Integration Note

Automation/Lighting Panel Manufacturer:	Elan Home Systems
Platforms:	**g! Platform**
Versions:	g! fw 6.4.209 or later
Specific Profile/Driver Version:	V1.0 or later (serial version which can be repurposed for IP by dealer) Note: newer profiles may provide for these two functionalities as two separate drivers. These may
Website location for profiles/drivers	http://www.convergingsystems.com/inres_elan_gsystem.htm
Document Revision Date:	January 22, 2014

OVERVIEW AND SUPPORTED FEATURES

The Elan g!Tools and associated hardware support the Converging Systems' family of motor and LED lighting control products using either RS-232 serial connection (IBT-100) or Ethernet (e-Node).

Integration of the Converging Systems' platforms are enabled from Elan touchscreens, Android and iOS devices both locally and remotely.

CURRENT PROFILES SUPPORT THE FOLLOWING FEATURES

The following commands are supported by the current profile (except those that are grayed out).

LED Lighting Commands

General Commands	HSB Color Space Command	RGB Color Space Command
ON	HUE_UP	RED,R
OFF	HUE_DOWN	GREEN,G
EFFECT,#	HUE,H	BLUE,B
STORE,#	SAT_UP	VALUE=R.G.B
RECALL,#	SAT_DOWN	PRESET.X=XXX.XXX.XXX
DISSOLVE.X=XX	SAT_S	
SEQRATE=XX	FADE_UP	
	FADE_DOWN	
	SET,L	
	STOP	

	COLOR-H.S.L	
	PRESETH.X=XXX.XXX.XXX	
	Bi-Directional Commands	
	COLOR=?	VALUE=?
	PRESETH.X=?	PRESET.X=?

Motor Commands

General Commands		
UP		
DOWN		
STOP		
RETRACT		
STORE,#		
RECALL,#		
PRESET.X=XX.XX		
Bi-Directional Commands		
STATUS=?		
POSITION=?		

CURRENT PROFILES DO NOT SUPPORT THE FOLLOWING FEATURES

Other than any features that are grayed out below, the following features of Converging Systems' motor and lighting control devices are currently unsupported.

Any feature not specifically notes as supported should be assumed to be unsupported

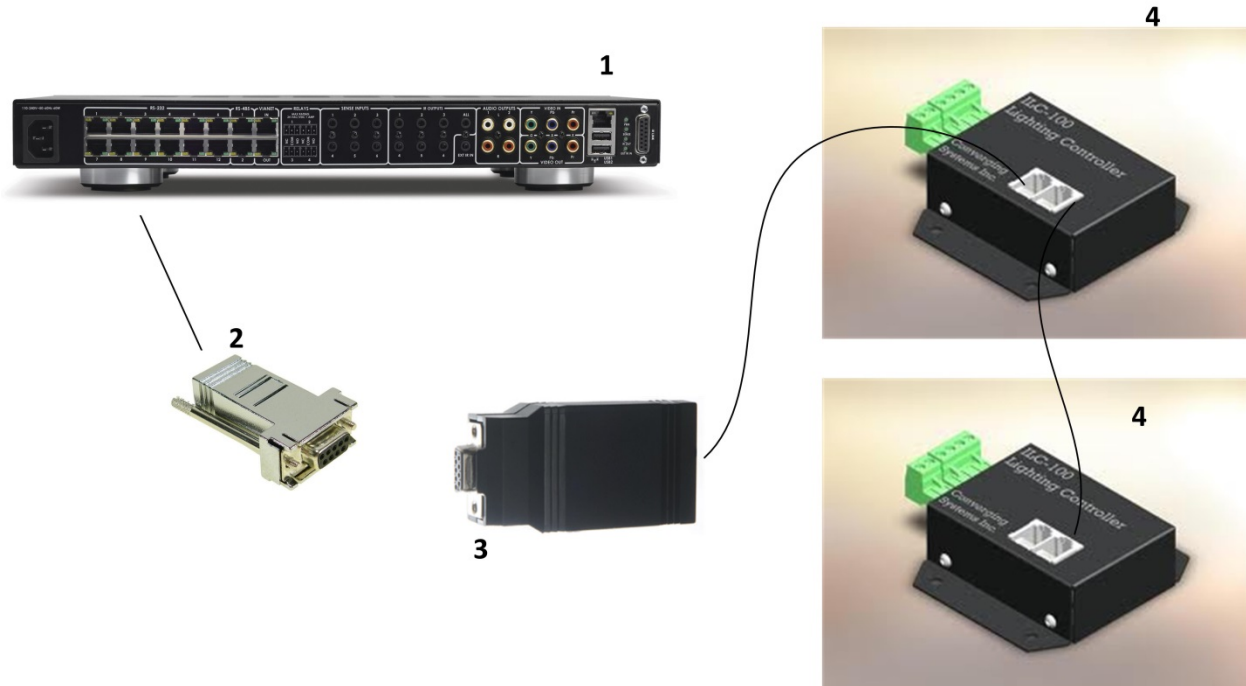# WIRING DIAGRAM (for IP connection)
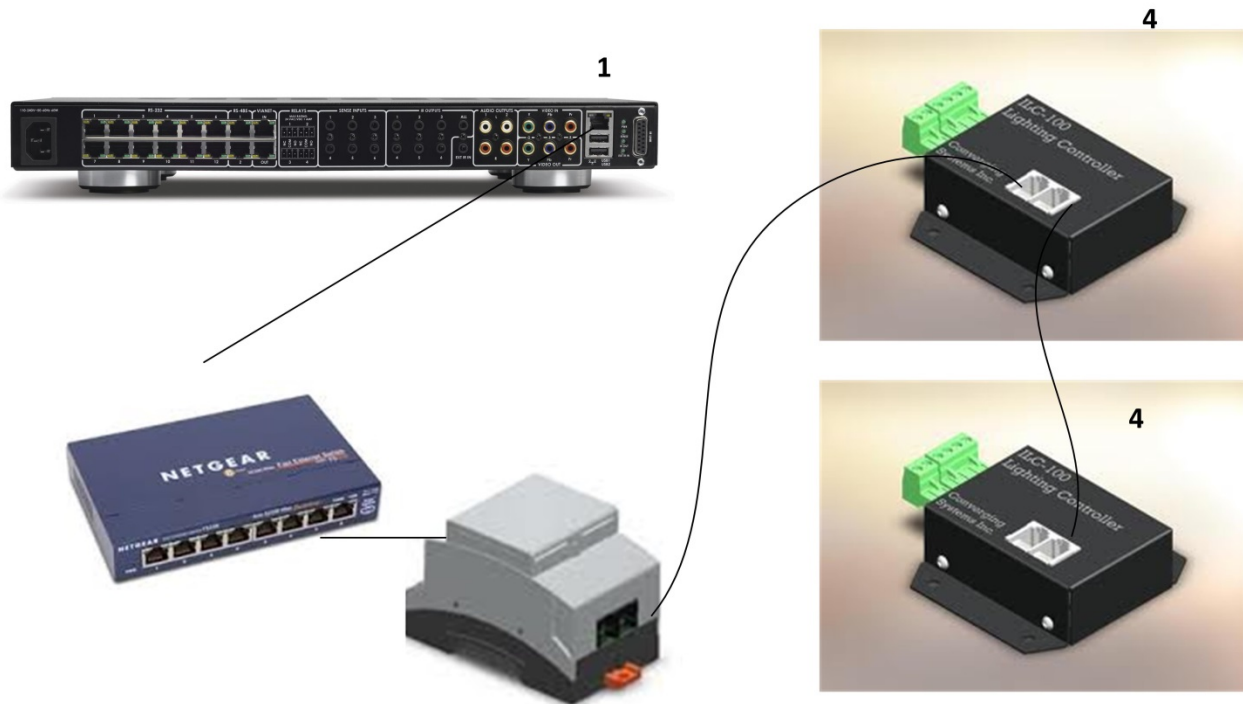
Wiring/Configuration Notes:

1. Maximum length of CS-Bus cabling from e-Node to the last ILC-100 using CAT5e or better cabling (and obeying the 1-1 pin-out requirements for the RJ-25-RJ25 cable) = 4000 feet
2. Maximum number of ILC-100 controllers and Converging Systems' keypads (if provided) that can exist on a single network connected to a single e-Node device = 254
3. Maximum number of e-Nodes that can exist on a g! system = 254

BILL OF MATERIALS (for IP control)

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	Elan Host Processor (HC12/HC6 or similar)	Elan Home Systems	HC12/HC6 or similar	Ethernet/Serial/IR	various	
2	Network Switch	Various	Various	Ethernet	RJ-45	
3	e-Node	Converging Systems	e-Node	Ethernet	RJ-45 (for Ethernet) RJ-25 for local bus	
4	Lighting Controller (or Motor Controller)	Converging Systems	ILC-100 or IMC-100 or (Stewart BRIC)	CS-Bus protocol	RJ-25 for CS-Bus communication	Must terminate beginning and end of bus

					with 120 ohm resister on pins 3/4

WIRING DIAGRAM (for RS-232 serial connection)

Wiring/Configuration Notes:

1. Maximum length of CS-Bus cabling from e-Node to the last ILC-100 using CAT5e or better cabling (and obeying the 1-1 pin-out requirements for the RJ-25-RJ25 cable) = 4000 feet
2. Maximum number of ILC-100 controllers and Converging Systems' keypads (if provided) that can exist on a single network connected to a single e-Node device = 254
3. Maximum number of e-Nodes that can exist on an Elan = 254

BILL OF MATERIALS (for RS-232c connection)

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	Elan Host Processor (HC12/HC6 or similar)	Elan Home Systems	HC12/HC6 or similar	Ethernet/Serial/IR	various	
2	RJ-45 to DB-9 dongle	Elan	RJ-45 to DB-9 straight dongle (CB-307 Male)	RS-232c	Pinouts RJ45 / DB9 1 / 9 2 / 1 3 / 4 4 / 5 5 / 2	

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						6	3	
						7	8	
						8	7	
3	IBT-100	Converging Systems	IBT-100	RS-232c	DB-9 (for Serial) RJ-25 for local bus			
4	Lighting Controller (or Motor Controller)	Converging Systems	ILC-100 or IMC-100 or (Stewart BRIC)	CS-Bus protocol	RJ-25 for CS-Bus communication	Must terminate beginning and end of bus with 120 ohm terminating resister on pins 3/4		

System Configuration/Programming

Before proper operation between the Converging Systems' controllers and the Elan system can begin, it will be first necessary for most applications to configure the Converging Systems' products using the e-Node Pilot (PC-based) application (and the e-Node). In addition, communication parameters within the Elan g!Tools software are also required. Refer to the specified instructions below for the particular subsystem for more information.

e-Node Programming

The Converging Systems e-Node is an Ethernet communication device which can be used to connect the Elan Host to one or more Converging Systems motor and/or lighting controllers. Alternatively, the IBT-100 serial interface device can be used alternatively to connect the same number of Converging Systems' controllers to an Elan serial output device in situations where Ethernet communication is not desired.

Regardless of which method (Ethernet or RS-232c) is desired to be used to communicate with Converging Systems' controllers, it is still suggested that initial set-up and commissioning of the controllers' addressing schemes and particular features are made using the e-Node Ethernet device and the e-Node Pilot application. Settings that can be implemented using this setup are as follows:

Step	Setting	Choices
1	IP Address	Static or Dynamic Addressing. If you want to change it to static, follow these steps -change **Static_IP** address to desired setting

		-change **Gateway_ADD** to desired setting -finally, change **DHCP** to **DISABLED** and hit **RESTART**
2	Telnet Client (under Pilot's Network section) Note: this is not the Telnet Server which is listed elsewhere under the e-Node Telnet tab	Factory standard is -**PROTO_TELNET** is Disabled Needs to be set to **Enabled** in order to activate Note: After this is changed, hit Restart within e-Node Pilot to reboot e-Node
3	Telnet Login	Currently, the Elan processors support Telnet communication with LOGIN so it is necessary to turn off the factory default of TELNET login on the e-Node. Go to the **TELNET** tab within Pilot, and turn LOGIN to DISABLE. Note: After this is changed, hit **RESTART** within e-Node Pilot to reboot e-Node.
4	Connected controller(s) Zone/Group/Node addressing	Discover connected motor or lighting controllers and assign each initially with a unique UID. Then after the UID has been assigned, enter a specific Zone/Group/Node address for each device from the universe of addresses shown below: **Zone** addressing from 1-254 **Group** addressing from 1-254 **Node** addressing from 1-254 **Note**: a wildcard value of 0 can be substituted for any valid address above to provide a broadcast to that subset of addresses

g!Tools Programming (for Serial device-IBT-100)

Typically, the following features are set-up within g!Tools under Input/Output

Step	Setting	Choices
1	Communication Device (add new)	Device Type: Serial Port with **Standard Communication**
2	Generic Serial Devices (add new)	-Add a **Generic Serial device** -Verify that under Communication the name entered in step #1 above appears, otherwise enter the name.
3	Serial Communication Parameters	Go back into the Communication device entered in Step #1 above and enter the following serial

		parameters: **COM Port**=Enter the appropriate port **Baud Rate**=57600 **Flow Control**=None **Parity**=None **Data Bits**=8 **Stop Bits**=8 and hit **APPLY** to SAVE
5	Import Serial Commands	Go to Generic Serial Device created in #2 and import applicable motor or led controller serial commands as provided by Converging Systems' website or Elan Dealer portal
4	Connected controller(s) Zone/Group/Node addressing	**Please note**: as the Elan serial/Ethernet driver is currently created, a default address of 1.1.0 for motor devices and 2.1.0 for LED lighting control devices is currently programmed within the serial driver. If your particular demands require other addressing, simply update your specific serial commands to your required addresses. Contact Elan Technical support if any newer drivers may exist that might streamline this process. Zone/Group/Node addresses for each device can be selected from the universe of addresses shown below: **Zone** addressing from 1-254 **Group** addressing from 1-254 **Node** addressing from 1-254 **Note**: a wildcard value of 0 can be substituted for any valid address above to provide a broadcast to that subset of addresses.

g!Tools Programming (for Ethernet device-e-Node)

Typically, the following features are set-up within g!Tools under Input/Output

Step	Setting	Choices
1	Communication Device (add new)	Device Type: **Ethernet/Generic Serial**
2	IP Address	IP address for connected e-Node (static is required here)
3	Port	Enter **23** for Telnet communication
4	Generic Serial Devices (add new)	-Add a **Generic Serial device**

		-Select under Communication Device the device name entered within step #1 above
5	Import Serial Commands	Import applicable motor or LED controller serial commands as provided by Converging Systems' website or Elan Dealer portal
4	Connected controller(s) Zone/Group/Node addressing	Please note: as the Elan serial/Ethernet driver is currently created, a default address of **1.1.0** for motor devices and **2.1.0** for LED lighting control devices is currently programmed within the serial driver. If your particular demands require other addressing, simply update your specific serial commands to your required addresses. Contact Elan Technical support if any newer drivers may exist that might streamline this process. Zone/Group/Node addresses for each device can be selected from the universe of addresses shown below: Zone addressing from 1-254 **Group** addressing from 1-254 **Node** addressing from 1-254 **Note**: a wildcard value of 0 can be substituted for any valid address above to provide a broadcast to that subset of addresses.

Elan Programming-User Interfaces

The individual installer typically designs the User Interface (UI) for the particular needs of the end-user. Converging Systems has created a number of sample User Interfaces (UI) which may be helpful to the dealer before the dealer starts his or her own design process. Sample UI screens are pictured below.

LED CONTROL ENVIRONMENTS

The following illustrations provide some sample UI for LED control interfaces.

Figure 1

Note: Hue/Saturation/Brightness control. Controls for two (stored) Effects. Standard ON and OFF buttons. Preset 1-5 (recall) and Store functions for Presets 1-5

Figure 2

Note: Presets 6-10 (recall) and Store functions for Presets 6-10. Presets 11-15 (recall) and Store functions for Presets 11-15
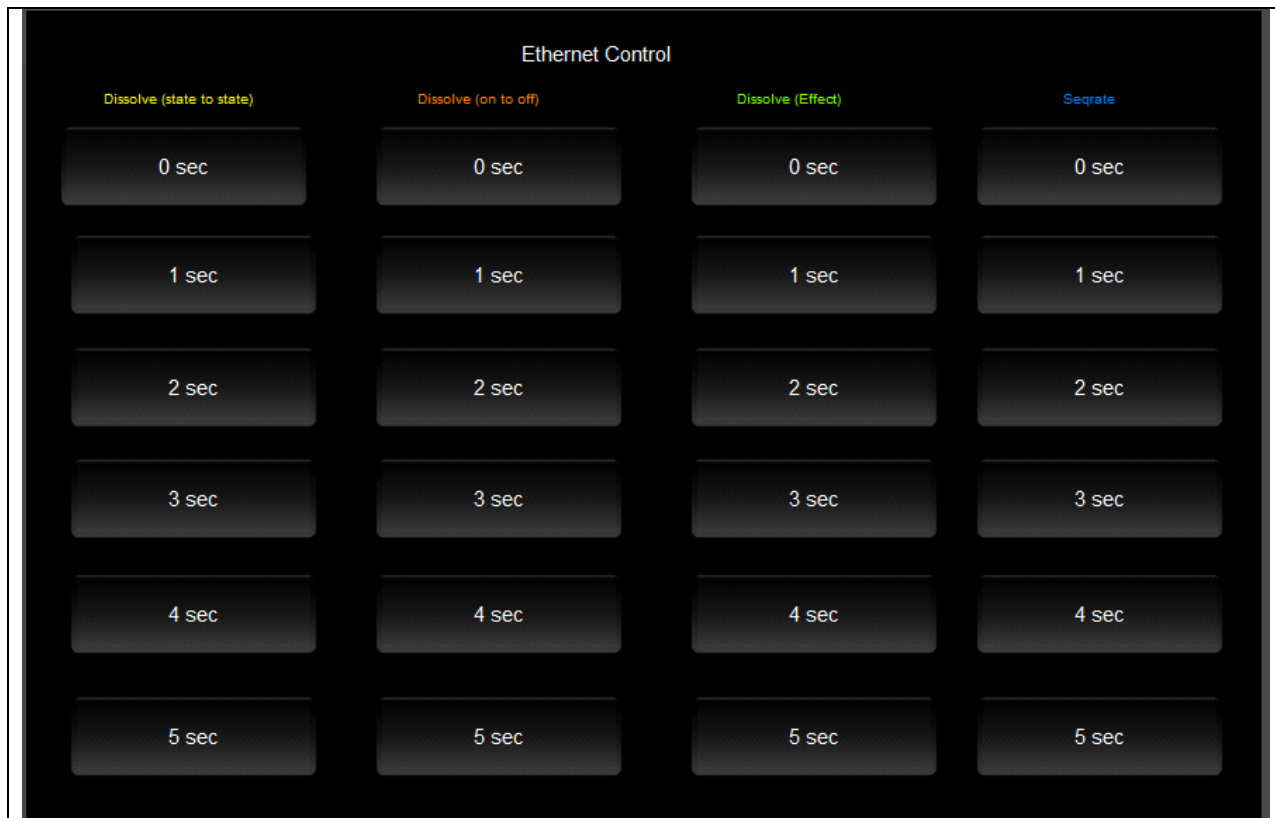
Figure 3

Note: Specific control keypads to set various Dissolve Rates as well as Sequence Rates. These are valuable for a variety of lighting control effects.

(reserved)

MOTOR CONTROL ENVIRONMENTS

The following illustrations provide some sample UI for motor control interfaces.

Figure 5

Note: Motor Control UP/Stop/Down for up to 4 motors. Preset Recall positions for up to 10 presets. Store Preset positions for up to 9 presets.

Figure 6

Note: Motor Control UP/Stop/Down for up to 5 motors. Preset Recall positions for up to 3 presets for each motor. Store Preset positions for up to 3 presets for each motor.

ADVANCED ELAN PROGRAMMING

(reserved)

Common Mistakes

1. Forgetting to set turn **off** Telnet Login under the TELNET page. Typically, Telnet sessions require a LOGIN ID. Currently within the Elan setup, Telnet is used without LOGIN. IF the LOGIN setting within the e-Node is not set to **DISABLE**, the Elan processor will be unable to establish a Telnet session with the e-Node. After this LOGIN is disabled, you must hit the **RESTART** button in order for this change to become valid.

2. Forgetting to update Zone/Group/Nodes addresses within the default serial driver for specific controllers. The default driver from Converging Systems is set to 2.1.0 for lighting devices, and 1.1.0 for motor devices. The "0" in the last location refers to a wildcard setting which causes all devices with a Node address from 1 to 254 to respond. If you have a setup with uses specific addresses other than 2.1.1 for instance (i.e. 2.1.2 for the second controller, 2.1.3 for the third controller, etc.) you must update the serial driver accordingly.

3. Make sure that you do not use the Communication Device created by more than one Generic Serial Device or Generic Ethernet Device.