ILC-x00 Troubleshooter

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Ref #	Category of Problem / MANUAL PROCEDURE	RESULT	SYMPTOMS OR CAUSES OF TROUBLE	REMEDY
	Category of Problem — The technician performs these operations in sequence. Follow the arrows	Look for these results, if OK, take next step. If faulty, see Col. 3 & 4	This column lists probable symptoms or causes of trouble	Many problems can be overcome by checking these items
1000	**Power Issues**			
1010	Plug in DC power into ILC-x00 controller — Observe >>>	Does on-board LED illuminate either solid Yellow or sold Green? / If neither color illuminate.	No power to unit or faulty unit	Check power supply, check polarity. Verify DC voltage generated by power supply is seen on ILC-x00 power connector
1020		Unit may be internally hung due to an ESD glitch that only impacts these LEDs		If you can see the ILC-xxx unit through web Pilot, within the CS-BUS tab select the applicable ILC-xx0 unit and right mouse click on the unit and hit Identify. This could clean the cache and enable the indicator lights to re-illuminate.
1030		A short on the Load (output) side would be impacting the status of these LEDS		Remove all load device connectors from the ILC-xxx controllers and reboot to see if LEDs re-illuminate.
1100	**Output color problems**			
1110	Monochrome, RGB, RGBW and bi-white LEDS have been connected initially to a compatible ILC-x00 controller.	LEDs fail to light	Miswiring, no input connection made, ILC-x00 not powered	Check to see if the marked output on the ILC-x00 controller is running to the same color on the LED strip. Remember "C" on the FLLA strip is common positive. Also verify if the ILC-x00 is power on. By default when an ILC_x00 is powered on all LEDs are triggered on (unless changed in software within Pilot).
1120		Wrong colors appear (i.e. Red, turns on Green, or Blue turns on Green, etc...)	Miswiring of outputs from ILC-x00 controller to applicable input wires on FLLA lighting strips	See above
1130		Multiple colors light when only one color is triggered	Typically, when in-field soldering is performed whiskers of solder may short two adjacent lines (i.e.with RGB Blue might be shorted to Red, or Red to Green or in addition with RGBW, Green might be shorted to White)	Visually inspect your soldering work to make sure no whiskers are present. If found clean up solder joints.
1140		LEDS appear faint or Green and Blue LEDS do not turn on at all	Improper power may be supplied. Typically, this is seen when a 12v power supply is driving 24v LEDs	Check power supply to make sure its output matches the LEDs that are connected to the ILC-x00 controller.
1150		When ILC-x00 controller is initially powered on, the connected LEDS turn on to full brightness and to White. Some installations may desire alternative colors or no illumination at all.	This is a factory programmed feature. This feature can be changed in the field	Open Pilot and expand the "+" in front of the target ILC_x00 controller. Within the Properties window find the STARTUP entry which is marked 6.13.24. The reference in the third octet to a "24" refers to a default setting to turn on LEDs to that which is stored in Storage location 24 (i.e. which can be seen through selecting a RECALL,24). You can change the value for Recall 24 to any color or level you desire. Alternatively, if you wish to use Recall 24 for some other purpose, simply change the reference from "24" to some other number that has the color or brightness level that you desire for the power-up startup condition.
1200	**e-Node/ILC-x00 Communication Issues**			
1210	Plug in CS-Bus cable from e-Node to one or more ILC-x00 controllers — Observe >>>	No ability to discover Device (ILC-x00) within Pilot	No CS-Bus connection or reliable connection. Could be bad CS-Bus cable, bad crimp, no grounding on CS-Bus cables or damaged CS-Bus communication chip	Substitute known good CS-Bus cable. Check pin outs on CS-Bus cable - twisted pairs should be on 1 & 2,, 3&4 and 5&6. Wiring should be 1-1, 2-2, 3-3, 4-4, 5-5, 6-6
1220	Observe >>>	Devices initially discovered from within Pilot may disappear from the discovery windows	More than one ILC-x00 controller may have inadvertently been assigned a duplicate UID (unique ID address)	Disconnect all ILC-x00 devices from the CS-Bus (or power off their unit by removing the power cord) and start adding one unit at a time and discovering with the Pilot application until unpredictable results are observed. Reset that uni at minimum before proceeding.
1230	Observe >>>	When devices are discovered, additional devices may inherit UID number from prior discovered units	Data corruption on CS-Bus which may have resulted from miswiring, not grounding negative input terminal on ILC-x00 controller or older firmware versions	Check wiring of CS-Bus, make sure ground is provided to negative terminal on ILC-100 and to Ground terminal on ILC-100m and ILC-400. If problem persists, update firmware to latest version available on website
1240	Observe>>>	Data connection problems on long CS-BUS platforms	The CS-BUS is a modified IEE485 type communication bus. Sometimes when there are external electrical interferences, poor crimps or other factors present which might be causing sporadic bus communication problems, it is advised to provide an EOL termination	Wire a 120ohm resister to pins 3 and 4 on the very end of the CS-Bus typically at the opposite end of the e-node where the e-Node is at the very beginning of the CS-Bus
1300	**Bus/Communication Responsive Issues**			
1310	Integration with a third-party automation or lighting systems has been accomplished but keypad or dimmer/slider seems to operate slowly or sporadically — Observe>>>	When a slider or button is pressed for a single unit, control is responsive / If not see next row	No problem here. Most likely any backchannel feedback (see NOTIFY section) is not overwhelming other bus traffic and automation system can process all backchannel information in real time.	
1320	Observe>>>	When a slider or button is pressed in quick succession to control many units including real time changes or some RGB-type color pickers are being used with some automation environments and their use appears sluggish or stuttering-like	The Notify parameter which either provides Hue/Saturation/Brightness feedback or Red/Green/Blue or RGBW feedback may be enabling a plethora of data onto some busses which might be overwhelming some automation systems.	Typically if many units are all being controlled through macros and lots of back channel information is being provided/processed, it might be a good idea to either (i) reduce the backchannel information by just reporting HSB or RGB data but not both or (ii) turn off NOTIFY where not needed. Change this from within Pilot (see section on Notify).
1330	Observe>>>	Actions evoked from the Pilot Virtual keypad or third-party automation systems may sometimes work and then other times be delayed	Communication issues rather than bus traffic issues might be the problem	See the e-Node/ILC-x00 Communication section above
1400	**Firmware Upgrade Issues**			
1410	Determine UID of target device using Pilot application. Close down Pilot, then launch firmware executable and enter UID of target controller and follow directions — Observe>>>	Does Firmware Update Notification show success / If not	Firmware updater fails	Pilot application may still be open-close application. UID entered in updater may be incorrect. Open Pilot and observe correct UID and once again close Pilot and try updater
1500	**Addressing Issues**			
1510	From the factory, each ILC_x00 controller comes with a default factory address of 2.1.0 (Zone of 2, Group of 1 and a non-set Node of 0). In order to individually address a unit, it must have a non-zero Node address which needs to be field programmed — Observe>>>	If a unit is left with a Node address of "0" (i.e. Z/G/N of 2.1.0), then that controller can only be controlled part of a general group (i.e. Z/G/N address of 2.1.0) rather than individually. Also, no backchannel information will be available even if NOTIFY is turned ON (see Notify/Back Channel Issues) for units left with a Node address of "0"	Programming of Z/G/N needs to be performed. See additional information with any Integration Note on Addressing	Open the Pilot application and expand the ILC-x00 controller that you wish to program by selecting the "+" mark, then select the BUS tab and enter your Z/G/N address making sure that you do not enter a "0" for any field
1520	Multiple ILC-x00 controllers are operating in unison and need to be programmed to operate separately — Observe>>>	Without programming each controller separately with Pilot, no individual control is possible	Individual controllers have not be programmed with non "0" Node address (i.e. BUS ADDRESS of 2.1.0 is a "0" Node address)	See above instruction
1530	A Zone/Group/Node address exceeding 254 for any field has been entered — Observe>>>	The actual ILC-x00 controller being targeted through a command is not being controlled	Zone/Group/Node addresses must fall in the range 1 to 254 for each octet	Change the address for any targeted controller to a number between 1 and 254
1600	**Notify/Back Channel Issues**			
1610	The parameter NOTIFY must be programmed to enable back channel information. — Observe>>>	Before programming, backchannel information with "!" in front of some does not appear (i.e. !2.1.1.LED.VALUE=240.240.240 or similar does not appear)	Notify needs to be turned on for ILC-x00 device or for each channel	Open Pilot application and hit discover e-nodes and then discover Devices within the View Map window. Expand the Devices and look under the LED tab for NOTIFY and turn to appropriate setting -("Color" for HSB feedback, "Value" for old-school RGB feedback, and BOTH for both)
1620	Observe>>>	Backchannel for specific controller does not appear, although backchannel occurs for some devices	Specific backchannel information is generated for all devices with non-zero Zone/Group/Node addresses (ZGN)	Make sure the device from which you are wishing to receive backchannel information has a non-zero ZGN address assigned. If not, assign it using directions above
1630	Observe>>>	You have an automation platform that has a slider that is addressing an ILC-x00 group with a wildcard address (i.e. 2.1.0) and you are not getting backchannel information	With earlier versions of ILC-x00 firmware, a query of a wildcard address (2.1.0) only provided backchannel notification from the "speaker of the class" which had a Node address of "1" (within the same Z/G series).That information was reported back from that speaker's Node address (i.e. 2.1.1) rather than from the wildcard address (i.e. 2.1.).	Update the firmware on any ILC-x00 controller where you desire this level of functionality. Consult Firmware Revision Notes on the Convergingsystems.com website to determine if your firmware is impacted here. (See linksat the bottom of this troubleshooter.)
1700	**Cabling from ILC-x00 controller to load (LEDs) is becoming hot or burning up**			
1710	You have wired your ILC-x00 without consulting the Voltage Drop Table available from Converging Systems — Observe>>>	LEDs are dim, or the wire run between the ILC-x00 controller and the LEDs are becoming very hot or have burned	Insufficient wire gauge to support connected LEDS	Review Voltage Drop Tables as applicable for your particular LEDs to be driven from the ConvergingSystems.com website. Make sure that proper wire gauge is being used depending upon (i) the load that will be driven and (ii) the distance of the wire from the ILC-x00 controller and the beginning of the FLLA or similar lighting device
1800	**Problems not identified above or for more troubleshooting**			
1810	Perform a Factory Reset Note: specific programming of unit may be lost in the process — Observe>>>	Unit is brought back to factory settings based on the current version of firmware programmed	Programming issues, bad communication issues, misc. issues / If ILC-400 in RGBW mode	For ILC-40D RGBW mode remove shroud to left of 2-pin power plug and depress silver button and hold until **three** sets of flashes are observed, then release button
1820			If ILC-400 in 4 channel mono mode	For ILC-400 RGBW mode remove shroud to left of 2-pin power plug and depress silver button and hold until **two** sets of flashes are observed, then release button
1830			If ILC-100c	For ILC-100c use paperclip and carefully insert into vertical side wall to find internal reset button. Hold down reset button until three sets of flashes are observed, then release button
1840			If ILC-100m	For ILC-10m use paperclip and vertically on edge of PCB where it is mark DISC and gently press inwards to find Discovery Button (not downwards) and depress tiny reset button until three sets of flashes are observed, then release button
1850				
3000	**Other Information**			
3010	Consult Firmware Release Notes — Determine platform>>>		If ILC-400	http://www.convergingsystems.com/software/ilc400/release_notes.php
3020			If ILC-100c	Consult ILC-400 for general release notes which may apply. Go to http://www.convergingsystems.com/downloads_library.php and click on ILC-100c controller to see if WIP release notes are present
3030			If ILC-100m	Consult ILC-400 for general release notes which may apply. Go to http://www.convergingsystems.com/downloads_library.php and click on ILC-100m controller to see if WIP release notes are present