

DIMMER LOAD TESTER

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Symbol for relevant information



Symbol for warning



Purpose

“Dimmer Load Tester” by Eelectron SpA is a simple program that helps to configure ETS parameters of universal dimmer Eelectron to handle the used load at the best. The program can be used with dimmer Eelectron product: DM02A02KNX.

Installation requirements

To install and use the application, it is necessary WINDOWS® operating system (WINDOWS 7 or higher) and Microsoft© .NET Framework; this one is already present if used on a PC with ETS4 or ETS5 installed.

Download application

Download the application from site www.eelectron.com and save it on the PC. The application does not require installation, it is enough to extract the files in a PC directory.

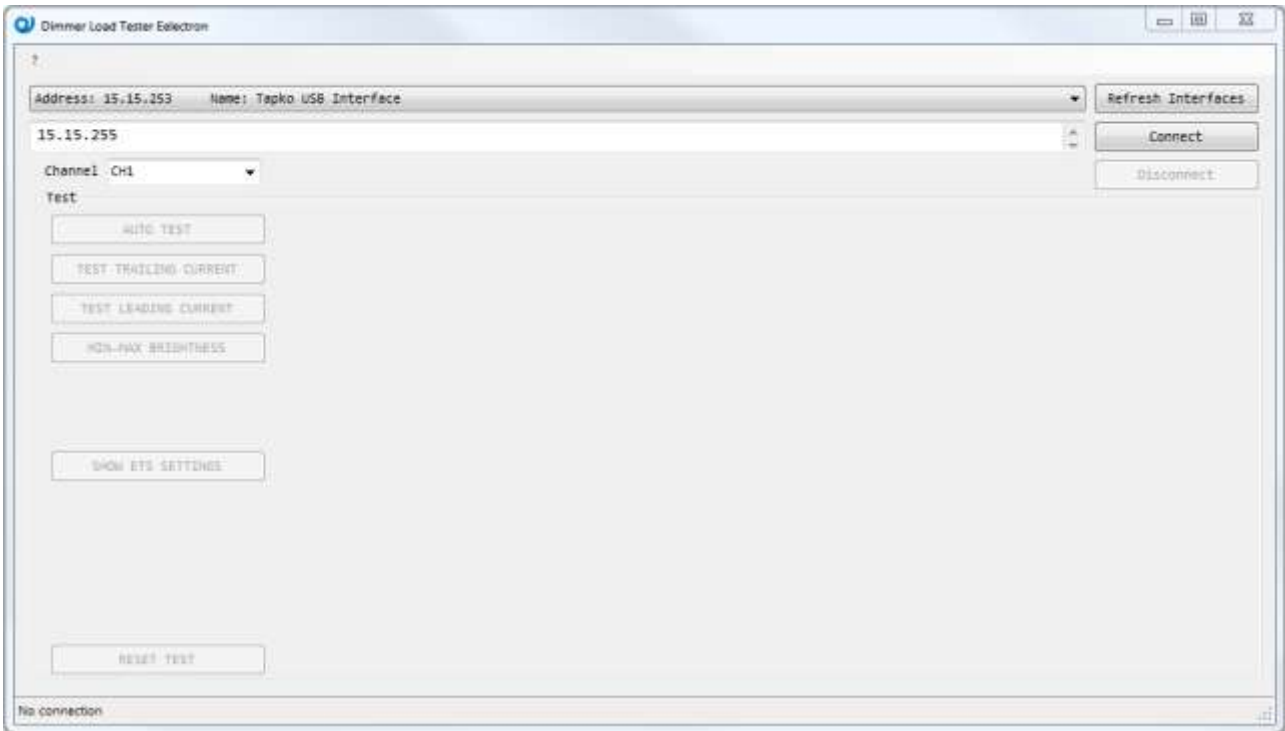
Connect the device

Power on the device, the dimmer must be connected both to the mains voltage and to the bus KNX; connect the PC to a KNX interface, then launch the application by clicking on the executable file DimmerLoadTester.exe.

Verify terms and conditions of the manufacturer before using the software by clicking on ‘? – About...’.

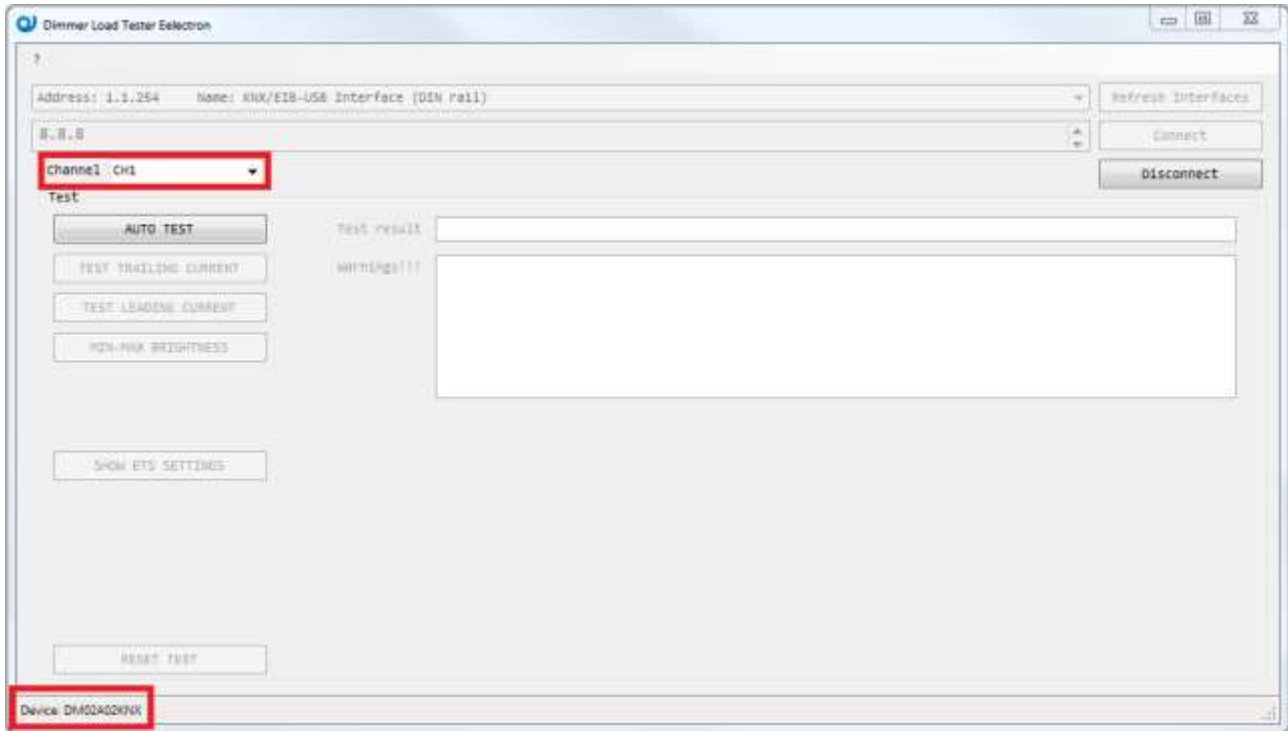
Use the drop down list to select the KNX interface and write in the lower textbox the individual address of the dimmer used for the test, then click on ‘Connect’ to start the configuration.

Click on ‘Refresh Interfaces’ to update the list of available connections.



Execution of the load test

If the connection is successful, at the bottom left of the window will appear the code of the connected device.



Select the channel connected to the lamps and click on 'AUTO TEST' to start the load test.



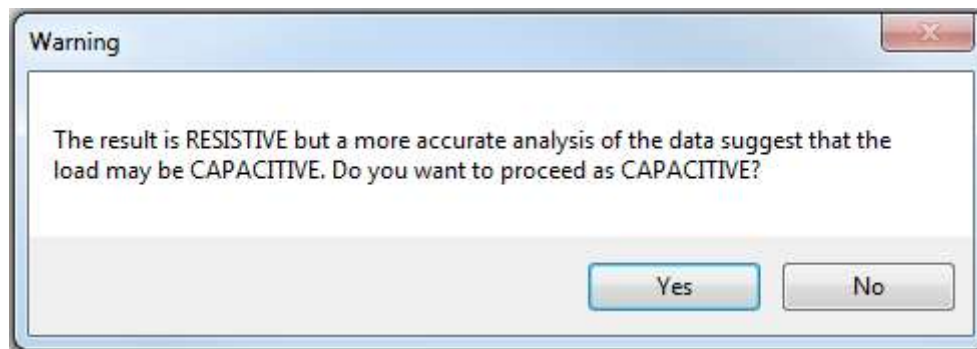
For an accurate evaluation, it is suggested to connect a load higher than 20W.

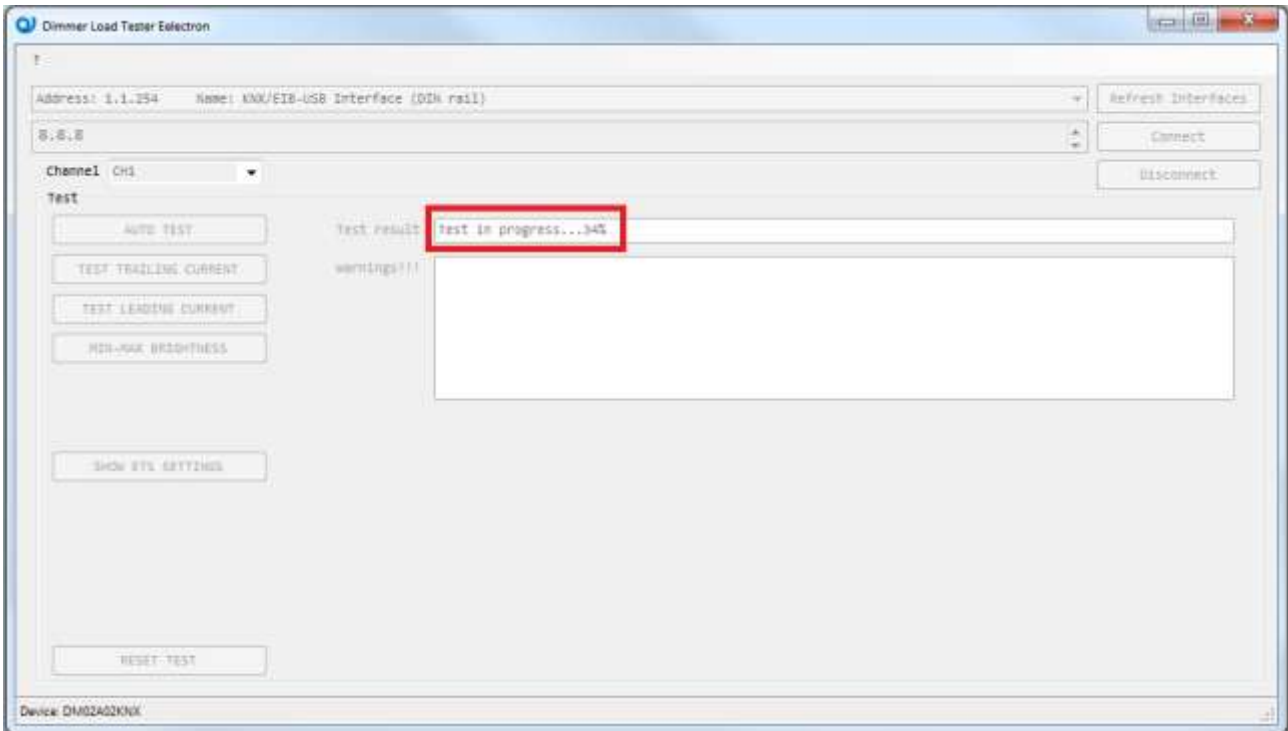


To test 'CH2', channel 2 must be enabled. Resetting the device, channel 2 is automatically enabled.



In case of low load connected, the software analyze the data detected. If the analysis identifies another type of load, a popup is displayed allowing to select the load (see the figure for example).

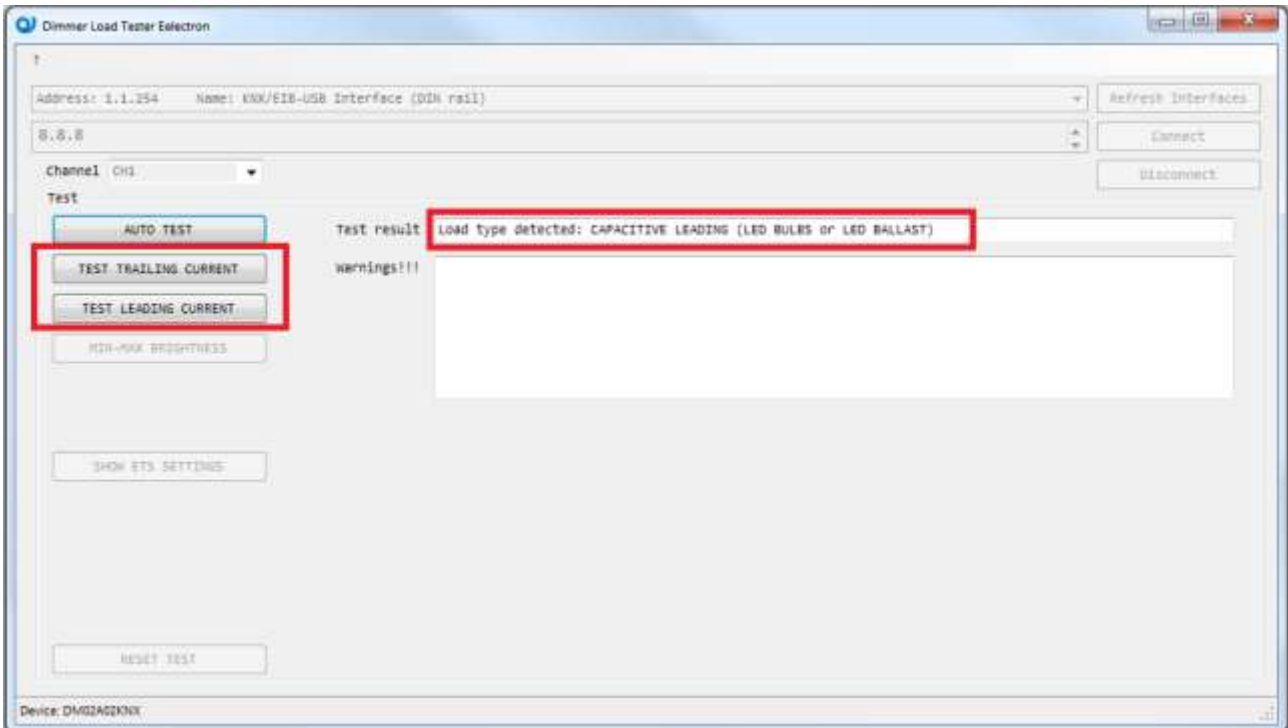




Once finished the test, the type of the load appears in 'Test result'.

Verify the maximum current of the load

Once finished the automatic identification of the load it is possible to look at the graphic of the current and read the maximum value measured: click on 'TEST TRAILING CURRENT' or 'TEST LEADING CURRENT'.



Insert the nominal power of the used lamps in the relative textbox and select the number of lamps used to estimate the maximum number of lamps that can be connected to the channel.

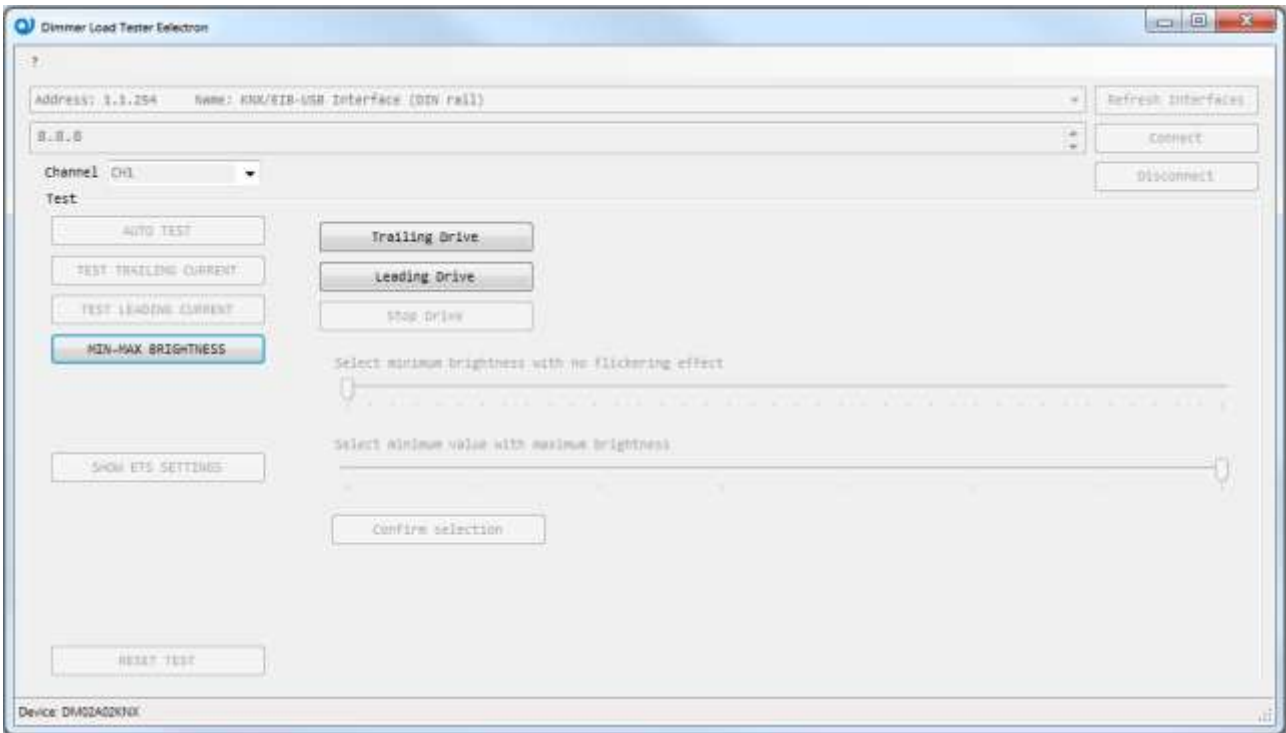


The evaluation of the maximum number of lamps has accuracy of 10%.

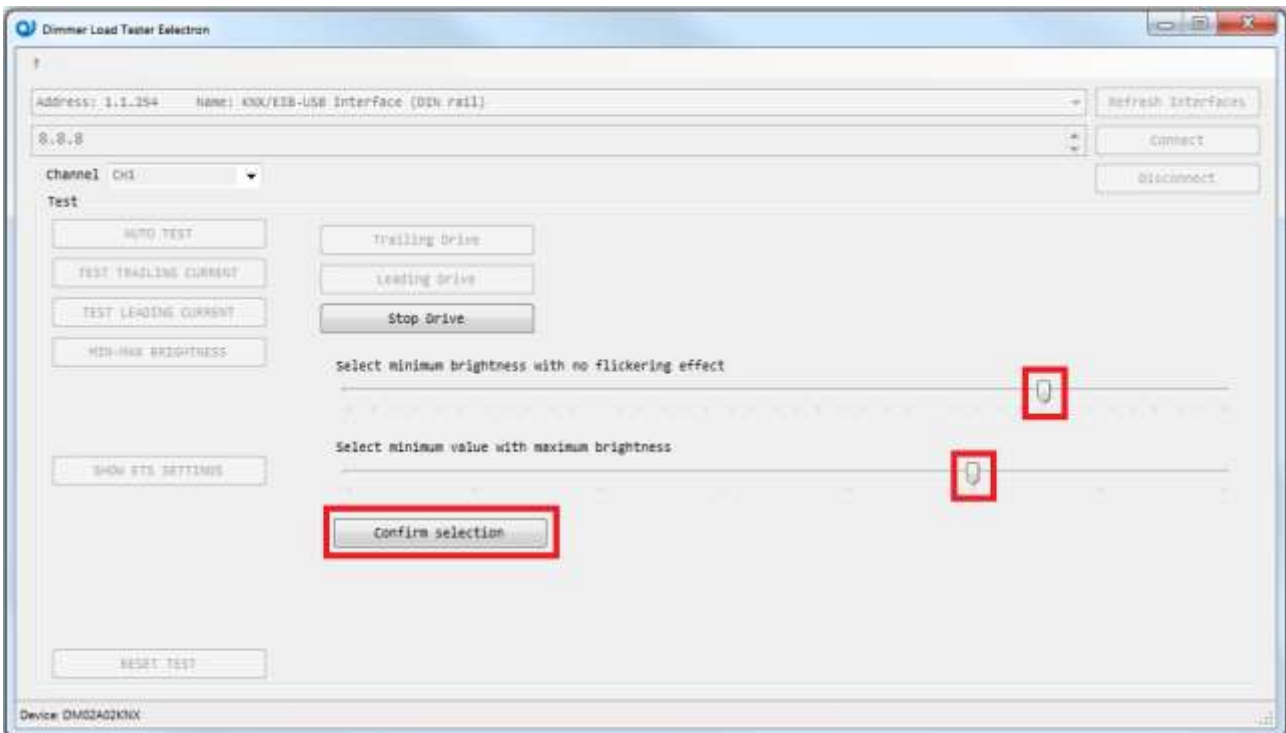
The test can be repeated by clicking on 'AUTO TEST'.

Optimize the brightness of the dimmer

Click on 'MIN-MAX BRIGHTNESS' to define the optimized configuration.



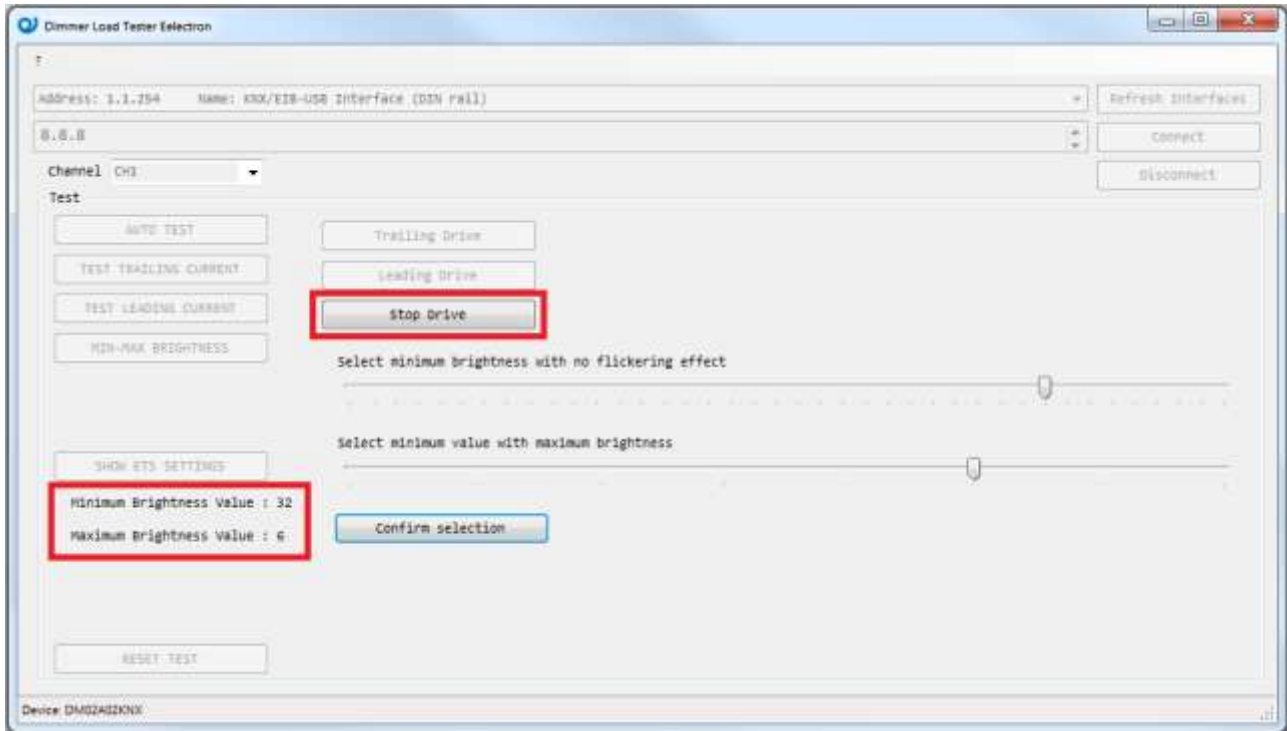
Click on 'Trailing Drive' or 'Leading Drive' to start the setting.



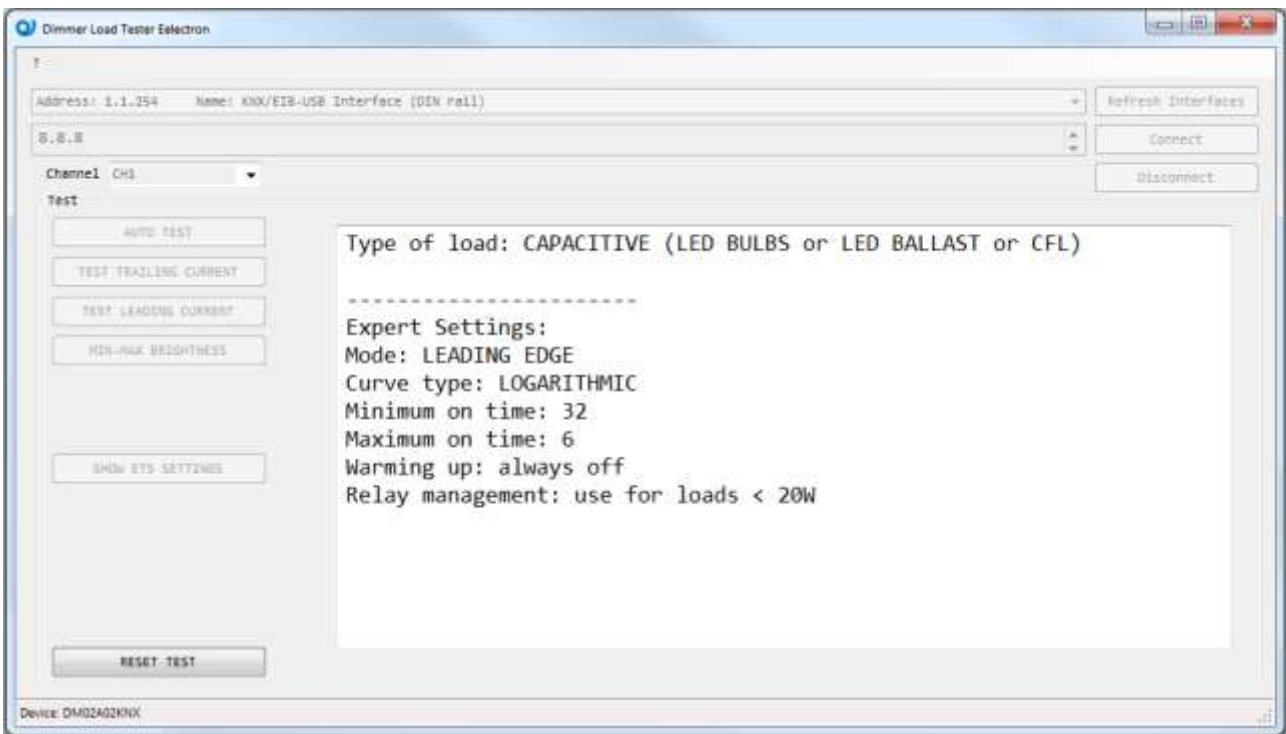
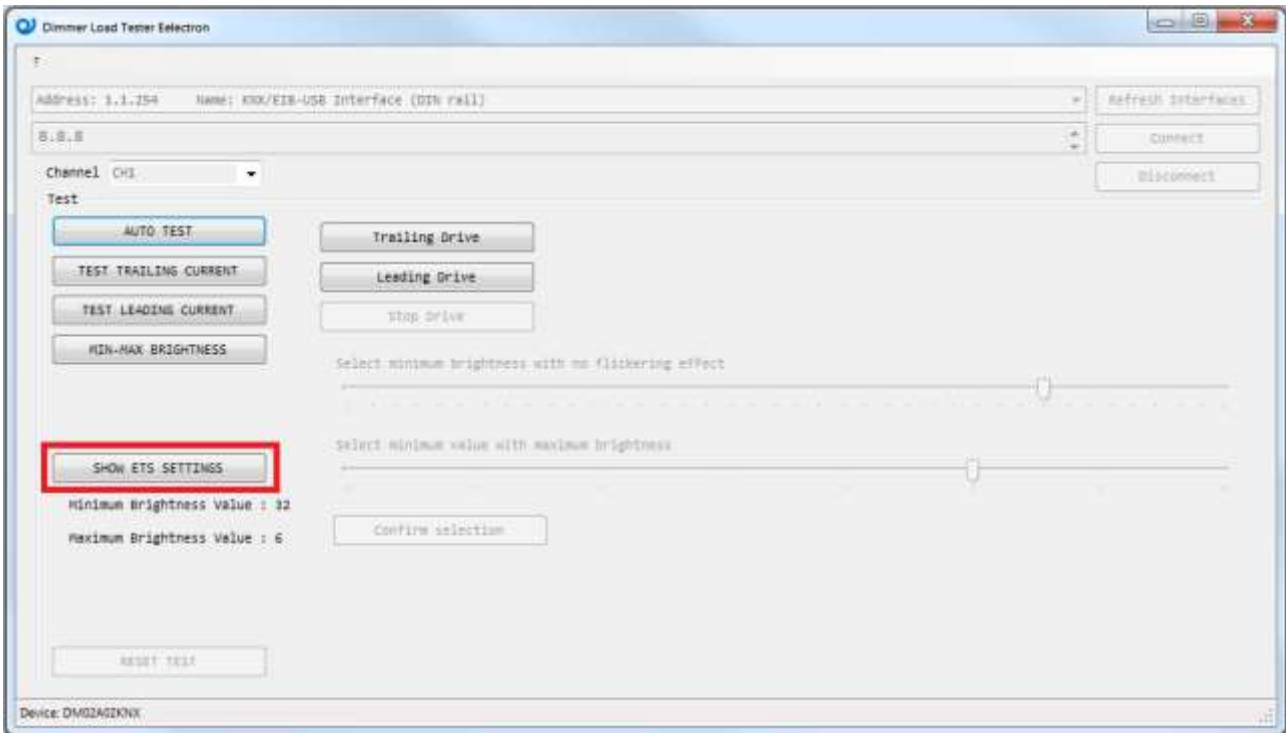
Move the cursors on the bars to set the brightness:

- Move the upper one from left to right until the load has stable brightness (no flickering)
- Move the lower one from right to left until the brightness does not decrease (select the point with maximum brightness which is more to the left)

Once the values are selected click on 'Confirm selection': the values are shown on the left.



Click on 'Stop Drive' to finish the setting; to look at the results click on 'SHOW ETS SETTINGS'.



Use the calculated parameters in the block 'Expert Settings' of the ETS project to configure the device at the best.

General Parameters

General

Channels

- <Channel 1> Generic
- <Channel 1> Configuration
- <Channel 1> Alarm
- <Channel 1> Expert Settings

Suggestion for: 230V led bulbs or low voltage led ballast

MODE: Trailing edge (Suggested)

Leading edge (WARNING : this mode may cause noise on the lamps and over current faults, but in some case has better performance al low brightness values.

If the lamps make high noise it means that there is high peak of current and this may reduce the device lifetime)

CURVE: Logarithmic (Suggested)

WARMING UP: Off (Never required)

MIN ON TIME: High values reduce the flickering at minimum brightness but it increase the minimum brightness level as side effect

MAX ON TIME: Suggested 8 (Decrease this value if the brightness reaches the maximum intensity when the KNX value is lower than 100%)

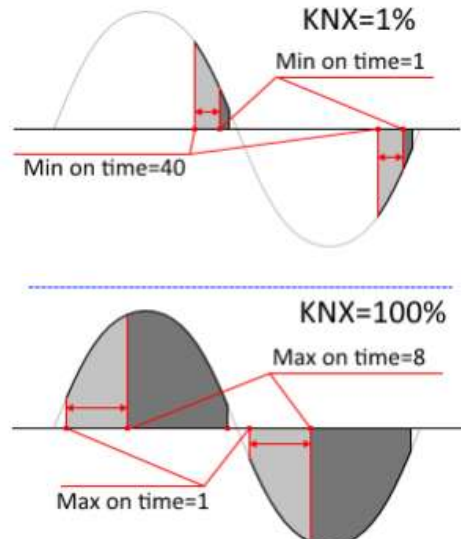
Driving mode: Trailing Leading

Curve type: Linear Logarithmic

Minimum on time: 32

Maximum on time: 6

Warming up: Off



The diagrams illustrate the dimmer's output waveform. The top diagram, labeled 'KNX=1% Min on time=1', shows a narrow pulse with a 1ms on-time and a 40ms off-time. The bottom diagram, labeled 'KNX=100% Max on time=8', shows a wider pulse with an 8ms on-time and a 1ms off-time. The waveforms are shown as a sine wave with shaded areas representing the pulse width.

Click on 'RESET TEST': select 'AUTO TEST' to repeat the execute a new measure or 'Disconnect' to end the procedure.

Troubleshooting



In case of error or application block, close the application and wait 1 minute before executing again the test.