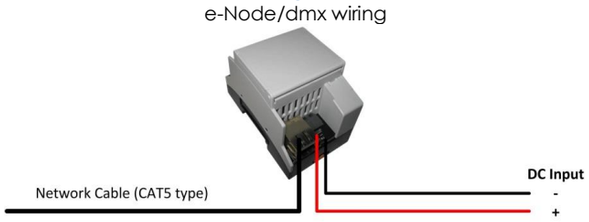
e-Node/dmx™ Quick Reference Installation Guide

The Converging Systems e-Node™/dmx is a network color computer enabling up to 32 DMX fixtures to be controlled from third-party automation and lighting systems. The e-Node Pilot application is used to set various setup and addressing parameters to map Converging Systems' Zone/Group/Node (Z/G/N) addresses to a specific DMX fixture type and fixture address (1-512) within a single DMX universe. For each additional 32 DMX Fixtures added to the system, a single additional e-Node/dmx is required. Where ILC-x00 family of lighting controllers and compatible FLLA flexible linear lighting arrays are desired to be integrated, consult the ILC-x00 Quick Start Guide. *Full Installation Manuals are available for ILC-xxx family controllers, the e-Node, e-Node/dmx at www.convergingsystems.com/customerportal/1000/installation.htm*

HARDWARE SETUP of e-Node/dmx Controller and 3rd party DMX Fixtures

Step 1
e-Node/dmx wiring



e-Node/dmx to Network connections. Interconnect the e-Node/dmx to your network switch using standard CAT5 or better cabling. The maximum distance from the switch to the e-Node is 100m (328ft). The e-Node requires external power and is not POE compatible.

e-Node/dmx power connection. Connect the e-Node/dmx to an available DC power source (12v-24vdc 300 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.

Step 2
e-Node/dmx – DMX Fixture Connectivity

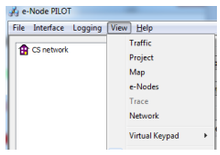
DMX Fixture wiring. Port 2 on the e-Node is used for data connection to the first DMX fixtures. Additional fixtures should be daisy-chained to the first fixture (max 32 fixtures on chain). Consult the table below for creating your own RJ-45 to DMX Fixture cable (cable not supplied).

E-Node RJ-45	XLR connector	Std RJ-45 DMX*	Philips RJ-45
Pin 1 (485+)	Pin 3	RJ-45 Pin 1	RJ-45 Pin **2**
Pin 2 (485-)	Pin 2	RJ-45 Pin 2	RJ-45 Pin **1**
Pin 7 (Gnd)	Pin 1	RJ-45 Pin 7	RJ-45 Pin 7
(all other pins)	N/C	*Std wiring	N/C

*Use standard (straight) CAT 5 cable.

SOFTWARE SETUP-Commissioning Requires the e-Node Pilot application.

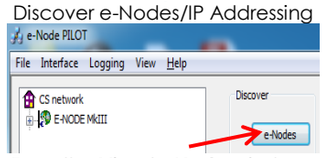
Step 3
e-Node Pilot Commissioning Tool



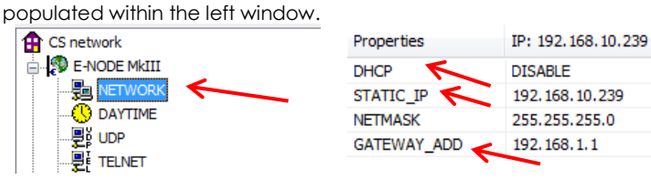
Download and Launch Pilot. Download and launch the (PC compatible) e-Node Pilot application available from Converging Systems' website. Before running, please make sure you **unzip** the file. http://www.convergingsystems.com/customerportal/1000/downloads.htm#anch4

Note: For running Pilot, it is highly advised to make a ***hardwired*** Ethernet connection from the e-Node to your network switch and another ***hardwired*** Ethernet connection from your switch to your computer--data may be lost or corrupted otherwise.

Step 4
Discover e-Nodes/IP Addressing

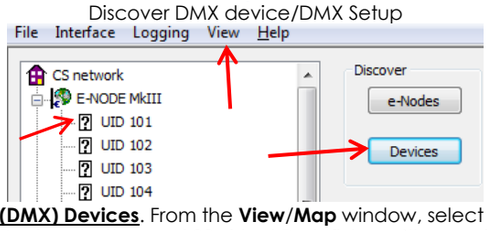


Discover e-Node. From the **View/e-Node** window, select the **Discover e-Node** button and any e-Nodes that have been powered-up and which exist on the same subnet as your computer will be populated within the left window.

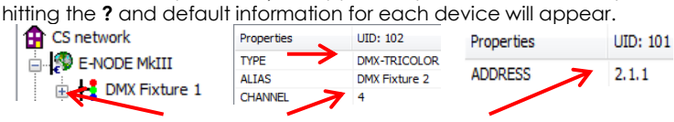


e-Node Network Parameters. By default the e-Node is set to **DHCP** ENABLED. To change to a Static IP address, select the **NETWORK** tab and enter a static IP addresses under **STATIC_IP**. Then, enter gateway IP address under **GATEWAY_ADD**. Next, select **DHCP** DISABLED and hit **Restart** to reboot the e-Node to establish the new parameters.
e-Node DMX Mode/CS-Bus Mode. Verify that under **Port(C), TYPE is** set to **DMX**. If not, change it to **DMX** and reboot e-Node.[1]

Step 5
Discover DMX device/DMX Setup

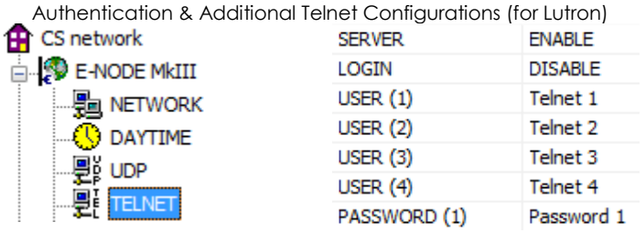


Discover (DMX) Devices. From the **View/Map** window, select the **Discover Devices** button and 32 virtual DMX fixtures (the maximum number available per-Node) will appear. Expand each device by hitting the **?** and default information for each device will appear.



DMX Device Parameter Settings. Highlight the first DMX device, hit the **+** mark and select the **TYPE**. From the pulldown, select the applicable DMX fixture type that will be assigned to Fixture 1 (UID 101). Next under **CHANNEL**, select the starting DMX address (from 1-512) that will be associated with this DMX device (note-if the device is a 3-channel device with addresses4-6, just enter "4"). Finally, under **BUS/ADDRESS** change the Z/G/N Address only if required for your system. Repeat these steps for each additional DMX fixture that will be connected.

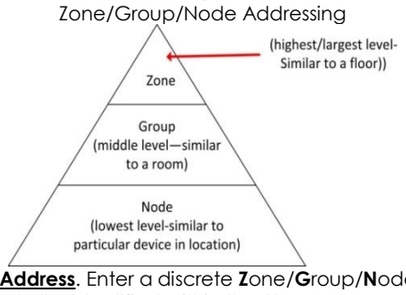
Step 6
Authentication & Additional Telnet Configurations (for Lutron)



Telnet Authentication. By default, **LOGIN** authentication for Telnet (Port 23) communication is set to ENABLED. Provided **LOGIN** is ***not*** set to DISABLED, you should utilize one of the four Usernames/Passwords pairs displayed under **TELNET** (available under **View/e-Node/TELNET** window) within your targeted automation system to properly login to the e-Node (e-Node Usernames and Passwords can be changed).
Lutron Operation. In addition to the Telnet functionality available above, it is also possible to enable Lutron connectivity. From the **View/e-Node** window, select the **LUTRON** tab and enter under **SYSTEM** the Lutron system to which you wish to communicate, the IP Address of the Lutron processor under **ADAPTOR_IP**, and an available Lutron **LOGIN** and **PASSWORD** credential (previously set up within the Lutron system) in order for the e-Node to connect to the Lutron processor. Then select ENABLED under **CONNECTION** and select **Restart** e-Node to activate the Lutron service.

Step 7

Zone/Group/Node Addressing



Assign Z/G/N Address. Enter a discrete **Z**one/**G**roup/**N**ode address for each DMX Controller identified within the Step 5. For more information on addressing, review the *Instruction Manual* or applicable *Integration Note*.

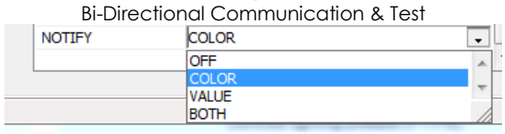
The factory default for the first DMX Controller is **2.1.1.** The second DMX controller is set to **2.2.1.** You may change these as appropriate. Standard feedback (if **NOTIFY** is Enabled-see Step 8) will occur from any unit whose address exactly matches the output command (i.e. 2.1.1 will respond to a command given to 2.1.1).

Wildcard Addresses, Within your control system, if you select an address with a "0" in one of the Z/G/N fields, all fixtures with the other two Z/G/N fields identical will operate as a group. When a wildcard "0" is issued in a command (i.e. 2.1.0), feedback will occur but only from a unit present with a "1" in the wildcard field (i.e. 2.1.**1**).

Note: Enter the Zone/Group/Node address separated by **PERIODs** and hit **ENTER**. When the field turns BLUE you know the data has been successfully entered.

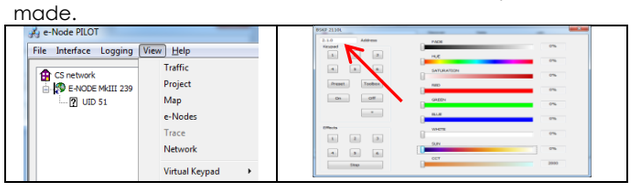
Step 8

Bi-Directional Communication & Test



Enable Bi-directional Communication. In order to invoke bi-directional communication such that a control system with compatible sliders can show feedback when there are changes in DMX fixtures' color state (i.e. colors or fade levels) a setting has to be made. Here, after **Devices** have been discovered under the **View/Map** menu and for each DMX Fixture where bi-directional control is desired, under the **LED** tab set the **NOTIFY** Flag to either **COLOR** (for the HSV or **H**ue, **S**aturation, **V**alue color space) or to **VALUE** (for the old-school **R**ed, **G**reen, **B**lue 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**.

Test. Launch the **Virtual Keypad/Lighting** with the Pilot application and test by entering an appropriate (**Z/G/N**) address and adjust sliders. Connected DMX devices should react as adjustments are made.



Important Safety Information

The e-Node/dmx Controller utilizes UL Listed components. The Unit also has been tested under FCC for Home or Office use.

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Each CSI product, except as otherwise provided herein, will be free from defects in materials and workmanship for a period of one (1) year from the date of delivery to the end-user.

ILLUMINAIRE WARRANTY

Each CSI FLLA luminaire product will be free from defects in materials and workmanship for a period of three (3) years from the date of delivery to the end-user including coverage of the following performance criteria:

- LED Light Output will be maintained above 50% of initial output
- Tri-colored (RGB) output will consist of all three color components (red, green, and blue)
- Quad-channel (RGBW) output will consist of three color components (red, green, and blue) and white.
- Monochrome output will consist of a single color output (white)

Additional Terms and Conditions and exclusions are available on the Converging Systems website

[1]The e-Node/dmx is equipped with dual functionality—standard DMX compatibility as well as CS-Bus compatibility (for ILC-x00 and FLLA LED applications)