Honeywell

INNCOM L510
Lamp Controller

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OVERVIEW

The L510 provides dimming control of almost any floor or desk lamp. The dimmer plugs right into your lamp and wall socket. Dimming the lights with the L510 saves energy and provides elegant lighting and mood control when used in conjunction with Honeywell's Integrated Room Automation System.

In a typical application, the L510 provides wireless remote control of a table or floor lamp while participating in a lighting scene or mood. The L510 can also be equipped with a tabletop switch for easily accessible local control of the lamp, making it easier to turn the light on and off without reaching under the lamp shade. The L510 allows the use of a standard light bulb instead of costly 3-way bulbs. L510 is available in models for dimmable CFL and LED bulbs and models designed for incandescent and halogen lamps and can do non-lamp plug-in loads like dimmable plug-in LED strips.

Figure 1. L510 Overview

This equipment has been tested and found to comply with the limits for a Class B digital device, according to Part 15 of the FCC Rules. These limits are designed to protect reasonably against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used as per the instructions, may cause harmful interference to radio communications. There is no guarantee. That interference, however, will not occur in a specific installation. Suppose this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off. In that case, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and

2. this device must accept any interference received, including interference that may cause undesired operation. Please note that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;

2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

# COMPATIBILITY /FUNCTION COMPARED TO THE REPLACEMENT PART– L208

Parameter	Specification
Is it straight swap for the replacement?	NO
Is any rewiring required?	Plug In*
Is the new unit the same footprint?	NO
Are the new units compatible with the replacement?	YES
Is any re-programming work required on the server side and rest of the hardware products in a same room?	NO

*The L208 required a switch to be connected to the L208 in order to Bind it to the required Room ID and RF Channel.

The L510 has a built-In Bind switch and does not require a separate switch in order to bind the L510.

Loads smaller than 15 watts, if dimmed by an L510 Triac require lab testing. If the current gets too low in the L510T, the triac can prematurely turn off even if using an incandescent bulb. If a low wattage LED bulb (<15W) is being used, you can get a large flash from the bulb as the L510T first turns on Once a higher wattage bulb or load is used, the flash disappears.

DIMENSIONS
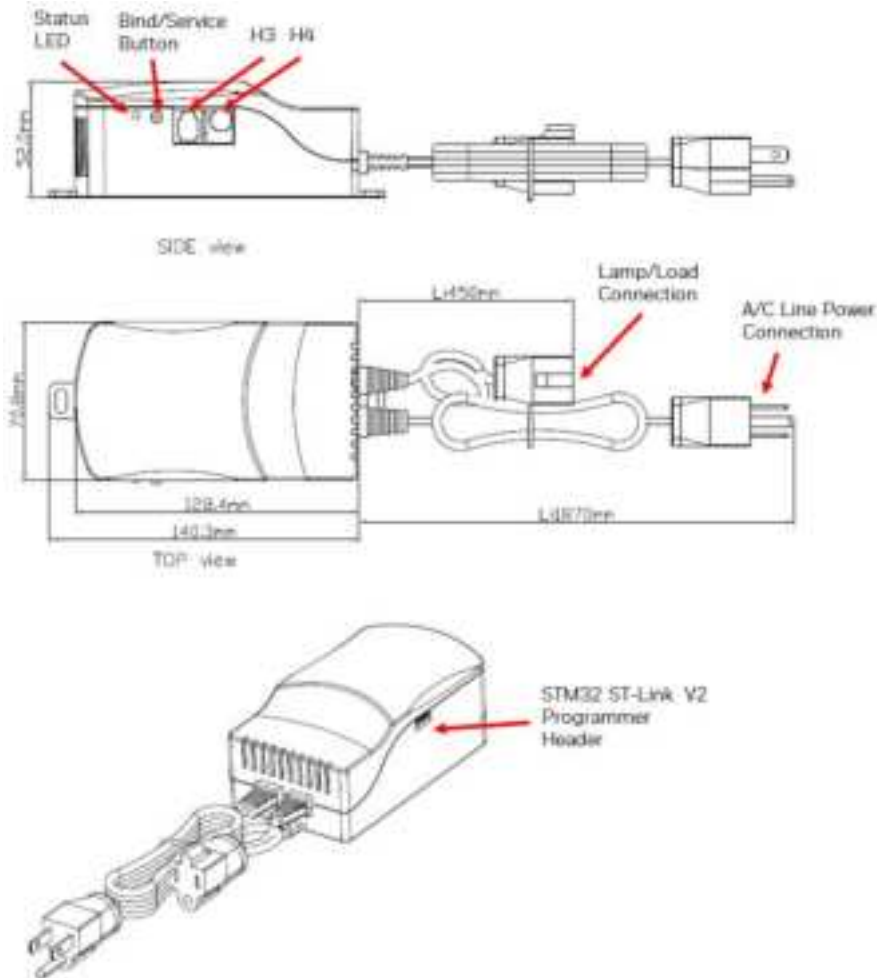
LED STATUS INDICATIONS

Off: L510 is not powered.

On for 1/2 second, Off for 1/2 second, and repeating: L510 is powered but has not received a "Central Status Broadcast" and does not think the room it is in is Online/connected with the Inncom server.

On for 1 second, Off for 1 second, and repeating: L510 is powered and has seen a "Central Status Broadcast" and does think the room it is in is Online/connected with the Inncom server.

Eight blinks 1/2 second apart, followed by a very rapid blink for 4 seconds, followed by On for 1 second, Off for 1 second, and repeating: The Bind/Service button was pressed, making the L510 send a Bind Request. The eight blinks indicate the L510 received a Bind Offer. It then RESETS, and on startup, it rapidly blinks the LED for 4 seconds.

On for 1 second, followed by very rapid blink for 4 seconds, followed by On for 1 second, Off for 1 second and repeating:

- The L510 just had power applied or was RESET.

- The Bind/Service button was pressed and the L510 has sent a Reverse Bind command but never received a Bind Offer.

L510 H3 AND H4 MODULAR PLUG CONNECTIONS

H3 RJ12 6-pin socket – Pins 2,3,5 provide an S5-Bus connection from the L510.

Accepts a 6P6C RJ12 modular plug.

Pins 1,4,6 not used.

A 250mm and 3000mm pre-built cable depicted above is available for order.

62-1345 = CABLE ASSY, 3 PIN 250MM, RJ12 TO S5BUS W, 62-1345.10 = CABLE ASSY, 3 PIN CABLE, 3000MM, S5, 3 Pin Connector to RJ12 Connector.
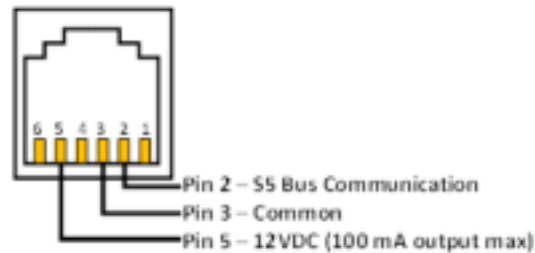

Figure 2. L510 H3 RJ12 Socket

Figure 3. RJ12 Plug (Molex 90075–031 or similar)

H4 RJ9 4-pin socket – Pins 2,3 provide an input to connect an external dry contact switch.

Accepts a 4P4C RJ9 modular plug. Pins 1 and 4 are not used

The typical use is to monitor an entry door or balcony door switch. You can configure the desired functionality via Inncom's INNTool/EngINN software.

Figure 4. L510 H4 RJ9 Socket

Figure 5. RJ12 Plug (Molex 90075-0027 or similar)

BINDING AND CONFIGURING THE L510 F OR L510 T

Configure the L510 with a unique device address and required functionality. It contains a radio that requires being "bound" to a specific Room ID, PAN ID, and RF Channel. Use a laptop with the EngINN program installed with a connected PC503 USB commissioning device to perform this binding and configuration. You can also configure it with an E7, E528/E527.4G thermostat, or e7w/E529 battery-powered thermostat.

Binding and configuring the L510 from EngInn

Prerequisite: Create an INNTool project that defines all the required settings for L510.F or L510.T using INNTool in a particular room and load it into EngINN. It is beyond the scope of this document to fully cover using INNTool/EngINN. Refer to specific commissioning documentation.

1. Navigate to the Deployment Data section on EngINN and select the desired room and L510.
   The Device Summary page opens, displaying the defined settings for the selected L510.
   Click the "Bind" button at the bottom to open the Bind Device screen.

2. On the Bind Device screen that appears, click the Start button to make EngINN begin watching for a Bind Request from the L510.


3. The L510 uses a "Reverse Bind," meaning it will send a Bind Request when you press its Bind /Service button. Do the following steps to Bind the L510.

   a. Go to the desired L510 and press its Bind/Service button to initiate the Reverse bind. It should send a Bind Request.


   b. If EngINN via the PC503 received the Bind request from the L510, it would send a Bind Offer to the L510. If the L510 received this Bind Offer, it will store the settings defined in the Bind Offer, RESET, then, upon startup, send a sound buzzer message into the room to make any device with a buzzer beep as audible feedback that the L510 was bound.

    c.   Upon seeing the L510 startup, ENGINN will show a green check symbol indicating the bind was successful.

4.   With the L510 bound and assigned its Room ID, PAN ID, and RF Channel, push its configuration from EngINN.

    a.   Click the Back to Summary button to return to the Device Summary screen.

    b.   Click the Write Configurations button. This will open the EngINN Task Manager, and you should see EngINN verifying the L510 exists and begin to write the defined configurations to the L510.
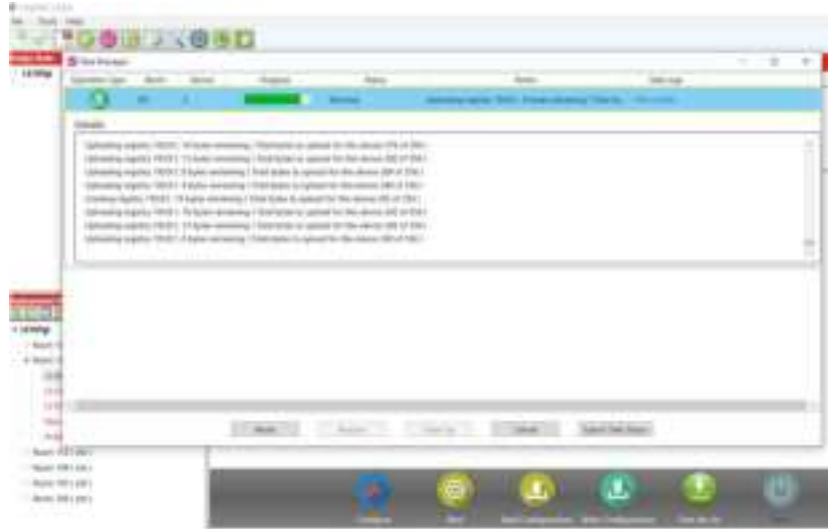
    c.   EngINN will indicate the upload is completed.
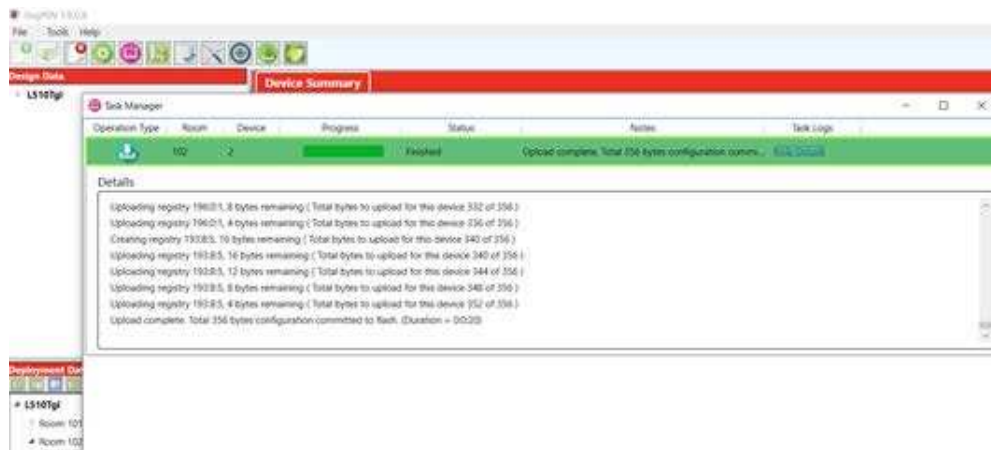
5.   Test the functionality of the L510.

Binding and configuring the L510 from an e7 or e7w Battery Powered Thermostat

You can bind and configure the L510 with an e7 thermostat or e7w battery–powered thermostat if not using EngINN. Refer to applicable commissioning documentation for the required L510 Address and I/O Map and the exact commissioning procedures.

1.   Enter Service Parameter mode on the e7/e7w.

    a.   Press and hold °F|°C.

    b.   Press and hold MODE.

    c.   Press and hold FAN.

    d.   Release the three buttons.

The thermostat will display "*rid*" when it has entered Service Parameter mode.

2. If not already done, set the required Room ID, PAN ID, and RF Channel into the e7/e7w. These values will be transferred to the L510 when you initiate the Bind. If this is already set, skip to Step 3.

Set the Room ID:

    a. Press Mode when the rid is displayed. The currently stored Room ID value is displayed and will begin scrolling across the screen one numerical setting at a time, from highest to lowest (left most to right most value). Note that the five-digit number comprises three fields: highest digit, middle two digits, and lowest two digits.

    b. Scrolling will first stop at the highest digit and display three vertical dots. Use the UP/DOWN arrow buttons to change this value (range is 0-6). Press FAN to continue.

    c. It will display two middle digits and two vertical dots. Set the middle two values using the UP/DOWN arrow buttons (range is 0-99). Press FAN to continue.

    d. It will display the last two digits and a single dot. Set the last two digits using the UP/DOWN arrow buttons (range is 0-99). Press MODE to accept the value.

    e. The new ID number displays across the display. The E528/E527 stores the value in the memory beeps. The E529 does not beep. It will show rid again once the scrolling is complete.

Set the PAN ID:

The valid ID range is 0-255; refer to the property-specific documentation for applicable PAN ID settings. To set the PAN ID, do the following:

    a. Use the UP/DOWN arrow buttons to select PAN.

    b. Press MODE

    c. Use the UP/DOWN arrow buttons to select the valid PAN ID value.

    d. Press FAN to store the value in memory.

Set the RF Channel:

    a. Use the UP/DOWN arrow buttons to select RF.

    b. Press MODE

    c. Use the UP/DOWN arrow buttons to select the RF Channel value.

    d. Press FAN to store the value in memory.

    e. Press °F|°C to exit service mode.

3. With the required Room ID, PAN ID, and RF Channel entered into the thermostat, now Bind the L510. There are two options:

- **Teach Address Bind** – Set a defined Address into the L510 in addition to the Room ID, PAN ID, and RF Channel.

    a. Use the UP/DOWN arrow buttons in SERVICE MODE to select Adr.

    b. Press MODE. The display changes to show Adr and an address value. Use the UP/DOWN arrow buttons to change the displayed value to the desired address.

    c. Press FAN to place the thermostat into reverse bind mode. The L510 uses a reverse bind.

    The thermostat display will show bnd, indicating it is waiting to see a reverse bind command from the L510. On the L510, press its Bind/Service button to make the L510 send a Bind Request. The thermostat will send a Bind Offer to the L510 containing the defined values when it sees this message. If the L510 received the Bind Offer, it would RESET and, upon startup, start using the new, designated Address and send 3 Sound buzzer messages to make the thermostat beep as an indication that the L510 was bound.

- Press °F|°C three times to exit service mode.

- **Teach I/O Bind** – Activate a stored I/O map configuration in the L510 and set the Room ID, PAN ID, and RF Channel.

    a. Use the UP/DOWN arrow buttons in SERVICE MODE to select Io.

    b. Press MODE. The display changes to show Io and an I/O Map value. Use the UP/DOWN arrow buttons to change the displayed value to the desired I/O map.

    c. Press FAN to place the thermostat into reverse bind mode. The L510 uses a reverse bind.

The thermostat display will show bnd, indicating it is waiting to see a reverse bind command from the L510. On the L510, press its Bind/Service button to make the L510 send a Bind Request. The thermostat will send a Bind Offer to the L510 containing the defined values when it sees this message. If the L510 received the Bind Offer, it would RESET and upon startup, start using the new I/O Map configuration and send 3 Sound buzzer messages to make the thermostat beep as an indication that the L510 was bound.

d. Press °F|°C three times to exit service mode.

4. Test the functionality of the L510.

Binding and configuring the L510 from an E528/E527.4G or E529 Battery Powered Thermostat

If not using EngINN to Bind and configure the L510, you can bind and configure the L510 with an E528/E527.4G thermostat or E529 battery-powered thermostat. Refer to applicable commissioning documentation for the required L510 Address and I/O Map.

1. Enter Service Parameter mode on the E528/E527/E529.

   a. Press and hold °F|°C.

   b. Press and hold OFF/AUTO.

   c. Press and hold DISPLAY.

   d. Release the three buttons.

   The thermostat will display "rid" when it has entered Service Parameter mode.

2. If not already done, set the required Room ID, PAN ID, and RF Channel into the E528/E527/E529. These values will be transferred to the L510 when you initiate the Bind. If these have already been set, skip to Step 3.

Set the Room ID:

   a. With rid displayed, press DISPLAY. The currently stored Room ID value is displayed and will begin scrolling across the screen from highest to lowest (left most to right most value). Note that the five-digit number comprises three fields: highest digit, middle two digits, and lowest two digits.

   b. Scrolling will stop at the highest digit first. HI, and will display the highest digit. Use the UP/DOWN arrow buttons to change the value (range is 0-6).

   For the E528/E527, press OFF/AUTO to continue. For the E529, press DISPLAY to continue.

   c. It will display MED and the middle two digits. Set the following two values in the sequence using the UP/DOWN arrow buttons (range is 0-99).

   For the E528/E527, press OFF/AUTO to continue. For the E529, press DISPLAY to continue.

   d. It will display the LO and the last two digits (the range is 0-99). Set the previous two values using the UP/DOWN arrow buttons (range is 0-99) and press DISPLAY to accept the value.

   e. The new ID number displays across the display. The E528/E527 stores the value in the memory beeps. The E529 does not beep. It will show rid again once the scrolling is complete.

Set the PAN ID:

The valid ID range is 0-255; refer to the property-specific documentation for applicable PAN ID settings. To set the PAN ID, do the following:

   a. Use the UP/DOWN arrow buttons to select PAn.

   b. Press DISPLAY

   c. Use the UP/DOWN arrow buttons to select the valid PAN ID value.

   d. Press DISPLAY to store the value in memory.

Set the RF Channel:

    a.   Use the UP/DOWN arrow buttons to select rF.

    b.   Press DISPLAY

    c.   Use the UP/DOWN arrow buttons to select the RF Channel value.

    d.   Press DISPLAY to store the value in memory.

    e.   Press °F|°C to exit service mode.

3. With the required Room ID, PAN ID, and RF Channel entered into the thermostat, now Bind the L510. There are two options:

- **Teach Address Bind** – This sets the defined Address into the L510 in addition to the Room ID, PAN ID, and RF Channel.

    a.   In SERVICE MODE, use the UP/DOWN arrow buttons to select Adr.

    b.   Press DISPLAY. The display changes to show V and a value. Use the UP/DOWN arrow buttons to change the displayed value to the desired address.

    c.   Initiate the Reverse Bind:

      —"For the E528/E527, press OFF/AUTO to place the thermostat into reverse bind mode. The L510 uses a reverse bind. The E528/E527 will display bnd, indicating it is waiting to see a reverse bind command from the L510.

      —For the E529, do nothing. Leave the E529 displaying the desired Address.

        On the L510, press its Bind/Service button to make the L510 send a Bind Request. The thermostat will send a Bind Offer to the L510 containing the defined values when it sees this message. If the L510 received the Bind Offer, it will RESET and, upon startup, begin using the defined Address and send 3 Sound buzzer messages to make the thermostat beep as an indication that the L510 was bound.

      —Press °F|°C three times to exit service mode.

- **Teach Address Bind –** Activate a stored I/O map configuration in the L510 and set the Room ID, PAN ID, and RF Channel.

    a.   In SERVICE MODE, use the UP/DOWN arrow buttons to select Io.

    b.   Press DISPLAY. The display changes to show V and a value. Use the UP/DOWN arrow buttons to change the displayed value to the desired I/O map.

    c.   Initiate the Reverse Bind:

      —For the E528/E527, press OFF/AUTO to place the thermostat into reverse bind mode. The L510 uses a reverse bind. The E528/E527 will display bnd, indicating it is waiting to see a reverse bind command from the L510..

      —For the E529, do nothing. Leave the E529 displaying the desired I/O Map.

        On the L510, press its Bind/Service button to make the L510 send a Bind Request. The thermostat will send a Bind Offer to the L510 containing the defined values when it sees this message. If the L510 received the Bind Offer, it will RESET and, upon startup, begin using the new I/O Map configuration and send 3 Sound buzzer messages to make the thermostat beep as an indication that the L510 was bound.

      —Press °F|°C three times to exit service mode.

4. Test the functionality of the L510.

TROUBLESHOOTING

Binding and configuring issues

1. You can't Bind the L510 from EngINN.   The "Bind" button is disabled
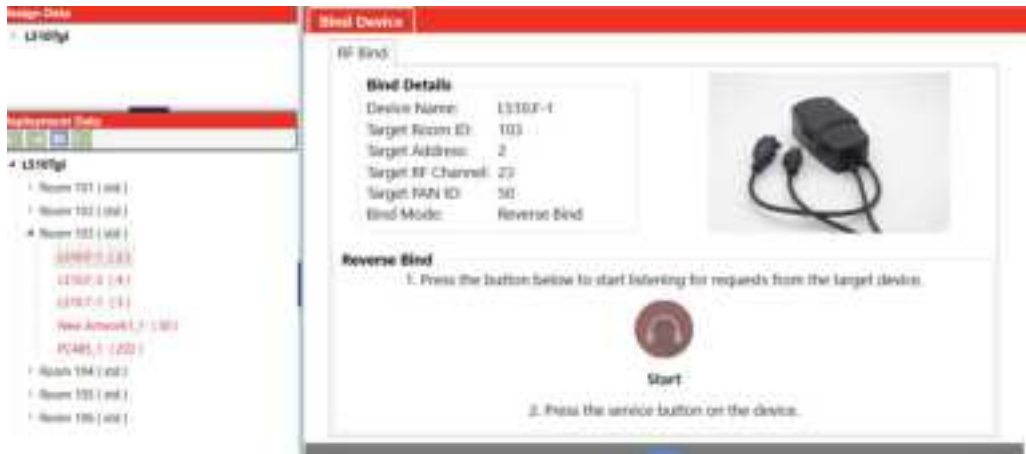

Possible Reasons:

Configure EngINN to connect to WSCon instead of the PC503. Look in the lower right corner of EngINN. If you see "Server (WSCon), configure EngINN to connect to the WSCon program instead of the PC503. Click the "Server (WSCon)" item to open a Settings window. From there, set the EngINN Communication. Interface to PC503 instead of Server (WSCon) and click the Save button to update EngINN.

2. You can't Bind the L510 from EngINN. When Binding the L510 from EngINN, you click the Reverse Bind Start button, then go to the L510 and press its Bind button, but EngINN never indicates it received a Bind request and never displays a Green check or indicates the device is Online.

Possible Reasons:

- The PC503 USB commissioning device is not connected to a USB port on the PC being used to run EngINN. There is an issue with the USB cable used, or the USB driver the PC503 uses did not install correctly. Look at the bottom right of EngINN. Does it indicate "PC503-Channel XX – Connected" or "Disconnected".

If it indicates disconnected, verify the connection between PC503, USB cable, and the used PC. Try just unplugging the USB cable and plugging it back in again and see if that forces EngINN to connect to the PC503. If that doesn't work, try plugging the USB cable into a different USB port. PC503 is a Windows HID device similar to a mouse that does not need an installed driver, and no Com port gets assigned to it.

- The L510 is not powered. Verify that the L510 power cable is plugged into a live/powered outlet supplying 120VAC. If powered, the Green Status LED on the L510 should be ON.

3. When writing a configuration to the L510 from EngINN, you get a "DeviceType value doesn't match with the configured device in EngINN" message, and EngINN does not configure the device.

Possible Reasons:

The software loaded into the L510 is not the proper INNTool Shelf software that needs to be used with EngINN. EngINN expects devices configured and commissioned from EngINN to be loaded with a specific "INNTool Shelf" version for the particular device getting configured. EngINN first reads the device's "Device Type" ID when you start downloading a configuration to the device. It does not match what EngINN expects. It stops the configuration and indicates that the Device Type in the device does not match.

It would help if you verify what loaded actual software into the L510 and whether it is the latest/current INNTool Shelf version for the L510. Contact Inncom Customer service if you have questions.

Light Output Control Issues

1. I never see the L510 turn ON its output.

Possible Reasons:

- The L510 is not powered. Verify that the L510 power cable is plugged into a live/powered outlet supplying 120VAC. If powered, the Green Status LED on the L510 should be ON.

- Does the lamp connected to the L510 have its own switch? Is this switch in the OFF position or Open? If so, consider re-wiring the lamp to remove this switch to prevent someone from turning off the switch in the future.

- The L510 is not configured correctly. Was it configured via EngINN/PC503? Have you tried to push the configuration from EngINN to L510 again and see if it allows L510 to turn ON/OFF as expected?

- How are you trying to turn on/off or control the L510?

  From a switch locally connected to the H4 4-pin socket on the L510?

  If so, verify the switch is functioning using a continuity meter. Is the switch shorting the input when closed? Is the switch fully/correctly connected to the L510 H4 header? Have you configured L510 via EngINN such that its low voltage input on the H4 RJ9 connection controls its local light output?

  From an Inncom switch inside the guest room such as a Modeva or Evora, pressing a button on this switch is supposed to turn on/off or dim up/down the light(s) connected to the L510?

  If so, have you verified the configuration of the Evora/Modeva is correct and is sending the correct/expected commands to the L510? Have you traced the in-room commands sent from the Evora/Modeva when you press the button and are they as expected?

2. The L510 is supposed to dim the lamp connected to it but is only turning full On or OFF.

Possible Reasons:

Are you sure the load/lamp connected to the L510 is dimmable? If it is, what was defined in the INNTool project for the particular L510? Is the INNTool project configuring the L510 as ON/Off only with no dimming?

Verify the settings in EngINN:

- Select the desired L510 in the particular room

- Click Configure > Advanced Configuration> Outputs.

- Find the "Enable Dimming" option. Is the checkbox cleared? If so, the configuration settings into the L510 from EngINN have dimming disabled. Change this option to enable dimming, update the room type the L510 is associated with, and then re-configure the L510 from EngIN.

You can also send a dialog command to the L510 to check if dimming is enabled or disabled. CBL32 Registry 7:3:X:23 DimSetup (X typically is always 1) controls the Dimming control in the L510. The upper Bit 7 in the value stored in 7:3:1:23 is the "DE" Dimming Enable bit. It needs to be set for the L510 to be able to Dim its output.

The command to read is 0018C07030117. In the image below, the reply to this command was 0001000000014080. The first two characters are the value of 7:3:1:23 in Hexadecimal, or 00, so the DE bit 7 is cleared. It should have been 80 (0x80 hex is 1000 0000 binary), so that Bit 7 DE was set.

Send the command 0018D0703011780 to set offset 23 to value 0x80 to set the DE bit, then read it back with the 0018C07030117 to verify it changed.

Now test if you can dim L510. If so, you need to update INNTool, so that it enables the dimming in L510.

3. The light fixture connected to the L510 is flickering.

Possible Reasons:

The L510 type (.F or FET or.T or Triac) being used does not match the requirements of the lamps/bulbs being controlled. What kind of light lamp/bulb is being controlled, and does the manufacturer of the lamp/bulb recommend Forward or Reverse phase control. If the lamp/bulb fixture manufacturer recommends using a "Reverse Phase FET based "dimmer, an L510.F should be used. If the lamp/light fixture manufacturer recommends using a "Forward Phase Triac based" dimmer, an L510.T should be used.

In general:

- Incandescent bulbs: Can be controlled by either forward or reverse phase dimmers, so either the L510.F or L510.T can be used.

- LED bulbs: Can be controlled by either forward or reverse phase dimmers. Generally, it will perform better in the reverse phase because of the characteristics of LED drivers. You will likely get better dimming performance using the L510.F.

- MLV (Magnetic Low Voltage): Can only be controlled by forwarding phase dimmers due to potential component damage from "kickback" voltage when current is interrupted in the reverse phase, so the L510.T should be used.

- ELV (Electronic Low Voltage): Can only be controlled by reverse phase dimmers due to the characteristics of electronic transformers, where the forward phase could result in poor performance, so the L510.F should be used.

However, you should always follow the recommendations /requirements of the lamp/bulb manufacturer.

4. If flickering only occurs when the L510 output is dimmed to a low level, you can try increasing the L510 Minimum Dim Level setting. This setting limits how low the Triac/FET output of the L510 is allowed to be dimmed down.

To use EngINN:

1. In the Deployment Data section, select the desired room (102 in this example), then select the desired L510 (L510.F with Address 2 in this example) and click the Configure button.

2. Expand the Light Output Configuration to view the details. The current Minimum Dimming level in% that is supposed to be set in the device is displayed in the Dimming section. It is 5% in the below example.

Try increasing the Minimum level to a higher% value, 20%, for example. You can use the slider control or manually enter the desired value. When you change the value, the "Commit To Room Type" and "Make New Room Type" options will become available because you have changed the Min Dim Level from what is currently stored in EngINN.

*   If you think you will be applying this change to ALL L510.F s in all rooms that are using the defined Room Type ("Std" room type in this example), click the "Commit To Room Type" button.

- If it is only this one room or a handful of rooms where you need to adjust the L510 Min Dim level, or you want to test just 1 room before applying the change to all rooms, consider creating a new Room Type and assigning the L510's in the selected rooms to this new room type. Click the "Make New Room Type" option.


Now that you have changed to the existing room type or created a new one, you need to push the new configuration to the L510.

Click the "Back to Summary" button and the "Write Configurations" button to upload the changes to the L510. When the upload is finished, dim the L510 output to its minimum level and see if the flickering has stopped. If it is still flickering, you can try increasing the Min Dim Level to a higher level.

You can also send a dialog command from the EngINN Trace Viewer to the L510 to directly adjust the Min Dim Level first, then once you find the correct level, update this in EngINN to update the INNproj file.

If using EngINN with a PC503:

1. Select the desired L510 in the desired room in the Deployment Data section. In this example, an L510.F in Room 103 with address two is selected.
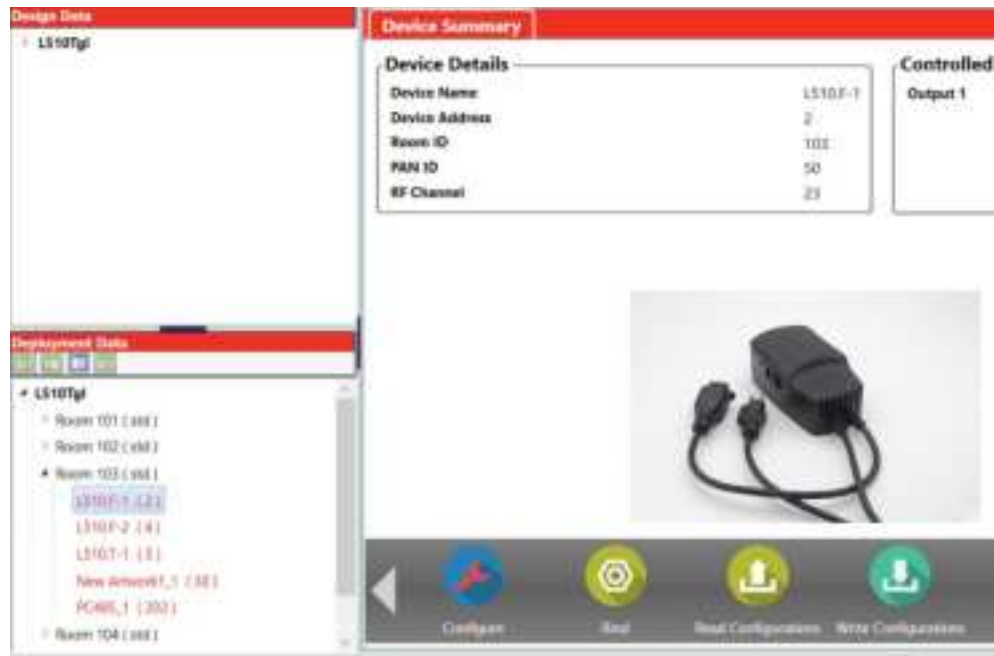
2. Open the EngINN Log Viewer (also called Trace Viewer) by clicking the "Show Log Viewer" button. The "Enable Filter" check-box should be enabled with the Room ID filter already enabled (103 in this example).

3. On the trace screen in the right-hand corner, click the Start button, uncheck all the addresses except for L510 from the "From" filter, and click OK. In this example, it's Address 2. This will display only messages from l510 Address 2 in the selected Room.This makes it easier to see the responses from the L510.
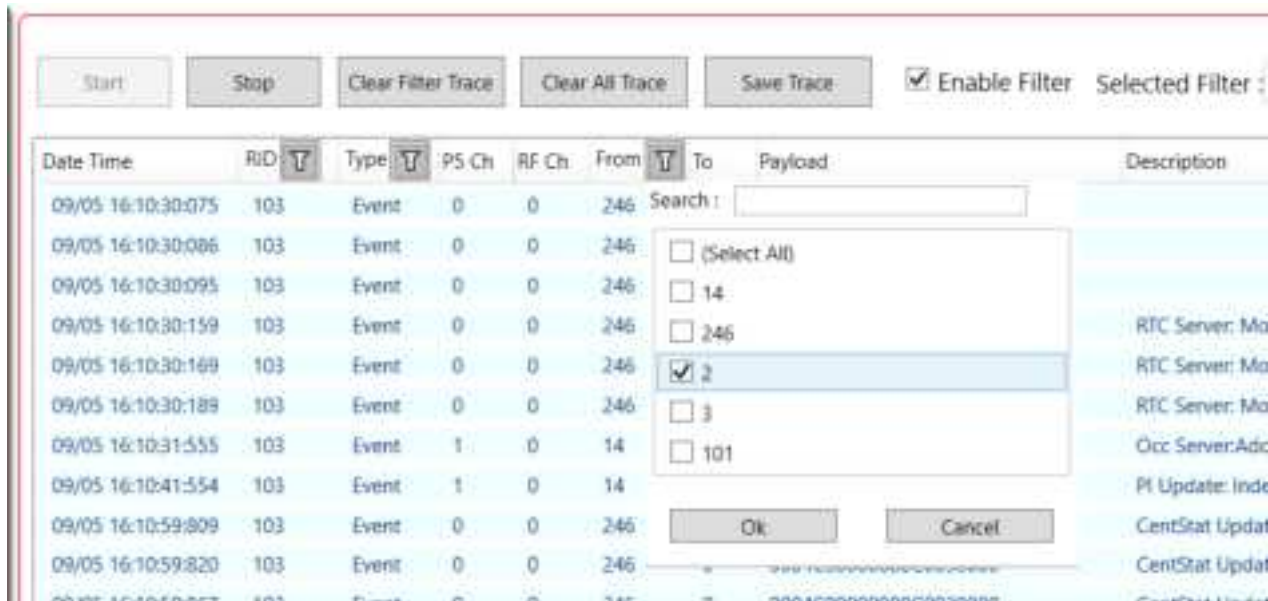
4. In the "Room Commands" section, set the Address and P5 channel to that used by the L510 (Add 2, P5 Chan 1 in this example), check the "As Query" option, and enter the command "0018C07030114" into the "Command to be send" field. Command 0018CXXYYZZWW reads Offset WW in Registry XX:YY: ZZ where these are in Hexadecimal. 0018C07030114 is reading Registry 7:3:1 Offset 20 Min Dim Level.

5. Click the Send button to send the command. You should see the reply appear in the trace section on the right. The reply was "01FF03C001000000" in this example. The first two values, 01, is the reply to the 0018C07030114 command. It is in Hexadecimal, and 0x01 = 1 decimal. So the current 7:3:1:20 Min Dim Level is 1. The 7:3:1:20 value is actually a 0-255 value and this value in percent% is (0-255 value)/255 X 100. So a value of 1 is 1/255 X 100 = 0.4%.

6. Now send the CBL32 Registry. Write the command to change the Min Dim Level to 20%. 0018DXXYYZZWWVV is the CBL32 Write Registry command. XXYYZZ is the desired CBL32 Registry, WW is the Offset of the Registry, and VV is the value to write. The command to send to change 7:3:1:20 Min Dim Level to 20% is 0018D07030114330018D is the Registry write command. 07030114 is Registry 7:3:1:20 Min Dim Level. The desired 20% scaled to a 0-255 range is 20/100 X 255 = 51 decimal. 51 = 0x33 hex.

So the command to send is 0018D0703011433. In the below image, the command was sent and acknowledged.
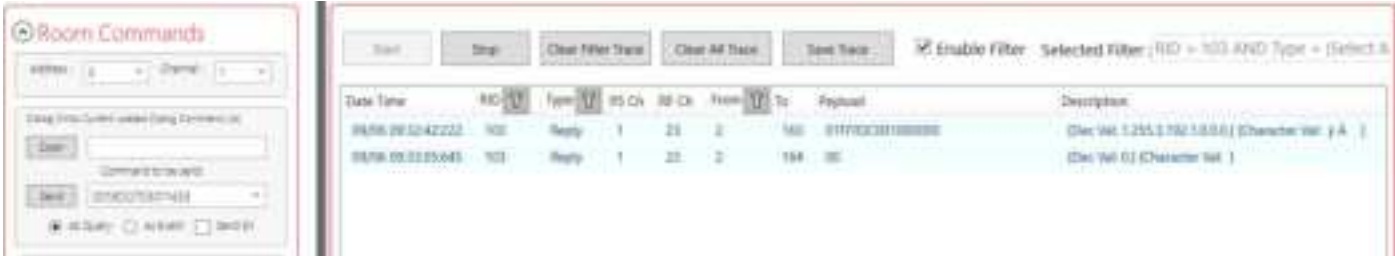
Then send the 0018C07030114 command again to read the value to make sure it was changed. The first byte of the reply was 0x33, which is 20%. Now dim the output to its lowest setting and see if the flickering stops. If it is still flickering, try a higher value until you get the flickering to stop.

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