Resetting EcoSystem Ballasts and Drivers with Lunatone USB 30 mA

Necessary Hardware

1. Windows PC
2. Lunatone DALI USB 30 mA (USB-to-DALI/EcoSystem adapter)
   - Article Number: 24138923-30
   - Product webpage: https://www.lunatone.com/en/product/dali-usb/
   - Available in the US from: iLucida, LLC (info@ilucida.com)
3. Line-voltage powered ballast or driver
4. Lutron EcoSystem bus cable or two wires between 16 to 20 AWG (0.5 to 1.5 mm^2)

Necessary Software

1. DALI-Cockpit Utility (consists of "DALI-Cockpit" and "DALI-Monitor" programs)
   - Download from: https://www.lunatone.com/en/product/dali-cockpit/
2. DALI Cockpit Scripts (Compatible with v1.38.60)
   - Download from: https://www.lutron.com/TechnicalDocumentLibrary/048816-Resetting_EcoSystem_Address_Scripts.zip
   - This will be downloaded as a ZIP file, which contains two files: "1-QueryShortAddressOnBus.cot" and "2-ClearShortAddresses.cot". Unzip the file, and save the contents into a location where they can be accessed later. The files are needed for steps 5-7.

Note that this procedure was developed using DALI Cockpit Utility version 1.38.60. The following screenshots may not exactly match different versions of the DALI Cockpit software. The information in this application note is provided for reference only.

The DALI Cockpit Utility is owned and copyrighted by Lunatone Industrielle Elektronik GmbH. It is not developed, maintained, or supported by Lutron Electronics. Lutron Electronics disclaims any and all liability in connection with use of the DALI-Cockpit Utility, which is at your own risk.

Procedure for Clearing EcoSystem Addresses

1. Install the DALI-Cockpit Utility on the Windows PC if it has not been already installed.
2. Prepare the DALI-Cockpit software to communicate with the fixture.
   - Open the DALI-Cockpit software. If this is the first time the software is run, follow the directions below; otherwise, skip to the next step.
   - The first time the software is run, it may start up in German; click the "Unregistriert fortfahren" button to open the software.
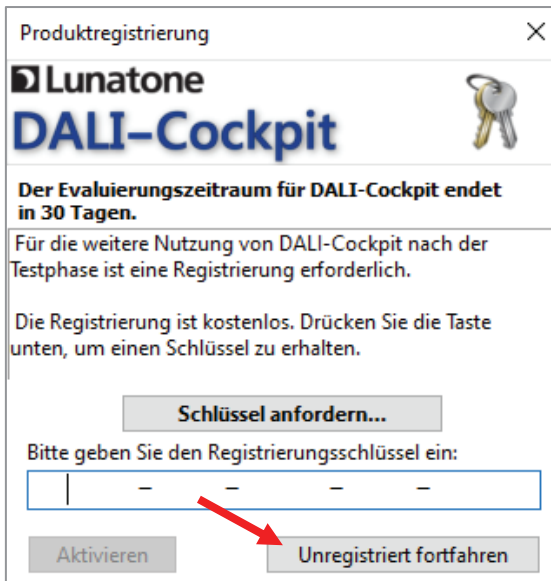
   - Then, go to the "Einstellungen" menu, choose "Options", then switch "Interface-Sprache" from Deutsch to Englisch. Then, close and restart the software for changes to take effect.
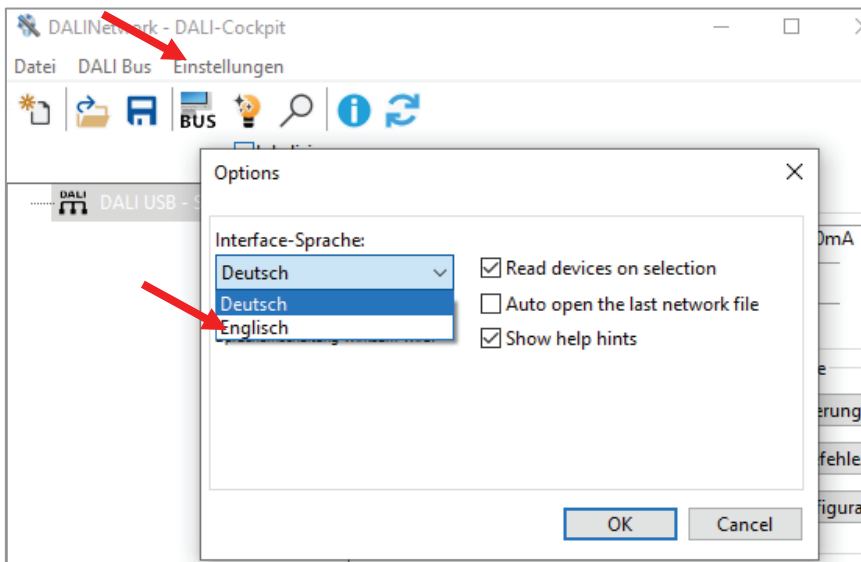

   - During the first run of the software, you may be asked to request a registration key. If you choose to register the software, you will receive the key via email. Alternately, you can choose to run the software unregistered for up to 30 days by clicking on the "Continue Unregistered" or "Unregistriert fortfahren" button.

Procedure for Clearing EcoSystem Addresses (continued)

3. Connect the PC to the interface and the interface to the fixture.
   - **Turn off power to the fixture.**
   - Connect the DALI USB 30 mA interface to the PC via the provided USB cable.
   - Disconnect E1/E2 (EcoSystem bus) from fixture and cap each wire individually; keep the hot/neutral/ground connection in place.
   - Using a length of cable long enough to reach from the Windows PC to the fixture, connect the DA+/DA- from the Lunatone DALI USB 30 mA devices to E1/E2 of the ballast or driver in the fixture; polarity does not matter. See wiring diagram:
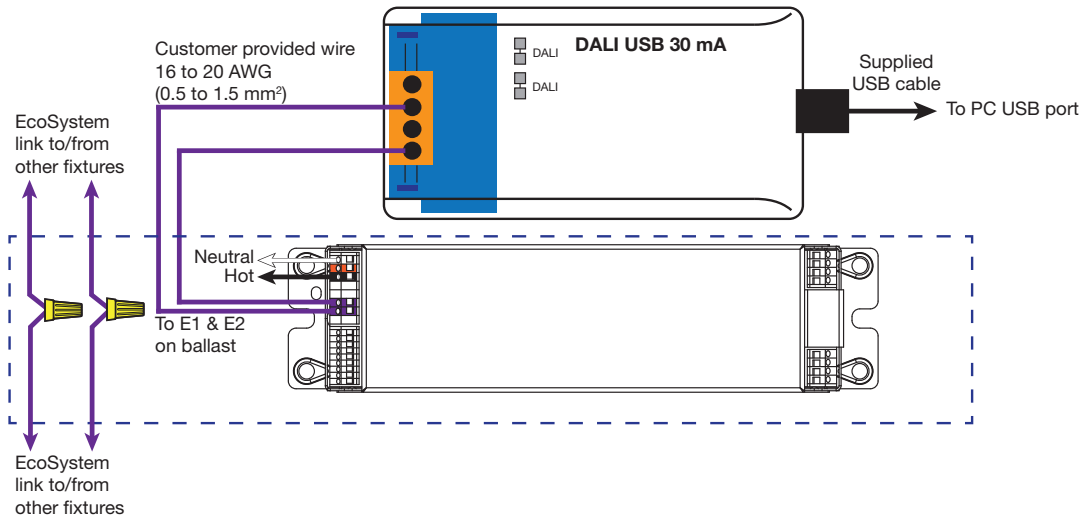
   - Turn on power to the fixture.
4. Using the DALI-Cockpit software, enable communication to any connected drivers or ballasts.
   - Open the DALI-Cockpit software. Click the "On" button under "Bus power."
   - Verify the "Bus power" setting next to the buttons now shows "ON."
   - If the "Bus power" is not "ON" check wiring and verify that only ballasts or drivers are connected.
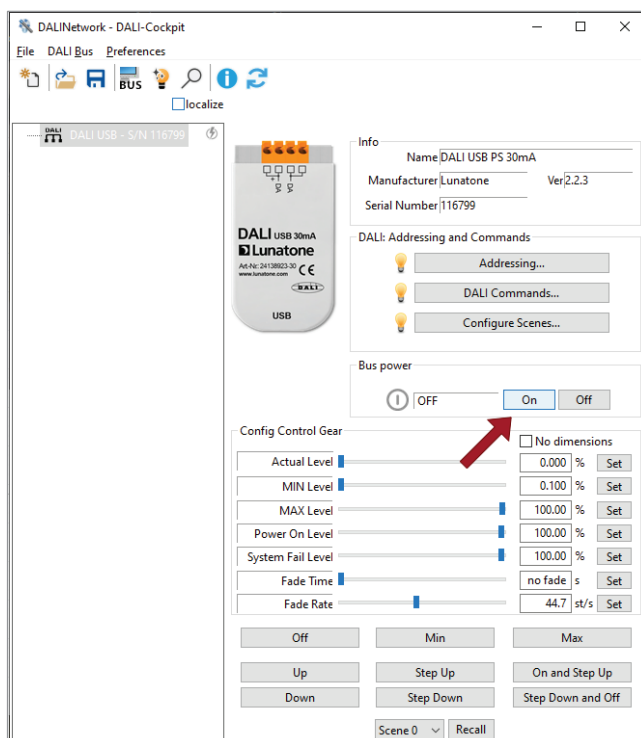
Procedure for Clearing EcoSystem Addresses (continued)

5. Test to ensure only the desired ballasts are visible on the link (typically only one).
   - In the menu bar, navigate to "DALI Bus" → "DALI Commands" (or press F9).
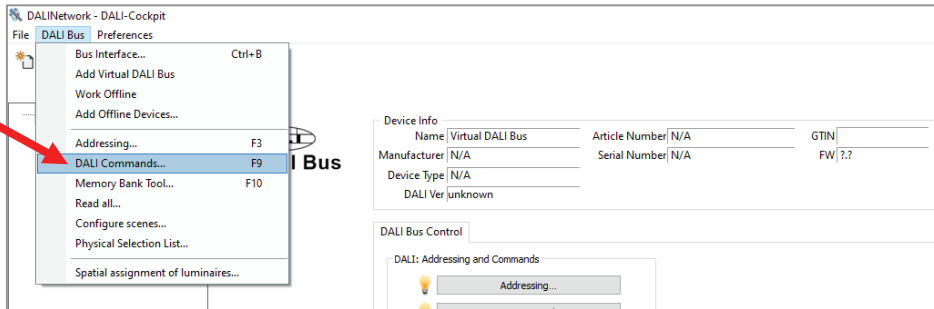
   - At the top of the "Send DALI Commands" window, choose the "Commands Over Time" tab.
   - On the top right side of the "Send DALI Commands" window, click "Open File…"
   - Navigate to where you saved the "1-QueryShortAddressesOnBus.cot" file and select "Open."
   - On the bottom right side of the window, click "START."
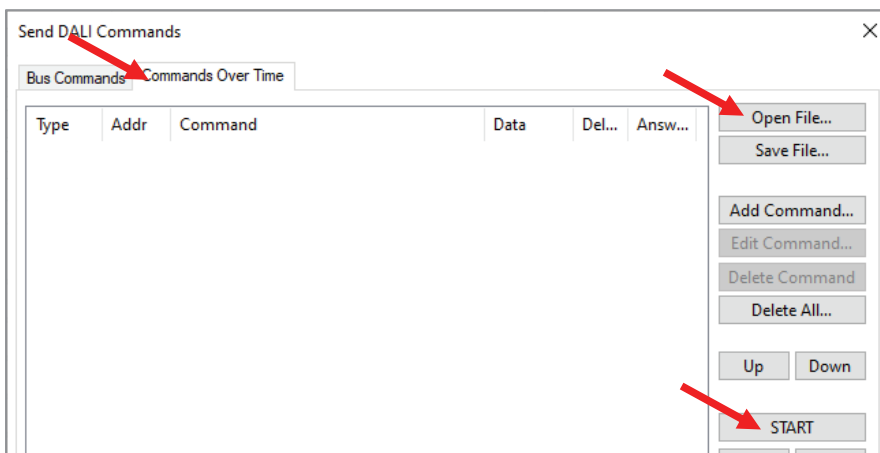
   - Wait for script to execute (START button will be reenabled when finished).
   - Confirm that only one address (row) provides a reply in the Answer column; you may need to scroll down. The value shown in the "Addr" column represents ONE LESS than the EcoSystem link address (for example, "A0" represents the EcoSystem Link address 1). The value appearing in the Answer column may vary. If "ERR" appears, check wiring (Step 3) and retry Step 4.

Response from only one address (value may vary)
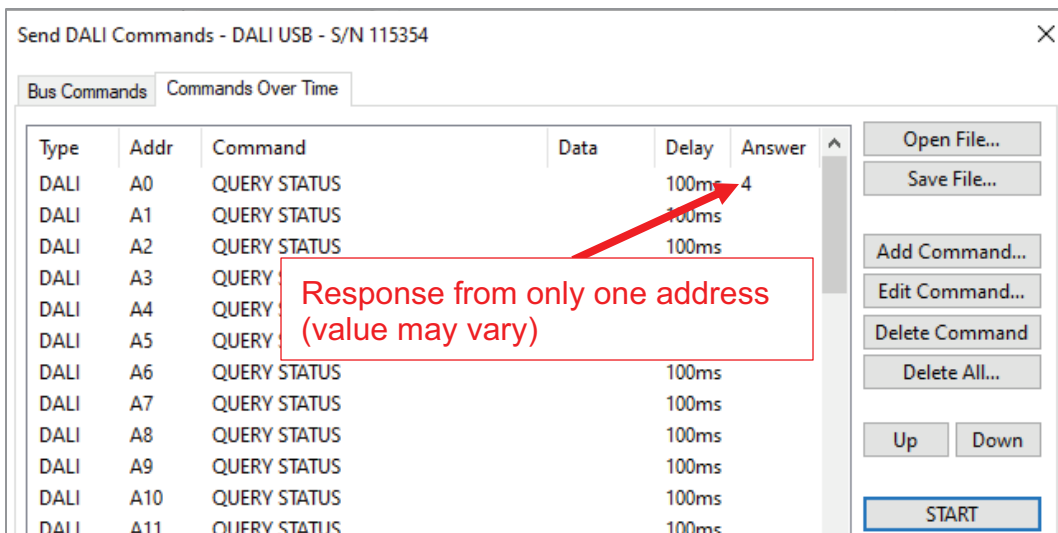
Procedure for Clearing EcoSystem Addresses (continued)

6. Clear the DALI address of the connected fixture.
   - In the DALI-Cockpit software, in the "Send DALI Commands" window, click "Open File…"
   - Navigate to the "2-ClearShortAddresses.cot" file and select "Open."
   - On the bottom right side of the window, click "START."
   - Wait for script to execute (START button will be enabled again when the script is finished).

7. Verify that the addresses have been cleared from the connected fixture.
   - In the DALI-Cockpit software, in the "Send DALI Commands" window, click "Open File…"
   - Navigate to the "1-QueryShortAddressOnBus.cot" file and select "Open."
   - On the bottom right side of the window, click "START."
   - Wait for script to execute (START button will be enabled again when the script is finished).
   - Confirm that there are no answer responses to any of the QUERY STATUS commands. If a response is received, restart the process at Step 6. If no responses are received, the screen should look like this:
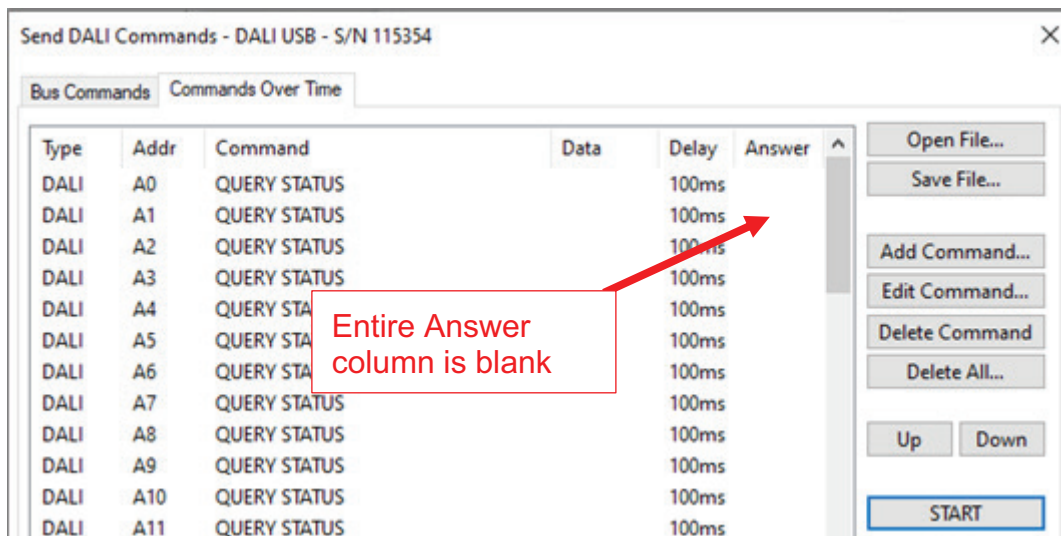
8. Remove the interface and uninstall the ballast or driver.
   - **Turn off power to the fixture.**
   - Disconnect the wires that go to the E1/E1 terminals on the ballast or driver. The ballast or driver can now be removed from the fixture, installed into a new fixture, and readdressed. The old fixture can have a new LED driver installed.

Monitoring/Troubleshooting DALI Communications

NOTE: The instructions in this section are only necessary if you are experiencing problems with the procedure in the previous section.
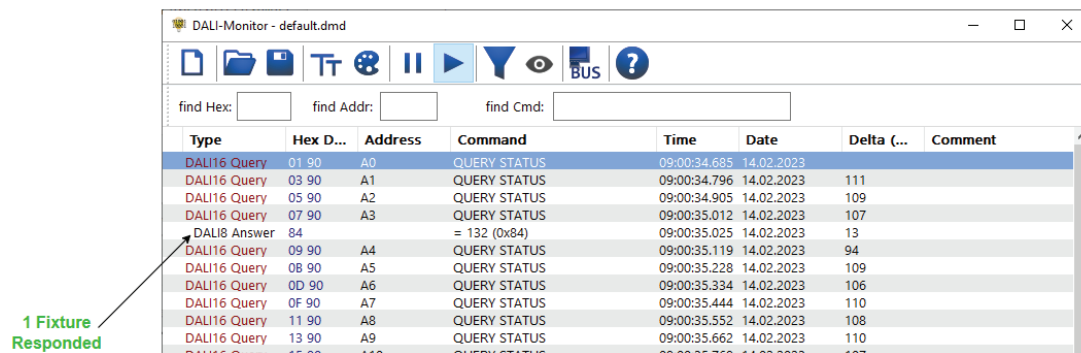
Use this procedure to monitor the commands being sent to and from the DALI USB device. This can be useful to troubleshoot issues or to create log files that may be requested by Lutron Engineering in the case of problems.

1. Prepare the DALI-Monitor software to check communications with the fixture.
   - Open the DALI-Monitor software. In the DALI-Monitor menu bar:
     - Click Clear buffer ([ ]).
     - Click Enable Reception of DALI Commands (▶).
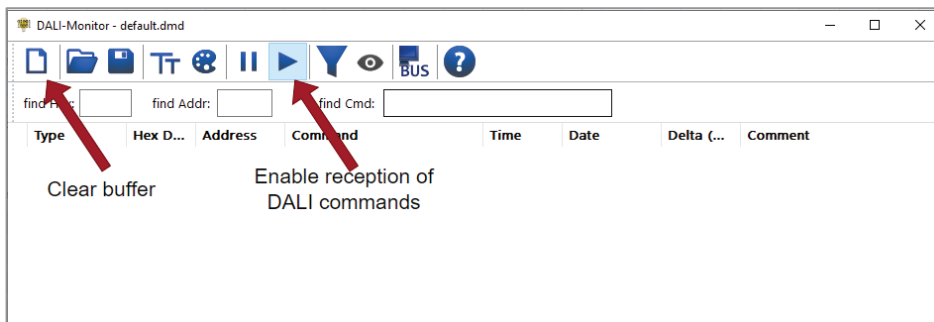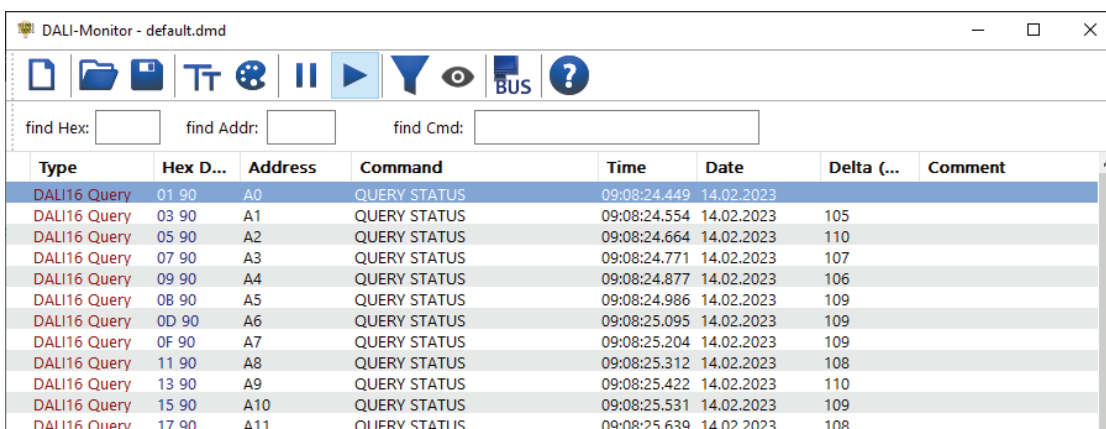
2. When sending commands via the DALI-Cockpit software, you can verify that commands were sent and properly received and acknowledged (if expected). For example, when running the "1-QueryShortAddressesOnBus" commands, you can verify that the command was sent and only intended fixtures responded to the "Query" with an "Answer". Before the "2-ClearShortAddressOnBus" commands are sent, you should only receive an "Answer" from one fixture, as shown below:

3. Once an address is cleared, you should not get an "Answer" from any fixtures, as shown here:

4. If desired, or instructed by Lutron Engineering, you can save the log of the commands by clicking on the [ ] button and providing a file name.

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