CUPOWER

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Instruction manual

NFC configurator

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Content

1. NFC

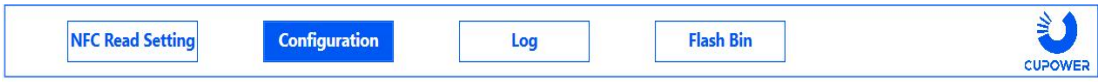
Near Field Communication (NFC) is a wireless technology enabling two devices to connect when only a few centimetres apart. Utilising Radio Frequency Identification (RFID) technology, NFC transmits data effortlessly. NFC's primary advantage lies in its simplicity; devices connect with just a tap or wave, eliminating the need for manual pairing. With the FEIG NFC device, programming the parameters of the CUPOWER NFC driver is straightforward using the CUPOWER NFC PC software.

2. Device

The ID CPR30-USB is crafted as a desktop device facilitating contactless data exchange with transponders that comply with the ISO 15693 and ISO 14443-A/-B standards, as illustrated below. This device supports contactless data exchange with transponders compliant with ISO 15693 and ISO 14443-A/-B, powered and communicating with a PC via a USB interface.

3. Menus and Operating Instructions

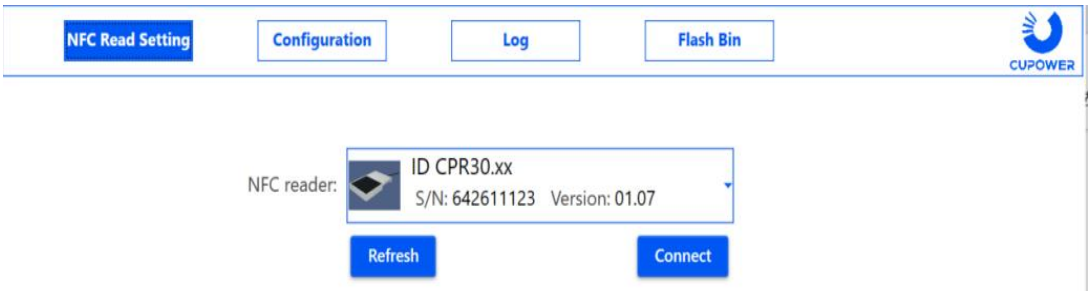
The NFC software comprises four main functions: NFC Read Setting, Configuration, Log, and Flash Bin. These functions are visually indicated in the software interface, with the active function highlighted in blue.



Note: The NFC Cnofigurator includes only the NFC Read Setting, Configuration, and Log functions. The Flash Bin function is exclusively available in NFC Configurator Pro.

3.1 NFC Read Setting

This function enables the scanning and connection to an NFC device, a necessary step before utilising the software. Currently, the FEIG model CPR30-USB is supported. The software interface, depicted below, guides users through the connection process.

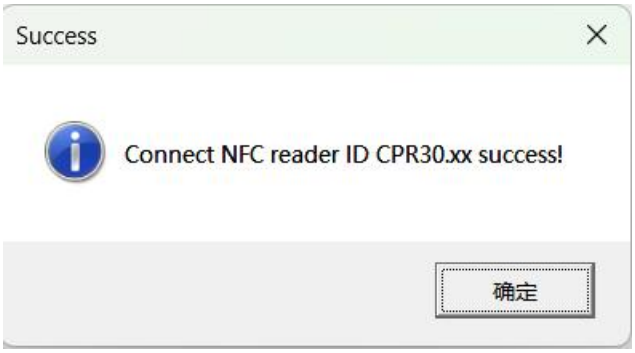


How to use:

1. Connect the NFC device to your computer via USB.

2. Click Refresh button to locate the NFC device. The device will appear in the NFC reader box once detected.

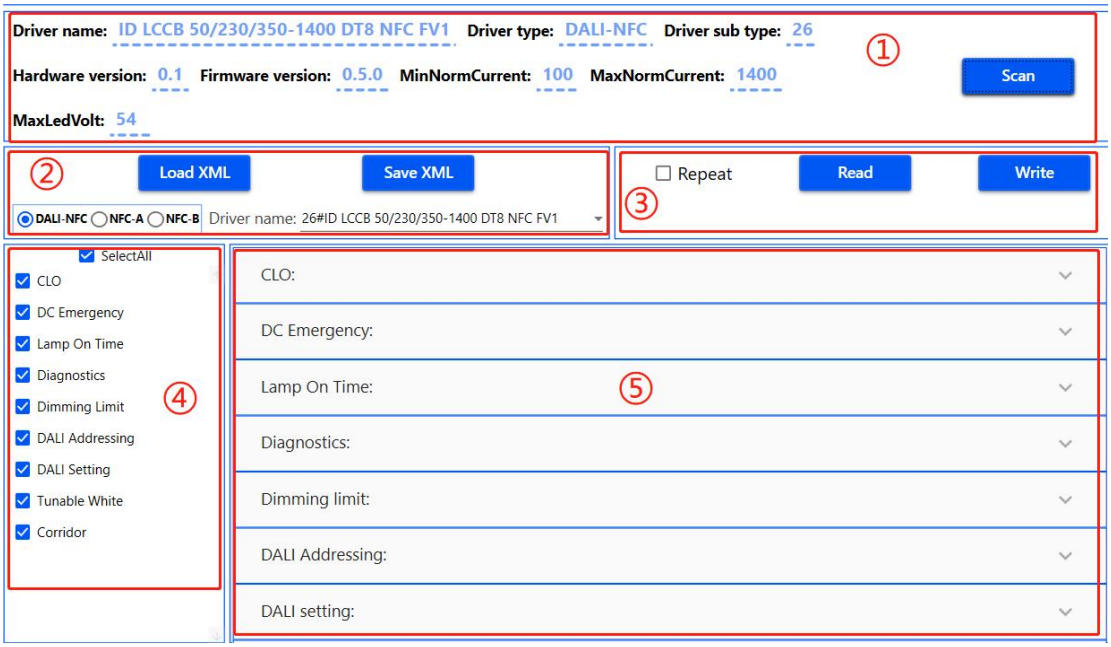
3. Click Connect button to establish a connection with the NFC host computer. A successful connection will display the device in the connected device box, as shown below.



3.2 Configuration

3.2.1 Configuration interface

The configuration interface is shown below.



①Product information,upon successfully connecting the NFC device, place the driver power within the NFC device's read-write range and click Scan button to access the following product information:

Driver Name: As per the actual product.

Driver Type: Customised by the manufacturer.

Driver sub type, refer to the actual product, customised by the manufacturer;

Hardware Version: As per the actual product.

Firmware Version: As per the actual product.

MinNormCurrent: Minimum adjustable output current (AOC), specific to the product.

MaxNormCurrent: Maximum adjustable output current (AOC), specific to the product.

MaxLedVolt: Maximum output voltage, as per the actual product.Hardware version, refer to the actual product.

② XML file, all parameters of the drive power can be configured at once without manually configuring each parameter, see 3.2.2 (2) for specific operation; the product type DALI-NFC NFC-A NFC-B is automatically selected after reading the drive power.

③Read/write operation, click Read to read the current parameter configuration of the driver power supply, click Write to write the parameter configuration, tick Repeat to repeat read/write.

④Configure the parameter options, only the checked parameters can be read/written, click on SelectAll select all.

⑤Parameter Configuration, where you can modify and set the parameters for the configured parameter options that have been ticked in ④, see Chapter 4 for details.

3.2.2 How to Configure

Manual Configuration:

If configuring the drive power supply manually:

1 .Click 

to enter the configuration interface;

2 .Click 

to search for the drive power supply;

3 .Tick the parameters that need to be written/read, e.g. if you need to change the drive power AOC, then tick □AOC;

4 .To write/read the parameters, click 

to write the parameter configuration, click 

to read the parameter configuration.

XML File Configuration:

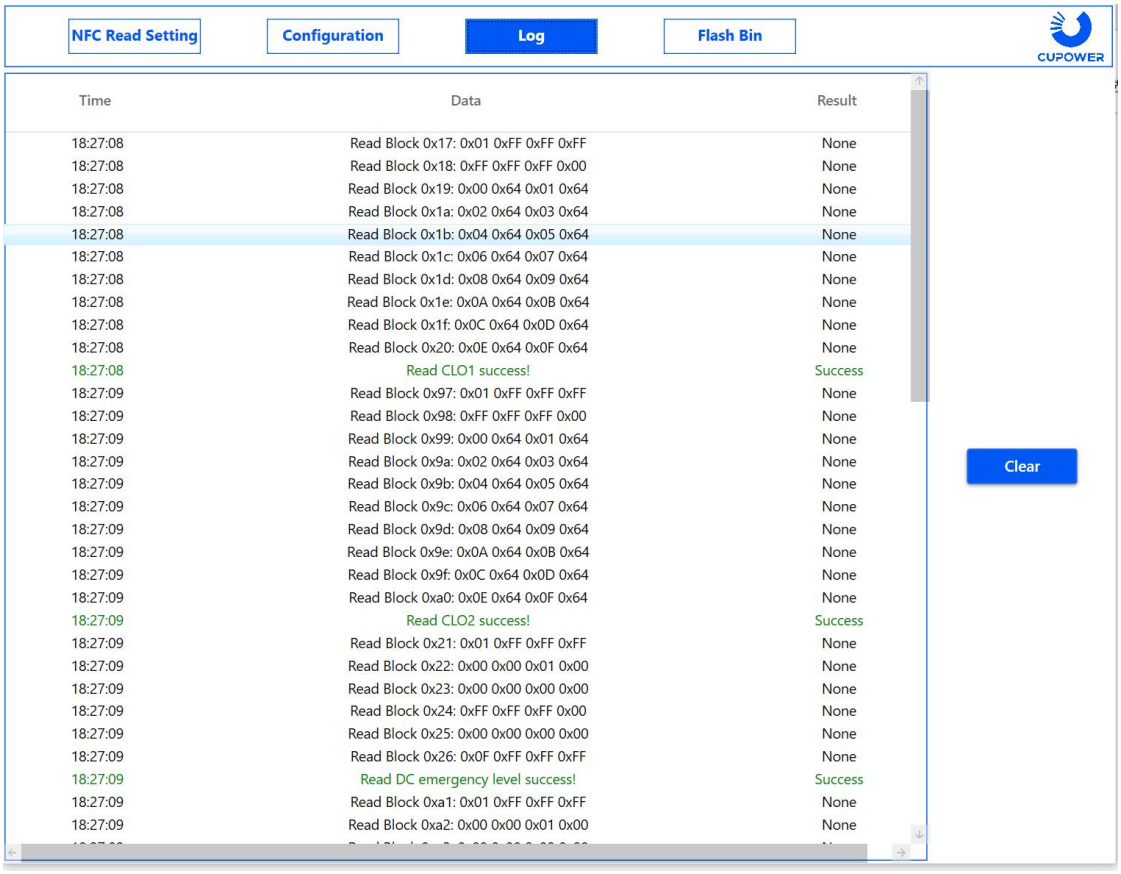
To import ideal parameter settings into multiple drive power supplies of the same model or to restore a drive power supply to ideal parameters, use an XML file for automatic configuration. This eliminates the need for manual parameter rewriting.

XML file generation method: After setting the desired parameters, click 

to export and save the desired parameter file as XML format.

3.3 Log

The log function records the time of operation, data address and data, and the outcome of each operation. It includes features to clear the log, as demonstrated below.



Note:Time is used to record the time of the operation, Data is used to record the address and data of the operation, Result is used to record the success or failure of the operation, click 

to clear the log.

3.4 Flash Bin

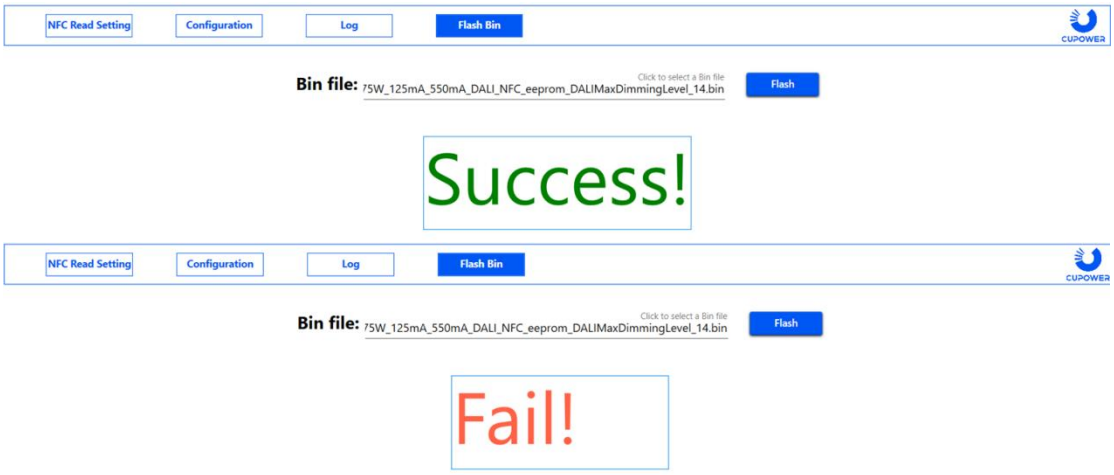
The Flash Bin function updates the NFC chip's programme in the driver power supply, including the device's operating system firmware or specific function configuration data. This is a unique capability reserved for **NFC Cnofigurator Pro**.Steps for using the Flash Bin function are outlined below, including importing the bin file and executing the burn process.

1. Click 

to import the corresponding bin file as shown below.

2. Click 

to burn, the burn result will be displayed in the box below, the success and failure interface are shown below.

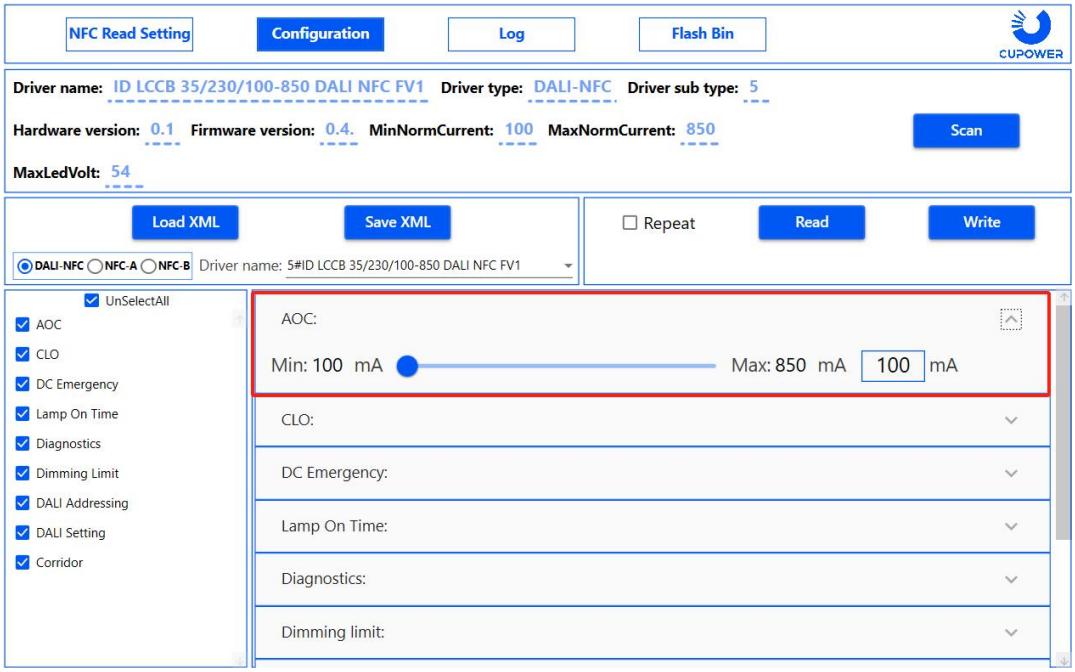


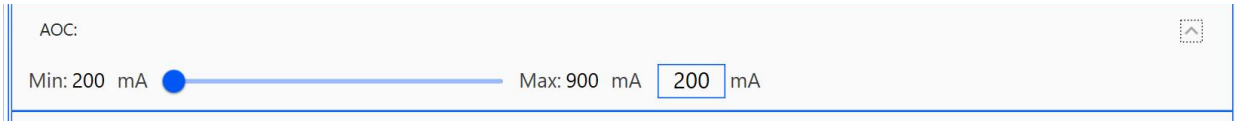
4. Parameters and How to Configure

This section provides detailed explanations of various parameters and instructions for their configuration.

4.1 AOC: Adjustable output current

Adjustable Output Current (AOC) allows users to set the power supply's maximum output current within the rated range, with a minimum increment of 1mA. For instance, the driver ID LCCB 35/230/100-850 DALI NFC FV1 can adjust its maximum output current from 100 to 850mA using NFC. This setting influences the maximum output current available for DALI dimming or PUSH dimming when the AOC is specified at a particular value, such as 100mA.



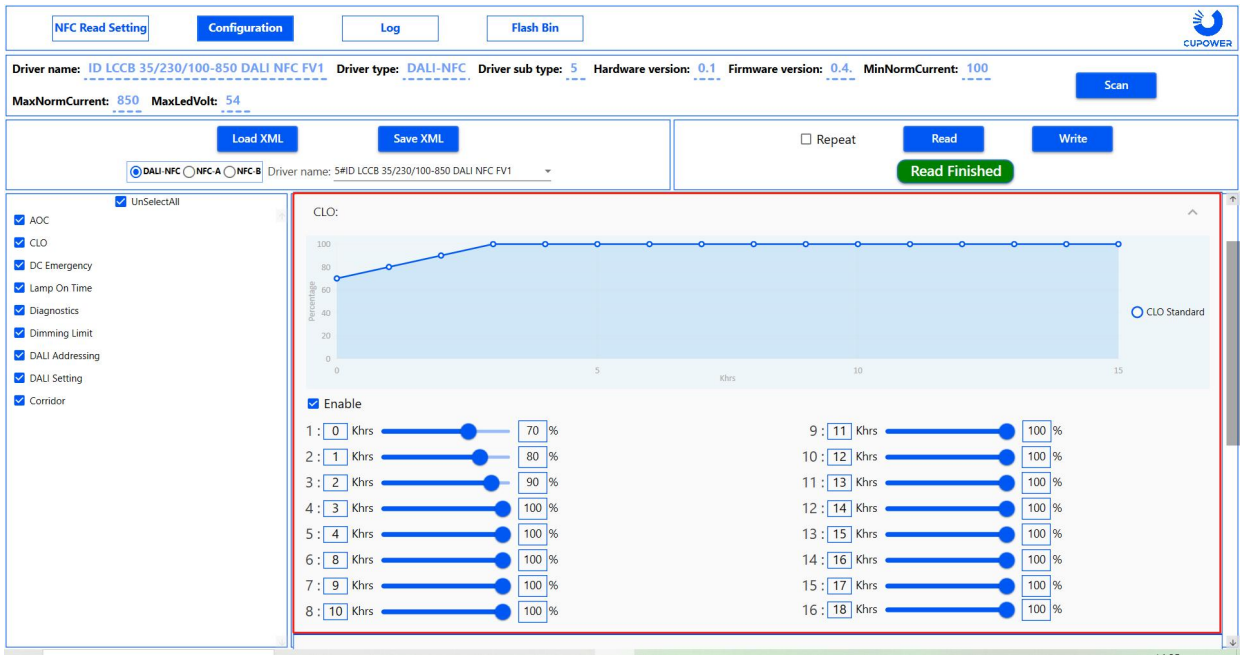


Note: For drivers in DT6 mode, AOC modifications are made here. In DT8 mode with Tunable White, AOC adjustments are made within the Tunable White section.

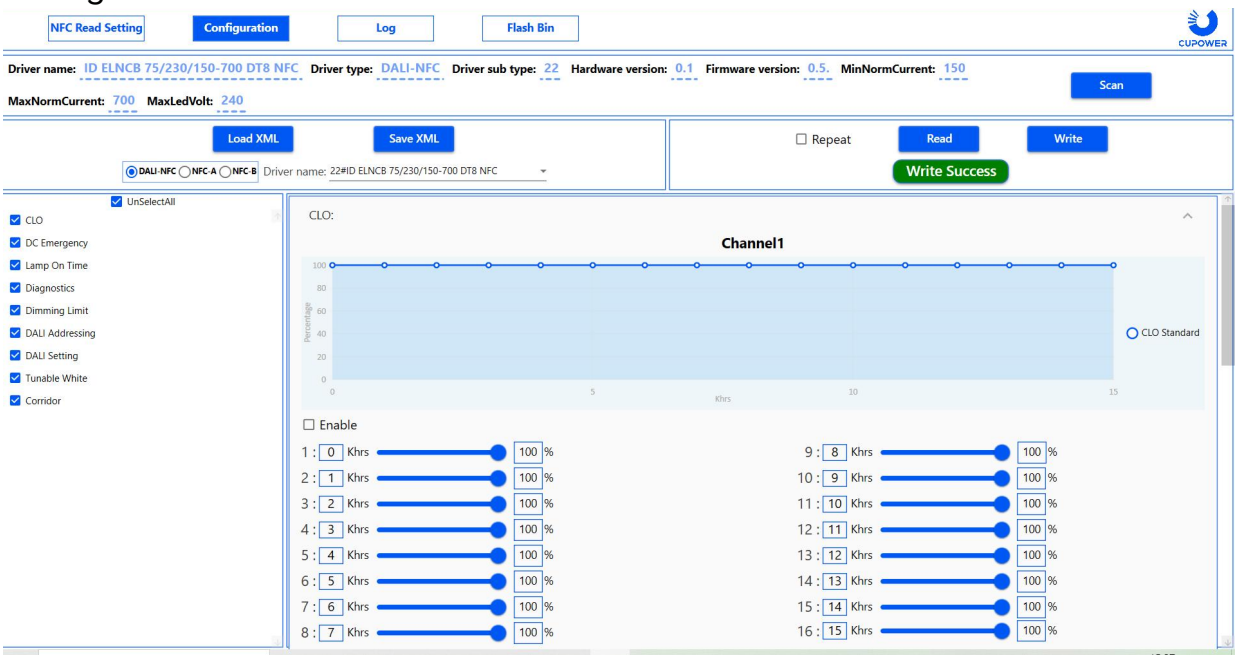
4.2 CLO: Constant lumen output

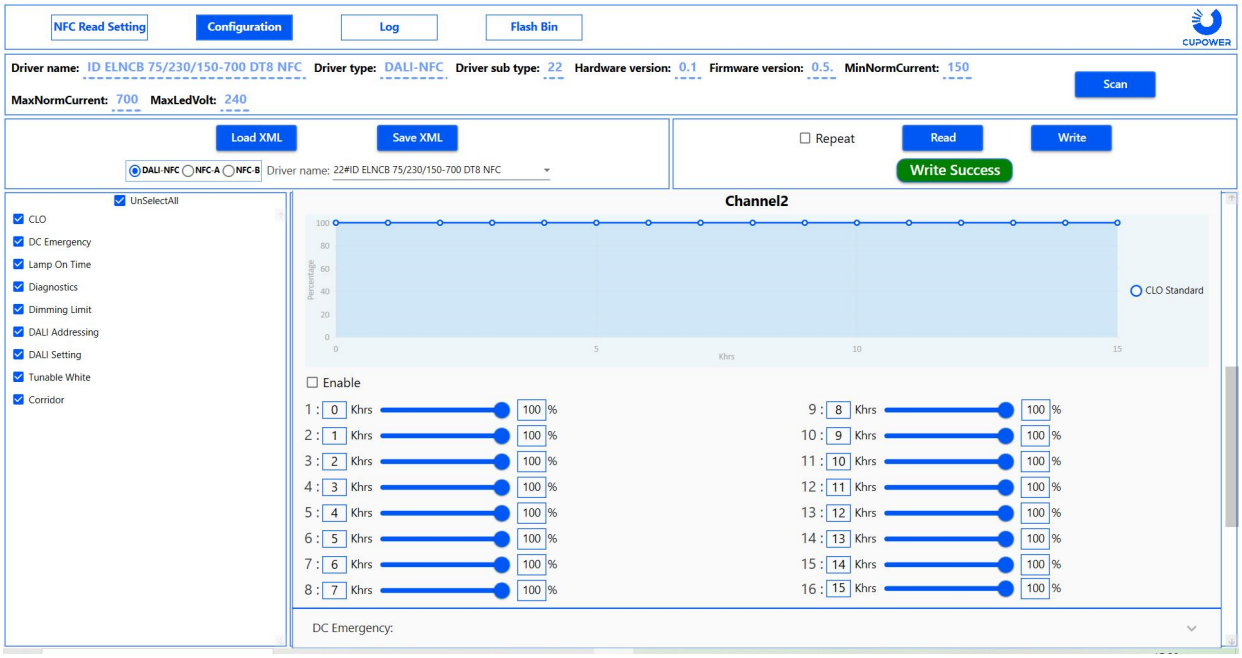
Constant Lumen Output (CLO) aims to compensate for LED luminosity decline over time. The LED driver monitors the LED's operational duration, adjusting output current at various intervals to counteract luminosity reduction. Users must populate the table with appropriate durations and corresponding output current percentages, ensuring the "Enable" option is selected for functionality. The maximum CLO duration is 255,000 hours, with an output current range of 70-100%.

Example Configuration: If configured as depicted below, the driver outputs 70% of the nominal current up to 1,000 hours, scaling up to 90% beyond 3,000 hours of operation.



Note: In DT6 2 Independent Outputs mode, each channel requires separate CLO settings.



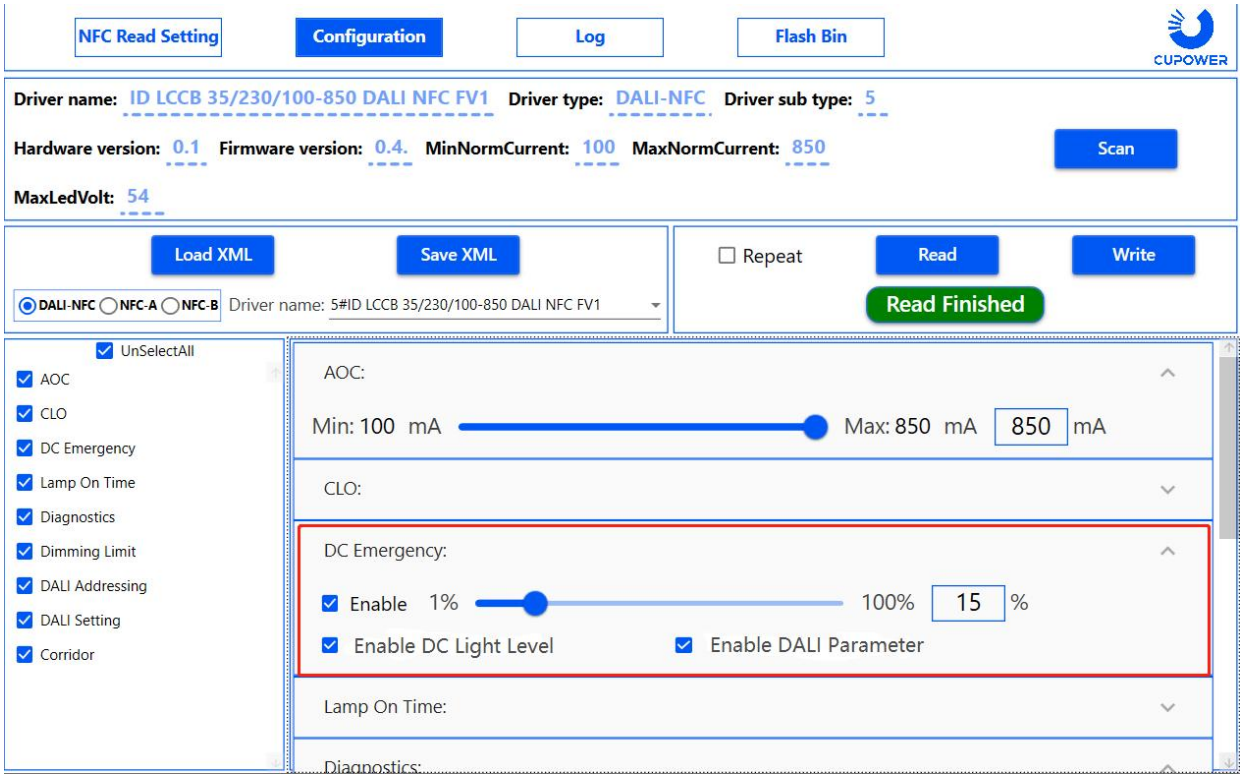


4.3 DC Emergency: Emergency Lighting (EL)

In DC Emergency Mode, the driver operates under unstable conditions, such as during fires, with communication typically disabled to ensure configuration integrity. The output current in this mode can range from 0% to 100%, defaulting at 15%. Options to "Enable DC Light Level" or "Enable DALI Parameter" control the driver's response to dimming commands and DALI commands, respectively, during emergency conditions.

If "Enable DC Light Level" is ticked and written, the output current in DC Emergency mode can be set via DALI port; if "Enable DALI Parameter If "Enable DALI Parameter" is ticked and written, the parameter in DC Emergency mode can be read through DALI port.

For these settings to be effective, the "Enable" option must be activated.

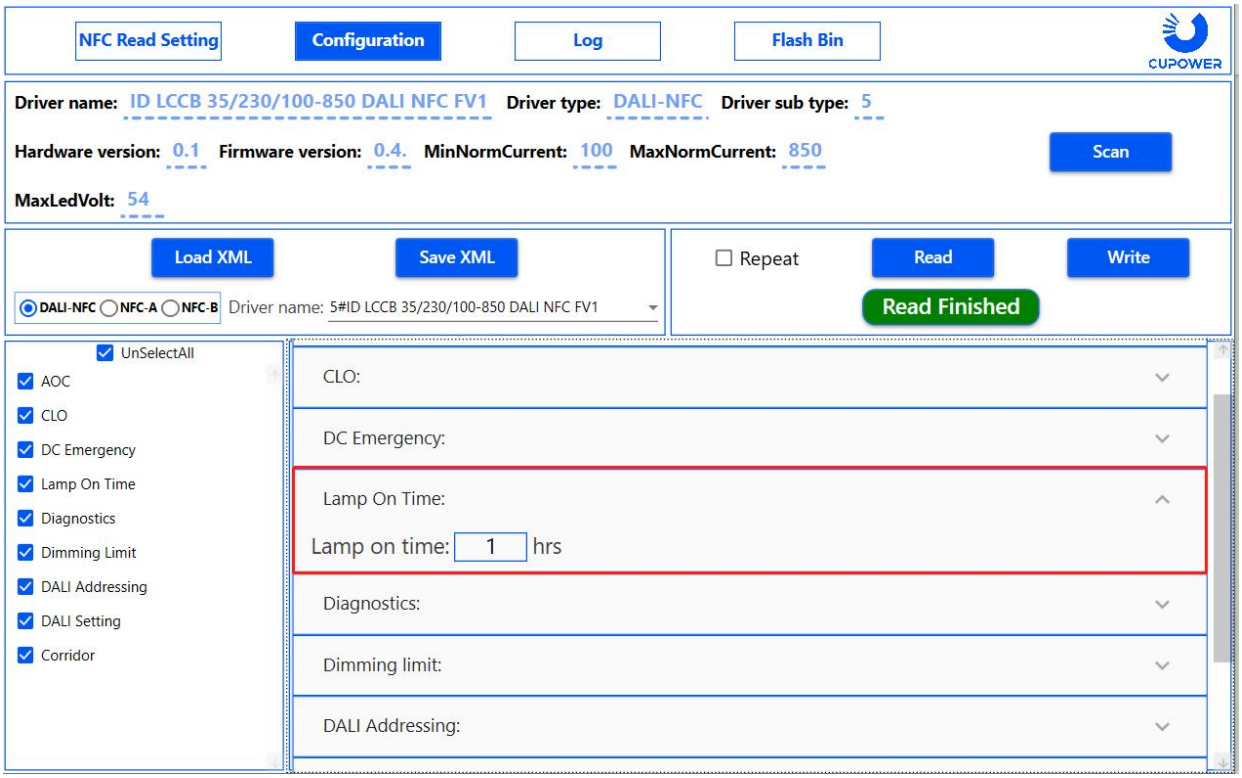


Note: Separate DC settings are necessary for each channel in DT6 2 Independent Outputs mode.

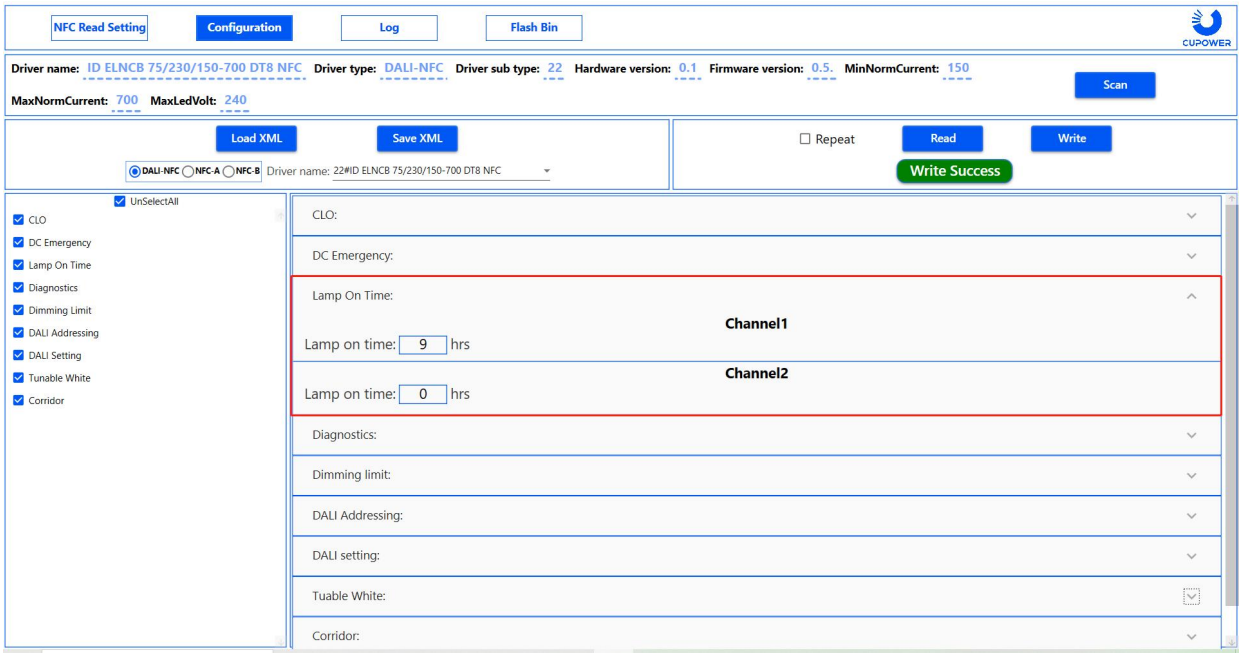
4.4 Lamp On Time:The duration of the lamp (changeable)

Lamp On Time serves as a reference for the CLO function, combining actual lamp operation time with a predefined duration. If the set time is 0 hours, Lamp On Time equals the actual operating time. When replacing LEDs, it's advisable to reset this value for accuracy.

The minimum increment of Lamp on time is 1 hour, counting range: 0-50000 hours, please reset this value when replacing LEDs. The configuration interface is shown in the figure below.

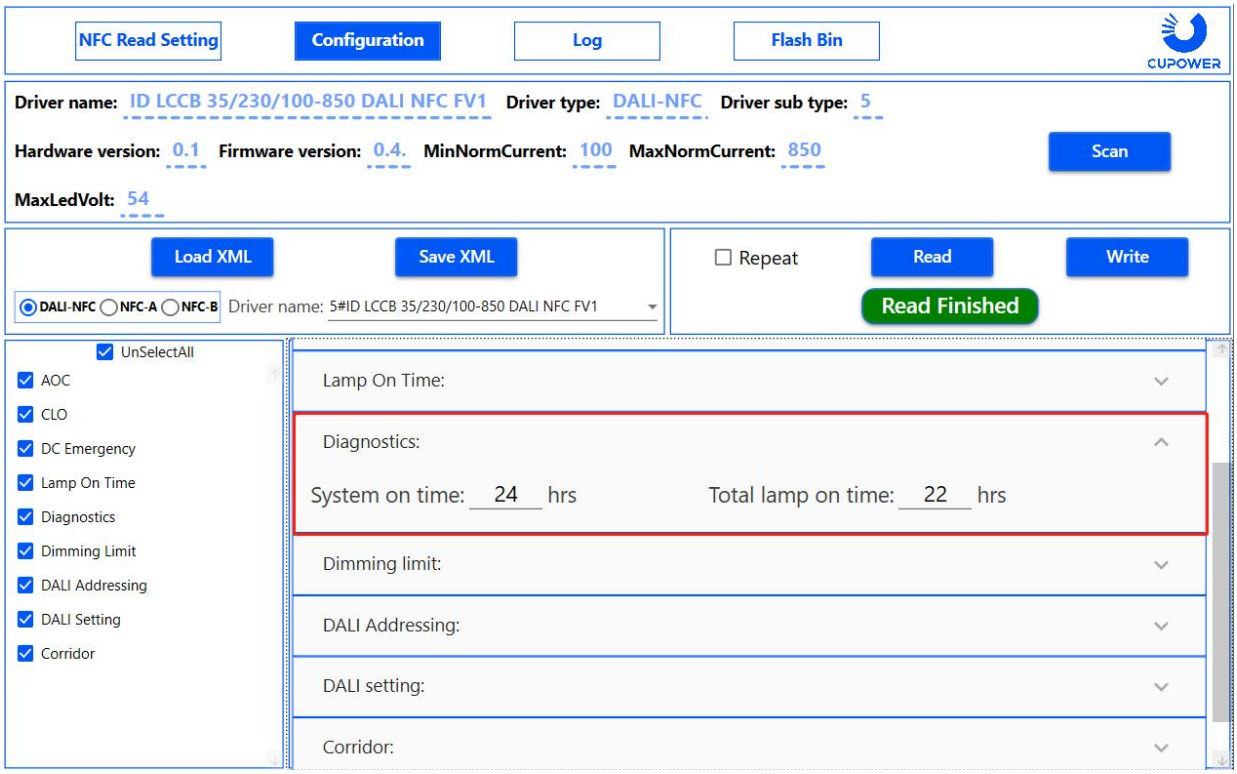


Note: In DT6 2 Independent Outputs mode, Lamp On Time must be set for each channel independently, as shown in the figure below.

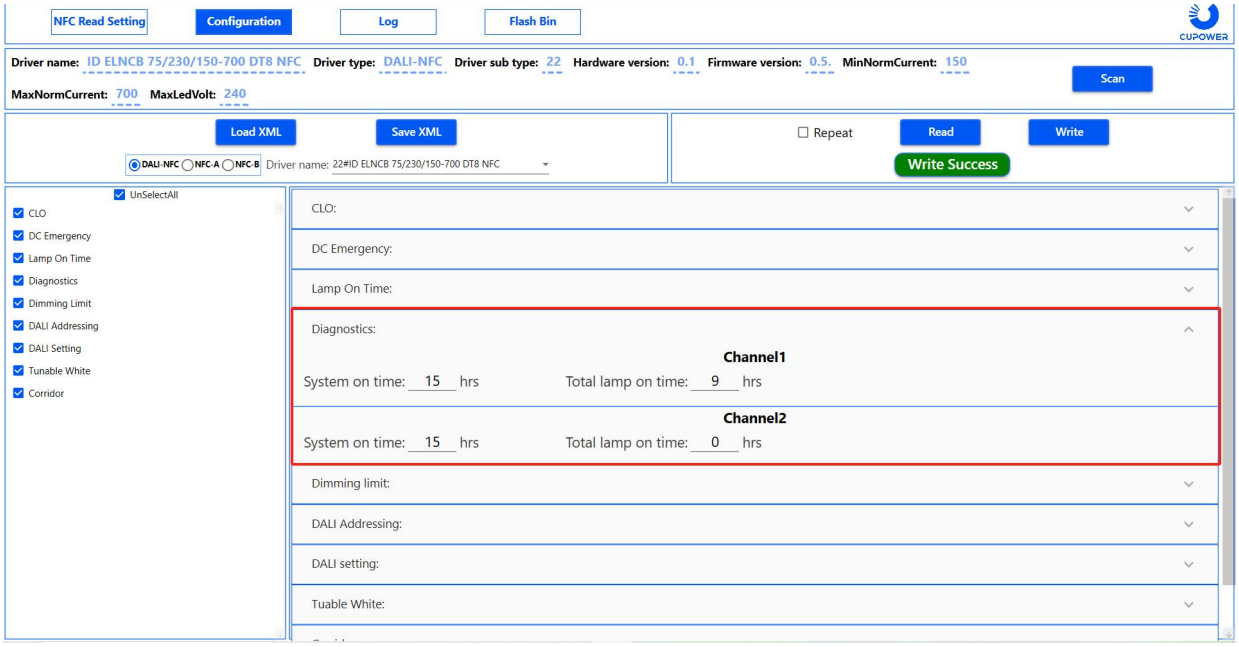


4.5 Diagnostics Read: Diagnostics data

This function provides data on the “System On Time” and “Total Lamp On Time” ,indicating the LED driver's and the LED load's operational durations, respectively. Supported time data currently includes up to 50,000 hours of operation.



Note: In DT6 2 Independent Outputs mode, data for each channel must be read separately.



4.6 Dimming Limit

The Dimming Limit settings govern the range within which the DALI system can adjust the lighting:

4.6.1 DALI Min Dimming Level

This is the lowest level to which the light can be dimmed, with a unit of 1 and a range of 85-254.

4.6.2 DALI Max Dimming Level

This is the highest level to which the light can be dimmed, with the same unit and range as the minimum level.

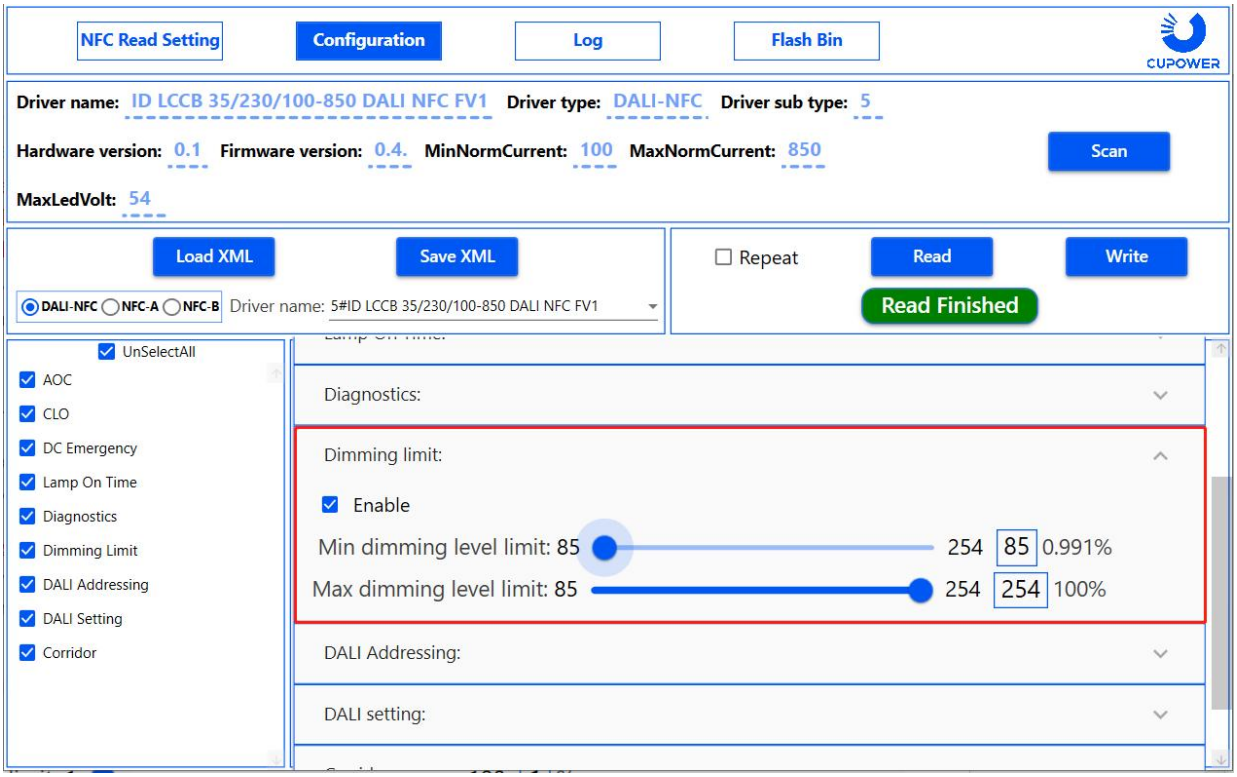
4.6.3 Min Dimming Limit

The minimum percentage to which the light can be dimmed, ranging from 1-100%.

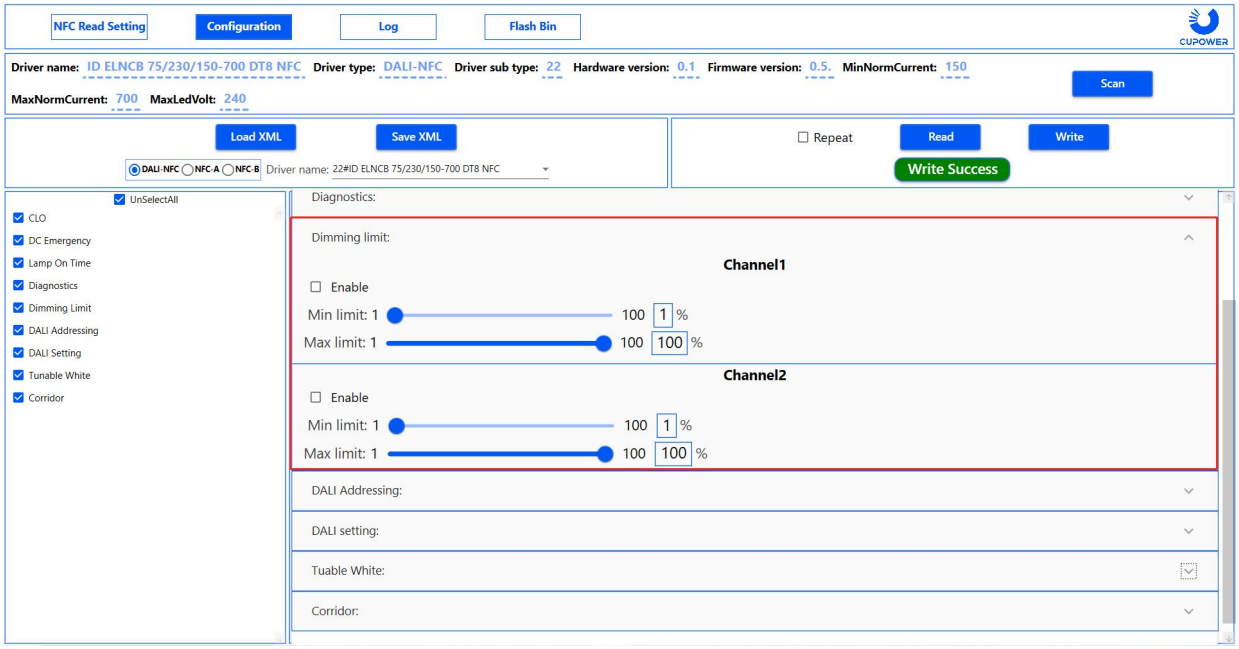
4.6.4 Max Dimming Limit

The maximum percentage to which the light can be dimmed, also ranging from 1-100%.

For these settings to be effective, the “Enable” option must be activated.



Note: In DT6 2 Independent Outputs mode, each channel's Dimming Limit must be set individually.



4.7 DALI Setting(partial parameters)

4.7.1 Fade Time (0-15)

This setting adjusts the overall fade time for DALI dimming commands, not affecting the maximum and minimum call levels.

4.7.2 Fade Rate (0-15)

Adjusts the fade rate per second for DALI dimming commands, again not affecting direct calls to the maximum and minimum levels.

4.7.3 Dimming Curve (Logarithmic/Linear)

Determines the dimming curve's nature, whether it decreases logarithmically or linearly.

4.7.4 Power On Level (0-255)

Defines the startup level for the DALI port when connected as a host.The default value is 255。

4.7.5 System Failure Level (0-255)

Sets the startup brightness in case the DALI port disconnects.The default value is 255.

4.7.6 Power On Colour Temperature

Depends on the Tunable White setting, denoting the startup colour temperature when connected as a host.The default value is 65535.

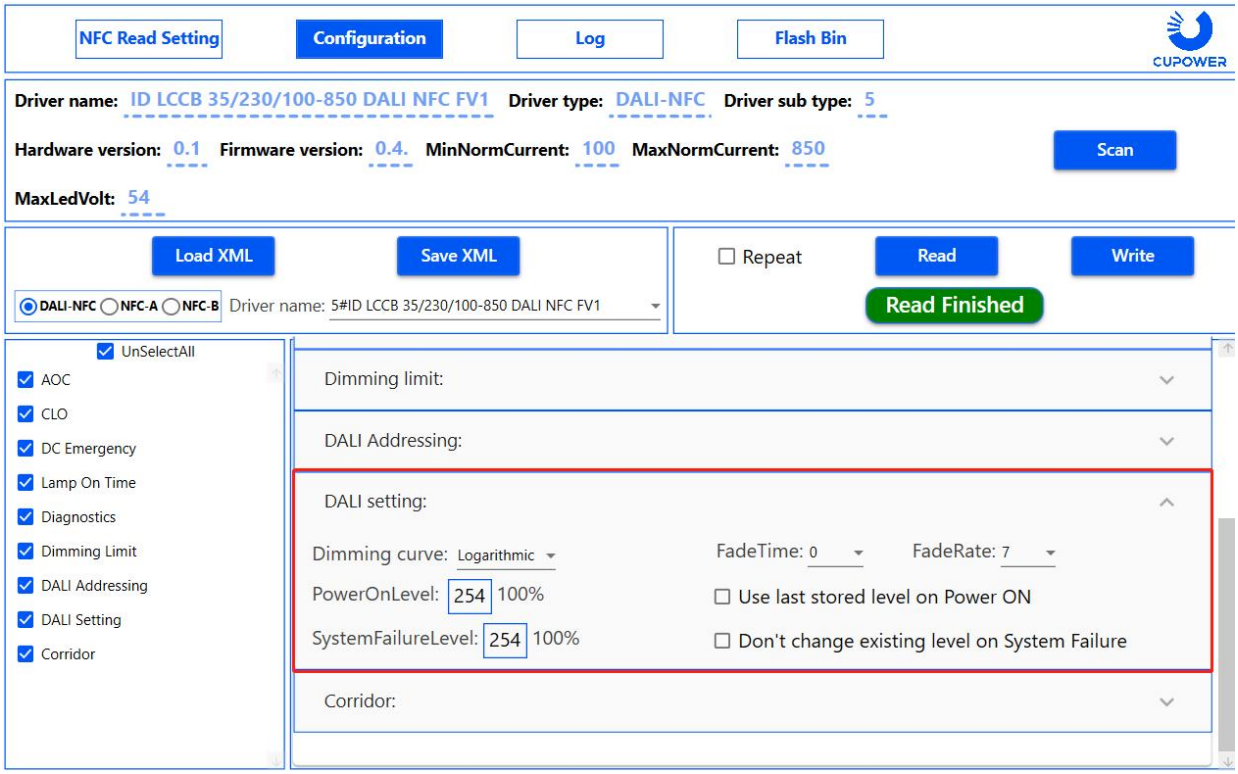
4.7.7 System Failure Colour Temperature

Also depends on the Tunable White setting, indicating the startup colour temperature upon disconnection.The default colour temperature is 65535.

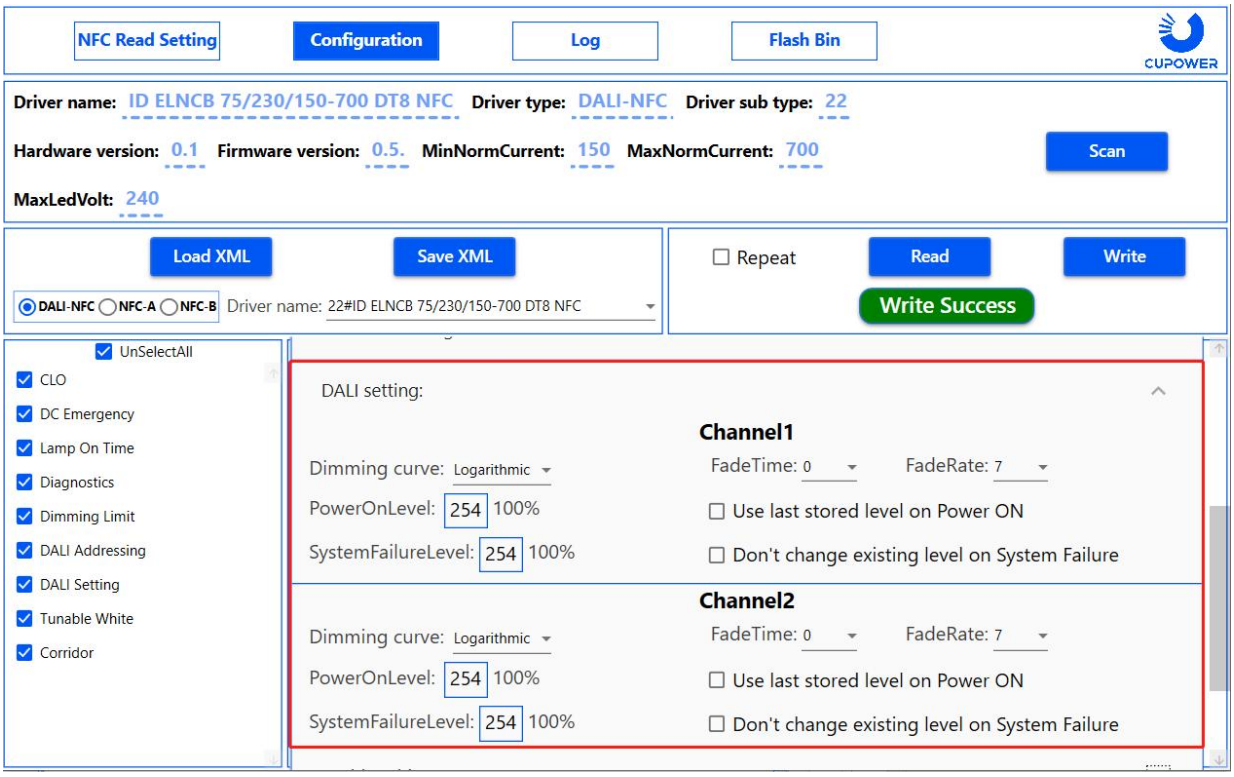
Selecting "Use last level on Power ON" or "Don't change existing level on System Failure" will set default values for power-on and system failure levels, respectively.

Selecting "Use last stored colour temperature on power on " or "Don't change existing colour temperature on System Failure" will set default colour temperature for power-on and system failure colour temperature, respectively.

The configuration screen is shown below.

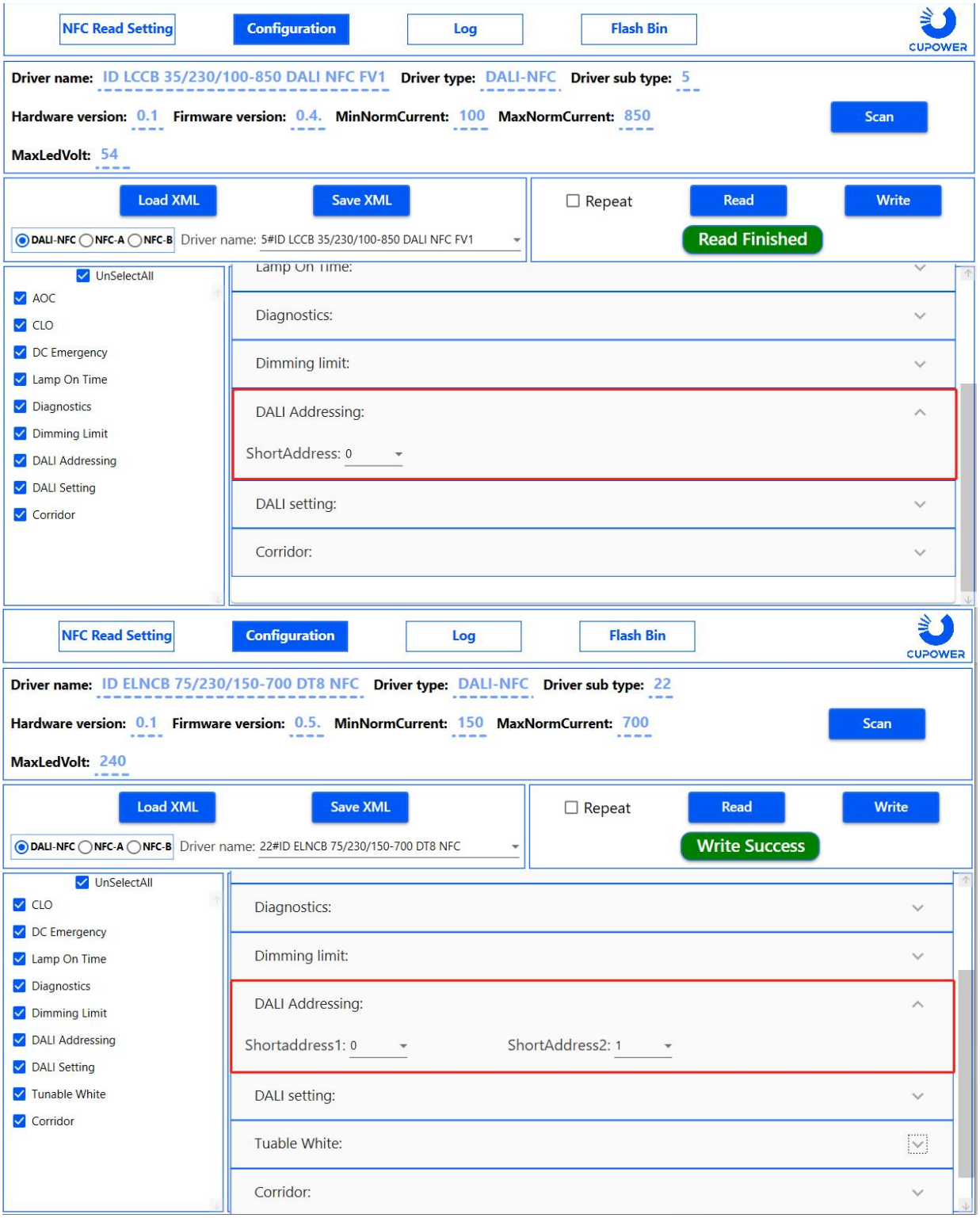


Note: In DT6 2 Independent Outputs mode, DALI settings for each channel must be configured separately.



4.8 DALI Addressing

Short addresses within the DALI bus system uniquely identify each device, allowing it to receive and respond to commands. These addresses range from 0 to 63.



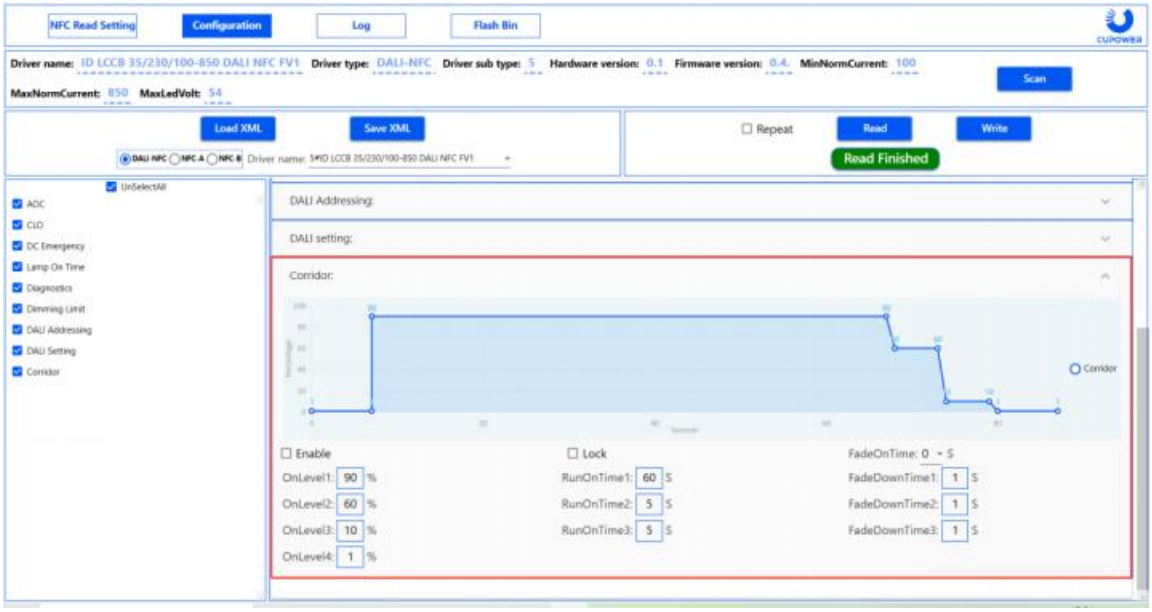
Note: In DT6 2 Independent Outputs mode, each channel must be assigned a unique short address.

4.9 Corridor

Corridor Mode enhances safety and energy efficiency by adjusting lighting brightness based on motion detection. This mode enables lights to brighten when people are detected and dim when the area is unoccupied, optimizing energy use.
Settings include:

- FadeOnTime: Time to transition from idle to active mode.
- OnLevel and RunOnTime: Brightness levels and durations for various stages of active mode.
- FadeDownTime: Time to transition back to lower brightness levels or idle mode.
- Lock and Enable: Options to automatically engage Corridor Mode upon startup and activate this function.

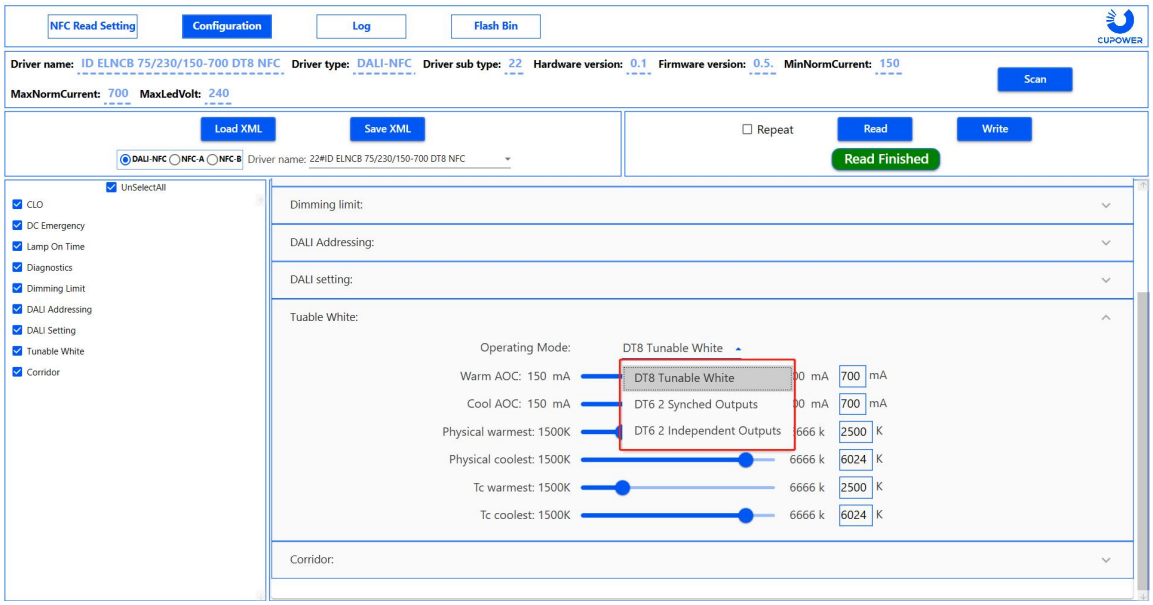
Tick “Lock” to enable the driver to switch to corridor mode automatically after power on, tick “Enable” to enable this function.



Please note: Even if the “ Enable “ is ticked, it still needs long press PUSH button for 55s to enter Corridor mode. If ticked “ Lock “, there is no need to long press.

4.10 Tunable White (range setting of the TC color temperature with AOC functions)

This setting allows for the adjustment of the colour temperature range and maximum current for both warm and cool channels in various operating modes, including DT8 Tunable White, DT6 2 Synched Outputs, and DT6 2 Independent Outputs modes. Specifications include maximum current for warm and cool channels, physical and set colour temperature ranges, and configurations specific to different operating modes.



Note: Tunable White configuration is not available for DT6 2 Synched Outputs mode only.

Warm AOC, maximum current (in mA) for the warm channel;

Cool AOC, maximum current (in mA) for the cool channel;

Physical warmest, physical warmest colour temperature (in Kelvin, range 1500-6666K);

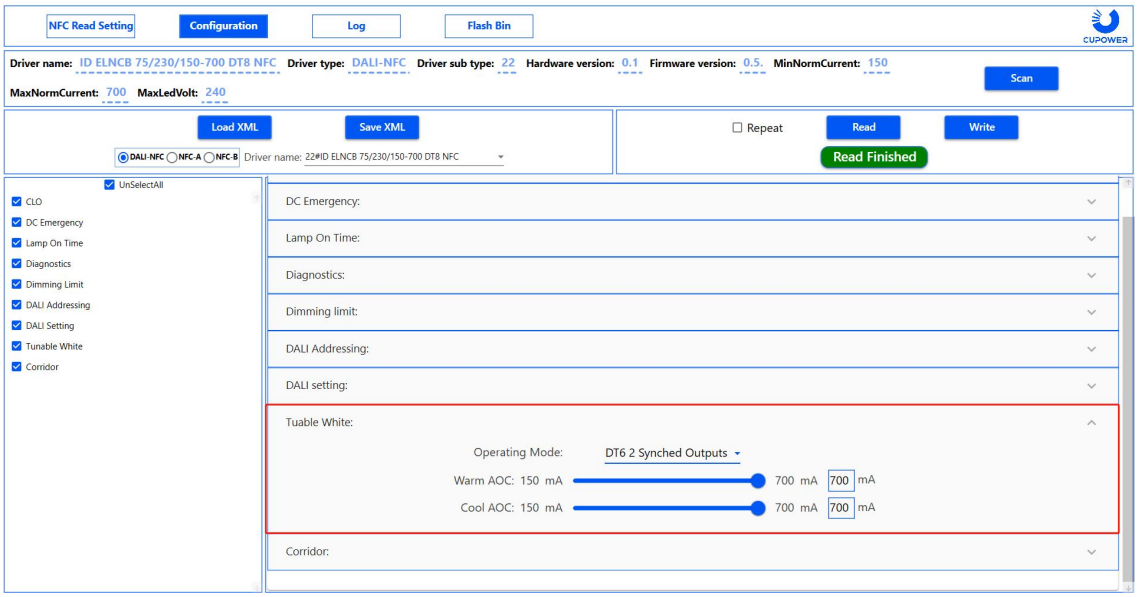
Physical coolest, physical coolest colour temperature (in Kelvin, range 1500-6666K);

Tc warmest, set warmest colour temperature (in Kelvin, range 1500-6666K);

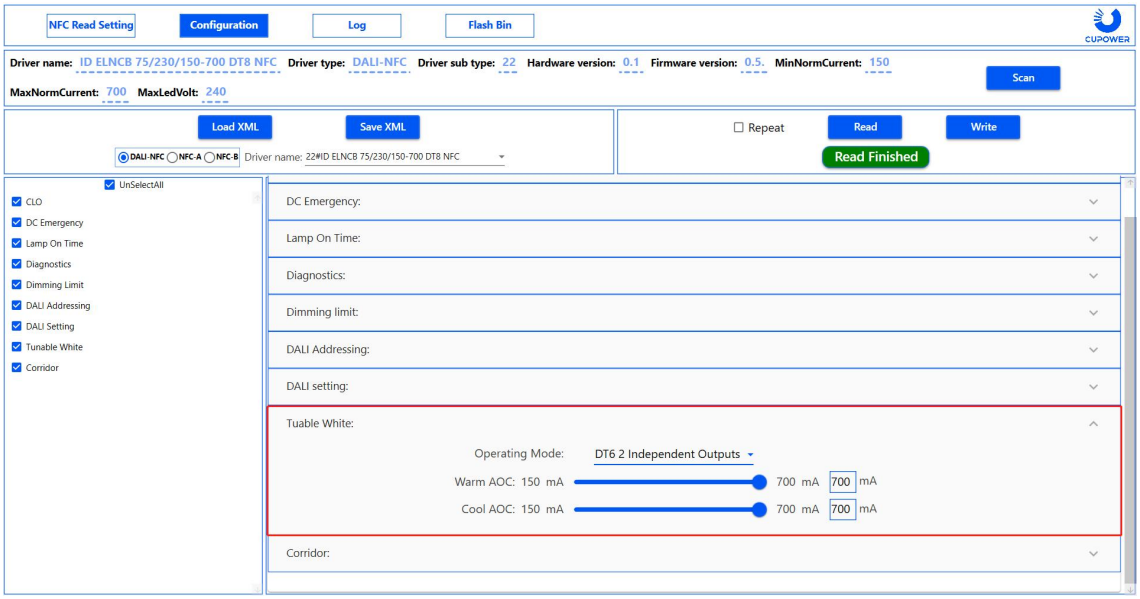
Tc coolest, set warmest colour temperature (in Kelvin, range 1500-6666K).

The configuration screen is shown below.

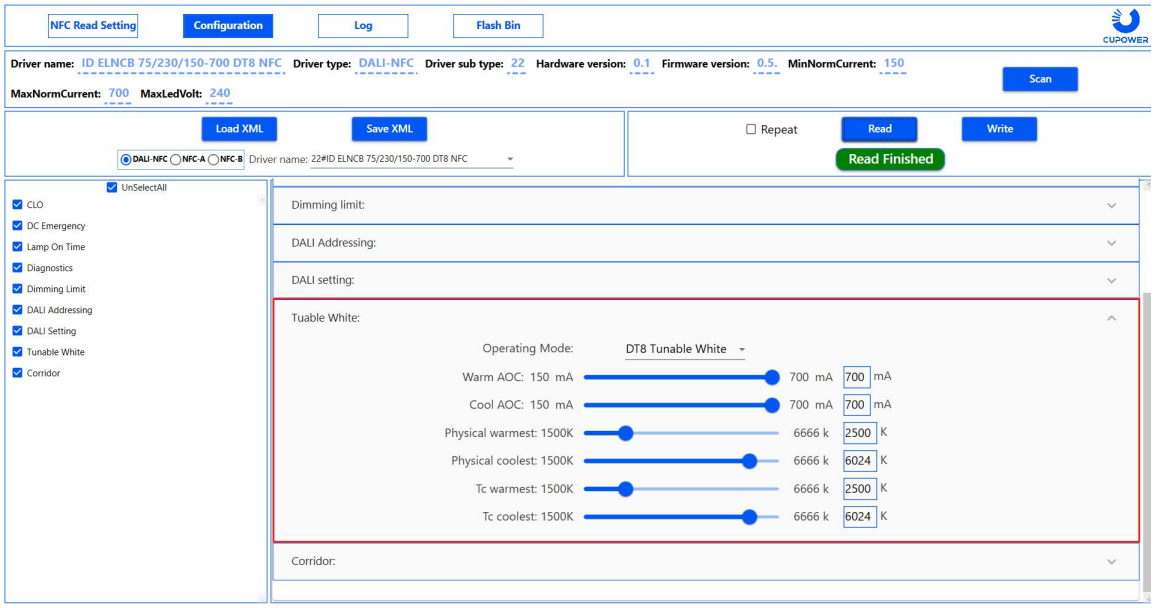
DT6 2 Synched Outputs (DT6 Single Address) Mode



DT6 2 Independent Outputs (DT6 Dual Address) Mode



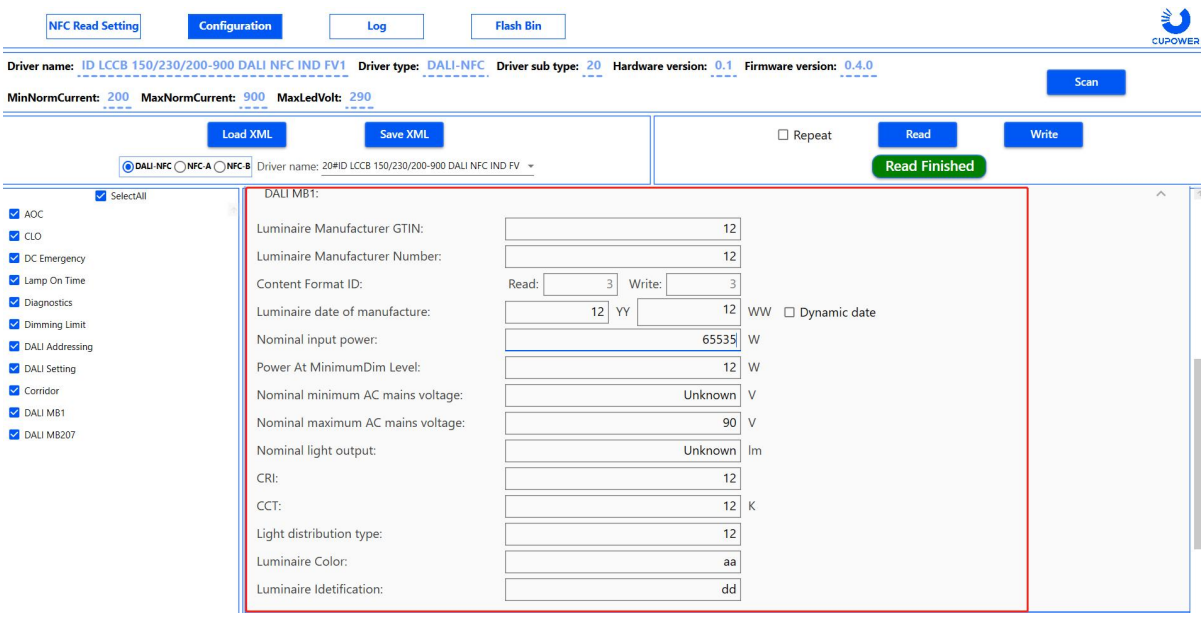
DT8 Tunable White mode



Note: Colour temperature parameters are exclusively configurable in DT8 Tunable White mode.

4.11 DALI MB1

The configuration screen is shown below:



This configuration involves setting up various parameters for the DALI MB1 memory bank, including:

Luminaire Manufacturer GTIN: Requires decimal input representing the Global Trade Item Number.

Luminaire Manufacturer Number: Decimal input specifying the manufacturer's identifier.

Content Format ID: A fixed value, typically set to 3, indicating the data format.

Luminaire Date of Manufacturer: Input should include the last two digits of the year and the current week number, allowing automatic retrieval of the current week of the year.

Nominal Input Power: Decimal input for the luminaire's rated power consumption.

Power At Minimum Dim Level: Specifies the power consumption at the lowest dimming level.

Nominal Minimum AC Mains Voltage: The lowest voltage at which the luminaire operates correctly, within a specific range or 65535 if not applicable.

Nominal Maximum AC Mains Voltage: The highest operational voltage for the luminaire, subject to similar constraints.

Nominal Light Output: Decimal input indicating the light output under standard conditions.

CRI (Colour Rendering Index): A value between 0 and 100 indicating the light's colour fidelity.

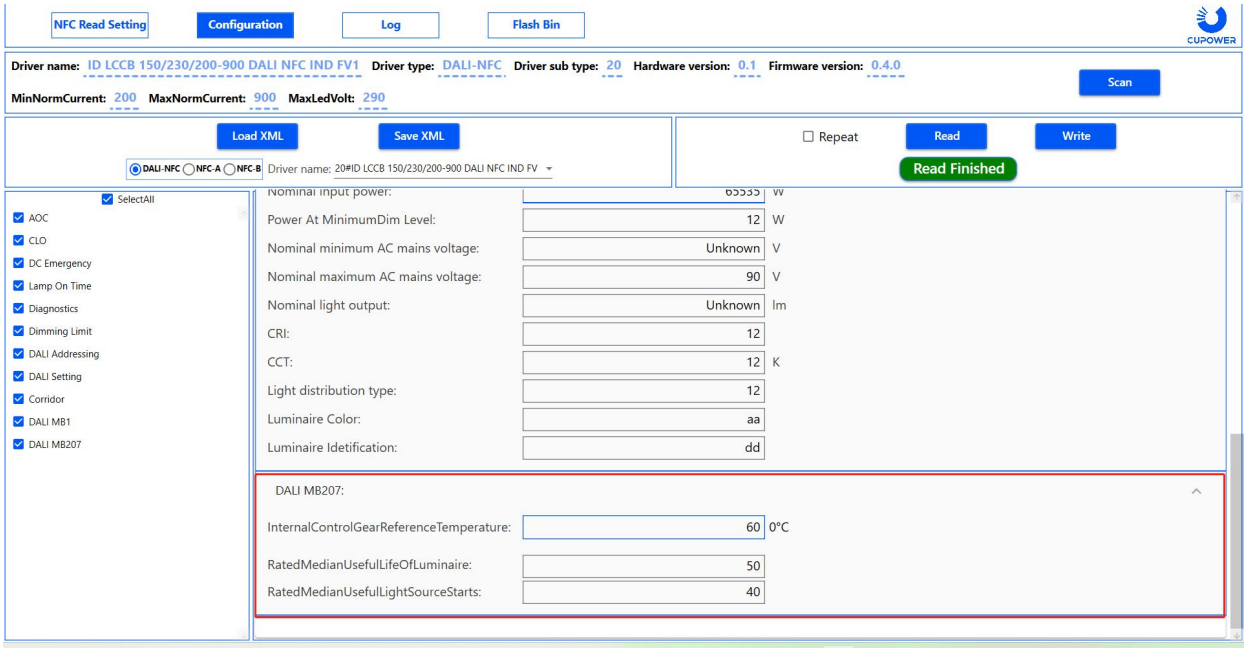
CCT (Correlated Colour Temperature): Specifies the light colour temperature, with a range or 65535 if not applicable.

Light Distribution Type: Identifies the luminaire's distribution pattern, with options or 255 if not relevant.

Luminaire Color: A string describing the luminaire's colour, up to 24 characters.
Luminaire Identification: A string for additional identification, up to 60 characters.

4.12 DALI MB207

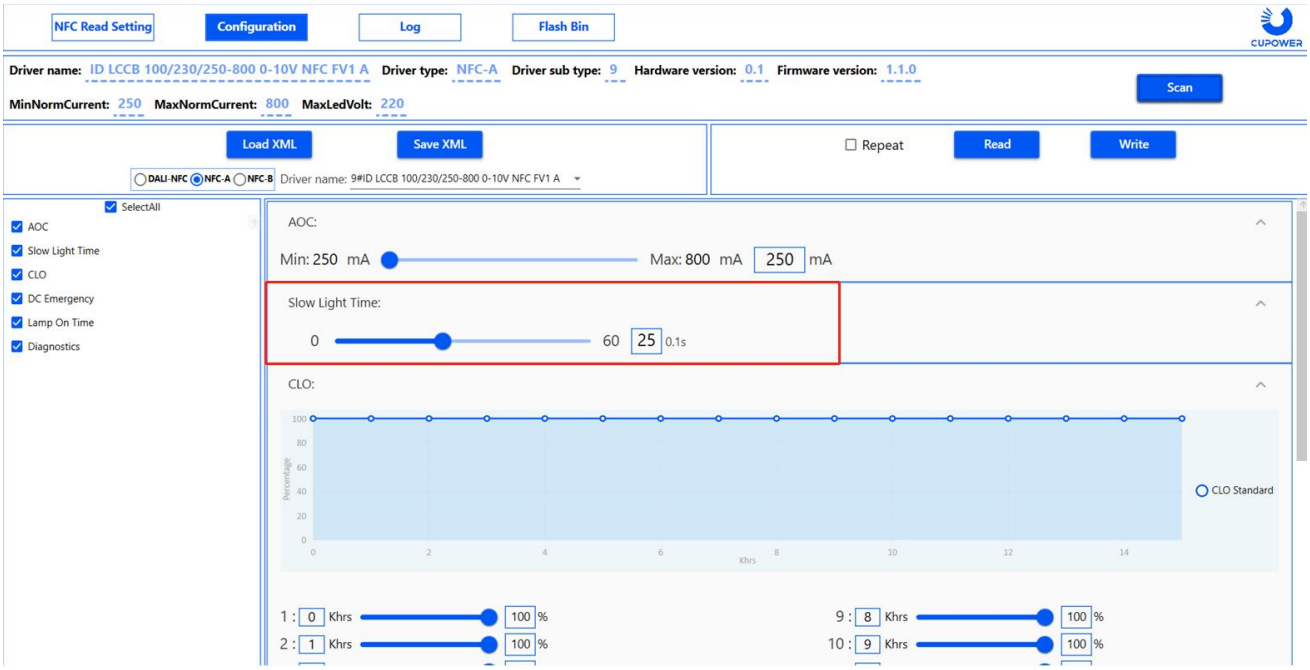
The configuration screen is shown below:



Configuration settings for the DALI MB207 memory bank include:
Internal Temperature of the Control Device: Decimal input representing the device's temperature, with a specific range or 255 if not applicable.
Service Life of the Lamp: Indicates the expected operational lifespan of the lamp in decimal form, within a given range or 255 if not applicable.
Number of Times the Lamp is Activated: Decimal input for the count of lamp activations, with a range or 65535 if not relevant.

4.13 Slow Light Time

This setting adjusts the startup delay for the drive power supply, allowing additional time for system preparations and reducing stress on the CPU and other hardware components during boot. This approach aims to expedite system access and enhance device responsiveness by:
Range: 0-6 seconds, with a minimum increment of 0.1 seconds, facilitating a smoother startup process.



5. Note

The ID CPR30-USB communicates with the driver at a distance of about 3cm, so unstable data transmission may occur when using it in the critical position, which will result in data confusion. Data confusion could be handled as follows:

MCU for GD32E230G8U6 driver: power on once after the data is messed up, it can be restored to the settings before the data is messed up; you can also import XML file to restore the data;

MCU is not the driver of GD32E230G8U6: Use the corresponding XML file to recover the data.

If there are other drivers of the same model, you can also take another sample of the same model to read the data once, and then write the parameters of this time directly into the driver of the data confusion.

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