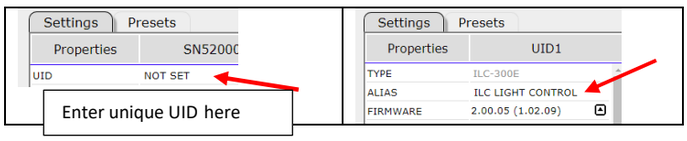
Step 7

Discover each Controller and assign UID and Alias Names



Discover and Assign UID. Select **CSBus** tab and then 🔍. Any UID-unassigned (connected) controller(s) will auto appear in Red (i.e., ILC ILC-300E above). Next, (1) assign an **unused UID** number (unique ID) to the ILC device to be addressed (generally start with the UID value of "1" and work up sequentially) and enter this number into the UID window and select Enter ↵ (on your keypad)

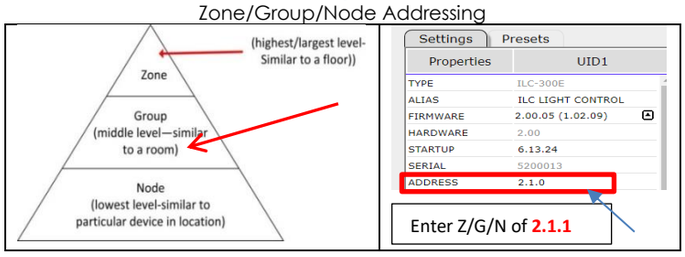
Assign Alias Name. Select **Settings**. You can change the **Alias** name here. **Make sure you assign useful names now before integrating with third-party control platforms (harder to change later).**



Note: ***Make sure all control systems (i.e., Vantage) are powered off during this process for they may be issuing similar beacons on the bus which will interfere with this process. Never assign duplicate UIDs to two devices.***

Step 8

Zone/Group/Node Addressing



Assign Z/G/N Address. Enter a discrete **Z**one/**G**roup/**N**ode address (in the format of **2.1.1** for instance) for **each** Lighting Controller identified within the previous Step within the **ADDRESS** field above. For more information on addressing, review the *Instruction Manual* or applicable *Integration Note for your 3rd party integration platform*.

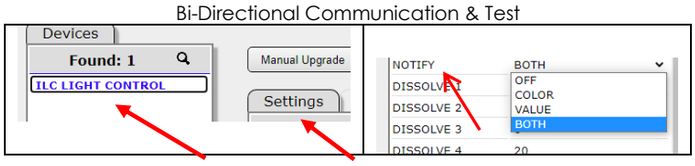
The factory default for Lighting Controllers is **2.1.0** with the "0" acting as a wildcard **and** as an undefined address (with no bi-directional capability). Typically, if you identify your first controller as a **2.1.1** and work upwards (**2.1.2**; **2.1.3**; … **2.1.254**) sequentially among controllers, you will be fine for most installations.

Direction. Enter the **Z**one/**G**roup/**N**ode address separated by **PERIODs** and hit **ENTER**. When the field turns **BLUE** you know the data has been successfully entered.

Example: For your first address, select 2.1.1 (see right pane above)

Step 9

Bi-Directional Communication & Test

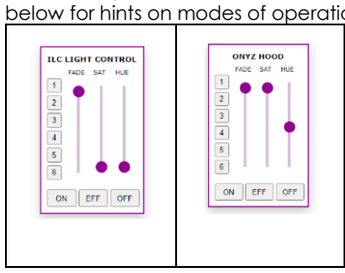


Enable Bi-directional Communication. In order to invoke bi-directional communication so that a control system with compatible sliders can show feedback when there are changes in ILC-x00 controller's color state (i.e., colors change or states), under **Devices** select the applicable controller (ILC LIGHT CONTROL here), and under **Settings** scroll down (maybe to the bottom) to find the **NOTIFY** flag. Set that flag to either **COLOR** (for the HSV or Hue, Saturation, Value color space) or to **VALUE** (for the old school Red, Green, Blue Value color space—***old school because there is no dimmer in this color space***). If you want to have both sets of sliders (not really recommended in larger systems where bus traffic may become excessive), set the flag to **BOTH**.

IMPORTANCE OF TESTING. Before integrating with 3rd control platforms, make sure you test using either of the following methods. If you have 4 or fewer connected controllers use Test with Web UI otherwise use Pilot

Test using Web UI. Within the e-Node Web application, select "Logoff"

And up to four keypads will appear. The order of their appearance is the ordering of how they were discovered under **Devices**. See Key below for hints on modes of operation.



Key

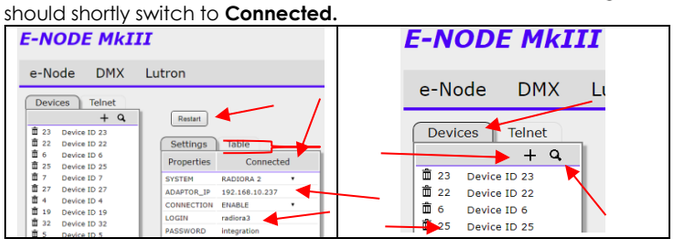
1-6	Presets
Hue	Color (bottom and top are red, green is 33% and blue is 66% up from bottom)
Sat	Absence or presence of white
Fade	Brightness
Effect	Select "EFF" + "4" for a demo of all colors

Test using Pilot. Refer to the Virtual Terminal Quick Start Guide to access the following more robust testing tool. Be sure to enter the correct **Z**one/**G**roup/**N**ode address as programmed within Step 8 to test. Connected LEDs should react as adjustments are made.

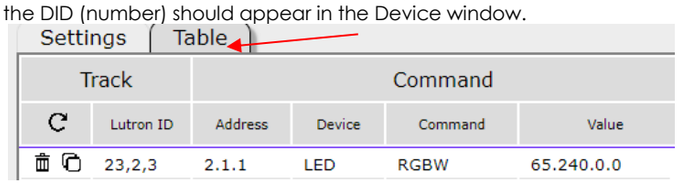
Step 10

New "SLIM" Lutron Programming

Under the **Lutron/Settings** tab below, enter (i) the (Lutron) **Adaptor IP**, (ii) an available Telnet **Login** and **Password** available from Lutron, then hit **Connection**: ENABLE and then **Restart.** The **Disconnected** message should shortly switch to **Connected.**



Under **Lutron/Devices** above, either (i) add an activated Lutron Device ID (DID)by selecting the **+** mark and manually typing in a valid Lutron DID number, or (ii) depress an operational button on an assigned Lutron device an auto-discover that DID by selecting the 🔍--if seen the DID (number) should appear in the Device window.



Finally, under **Lutron/Table** above, for each desired mapping of a Lutron button push to a resulting DMX action, enter all fields (a)**Lutron ID*** (DID, button #, and type) (b) ZGN **Address** for DMX, (c)**Device*** (type), (d) **Command***, and (e) **Value** (if required for Recalls, Stores, etc.) line by line.

*For these fields, right click and select from available/valid choices.

For more information consult the "e-Node Interfacing with Lutron" guide.

Important Safety Information

The ILC-xx0 LED Controller and FLLA/Listed Luminaries driven by a specified Class 2 power supply and mounting hardware carry a UL Listing under Low Voltage Lighting System (UL File-2108). The ILC-xx0 Controller as a standalone unit in addition has been approved as a Recognized Component/Low Voltage Under Cabinet fitting (UL File-2108).

c UL us LOW VOLTAGE LIGHTING SYSTEM LISTED E50944

c UL us

Caution: ILC-xx0 Controllers and FLLA/Listed Luminaries should only be installed with Class 2 Power Units
Attention: Les contrôleurs ILC-xx0 et les luminaires FLLA / répertoriés ne doivent être installés qu'avec des unités d'alimentation de classe 2