Application Note #816



Revision A April 2023

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 mm²)

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.

👯 DALINetwork - DA Datei DALI Bus Ein	LI-Cockpit stellungen	_	
Mali Bus Ein	Stellungen	 ☑ Read devices on selection □ Auto open the last network file ☑ Show help bitt 	X)mA
		OK Cancel	e erung fehle iigura

• 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.



LUTRON

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" \rightarrow "DALI Commands" (or press F9).

File D	ALI Bus Preferences		1			
*1	Bus Interface	Ctrl+B	1			
	Add Virtual DALI Bus		1			
	Work Offline		1			
	Add Offline Devices		1	Device Info		
	Addressing			Name Virtual DALI Bus	Article Number N/A	GTIN
	Addressing	FS		Manufacturer N/A	Serial Number N/A	EW ?.?
	DALI Commands	F9	IBUS	Device Type N/A		
	Memory Bank Tool	F10	1	Device type TVA		
	Read all		1	DALI Ver unknown		
	Configure scenes		1			
	Diversional Colorations List		1	DALI Bus Control		
	Physical Selection List			DALL: Addressing and Commands		
	Spatial assignment of lumi	naires	1	DALI, Addressing and commands		
	Spatial assignment of lumi	naires	-	DALI: Addressing and Commands		

- 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."

end DAL	l Comman	ds			
Bus Comn	nands Cor	mmands Over Time			
Туре	Addr	Command	Data	Del A	nsw Save File
					Add Command Edit Command
					Delete Command
					Up Down
					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.

Send DALI	Comman	ds - DALI USB - S/N 115354					×
Bus Comm	nands Cor	nmands Over Time					
Туре	Addr	Command	Data	Delay	Answer	^	Open File
DALI	A0	QUERY STATUS		100ms	4		Save File
DALI	A1	QUERY STATUS		loums			
DALI	A2	QUERY STATUS		100ms			Add Command
DALI	A3	QUERY Bosponso f	om only one	oddr			Edit Command
DALI	A4	QUERY	on only one	auure	55		Eure Command
DALI	A5	QUERY (value may	vary)				Delete Command
DALI	A6	QUERY STATUS		100ms			Delete All
DALI	A7	QUERY STATUS		100ms			
DALI	A8	QUERY STATUS		100ms			Up Down
DALI	A9	QUERY STATUS		100ms			
DALI	A10	QUERY STATUS		100ms			CTADT
DALI	A11	QUERY STATUS		100ms			START

LUTRON

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:

	😻 DALI-Monitor - d	default.dmd		-					-	×
			8	▶ ▼ ⊙	Bus 🕐					
	find Hex:	find Ad	ldr:	find Cmd:						
	Туре	Hex D	Address	Command	Т	ime D	Date	Delta (Comment	^
	DALI16 Query	01 90	AO	QUERY STATUS	09	:00:34.685 14	4.02.2023			
	DALI16 Query	03 90	A1	QUERY STATUS	09	:00:34.796 14	4.02.2023	111		
	DALI16 Query	05 90	A2	QUERY STATUS	09	:00:34.905 14	4.02.2023	109		
	DALI16 Query	07 90	A3	QUERY STATUS	09	:00:35.012 14	4.02.2023	107		
	DALI8 Answer	84		= 132 (0x84)	09	:00:35.025 14	4.02.2023	13		
	DALI16 Query	09 90	A4	QUERY STATUS	09	:00:35.119 14	4.02.2023	94		
	DALI16 Query	OB 90	A5	QUERY STATUS	09	:00:35.228 14	4.02.2023	109		
	DALI16 Query	0D 90	A6	QUERY STATUS	09	:00:35.334 14	4.02.2023	106		
	DALI16 Query	0F 90	A7	QUERY STATUS	09	:00:35.444 14	4.02.2023	110		
1 Fixture	DALI16 Query	11 90	A8	QUERY STATUS	09	:00:35.552 14	4.02.2023	108		
Responded	DALI16 Query	13 90	A9	QUERY STATUS	09	:00:35.662 14	4.02.2023	110		
responded	DALI16 Ouopy	15.00	A10	OHEDV CTATHIC	00	00.25 760 1/	1 00 0000	107		

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

😻 DALI-Monitor - d	default.dmd							_	×
		8 II		Bus ?					
find Hex:	find Ad	ldr:	find Cmd:						
Туре	Hex D	Address	Command		Time	Date	Delta (Comment	^
DALI16 Query			QUERY STATUS		09:08:24.449				
DALI16 Query	03 90	A1	QUERY STATUS		09:08:24.554	14.02.2023	105		
DALI16 Query	05 90	A2	QUERY STATUS		09:08:24.664	14.02.2023	110		
DALI16 Query	07 90	A3	QUERY STATUS		09:08:24.771	14.02.2023	107		
DALI16 Query	09 90	A4	QUERY STATUS		09:08:24.877	14.02.2023	106		
DALI16 Query	0B 90	A5	QUERY STATUS		09:08:24.986	14.02.2023	109		
DALI16 Query	0D 90	A6	QUERY STATUS		09:08:25.095	14.02.2023	109		
DALI16 Query	0F 90	A7	QUERY STATUS		09:08:25.204	14.02.2023	109		
DALI16 Query	11 90	A8	QUERY STATUS		09:08:25.312	14.02.2023	108		
DALI16 Query	13 90	A9	QUERY STATUS		09:08:25.422	14.02.2023	110		
DALI16 Query	15 90	A10	QUERY STATUS		09:08:25.531	14.02.2023	109		
DALI16 Query	17 90	A11	QUERY STATUS		09:08:25.639	14.02.2023	108		

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.

Lutron and EcoSystem are trademarks or registered trademarks of Lutron Electronics Co., Inc. in the US and/or other countries. All other product names, logos, and brands are property of their respective owners.

Lutron Contact Numbers

WORLD HEADQUARTERS USA Lutron Electronics Co., Inc. 7200 Suter Road Coopersburg, PA 18036-1299 TEL: +1.610.282.3800 FAX: +1.610.282.1243

support@lutron.com

www.lutron.com/support

North & South America Customer Assistance USA, Canada, Caribbean: 1.844.LUTRON1 (1.844.588.7661) Mexico: +1.888.235.2910 Central/South America: +1.610.282.6701 UK AND EUROPE: Lutron EA Limited 125 Finsbury Pavement 4th floor, London EC2A 1NQ United Kingdom TEL: +44.(0)20.7702.0657 FAX: +44.(0)20.7480.6899 FREEPHONE (UK): 0800.282.107 Technical Support: +44.(0)20.7680.4481

lutronlondon@lutron.com

ASIA: Lutron GL Ltd. 390 Havelock Road #07-04 King's Centre Singapore 169662 TEL: +65.6220.4666 FAX: +65.6220.4333 Technical Support: 800.120.4491

lutronsea@lutron.com

Asia Technical Hotlines

Northern China: 10.800.712.1536 Southern China: 10.800.120.1536 Hong Kong: 800.901.849 Indonesia: 001.803.011.3994 Japan: +81.3.5575.8411 Macau: 0800.401 Taiwan: 00.801.137.737 Thailand: 001.800.120.665853 Other Countries: +65.6220.4666

LUTRON