

# **DALI\_Tool\_For\_EUCO-2K1200GIA**

## **User Manual V0. 0. 0**

**Revision history**

Revision	Changes	Author	Date
V0.0.0	Initial release	David.Zhou	2023/03/31

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## 1) Connect the device

Before launching the DALI programming software, make sure the programmer is connected to the USB port of your computer. Then, connect the programmer SDPTDV05UAB to the LED driver via DA+/DA- terminal (The DALI interface is polarity sensitive). After all of this, the target driver must be AC mains powered on during the whole process of operation. The connection is described in the following figure. It is recommended to connect to LED fixture during the programming. The driver will turn on the light on and off to indicate the current programming is carried in correct order. For simplicity, the programming could be carried out without LED fixture connection.

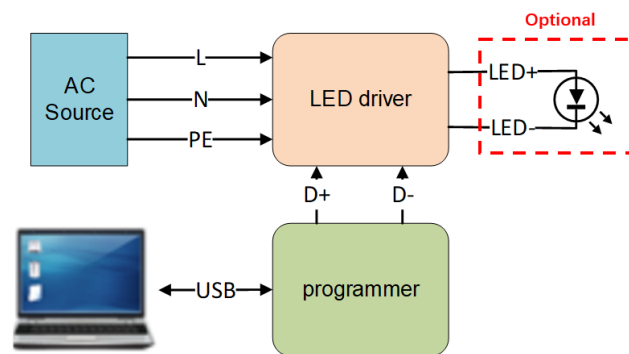


Figure 1. The connection of the DALI programming tool



Figure 2. The picture of the DALI programming tool

Note that when the tool is connected to the computer for the very first time, it may take a few minutes to install a driver automatically. Please wait patiently for the installation to finish.

## 2) Open DALI programming software

Double click "***DALI\_Tool\_For\_EUCO-2K1200GIA\_S00E00.exe***" to start the software.



DALI\_Tool\_For\_  
EUCO-2K1200G  
IA\_S00E00

Figure 3 Open DALI programming software

### 3) Set address mode

The EUCO-2K1200GIA series have two different channels modes : Single address mode and Multiple addresses mode. The single address means that three current output channels share one DALI address. So the dimming actions of the three output channels are performed uniformly. And multiple address mode means that the three output channel could be set as different addresses. When in this mode, the three output channel could be controlled independently. The default address mode is single address mode.

The screenshot displays the DALI Programming Tool interface. At the top, there are 'Save' and 'Load' buttons. The main title 'DALI Programming Tool' is prominently displayed. Below the title, the 'Address mode' dropdown menu is open, showing 'Single address' and 'Multiple addresses' options. To the right, the 'Integrated DALI bus power' is set to 'Disable', with 'Write' and 'Read' buttons. Below this, the 'Current programming' section shows 'Channel' set to 'All' and 'Current' set to '2000 mA', with 'Write' and 'Read' buttons. The 'OTP on LED fixture' section shows 'NTC trigger point' set to '100 °C', with 'Write' and 'Read' buttons. The 'Dimming' section shows 'Level' set to '0', with a 'Dimming' button. At the bottom left, a green circle indicates 'Connected'. At the bottom right, there are 'Add-on functions' and 'Firmware update' buttons.

Figure 4 Operating modes

After the address was written, the driver should power off and wait at least 30s, then power on again to make sure the new address mode works normal. Of course, click “**Read**” button could read current address mode.

#### 4) Enable/Disable integrated DALI power

The EUCO-2K1200GIA series support DALI part 250-integrated DALI power supply. It could provide 16V, 50mA DALI power. The default state of this power is disabled. You could enable or disable this function with the GUI.

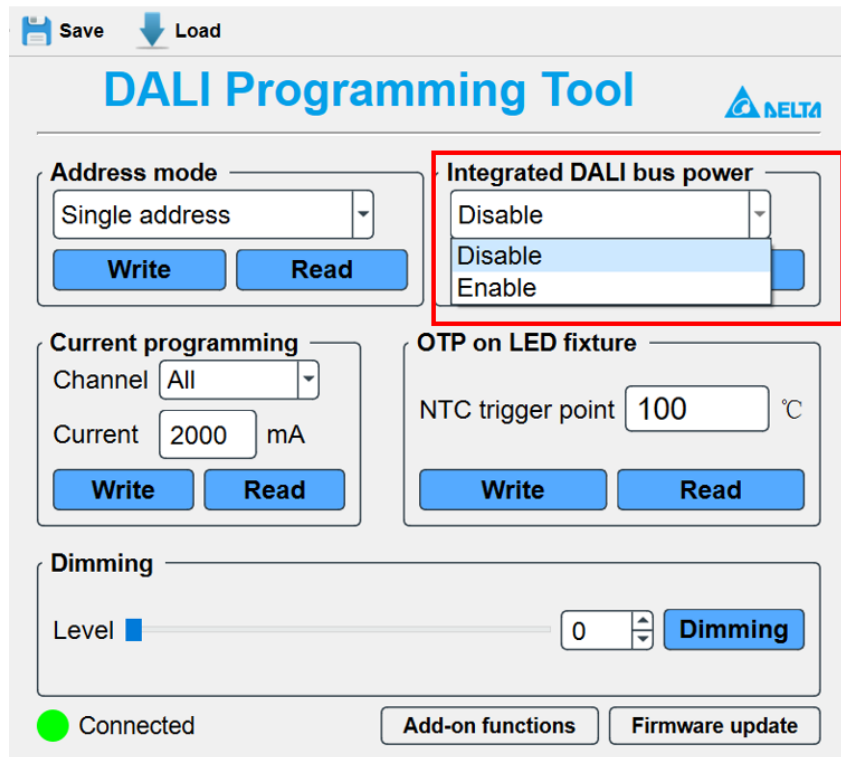


Figure 4 Enable/Disable DALI power

#### 5) Program the output current

**Step 1:** The GUI interface of DALI programming tool is shown in the following figure. Firstly, after opening the software, make sure the status light becomes green which means that the DALI programming tool has been connected successfully. Otherwise, follow step “I-Connect the device” to check the USB cable and DALI bus.

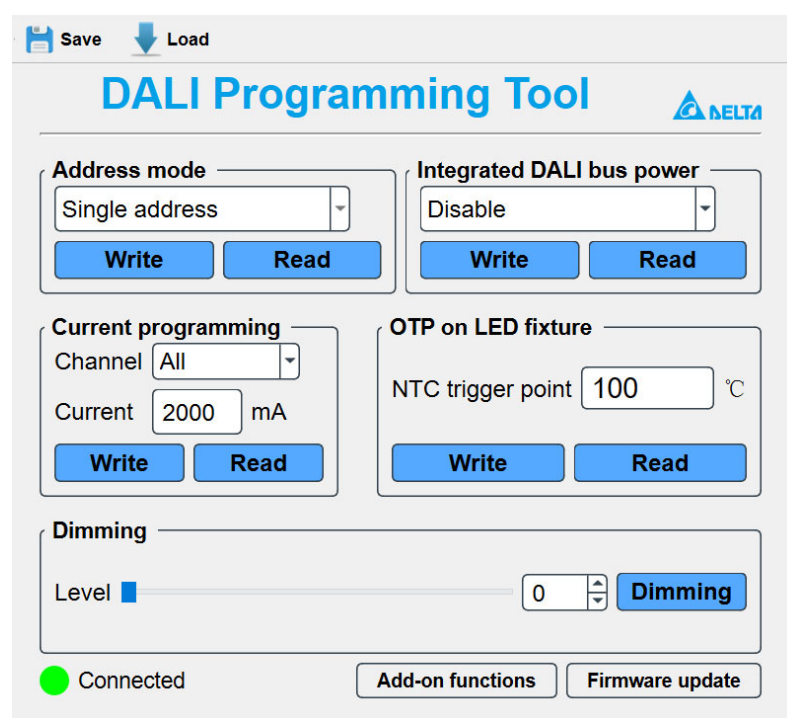


Figure 6 the software of DALI programming tool

**Step 2:** There are four items of current channel you can choose as shown below:

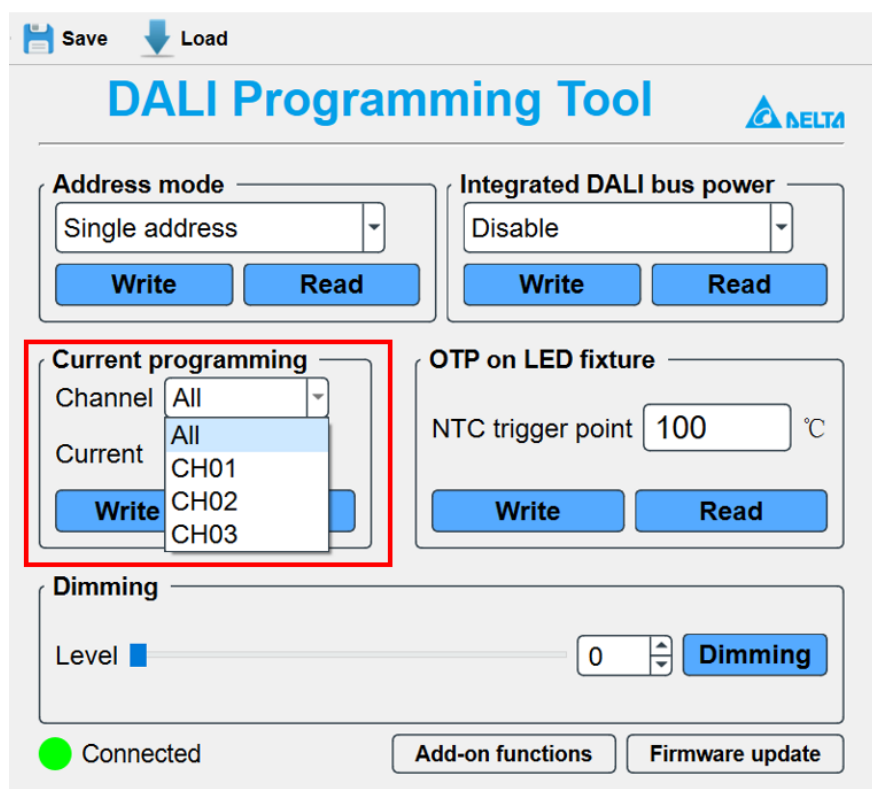


Figure 7. Choose current channel

If you select the item “**All**”, it means that you would program the current of all three channels at once. But the channel, “CH01”, “CH02” and “CH03”, would only program the corresponding channel ‘s current.

**Step 3:** After choosing the programming channel, the current value of that channel also need to be set. The default value for each channel is 2000mA as show in the figure. You could set the current value from 700mA to 2000mA.

The screenshot displays the 'DALI Programming Tool' interface. At the top, there are 'Save' and 'Load' buttons. The main title 'DALI Programming Tool' is in blue, with the 'DELTA' logo on the right. The interface is divided into several sections:

- Address mode:** A dropdown menu set to 'Single address' with 'Write' and 'Read' buttons below it.
- Integrated DALI bus power:** A dropdown menu set to 'Disable' with 'Write' and 'Read' buttons below it.
- Current programming:** A section with a 'Channel' dropdown set to 'All' and a 'Current' input field set to '2000 mA'. This section is highlighted with a red rectangle. It has 'Write' and 'Read' buttons below it.
- OTP on LED fixture:** A section with an 'NTC trigger point' input field set to '100 °C' and 'Write' and 'Read' buttons below it.
- Dimming:** A section with a 'Level' slider and a 'Dimming' button.

At the bottom, there is a green status indicator labeled 'Connected', and two buttons: 'Add-on functions' and 'Firmware update'.

Figure 8. Set current value

**Step 4:** If the programming parameters have been set completely, click **“Write”** button. Then the driver would light-off and light-on automatically. And the status message at the bottom will show **“Current programming successfully”**.



The screenshot shows the DALI Programming Tool interface. At the top, there are 'Save' and 'Load' buttons. The title 'DALI Programming Tool' is prominently displayed. Below the title, there are several configuration sections:

- Address mode:** A dropdown menu set to 'Single address' with 'Write' and 'Read' buttons below it.
- Integrated DALI bus power:** A dropdown menu set to 'Disable' with 'Write' and 'Read' buttons below it.
- Current programming:** A section with a 'Channel' dropdown set to 'All', a 'Current' input field set to '2000 mA', and 'Write' and 'Read' buttons below it.
- OTP on LED fixture:** A section with an 'NTC trigger point' input field set to '100 °C' and 'Write' and 'Read' buttons below it.
- Dimming:** A section with a 'Level' slider and a 'Dimming' button.

At the bottom, a green circle icon is highlighted with a red box, followed by the text 'Current program successfully.' To the right of this are buttons for 'Add-on functions' and 'Firmware update'.

Figure 9. Current program successfully

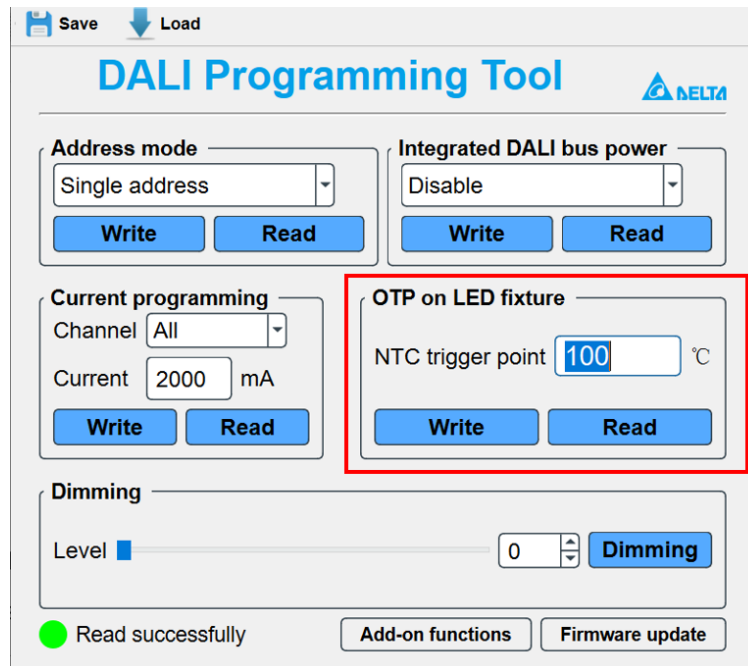
**Step 5:** After programming the current, the customer could read the programming result to check if the output current programming action is right. Click “ **Read** ” button to read the actual output current.

This screenshot shows the same DALI Programming Tool interface as Figure 9, but with the 'Read' button in the 'Current programming' section highlighted. The status at the bottom has changed to a green circle icon followed by the text 'Read successfully.' The 'Current' input field still shows '2000 mA' and the 'NTC trigger point' is still '100 °C'.

Figure 10. Read current programming value

## 6) Set and read LED OTP parameters

The driver has integrated the OTP function for the LED fixture via “NTC” terminal with a certain NTC component in LED fixture. Please refer to datasheet for the circuit details. For the OTP, there is one parameter need to be set: the NTC trigger point.



The screenshot shows the DALI Programming Tool interface. At the top, there are 'Save' and 'Load' buttons. The title 'DALI Programming Tool' is prominently displayed. Below the title, there are two main sections: 'Address mode' and 'Integrated DALI bus power'. The 'Address mode' section has a dropdown menu set to 'Single address' and 'Write'/'Read' buttons. The 'Integrated DALI bus power' section has a dropdown menu set to 'Disable' and 'Write'/'Read' buttons. In the center, there is a 'Current programming' section with a 'Channel' dropdown set to 'All' and a 'Current' input set to '2000 mA', with 'Write'/'Read' buttons. To the right of this, the 'OTP on LED fixture' section is highlighted with a red border. It contains an 'NTC trigger point' input set to '100' with a degree Celsius symbol, and 'Write'/'Read' buttons. Below these sections is a 'Dimming' section with a 'Level' slider and a 'Dimming' button. At the bottom, there is a green status indicator labeled 'Read successfully' and two buttons: 'Add-on functions' and 'Firmware update'.

Figure 11. Set OTP parameters

When the temperature of NTC component has exceeded NTC trigger point, it would start OTP protection process. Please refer to the driver's datasheet for full details of OTP.

In order to make sure the OTP protection works normal, some constraints have been introduced.

1. The range of NTC trigger point is 80°C~120°C. The default value is 100°C.

Also, click the “**Read**” button could read the current OTP setting.

## 7) Save& Load profile

**Step1:** Please click the “Save” button in the tool bar. The GUI would save current configured parameters.

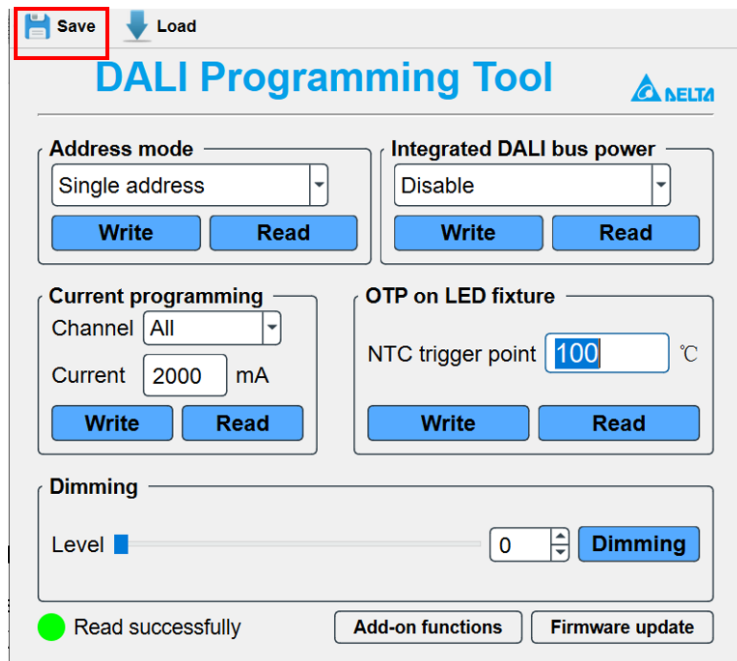


Figure 12. Save profile

The program will create a new folder in current path named “profile”. In this folder, the file with parameters is named “config.ini”.

**Step2:** Please click “Load” button to load the last saved profile.

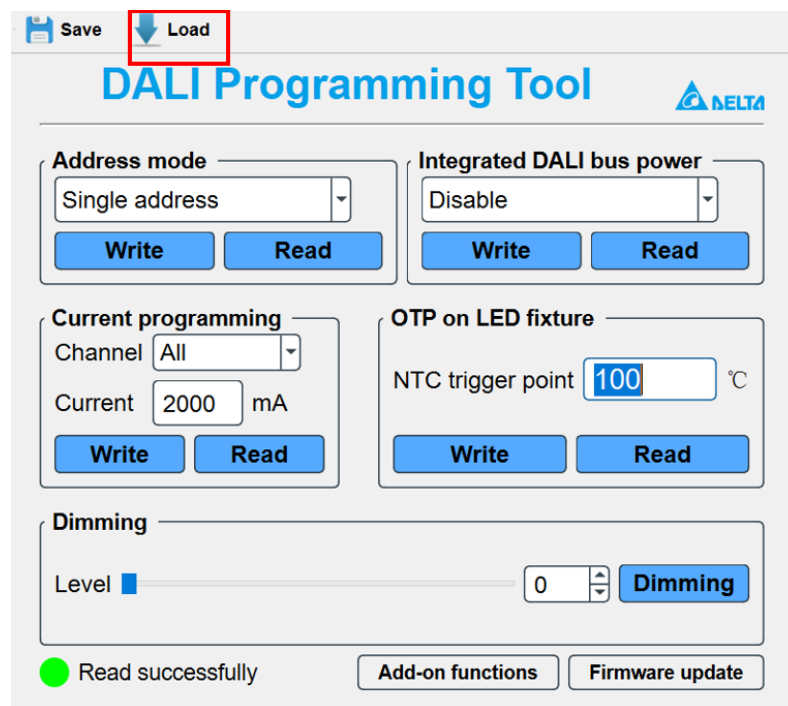


Figure 13. Save profile

And every time the GUI starts, it will load the profile automatically.

## 8) Firmware update

**Step1:** Before updating the firmware, please make sure that the programming tool you are using is the latest version which the model number is SDPT05UAA or SDPT05UAB. And, the AC power of the driver has been turned off for at least 30 seconds.

**Note:** If you use SDPT05UAB for updating, it would support update 30~40pcs at a time.

**Step2:** Click “**Firmware update**” button in the lower right corner. The firmware update interface would pop out.

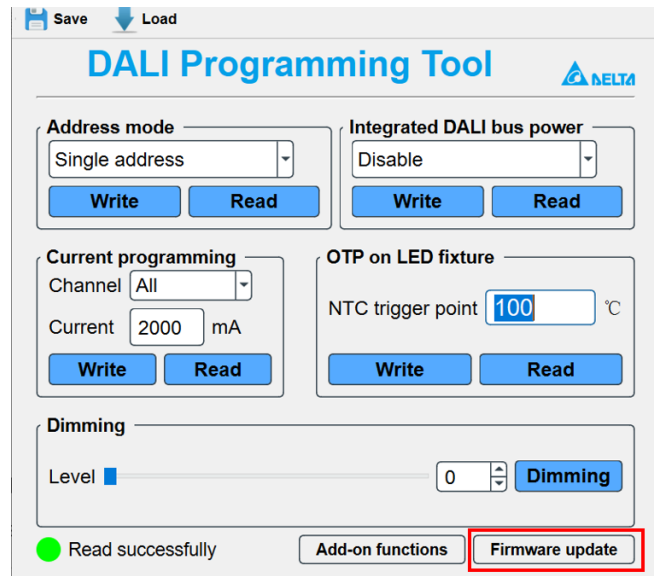


Figure 14. Click Firmware update button

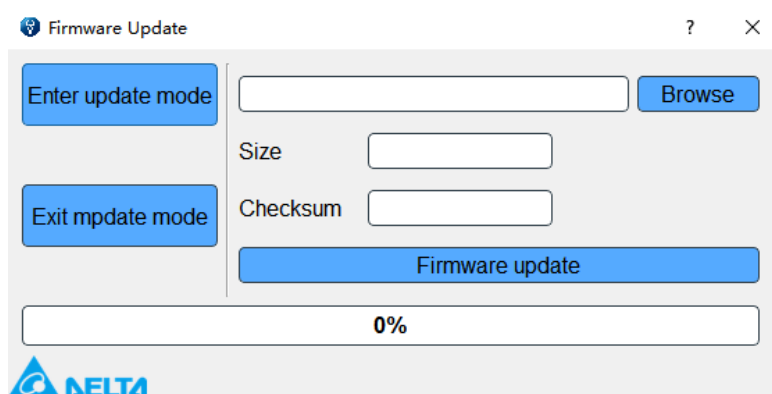


Figure 15. the interface of firmware update

Step3: Click the button “**Enter Update mode**” as shown below.

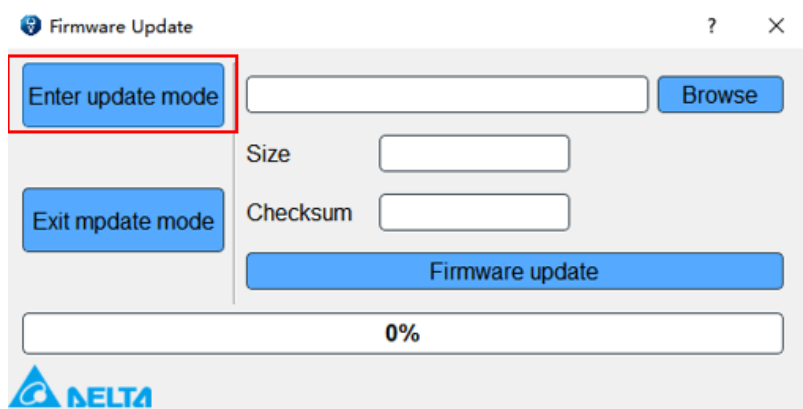


Figure 16. Enter firmware update mode

Please click “**NO**” in the following picture.

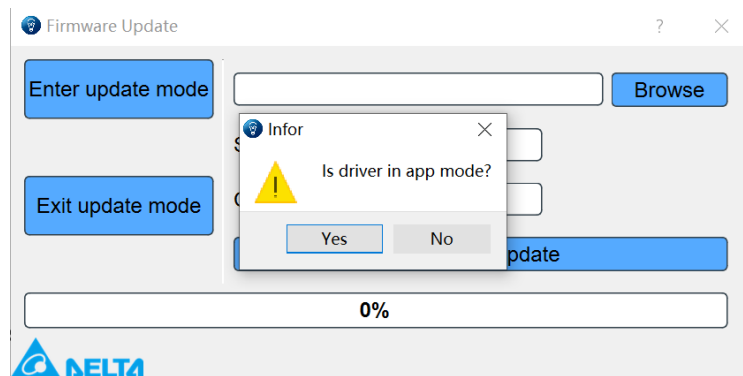


Figure 17. Choose enter update mode

When a message “**Wait for AC power on ...**” pops up, turn on the AC power of driver. After the AC power is stable, click “**OK**” button.

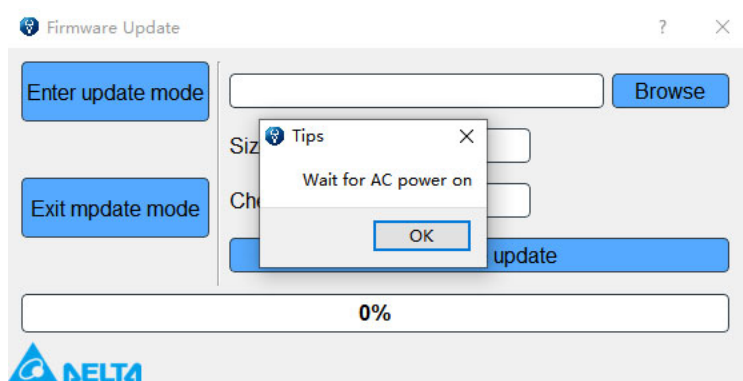


Figure 18. Message: Wait for ac power on

If the MCU has already been in update mode, a message “MCU is ready for updating” would pop out.

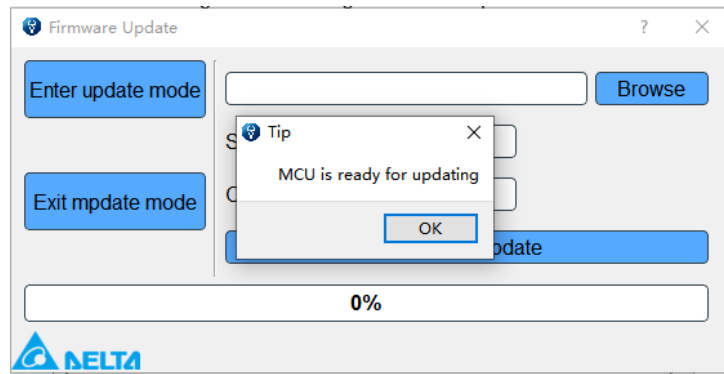


Figure 19. Message: MCU is ready for updating

Step 4: Click **“browse”** button and choose the hex file that you are ready for updating. Please check the size and checksum of hex file in case of updating wrong file.

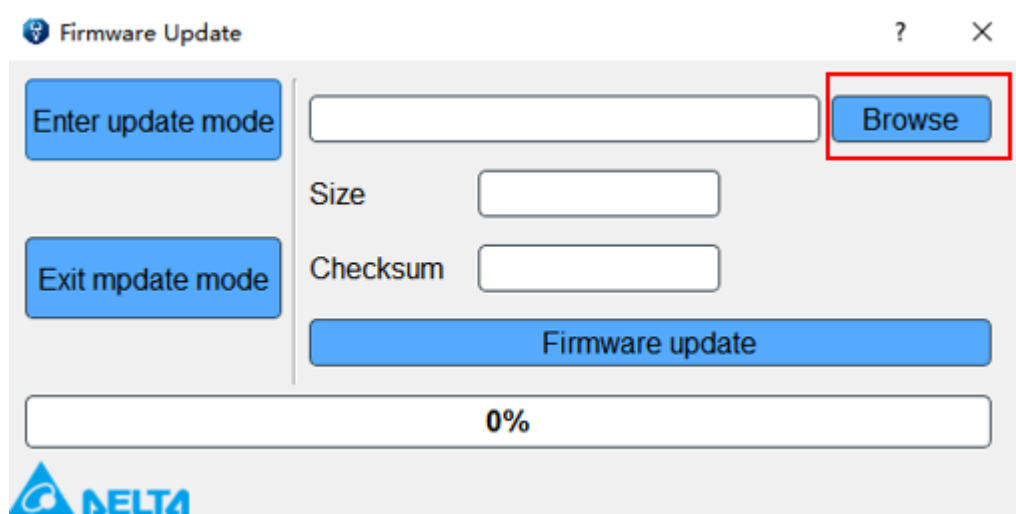


Figure 20. Read hex file

Step 5: Click button **“Firmware-update”** to update firmware. The progress state shall be shown in the progress bar.

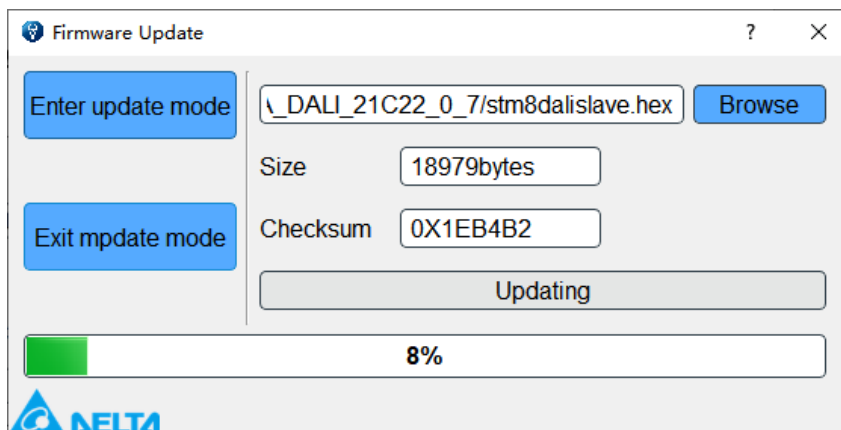


Figure 21. Update hex file

When the update is completed, **“Update successfully”** would pop out. The whole update process will take about one minute.

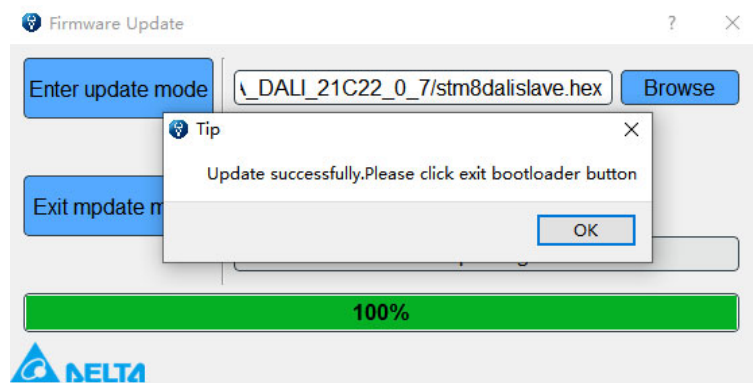


Figure 22. Update successfully

Step 6: Click button ***“Exit Update mode”*** to exit update mode.

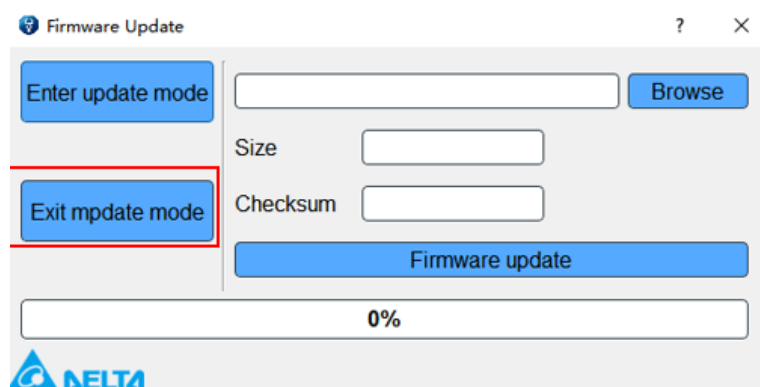


Figure 23. Exit update mode

## 9) Add-on functions

Step 1: Turn on the AC power, when the driver works normal, then open the GUI. Click the “Add-on Functions”. There would pop out one new GUI.

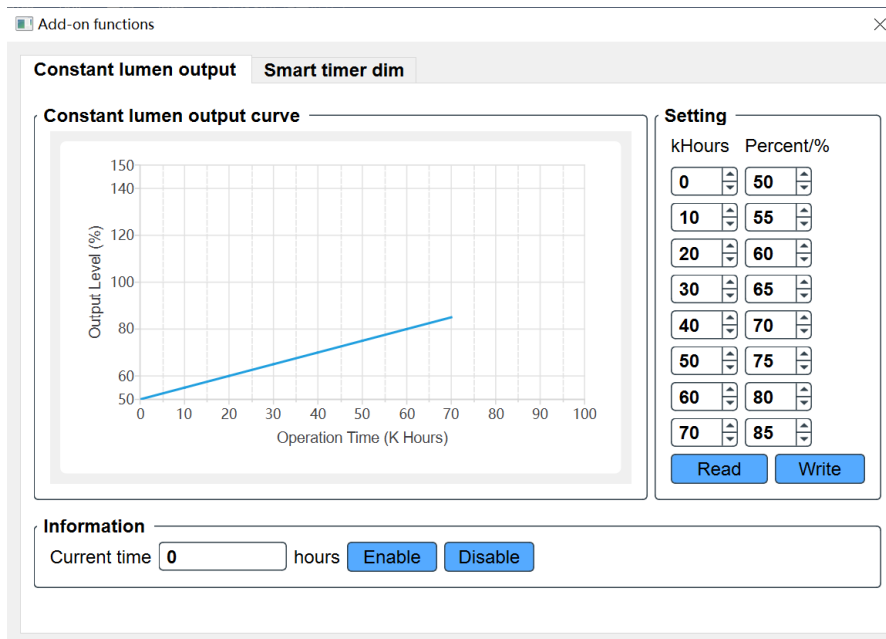


Figure 24. GUI for add-on functions

There are two items in add-on functions: Constant lumen output, smart timer dim.

**Constant lumen output:** Luminance of most LED drivers would be attenuated more or less, with the same output current. So the driver supports this illumination compensation function to make sure to get the constant lumen.

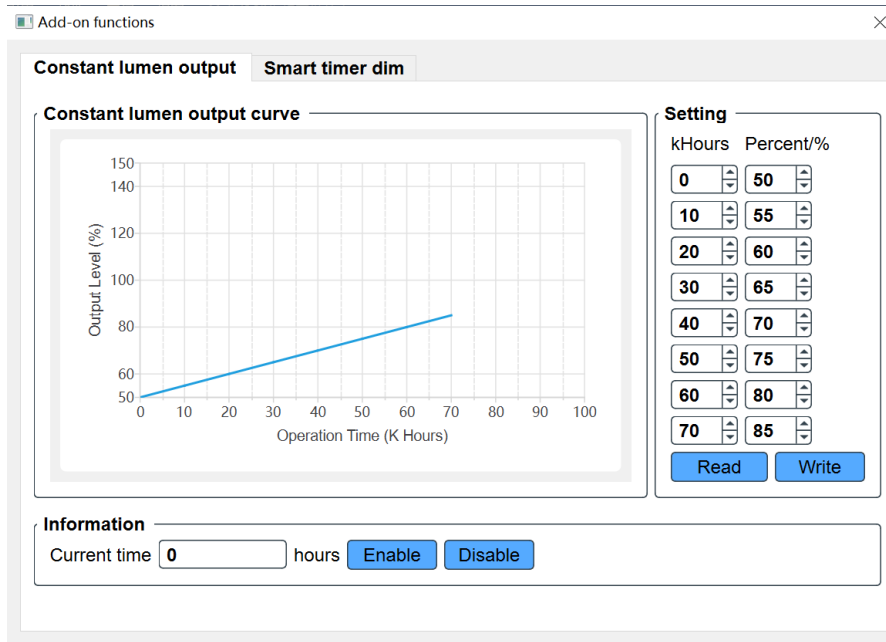


Figure 25. GUI for CLO

There are 8 time steps and percent steps for the setting. The unit for time step is kHours. Please refer the datasheet of LED to get the curve between time and illumination. And the first time always would be 0.

After key in all parameters, click on the “*Write*” button to start the writing process. Then the “*Read*” button could be clicked to check if the setting is correctly.

If the setting is successful, click “*Enable*” to start the CLO function. In avoid of flicker, the CLO ration only be updated when received the dimming command.

**Smart timer dim:** In this function, you could customize a dynamic dimming schedule in different modes



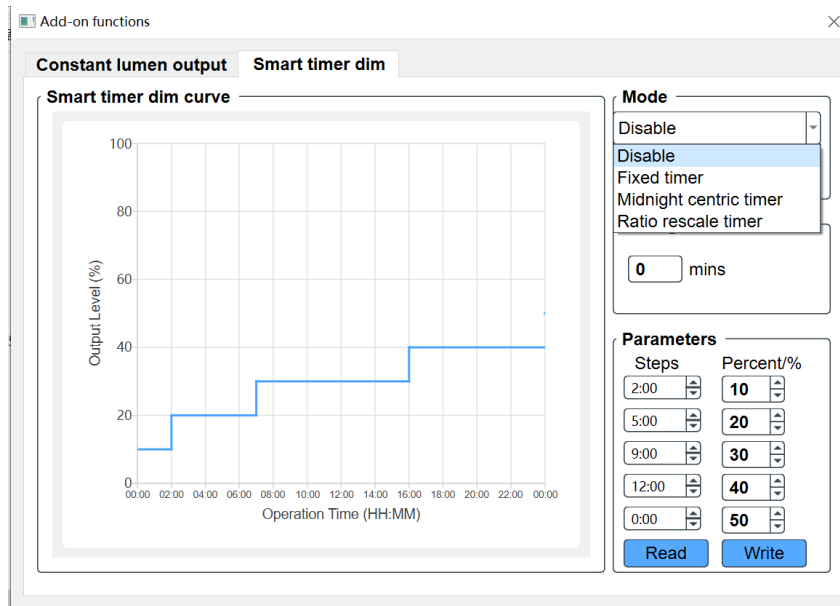


Figure 26. Different modes for STD

There are three modes to create an autonomous dimming schedule:

**Fixed timer:** It is a memoryless-based dimming mode that tracks the output level based on the programmed timing curve. The output level is organized by scheduled profile in the five steps.

**Midnight centric timer:** This mode is a memory-based that automatically measures over the past two days. The power on time of these two days is naturally corresponded to the night time. The midnight centric timer software calculates the length of power on time and centralized from the given virtual midnight point and changed the output level accordingly. More specifically, when the LED driver is power-on during the very first two days or the power-on time difference of past two days is more than 15minutes, the output current will fix to the maximum level since there is no valid data for reference. When the power-on time difference of past two days is less than 15minutes, the output level is controlled based on the correlation between the midnight point of programmed profile and yesterday power-on duration.

**Ratio rescale timer:** This mode is similar to midnight centric timer that records the power-on time based on the local night time. The ratio rescale timer software rescale programmed output power profile of each step by a calculated percentage of the recorded power-on time (when valid) out of given 5 steps duration.

Note: When all steps are finished, the light level remain in last level (level in step 5) for all three modes.

**Fixed timer mode usage:** The figure below shows the example of fixed timer dimming profile. In this case, the driver will perform 75% output level for the first two hours since power-up. Then change to 55% output level for following four hours (as step 2), follow by 35% output level for another three hours (as step3), and so on.

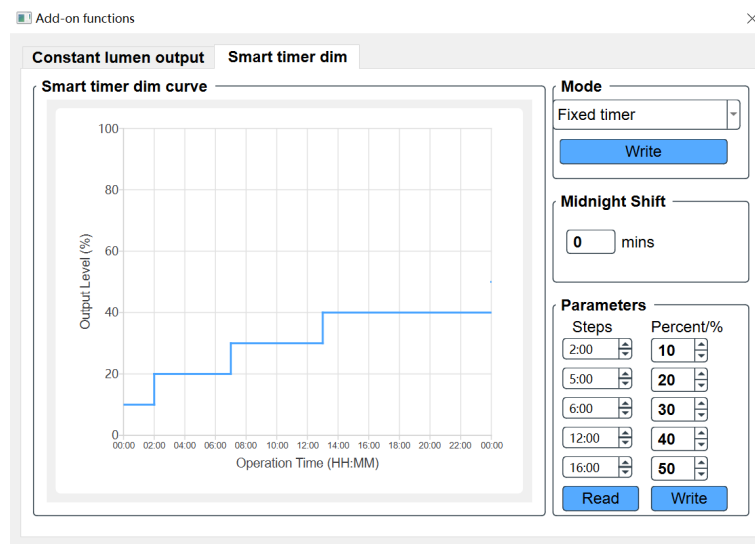


Figure 27. Fixed timer mode usage

**Midnight centric timer mode usage:** The figure below shows the midnight point is set to 23:00(dotted line) with typical five steps profile. If yesterday's time duration is six hours and valid, then the driver will perform the output level at 55% for one hour when power on, then follow by 35% for three hours, and so on.

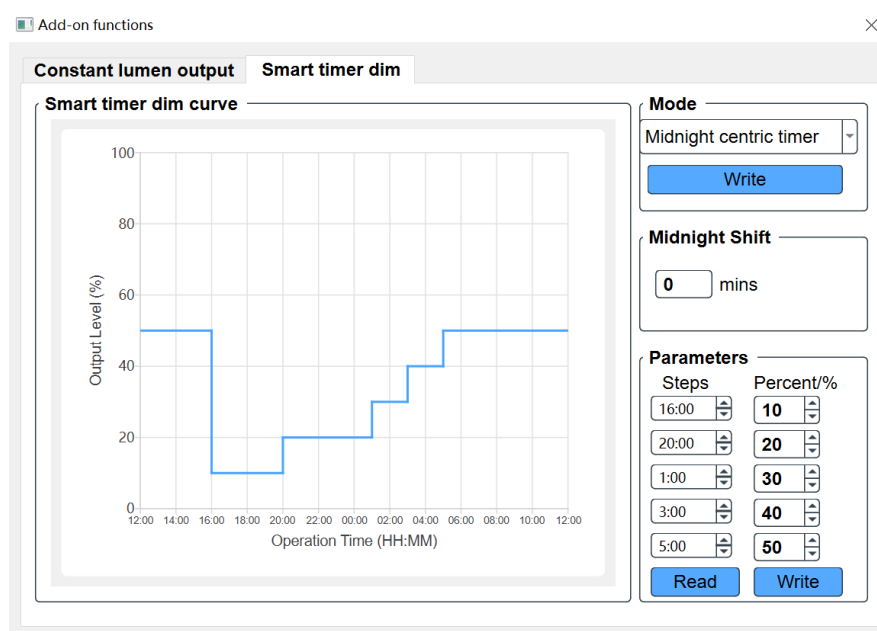


Figure 28. Midnight centric timer mode usage

**Ratio rescale timer mode usage:** The figure below shows the same example of dimming profile as in fixed timer. If yesterday's time duration is six hours and valid. In this case, the ratio is going to be rescaled is 50% of original setting profile (total of twelve hours) for each step. Therefore, the driver will perform the output level at 75% for one hour (50% of setting profile) when power on. Then performs 55% output level for two hours, and so on.

For this function, it would be better to write the setting parameters. Click the “Write” button to configure the midnight shift and all schedule. Then click the “ Write” button in the STD mode to choose one mode or disable all of them.

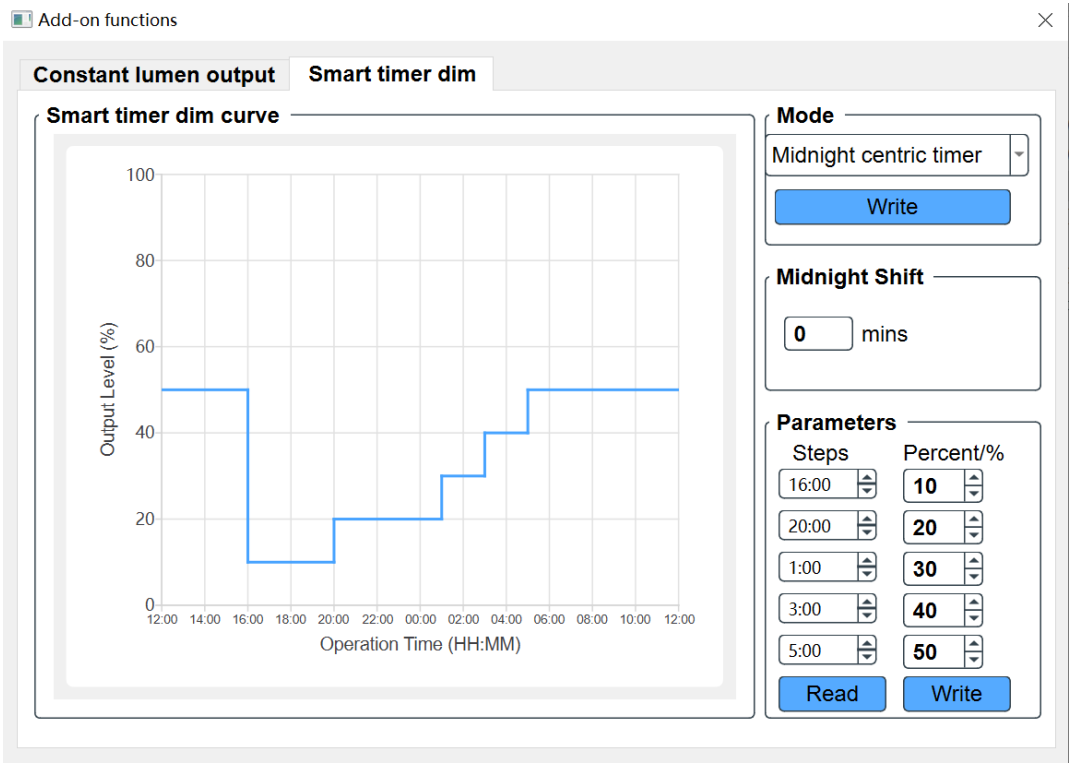


Figure 29. STD write