User Manual

KNX-DALI-2 Gateway Configuration _V1.0

目 录

Chapter 1 Overview

KNX-DALI-2 Gateway Configuration (Hereinafter referred to as DCA)is a plugin of the ETS software for configuring DALI gateway, embedded in the application of DALI gateway, to conveniently address, commission, configure and upgrade, as well as monitoring for failure information on the DALI bus driver.

The manual mainly introduce about the overall framework, software functions and operations of DCA.

1.1 Function Overview

DCA is able to configure device control and parameter, group, scene etc. to the DALI device connecting on the channel through the DALI gateway.In addition, it can also address and modify the address of the DALI device.Therefore, after configuring function to the KNX/DALI gateway through the ETS software, DCA needs to be further configured to complete the functions. For example DALI group control, DALI scene control, global scene control and other functions in effect need to be configured through the DCA.

Function overview of DALI system configuration software are summarized as follows:

- **Import/Export configuration**
- **Initialize the DALI bus, assign address to DALI device**
- **Query device status on the DALI bus, read DALI device configuration**
- **Address adjustment for devices with DALI addresses programmed, modify the association of the ECG with the ballast address**
- **Reading or modifying the ballast parameter configuration**
- **Supporting switch, brightness, colour temperature, colour control operation for 64 DALI devices of the two channels**
- **Edit group assignments to DALI devices and specify associated groups**
- **DALI scene configuration, assign scenes and set brightness value, colour temperature and colour for each DALI device.**

- **Global scene configuration and testing**
- **Upgrading the DALI software functionality of the gateway**
- **Read the lamp or ballast failure status of the DALI device**

1.2 Software download and installation overview

Etsapp file is obtained from the manufacturer or the shop of the myknx account(search "KNX-DALI-2 Gateway Configuration"). Then, add APP in the lower right corner of ETS5. If there is an old version before, delete it and restart ETS5 to add a new version of APP. In the project configuration of DALI device, you can see that the editing interface of the database has a DCA menu after the APP is added successfully. Click to see the configuration interface of DCA.

Note: This function only supports to the version with ETS license, that is ETS dongle needs to be installed on the computer, including ETS5Lite, ETS5 Supplementary, ETS5 Professional、ETS6 Lite 、ETS6 Professional or higher version.

1.3 Operation Steps

The following steps are required for a newly installed project or a rectified project:

1.Trigger broadcast switch control by short-pressing the Test/Set button to test if any DALI devices are not connected properly.

2.Parameter configuration of the device through the ETS software, and download the configured parameters to the gateway.

Note： The device type set for the ECG in ETS must match the actual driver type being used; otherwise, some functions may not be controllable.

For example, if the driver address is 0 and the type is RGB driver, ECG1 should be configured as RGB type, otherwise the error content will be displayed on this interface.

3.Use the DCA tool to read the device status. Click the "Sync.DaliBus" operation button to read the device status.

If the device quantity, parameters, and their configurations are correct, the DALI bus initialization is not performed. If it is not correct, the device on the DALI bus needs to be initialized. There are 2 ways to initialize an operation:

①Configure the parameter “Test/Set button function via long press(>5s)” to “Init all device” via ETS, then long press the Test/Set button for more than 5s. The DALI gateway starts to initialize the device on the bus and assigns an address to the DALI device from 0 to 63.

②Click on the operation button “[All]init DALI device” on the DCA tool.

4.If the device type set by ECG in ETS is not consistent with the actual driver type, you can modify the correspondence between ECG and the driver address by using DCA tool, dragging the device grid or left double-clicking to enter the device detail page to modify.

5.Using the DCA tool to modify partial parameter configurations, such as scene allocation, group allocation, etc.

6.Deploying all configurations to the device.

If you do not follow the above steps, the DALI device may not perform the operation according to the preset brightness value.

Note: In the address allocation phase, if there is an incomplete allocation address, start the initialization without address allocation operation (by DCA tool). If address allocation still fail more than twice, then you need to start the DALI bus initialization operation (by DCA tool or long press the Test/set button on the device for more than 5 seconds), this operation may cause the DALI device addressed to occur change, you need to check the correspondence between the ECG and the driver address after configuration to ensure that the device type set by the ECG needs to be the same as the type of the actual driver, otherwise some of the functions will not be controlled.

Chapter 2 DCA Interface

2.1 DCA main interface

Open the device database, click the [DCA] option in the database edit menu, DCA main interface (Initial interface) as shown in Fig. 2.1.

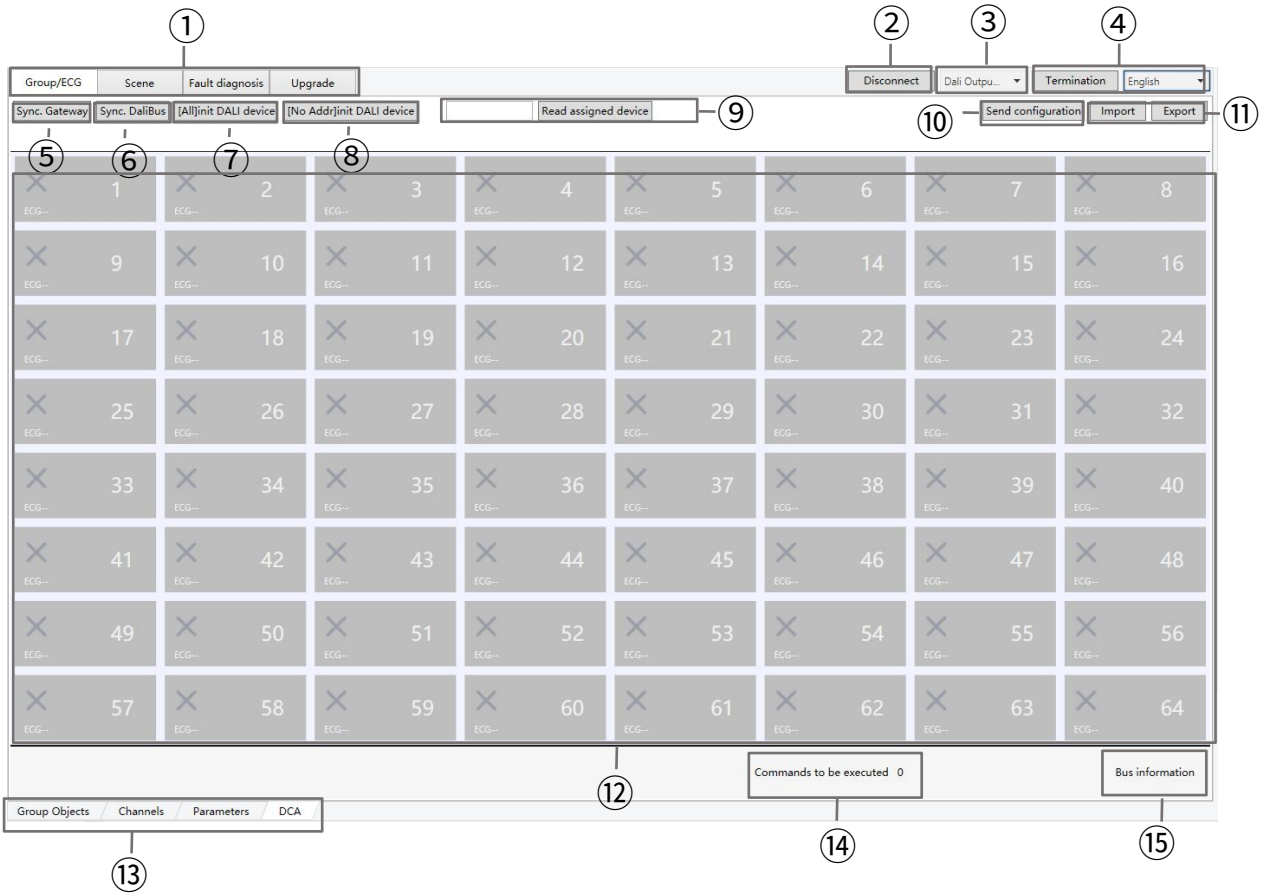


Fig.2.1 DCA main interface

①Click switch configuration Interface to Group/ECG, Scene, Fault diagnosis, and Upgrade interfaces. For details, see section 2.2-2.5.

②Click disconnect operation of the DALI gateway and DALI device, such as terminating operation during the process of reading the device status, this process will be interrupted; if terminating operation during the initialization of the bus, the initialization may fail.

Note: If there are too much data on the DALI bus or being too busy, terminating the operation should be taken into consideration.

③Click to select the channel and connect the gateway device.

④Click to switch the interface language to Chinese or English.

⑤Click to read the devices configuration saved on the gateway, including configuration of the DALI devices and configurations of groups, etc.

Note: If the gateway has not received the configuration downloaded by DCA when this operation is performed, the default configuration will be reported, which may not correspond to the actual situation.

⑥Click to read the configuration of DALI devices on the DALI bus directly.It is suitable for obtaining bus device information when you are configuring the DALI system for the first time.If it is a project that has already been issued with a DCA configuration, you can prioritize the use of the “Sync. Gateway” .

Note: If there are multiple devices on the channel, this operation will take a long time

⑦Assign DALI addresses to all DALI devices on the current channel.

Note: This operation will re-assign the address to the driver randomly, which will cause the association relationship between the driver and ECG to be disrupted, so please use it with caution.

⑧Only assign DALI address to the devices that have no address, this operation will not change the DALI address that has already assigned.

Note: If the address allocation is incomplete during address allocation, perform the " [No addr]init DALI device" operation. If the address allocation fails for more than two times, perform the "[All]init DALI device" operation.

⑨In the device list, select the address of a DALI device and click the "Read assigned device" to read all the information of the device from the DALI bus and display it to the software synchronously, such as device type, device configuration, scene configuration, etc.

⑩Click to send all devices and corresponding driver configurations to the gateway.

Note: Note: If the DCA has not read or configured the driver parameters, they are not sent by default here.

⑪ Import: Import the configuration of a DALI gateway. You can apply and modify the imported device by double-clicking on the device in the "Device/ECG" screen and selecting the device.

Export: After setting the configuration of a DALI gateway, user can export and save it.

⑫Display all DALI devices. For details, see section 2.2.1-2.2.2.

⑬Display the database edit menu of DALI device.

⑭Display the command waiting for the execution on the DALI bus.

⑮Display the bus voltage/current/ Dali Master version.

2.2 Device/Group

After synchronizing the DALI bus, the correlation between the ECG and the driver address is displayed on this page. This is shown in Figure 2.2. The specific operations are as follows:

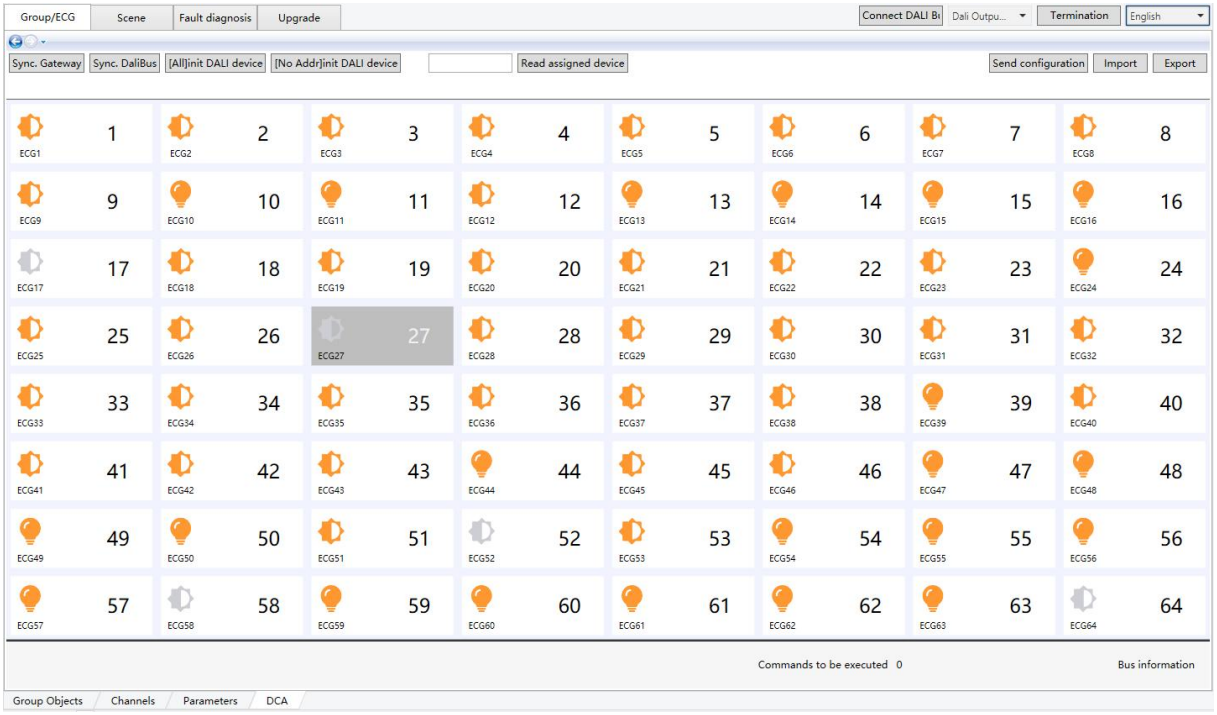


Fig.2.2(1) Group/ECG

（1）The card displays the correlation between ECG configuration and driver address, and displays the icon of the corresponding device type and the device address to the card with the corresponding number.

①Displays the device type icon (the icon is different for different device types).

②Displays the ECG number in the ETS.

③Displays the device number.

Note: Device number = driver address + 1

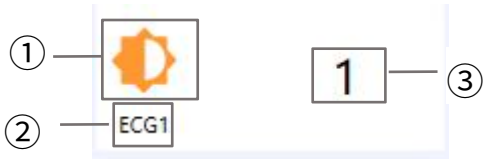


Fig.2.2(2)

Note： The ECG device type set in ETS needs to be consistent with the type of the actual driver, otherwise some functions will not be controlled.

For example, if the driver address is 39 and the type is color temperature, ECG40 should be configured as color temperature type, otherwise display "The driver type Color temperature lamp is inconsistent with the ECG Ordinary lamp in the database" when hovering over a device grid.,as shown in Fig. 2.2(3)

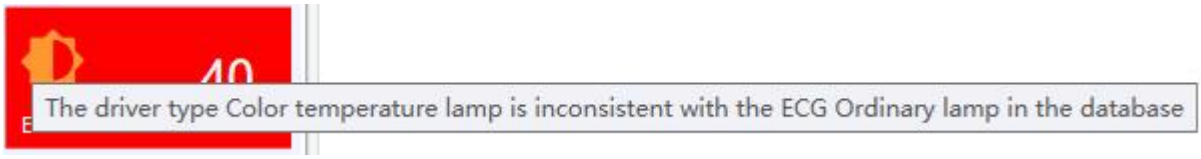


Fig.2.2(3)

（2） Press and hold the device grid, drag it to another device grid and release it to replace the relationship. After the replacement, DCA tool automatically determines whether the relationship is failure or not and gives you the corresponding prompts.

Note： Drag the device grid to associate ECG configurations to other driver addresses, the driver number defaults 1~64, only modify the ECG number associated with different addresses.

Note： The device grid status indication is as follows

①Normal state-Turn on the light, as shown in Fig. 2.2(4), if the light is turned off the icon is displayed in gray, as shown in Fig. 2.2(5).

Fig.2.2(4)Turn on the light

Fig.2.2(5)Turn off the light

②Failure state-Inconsistency in equipment type

Display“The driver type Color temperature lamp is inconsistent with the ECG Ordinary lamp in the database”when hovering over a device grid.

③Failure state-Driver is not associated with a ECG

Display“The driver is not associated with a ECG”when hovering over a device grid.

④Failure state-ECG is not associated with a drive.

Display“The ECG is not associated with a driver”when hovering over a device grid.

⑤Failure state-The corresponding driver is not configured.

The ECG is not associated with the address and the driver is not configured for the device at the corresponding address.

⑥Failure state-Drive failure，modify the association between the ECG and the driver address.

Display “Drive failure” when hovering over a device grid.

（3）By right-clicking on the device grid, it is possible to send commands for switch on/off, brightness, colour temperature, or colour (displayed according to the device type). For details, see section 2.2.1.1 to 2.2.1.7.

（4）By double-clicking the device grid with the left mouse button, you can access the detailed page of the device grid, where you can view the device's address and type, configuration group scene, device attributes , and send corresponding control commands.For details, see section 2.2.1-2.2.2.

Note：1.If the driver is not associated with a ECG, unable to access the detailed page of the device grid.

2. If the ECG is not associated with a driver, enable to access the detailed page of the device grid and directly control the corresponding driver device through the DALI address.

2.2.1 device grid

By right-clicking on the device grid, you can select switch brightness, colour temperature, colour and other device attributes to control. Different devices can control different attributes, if the device does not support colour, the colour will not be displayed, other attributes are the same.

The detail operations are as follows:

2.2.1.1 Switch

By right-clicking on the device grid, you can turn on/off the light. The icon will display the corresponding status of the light, as shown in Fig. 2.2.1.2(1), Fig. 2.2.1.2(2).

Fig.2.2.1.1(1)Turn on the light

Fig.2.2.1.1(2)Turn off the light

2.2.1.2 Brightness

By right-clicking on the device grid to adjust the brightness,as shown in Fig. 2.2.1.2(1).Hover the mouse over the corresponding device grid to display the current brightness value, as shown in Fig. 2.2.1.2(2).

Fig.2.2.1.2(1) Adjust the brightness

Fig.2.2.1.2(2) Brightness

①Adjust the brightness percentage by sliding this slider.

②Click on the icon to increase/decrease the brightness value.

③Used to display the current brightness value, and can also enter the adjusted brightness value.

④Click to send the current brightness value to the device.

2.2.1.3 colour temperature

By right-clicking on the device grid to adjust the colour temperature,as shown in Fig. 2.2.1.3(1).Hover the mouse over the corresponding device grid to display the current colour temperature value, as shown in Fig. 2.2.1.3(2).

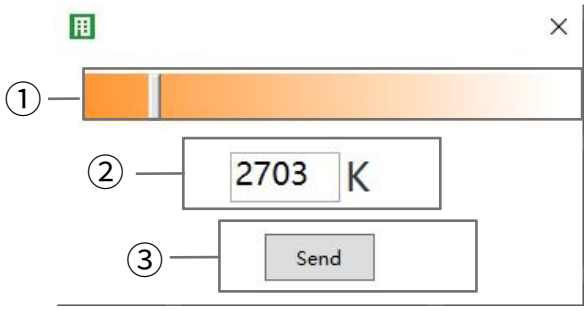


Fig.2.2.1.3(1) Adjust the colour temperature

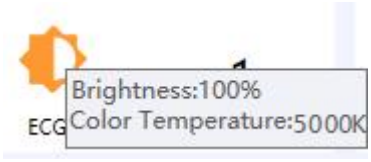


Fig.2.2.1.3(2) colour temperature value

①Slide the slider to adjust the colour temperature.

②Used to display the current colour temperature value, and can also enter the adjusted colour temperature value.

③Click to send the current brightness value to the device.

2.2.1.4 RGB

By right-clicking on the device grid to adjust the RGB,as shown in Fig. 2.2.1.4(1).Hover the mouse over the corresponding device grid to display the current RGB value, as shown in Fig. 2.2.1.4(2).

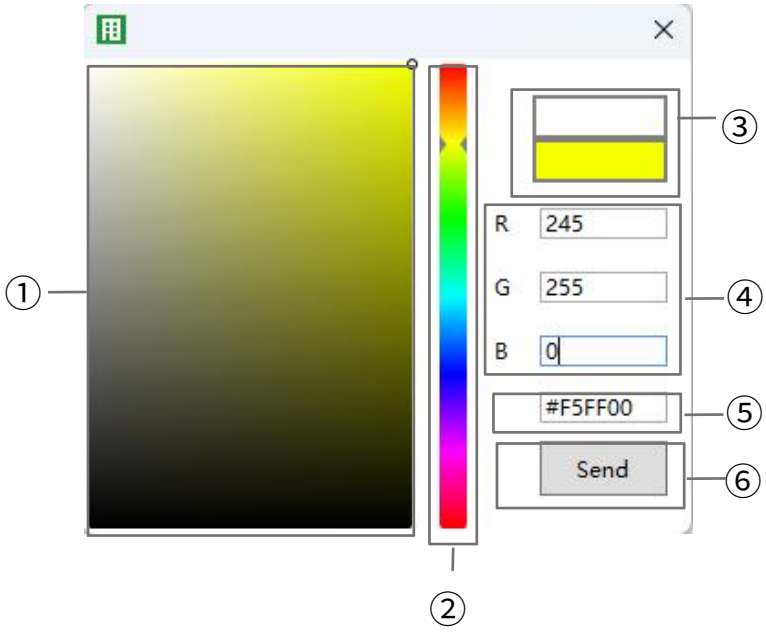


Fig.2.2.1.4(1) Adjust the RGB

Fig.2.2.1.4(2) RGB value

①Click on the colour palette to select a color.

②Slide the slider to adjust the colour.

③Displays the current color effect image.

④Enter the RGB value to adjust the colour.

⑤Used to display the current colour value, and can also enter the adjusted colour value.

⑥Click to send the current colour value to the device.

2.2.1.5 RGBW

By right-clicking on the device grid to adjust the RGBW,as shown in Fig. 2.2.1.5(1).Hover the mouse over the corresponding device grid to display the current RGBW value, as shown in Fig. 2.2.1.5(2).

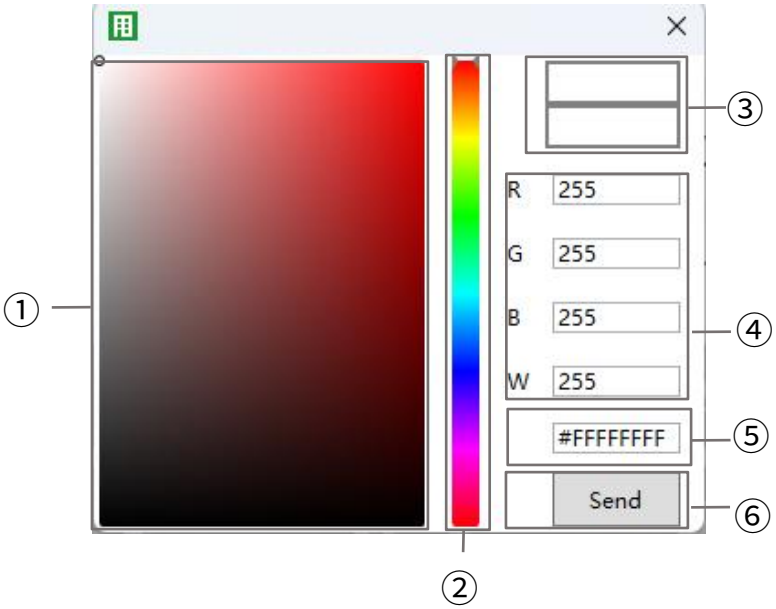


Fig.2.2.1.5(1) Adjust the RGBW

Fig.2.2.1.5(2) RGBW value

①Click on the colour palette to select a color.

②Slide the slider to adjust the colour.

③Displays the current color effect image.

④Enter the RGBW value to adjust the colour.

⑤Used to display the current colour value, and can also enter the adjusted colour value.

⑥Click to send the current colour value to the device.

2.2.1.6 XY

By right-clicking on the device grid to adjust the XY,as shown in Fig. 2.2.1.6(1).Hover the mouse over the corresponding device grid to display the current XY value, as shown in Fig. 2.2.1.6(2).

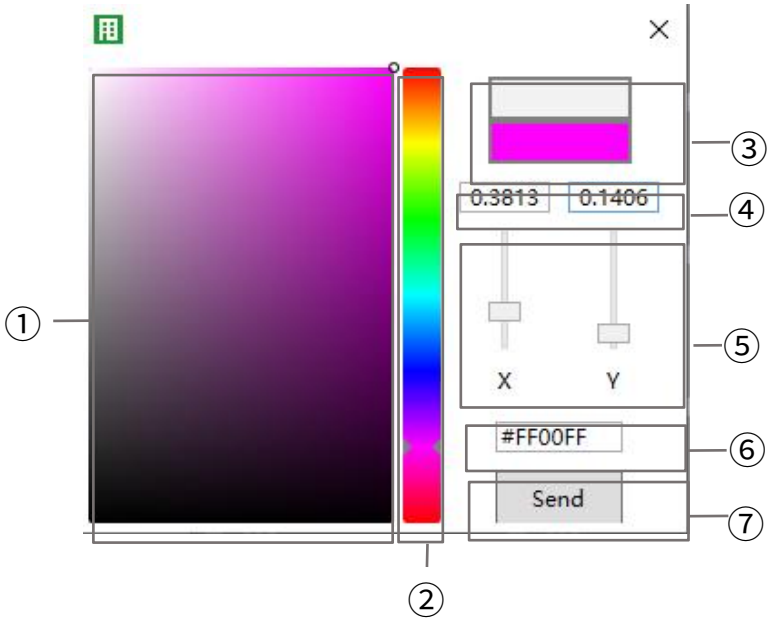


Fig.2.2.1.6(1) Adjust the XY

Fig.2.2.1.6(2) XY value

①Click on the colour palette to select a color.

②Slide the slider to adjust the colour.

③Displays the current color effect image.

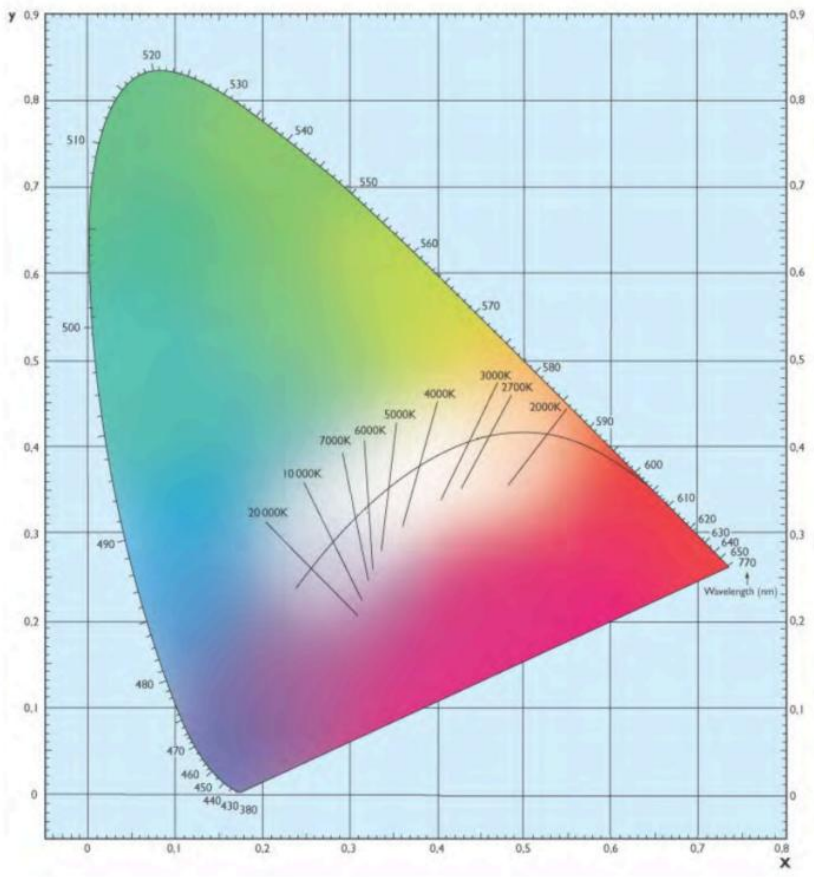
④Used to display the current XY value, and can also enter the adjusted XY value.

⑤Slide the slider to adjust the XY value.

⑥Display the current colour value, enter the color value is invalid.

⑦Click to send the current colour value to the device.

Note： XY colour value is not in the colour range then the control value are invalid, such as 0.01/0.01.


y
x
Wavelength (nm)
520
530
540
550
560
570
580
590
600
610
620
630
640
650
770
510
500
490
480
470
460
450
440
430
380
3000K
2700K
2000K
4000K
5000K
6000K
7000K
10000K
20000K

2.2.2 Detailed page of the device grid

By double-clicking the device icon with the left mouse button, you can access the detailed page of the device grid, where you can view the device's address and type, configuration group scene, device attributes, and send corresponding control commands, as shown in Fig.2.2.2(1)、Fig.2.2.2(2).

Different devices can control different attributes, if the device does not support colour, the colour will not be displayed, other attributes are the same.

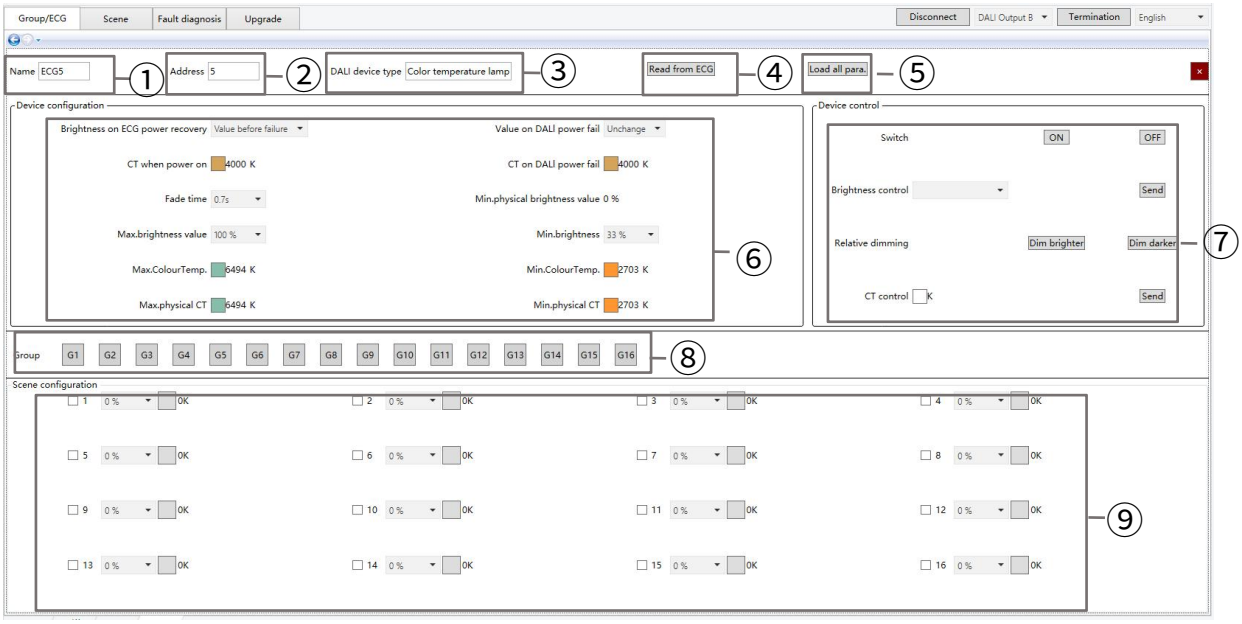


Fig.2.2.2(1) colour temperature

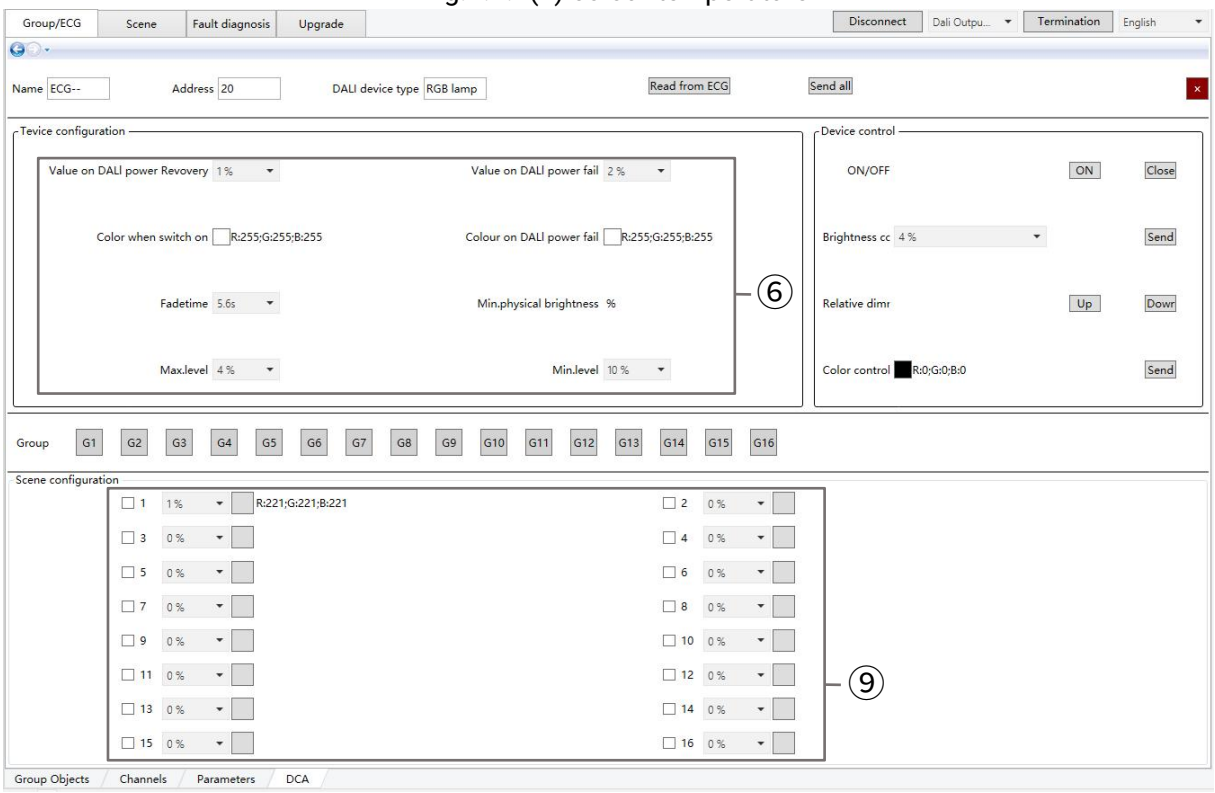


Fig.2.2.2(2) RGB

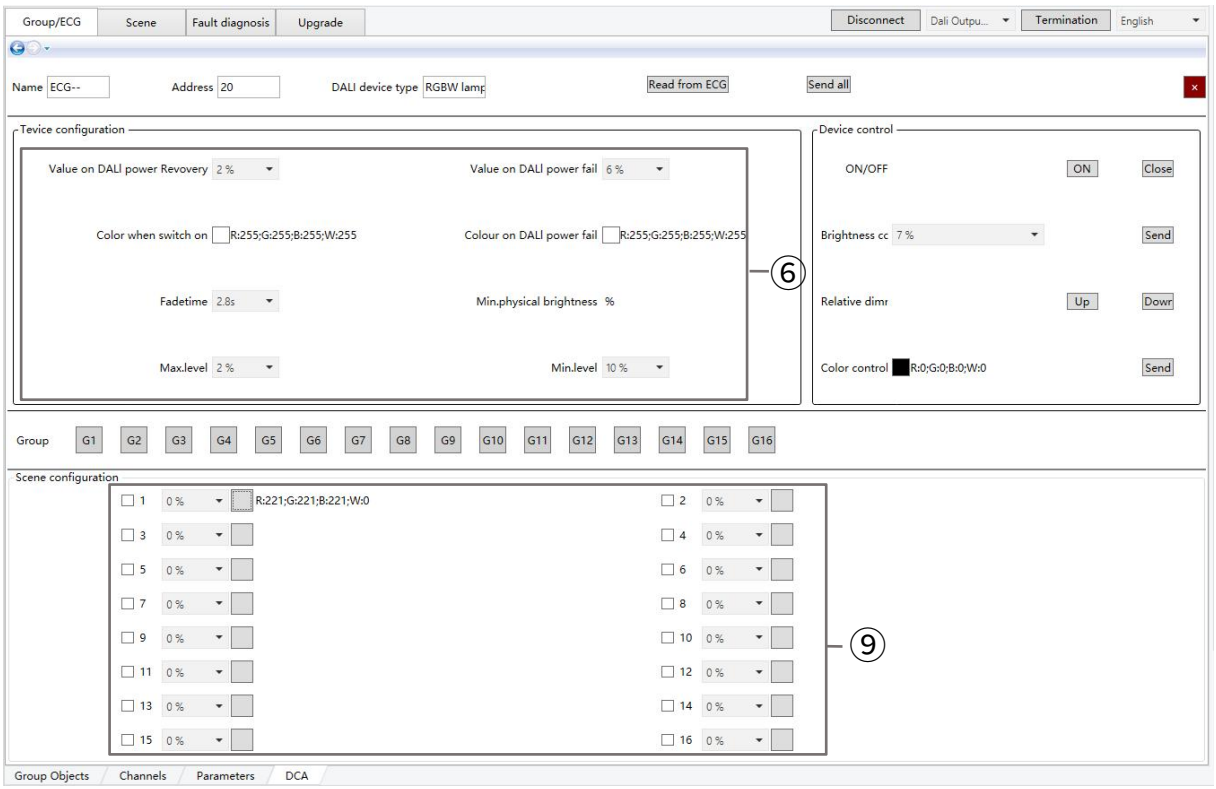


Fig.2.2.2(3) RGBW

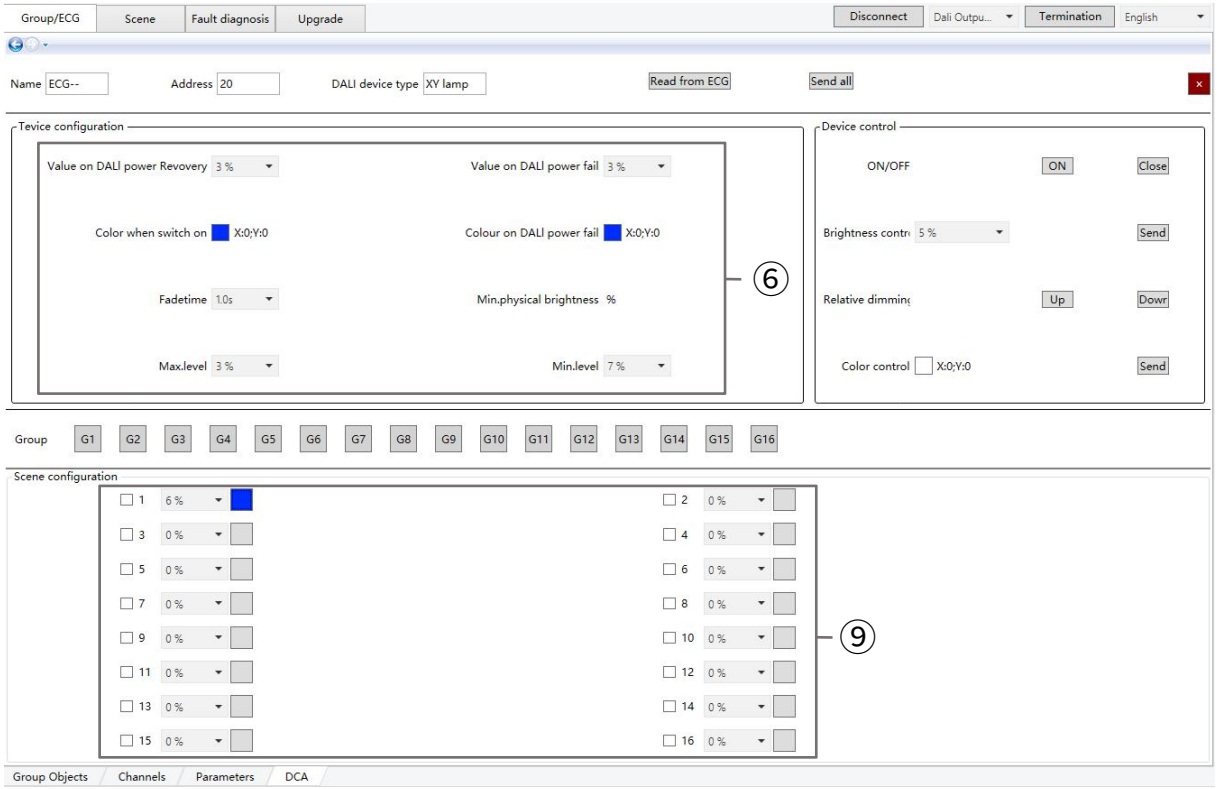


Fig.2.2.2(4) XY

①Displays the name of the selected device via ETS.

②Displays the address of the selected device, which can be modified, but not duplicate, otherwise it cannot be send, and the prompt appears as in Fig. 2.2.2(2).

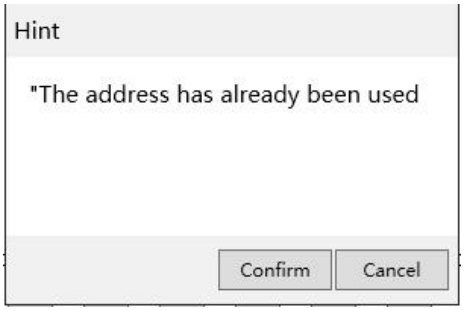


Fig.2.2.2(2)

③Displays the type of the selected device

④Read all the information of the selected device from the ECG and synchronize it to be displayed in the DCA, such as device type, device configuration, belonging group, and scene configuration.

⑤Send all device configuration, groups and scenes to the DALI device.

⑥Device configuration（**displayed according to the device type**）：

Brightness on ECG power recovery：The brightness value that the driver executes when the ECG power recovery.

Value on DALI power fail：The brightness value that the driver executes when the DALI communication of the DALI driver is disconnected.

CT when power on：The colour temperature value executed by the driver when the DALI communication of the DALI driver is disconnected and then reconnected.Option:1000-10000K

CT on DALI power fail：The colour temperature value that the driver executes when the DALI communication of the DALI driver is disconnected.Option:1000-10000K

Colour when switch on：The colour value executed by the driver when the DALI communication of the DALI driver is disconnected and then reconnected. X/Y Option:0-1、R/G/B/W Option:0-255.

Colour on DALI power fail：The colour value that the driver executes when the DALI communication of the DALI driver is disconnected. X/Y Option:0-1、R/G/B/W Option:0-255.

Fade time：The fade time for adjust brightness, colour temperature and colour by the driver.

Min. physical brightness value：Sets the minimum physical brightness value that the driver can execute, which refers to the minimum brightness value to activate the lamp, is only available for reading and cannot be send.

Maximum brightness value：Set the maximum brightness value that can be executed by the driver, which refers to the maximum brightness value controllable by the KNX-DALI-2 Gateway for lamps.When the driver receives the out-of-range value, it will execute the corresponding brightness according to its own logic, which is usually the maximum value.

Minimum brightness value：Set the minimum brightness value (related to the minimum physical brightness) that can be executed by the driver, which refers to the minimum brightness value controllable by the KNX-DALI-2 Gateway for lamps. When the driver receives the out-of-range value, it will execute the corresponding brightness according to its own logic, which is usually the minimum value.

Max. colour Temp.：Set the maximum colour temperature that can be executed by the driver, which refers to the maximum colour temperature value controllable by the KNX-DALI-2 Gateway for lamps.

Min. colour Temp.：Set the minimum colour temperature that can be executed by the driver, which refers to the minimum colour temperature value controllable by the KNX-DALI-2 Gateway for lamps.

Maximum physical CT：Set the maximum physical colour temperature that can be executed by the driver, which refers to the maximumcolour temperature value of the lamps itself, typically the colour temperature of cool white LEDs.

Minimum physical CT：Set the minimum physical colour temperature that can be executed by the driver, which refers to the minimum colour temperature value of the lamps itself, typically the colour temperature of warm white LEDs.

⑦Device control：The DCA triggers corresponding control commands, which are then directly sent to the driver via the gateway, enabling control over the driver's switch, brightness, and colour temperature.

⑧Group：DALI system defaults 16 groups, each device can belong to 16 groups, click the name of the corresponding group to assign the current device to the group, click again to cancel the group.

Note：If the device colour type is different from the group colour type, then the device cannot be added to the group and the group icon is grayed out.

⑨Scene configuration（**displayed according to the device type**）：Displays the scene configuration of the device, a total of 16 DALI scenes can be configured, the brightness, colour temperature and colour value of each scene can be preset, and the KNX scene number corresponding to the scene is configured by the ETS.

Check to enable this preset scene, when the DALI bus receives the DALI scene number, the driver will execute the preset state corresponding to the scene number, otherwise no operation will be executed.

2.3 Scene

Scene is global scene where the user can recall ECGs or groups as execution targets and set the scenario target state for them. When the gateway receives a KNX scene control telegram sent on the bus, it performs the corresponding operation.

In the global scene, you can add devices or groups to the scene and set the target brightness, colour temperature and colour for each device/group, which makes the control more free and flexible, as shown in Fig. 2.3(1).

The detail operations are as follows:

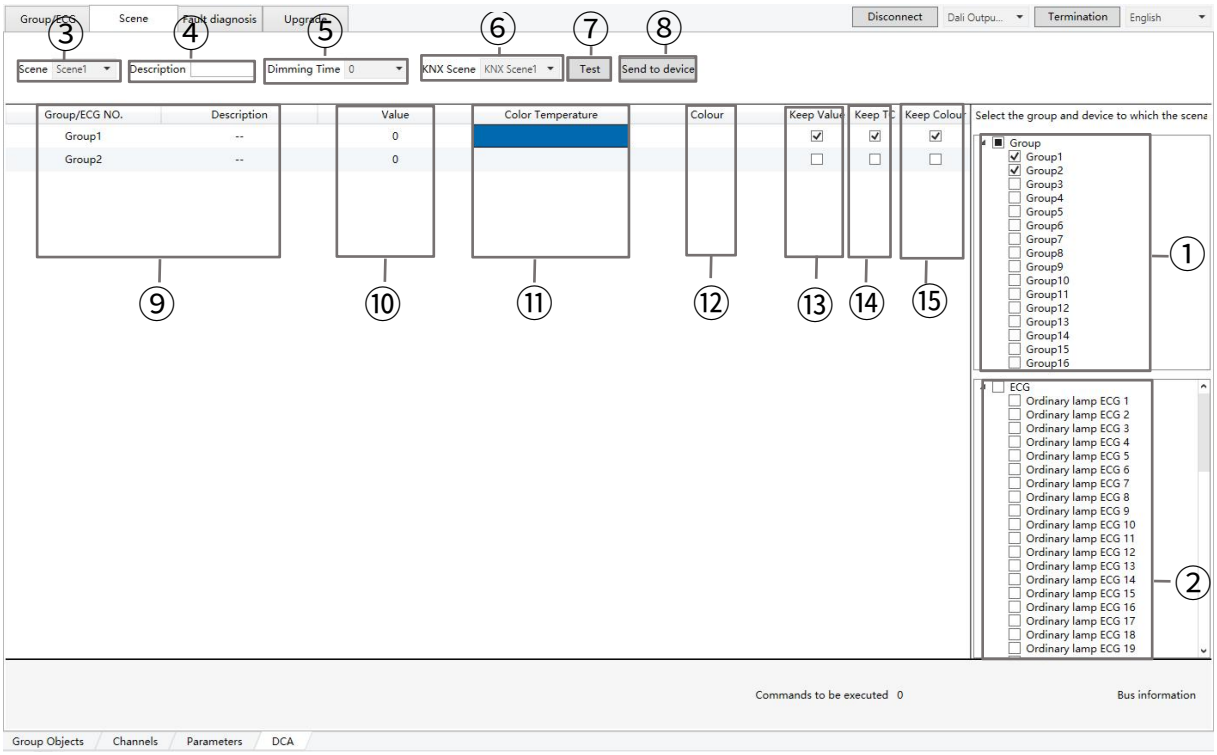


Fig.2.3(1) Scene

①Group：Display all groups, click to select the group to which the scenario belong, click again to deselect.

②ECG：Displays all devices reported by the gateway, click to select the device to which the scenario belong, click again to deselect.

③Scene：Select the corresponding number of the current scene, a total of 16 scenes can be selected, up to 16 scenes can be configured.

④Description：Click to enter a description of this scene, up to 18 bytes in length.

⑤Dimming time：Set the fade time from current value to target value in scene control, options:0~255s.

⑥KNX Scene：Select the KNX scene number that triggers this scene, 64 scene numbers are available. When the gateway receives the corresponding KNX scene number, the corresponding scene is executed.

⑦Test：Click to test all current scene configuration to the gateway and execute the corresponding device/group to the corresponding state.

⑧Send to device：Click to send all current scene configuration to the gateway.

⑨Group/ECG NO.：Click to select the group or device to which the scene belongs.

Description：Corresponding descriptions are displayed according to the selected groups and devices, which are set by the ETS and cannot be modified.

⑩Value: Double click the mouse, it appears as shown in Figure 2.3(2). Set the brightness value, options: 0%~100%

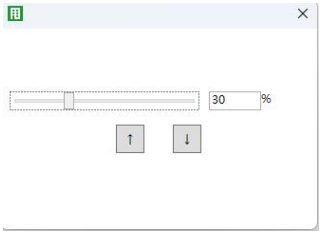


Fig.2.3(2) Brightness

⑪colour Temperature：According to the attributes of the device feedback, determine whether the colour temperature setting is supported, if it is supported, double-click to set the target colour temperature of the device or group, and the colour temperature range is configured according to the ETS, as shown in Fig. 2.2.2(3). Otherwise, display“N/A”.

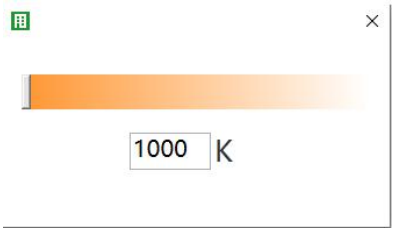
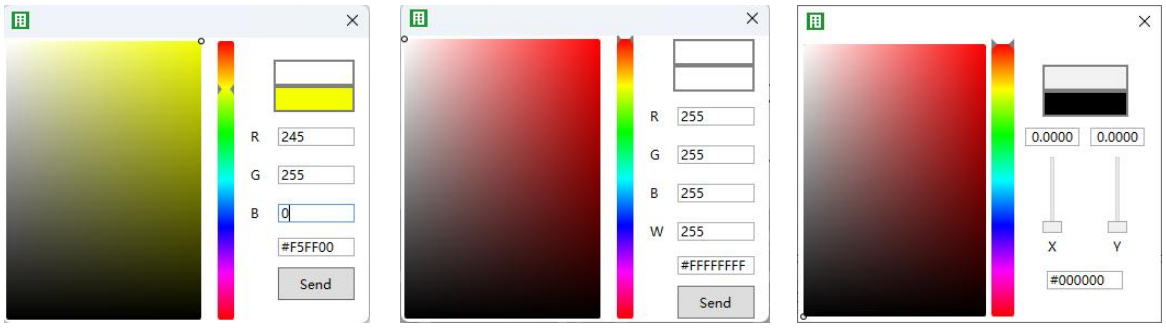


Fig.2.3(3) colour temperature

⑫colour：According to the attributes of the device feedback, determine whether the colour setting is supported, if it is supported, double-click to set the target colour of the device or group,as shown in Fig. 2.2.2(4). Otherwise, display“N/A”.



RGB RGBW XY

Fig.2.3(5) colour

⑬Keep Value、Keep TC、Keep colour：Checking indicates that the corresponding brightness, colour temperature, and colour values of this device/group will not be sent in this scene, keeping the state before scene control.

Note：It is not allowed to check three options at the same time.

2.4 Fault diagnosis

Across the DALI bus, according the type of device failure, it is categorized into lamp faults and ECG faults.The DCA tool can be used to view the total number of devices, number of faults, failure rate, total number of failures, total failure rate, the status of each ECG/lamp and export the data, as shown in Fig. 2.4 .

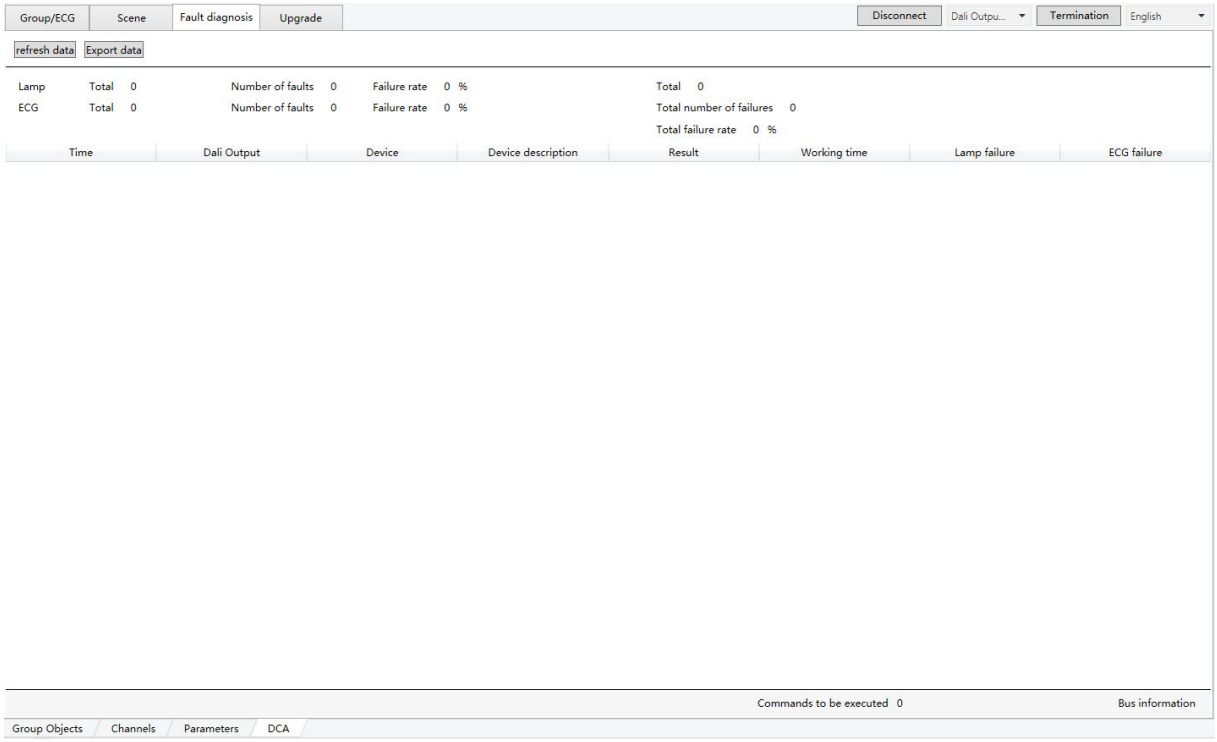


Fig.2.4 Fault diagnosis

2.5 Upgrade

Enter the upgrade page,you can not only automatically read the DALI firmware version information of the currently connected device, as shown in Figure 2.5(1). but also you can upgrade the DALI firmware version.The specific operations are as follows:

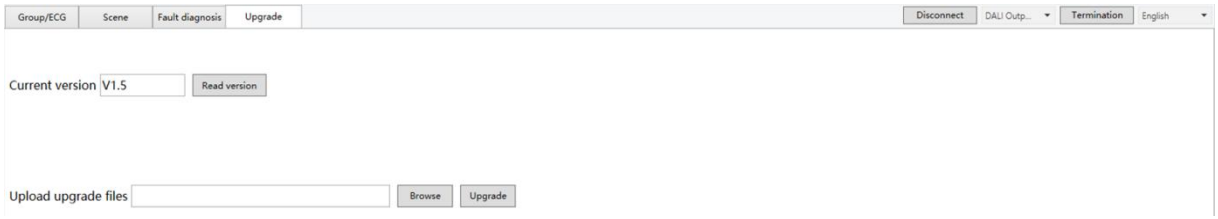


Fig.2.5(1) Read the DALI firmware version

First, click “Browse” to select the upgrade file, the file suffix is bin, and then click “upgrade”. The upgrade progress will be displayed, as shown in Figure 2.5(2), when the upgrade is completed, it prompts “Upgrade file issuance is complete”.

Note： During the upgrade process, you can not do other operations, click “Cancel” to terminate the upgrade process.

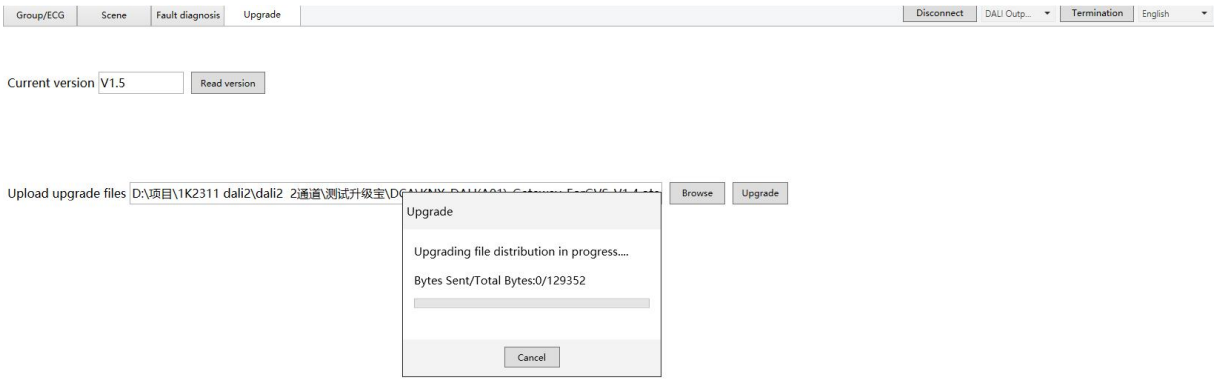


Fig.2.5(2) Upgrade

Chapter 3 DALI bus commission steps

This chapter mainly introduces the operation flow and precautions of DALI bus commission through DCA. For a newly installed project, the commission steps are as follows:

1.Ensure that the ETS running on the computer is the version with the license certificate (the available ETS dongle has been installed), and the DCA .etsapp file is correctly installed into the ETS.

2.Establish the DALI project in ETS, configure the parameters of the KNX-DALI-2 Gateway, and confirm the gateway operates normally.

Note： The device type set for the ECG in ETS must match the actual driver type being used; otherwise, some functions may not be controllable.

For example, if the driver address is 0 and the type is RGB driver, ECG1 should be configured as RGB type, otherwise the error content will be displayed on this interface.

3.Enter the DCA editing interface, select commission channel and read the device status.

There are 3 ways to read the device status as follows:

Click on the operation button “[All]init DALI device” on the DCA tool.

①Clicking on the operation button “Sync. DaliBus” on the DCA tool is suitable for obtaining bus device information when you are configuring the DALI system for the first time.

②Click on the operation button “Sync.Gateway” on the DCA tool is suitable for read the devices configuration saved in the gateway, including configuration of the DALI devices and configurations of groups, etc.

③A single device state can be read on the Group/ECG page,as shown in Fig.1.

Fig.1

If the device quantity, parameters, and their configurations are correct, the DALI bus initialization is not performed. If it is not correct, the device on the DALI bus needs to be initialized. There are 2 ways to initialize an operation:

①Configure the parameter “Test/Set button function via long press(>5s)” to “Init all device” via ETS, the long press the Test/Set button for more than five seconds. The DALI gateway starts to

initialize the device on the bus and assigns an address to the DALI device from 0 to 63.

②Click on the operation button “[All]init DALI device” on the DCA tool.

Note: Add DALI device to a configured project, if the added DALI device is installed for the first time, you can directly add it to the project. After adding the project, Click on the operation button “[No Addr]init DALI device”, adjust its DALI address.

If the device with DALI address is added and the address conflicts with a DALI device in the project, it needs to perform the operation of [[All]init DALI device], which will cause the previous adjusted DALI address to change. Therefore, it is recommended that the newly added DALI device should be added to the project after it is separately allocated the unused address or delete the original address .

4.If the device type set by ECG in ETS is not consistent with the actual driver type, you can modify the correspondence between ECG and the driver address by using DCA tool, dragging the device grid or left double-clicking to enter the device detail page to modify.

5.After completing step 4, configuration of DALI device such as scene configuration, parameter configuration and group assignment, etc. can be modified. After completing the modification, save it to device.

6.Export configuration, save the configuration of the gateway.