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DALI MASTER CONFIGURATION SOFTWARE INSTRUCTION

1. SOFTWARE FUNCTIONALITY INTRODUCTION

The Functionality Structure of the Software is as follow:

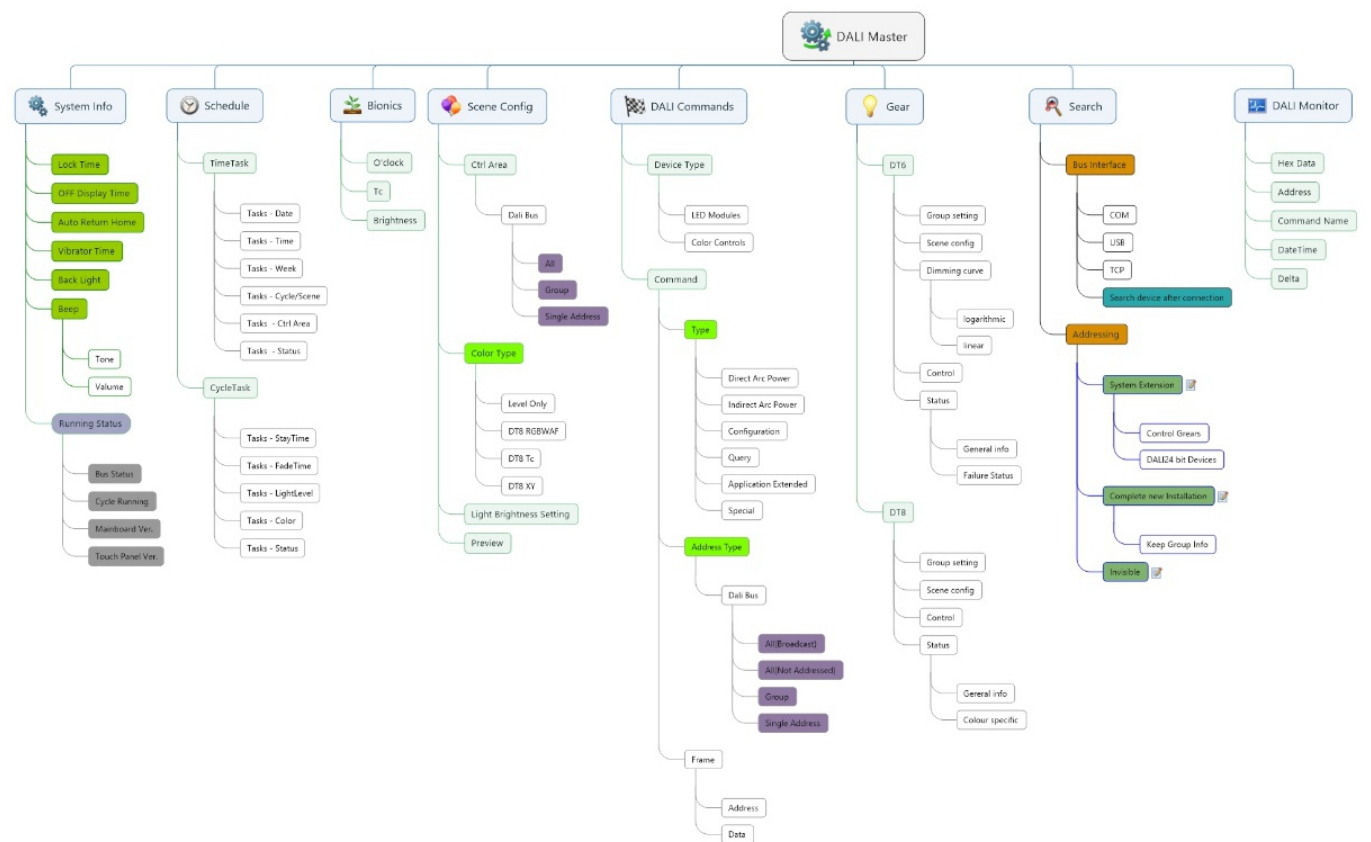


Figure 1: DALI Configuration Tool Functionality Structure Figure

1.1 Data Loading:

Device Data Loading:

Directly read from the master controller or load cache.

Master Data Loading:

Besides directly reading from the master or loading cache, the user can also do parameter configuration by importing configuration file.

1.2 Data Categories & Applications:

According to actual applications, the data categories of this software can be sorted as control data, configuration data, status data.

Control Data:

The direct control or other operations of the master to the control gears, such as ON(MAX), MIN or OFF, will occur data interaction, these data are control data, control data is invisible and different from other two data types.

Configuration Data:

The configuration parameters to the master, the configuration parameters to different types DALI device, and the all configuration parameters that can be edited in the window of this software and written into DALI devices are all configuration data.

Status Data:

Status data is a type of configuration data, this type of data is used to display the response data, and it can not be edited.

1.3 Notes:

The software must open the serial communication port first, then it can execute operations such as read, write to the DALI devices.

Note: The serial communication port baud rate needs to be set to 115200.

2 SOFTWARE OPERATION INSTRUCTION

2.1 Functionality Home Page

After the software is running, it enters the home page, as shown in Figure 2:

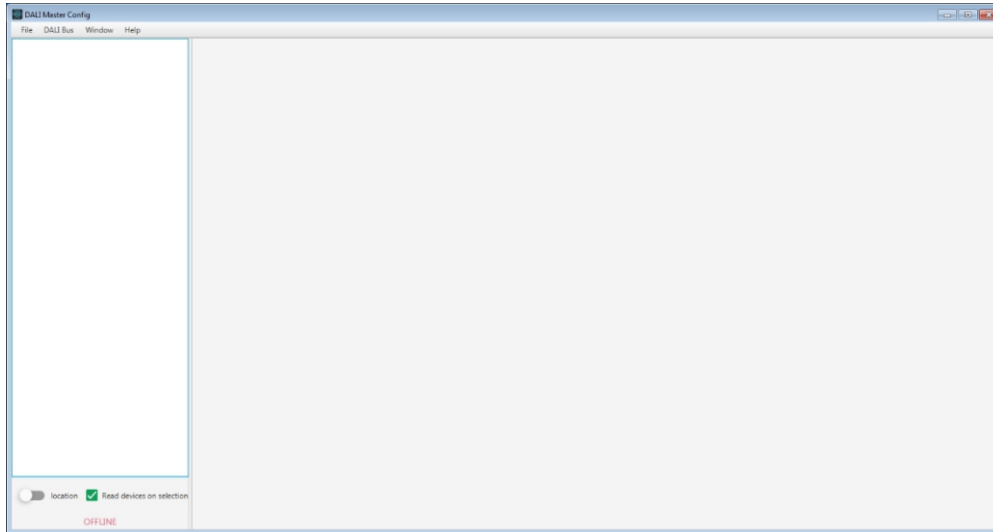


Figure 2: Home Page

2.2 Operation Instruction

2.2.1 Serial Port Connection Communication

Please make sure that the CH340 driver for the USB to Serial Communication Port Converter has already been installed, otherwise please refer to the part "Install CH340 Driver" to install the driver first.

As long as the software needs to communicate with DALI master, the serial connection port shall be opened so that data interaction can be executed, click "DALI Bus" at the title bar of the home page, then choose bus port, choose at the pop-up window as shown in Figure 3:

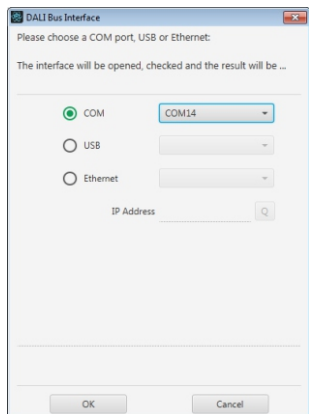


Figure 3: Select Serial Connection Port

Click "OK", then the software starts to connect the serial connection port, as shown in Figure 4:

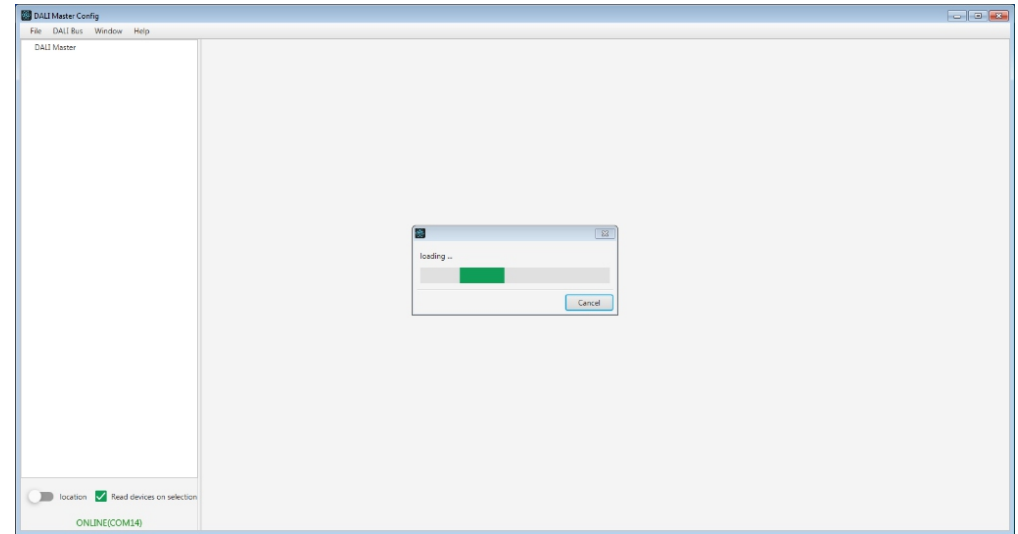


Figure 4: Connect the serial connection port

After connecting the serial port successfully, "Online + Serial Port Number information" will be displayed at the lower left corner of the window, there should be flashing indication if connecting fails or suspends as shown in Figure 5:

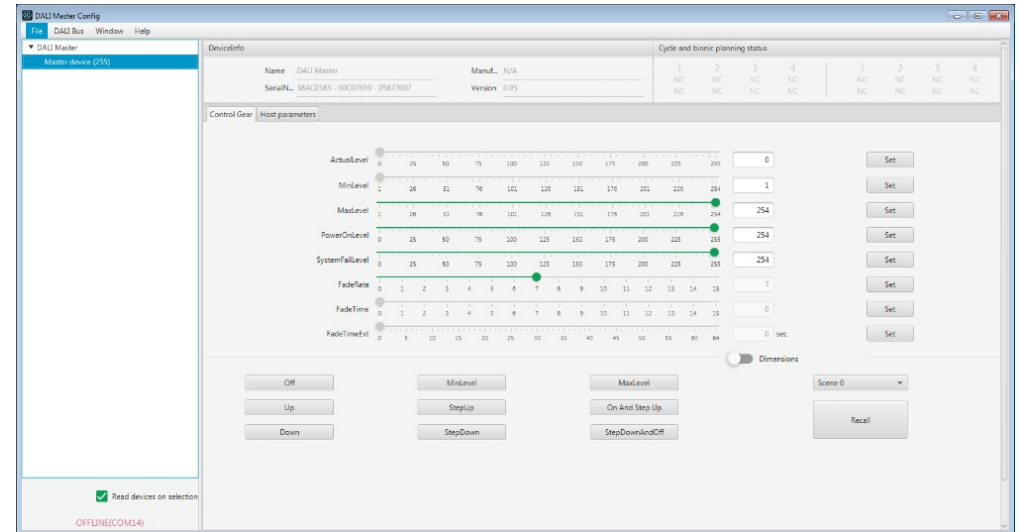


Figure 5: Connecting Suspends or Fails

2.2.2 Device Addressing

Select the menu "DALI bus", then select "Addressing" to open the window of addressing function as shown in Figure 6:

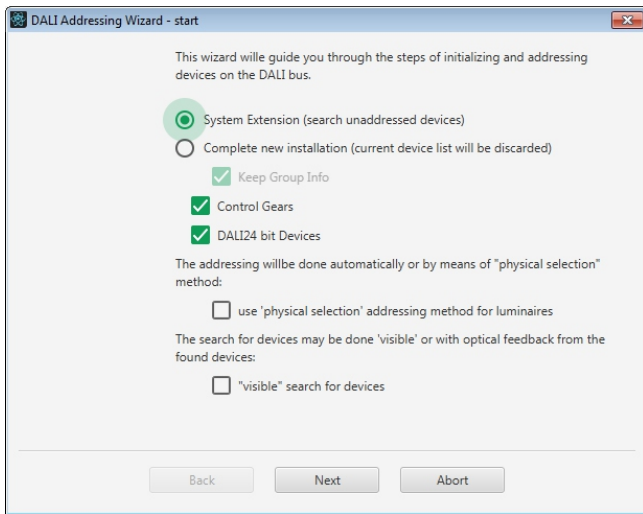


Figure 6: DALI Addressing Guide

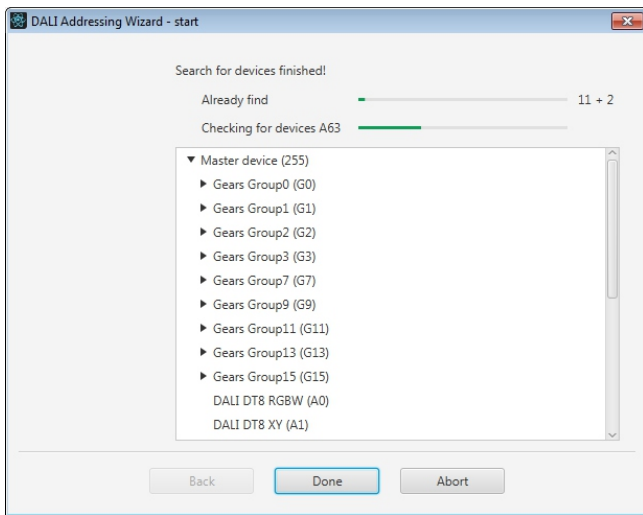


Figure 7: Device Discovering Completed

“Done”button manually to update the device tree structure.

Completely New Installation:

According to the user’s demand, to determine whether to maintain the devices’ group setting, once completely new installation starts, the addresses of all devices under current master will be cleared, and the master will assign addresses to the devices randomly from small number to large number (address range 0 to 63), in order to avoid application corruption caused by command and device type confusing, this function is different from “System Extension”, after discovering and addressing completed, the device tree will be updated directly since all addresses are re-assigned.

Since this software works depending on device data, when it starts addressing, to ensure correct discovering of the devices, please avoid operation of the end devices until discovering is completely executed.

The user can select to address “Control Gears” or “DALI24 bit devices” or both of them, the software will execute corresponding application according to the user’s selection, the “DALI24 bit devices” means the DALI input devices such as push buttons, absolute input devices, and sensors:
System Extension:

This function is to discover all node devices under current master controller, when the devices which are not addressed are discovered, the master controller will assign the smallest ID value which is not occupied currently and verify, if verified successfully, the master will create device nodes and update the device tree structure, and continues to discover, until there is no response, the user needs to click the

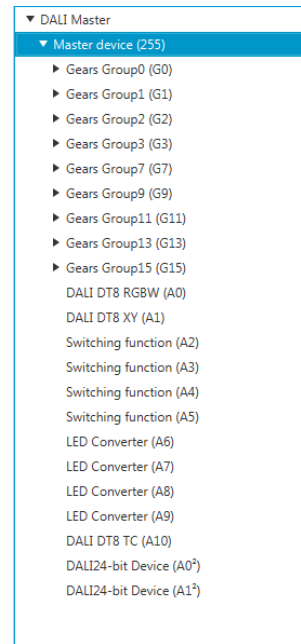


Figure 8: Device Tree

Click on “Done”, the addressing guide window will be closed, meanwhile the device tree on the left of the main window will be loaded:



2.2.3 Master Controller Configuration

Click the master controller node in the left tree diagram to open the master controller configuration interface. The control gear area is to execute lighting control to all control gears under the master controller and configure corresponding configuration parameters:

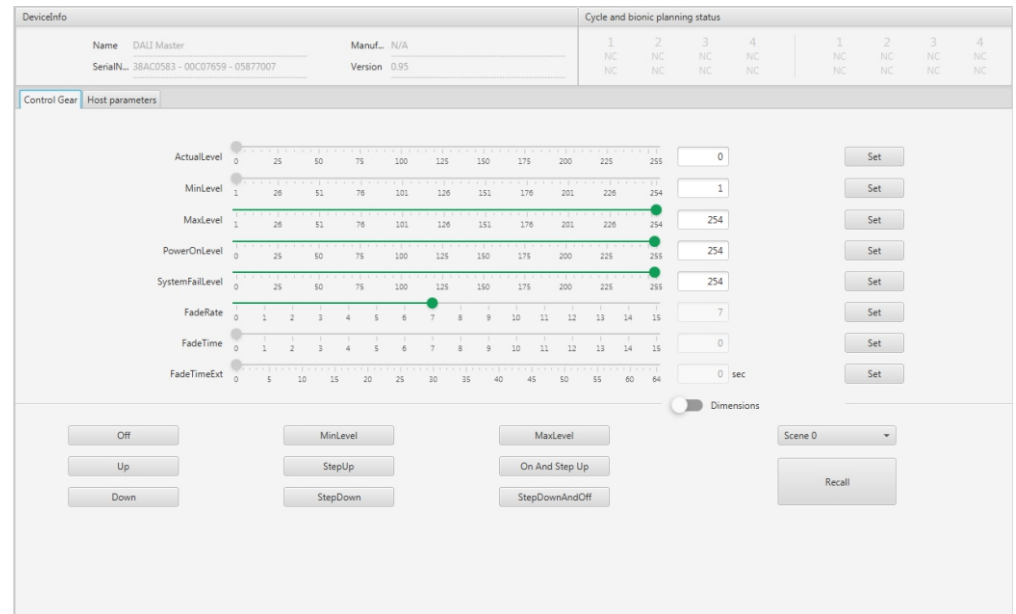


Figure 9: Master Configuration – Control Gear

Host parameters area is to manage the parameters such as system settings, scene name, recall of timer scheduler, recall of cycle scheduler, bionics mode, schedule running etc. and provide various operations such as read from and store to different blocks:

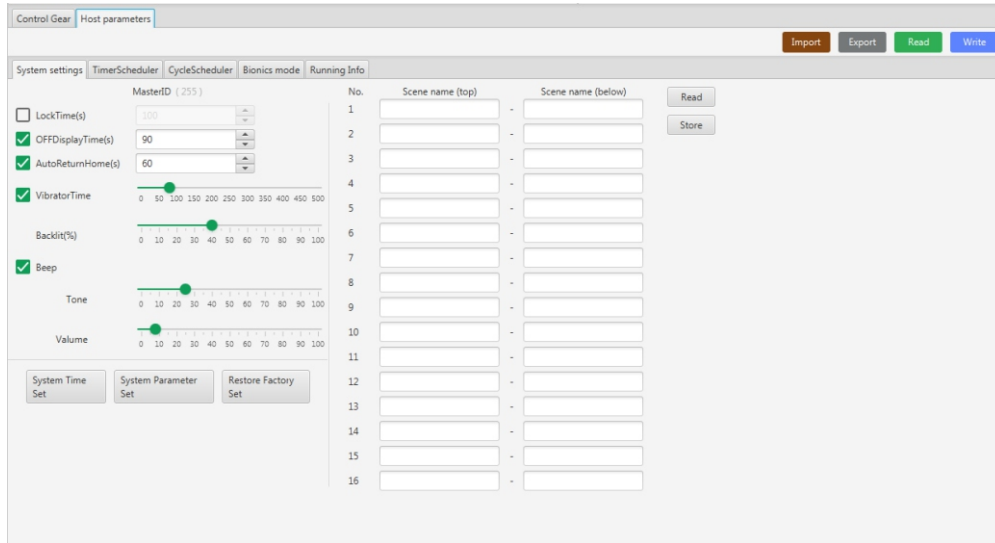


Figure 10: Host parameters – system settings

The right side of the system settings area is overall scene name setting, total 16 scenes, the name of each scene is divided into top and below two parts, which will be convenient for the master controller OLED display to show the name in multiple lines and center aligned.

No.	Date	Time(HH:MM:SS)	Week	Day/Week	CallType	Ctrl Area	Call	Enable
0	20.07.2021	00:00:00		Day	Scene	G0	Scene 0	<input type="checkbox"/>
1	20.07.2021	01:30:00		Day	Scene	G0	Scene 1	<input type="checkbox"/>
2	20.07.2021	03:00:00		Day	Scene	G0	Scene 2	<input type="checkbox"/>
3	20.07.2021	04:30:00		Day	Scene	G0	Scene 3	<input type="checkbox"/>
4	20.07.2021	06:00:00		Day	Scene	G0	Scene 4	<input type="checkbox"/>
5	20.07.2021	07:30:00		Day	Scene	G0	Scene 5	<input type="checkbox"/>
6	20.07.2021	09:00:00		Day	Scene	G0	Scene 6	<input type="checkbox"/>
7	20.07.2021	10:30:00		Day	Scene	G0	Scene 7	<input type="checkbox"/>
8	20.07.2021	12:00:00		Day	Scene	G0	Scene 8	<input type="checkbox"/>
9	20.07.2021	13:30:00		Day	Scene	G0	Scene 9	<input type="checkbox"/>
10	20.07.2021	15:00:00		Day	Scene	G0	Scene 10	<input type="checkbox"/>
11	20.07.2021	16:30:00		Day	Scene	G0	Scene 11	<input type="checkbox"/>
12	20.07.2021	18:00:00		Day	Scene	G0	Scene 12	<input type="checkbox"/>
13	20.07.2021	19:30:00		Day	Scene	G0	Scene 13	<input type="checkbox"/>
14	20.07.2021	21:00:00		Day	Scene	G0	Scene 14	<input type="checkbox"/>
15	20.07.2021	22:30:00		Day	Scene	G0	Scene 15	<input type="checkbox"/>
16	20.07.2021	00:00:00		Day	Scene	G1	Scene 0	<input type="checkbox"/>
17	20.07.2021	01:30:00		Day	Scene	G1	Scene 1	<input type="checkbox"/>
18	20.07.2021	03:00:00		Day	Scene	G1	Scene 2	<input type="checkbox"/>
19	20.07.2021	04:30:00		Day	Scene	G1	Scene 3	<input type="checkbox"/>

Figure 11 Host parameters – Timer Scheduler

Timer Scheduler is to directly apply a designated scene or cycle schedule setting at a scheduled time, double click the line data of the table showed in Figure 11 to edit the selected timer scheduler.

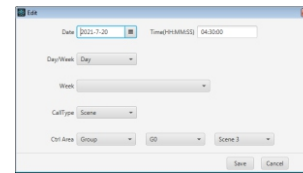


Figure 12 Modify a Timer Scheduler

Click "Save" at the bottom right corner of the pop-up window as shown in Figure 12, close the pop-up window, then click "Store" at the top right corner of the list table as shown in Figure 11 to enable the setting to be valid.



Step	StayTime	FadeTime	Brightness	Color	Enable
0	10 Sec	20 Sec	254	x: 0.722, y: 0.277	<input type="checkbox"/>
1	10 Sec	20 Sec	254	x: 0.634, y: 0.338	<input type="checkbox"/>
2	10 Sec	20 Sec	254	x: 0.446, y: 0.416	<input type="checkbox"/>
3	10 Sec	20 Sec	254	x: 0.258, y: 0.494	<input type="checkbox"/>
4	10 Sec	20 Sec	254	x: 0.170, y: 0.572	<input type="checkbox"/>
5	10 Sec	20 Sec	254	x: 0.098, y: 0.634	<input type="checkbox"/>
6	10 Sec	20 Sec	254	x: 0.085, y: 0.087	<input type="checkbox"/>
7	10 Sec	20 Sec	254	x: 0.358, y: 0.316	<input type="checkbox"/>
8	10 Sec	20 Sec	254	x: 0.722, y: 0.277	<input type="checkbox"/>
9	10 Sec	20 Sec	254	x: 0.634, y: 0.338	<input type="checkbox"/>
10	10 Sec	20 Sec	254	x: 0.446, y: 0.416	<input type="checkbox"/>
11	10 Sec	20 Sec	254	x: 0.258, y: 0.494	<input type="checkbox"/>
12	10 Sec	20 Sec	254	x: 0.170, y: 0.572	<input type="checkbox"/>
13	10 Sec	20 Sec	254	x: 0.098, y: 0.634	<input type="checkbox"/>
14	10 Sec	20 Sec	254	x: 0.085, y: 0.087	<input type="checkbox"/>
15	10 Sec	20 Sec	254	x: 0.358, y: 0.316	<input type="checkbox"/>
16	10 Sec	20 Sec	254	x: 0.722, y: 0.277	<input type="checkbox"/>
17	10 Sec	20 Sec	254	x: 0.634, y: 0.338	<input type="checkbox"/>
18	10 Sec	20 Sec	254	x: 0.446, y: 0.416	<input type="checkbox"/>
19	10 Sec	20 Sec	254	x: 0.258, y: 0.494	<input type="checkbox"/>

Figure 13 Host parameters – Cycle Scheduler

In the Cycle Scheduler, the change of cycle type can only be valid after clicking the data to set the control gear. Double click a line of the table showed in Figure 13 to edit the data.

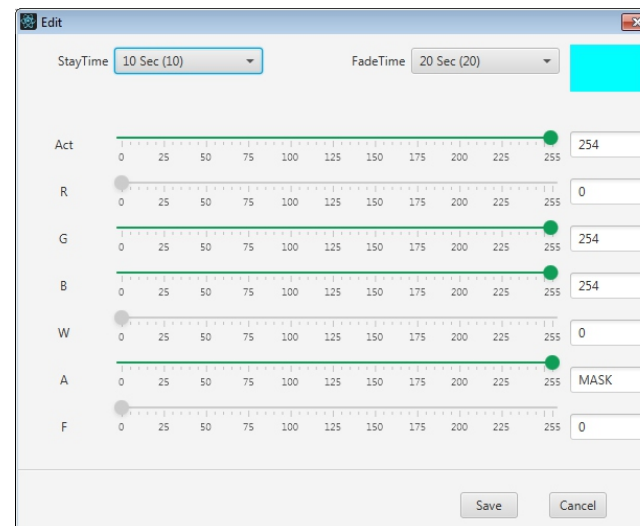


Figure 14 Cycle Scheduler – Step Color Edit

Edit the color value, stay time, fade time of the selected step at the pop-up window as shown in Figure 13 & 14, then click "Save", close the pop-up window, then click "Store" at the top right corner of the list table as shown in Figure 10 to enable the setting to be valid.

Enabel All	Enabel All
Stop All	Stop All
Enable reverse	Enable reverse
Batch editing - Date	Batch editing - StayTime
Batch editing - Time(HH:MM:SS)	Batch editing - FadeTime
Batch editing - Week	Batch editing - Brightness
Batch editing - Day/Week	

Figure 15 Right Click Menu Function on Timer Scheduler (left), Cycle Scheduler (right) List Tables

Timer Scheduler and Cycle Scheduler list tables also provide parameter value batch editing function, the user can open the function by clicking the list table with the right button of the mouse as shown in Figure 15, and then edit as per requirements.

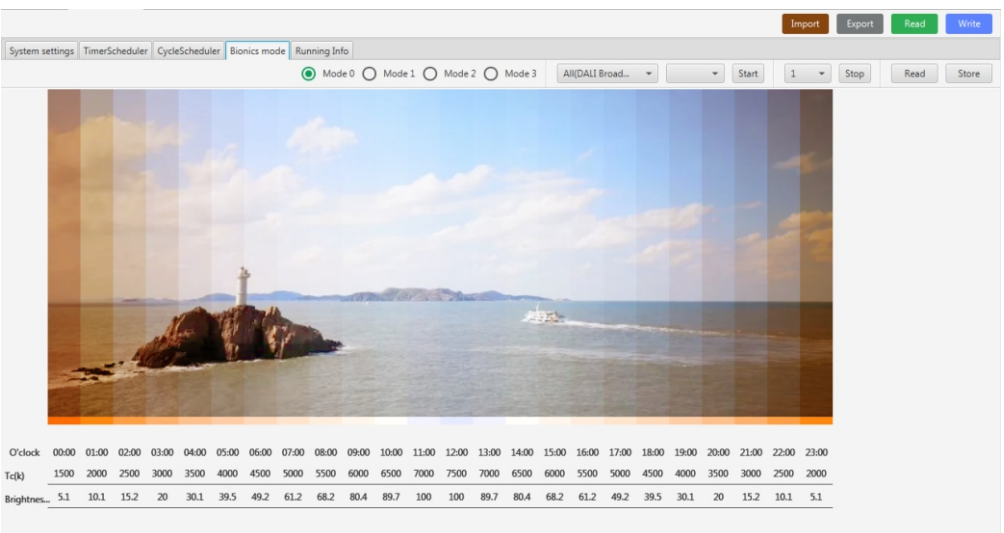


Figure 16 Bionic Data Setting

Bionics Mode is to mimic creature's clock, apply corresponding preset value at each whole hour time to achieve the goal of lighting control, it supports total 4 modes, the user can modify the color temperature and brightness depending on real requirements, the bionic effect can be previewed by adjusting the color of the picture as shown in Figure 16, then send the data and apply.

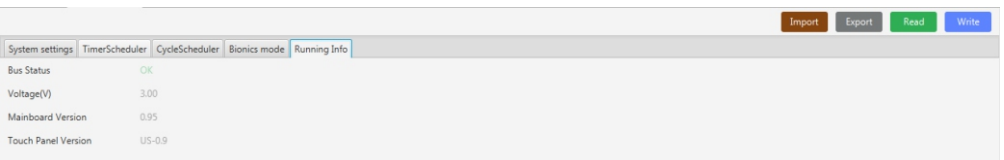


Figure 17 Running Parameters View

As shown in Figure 17, the user can view corresponding device info and running status of the cycle scheduler and bionics mode.

2.2.4 Group Configuration

Click the Group node of the device tree diagram on the left side, open the group configuration interface. Control Gear Area mainly provides the lighting control operations and corresponding parameter configuration to the control gears in current group.

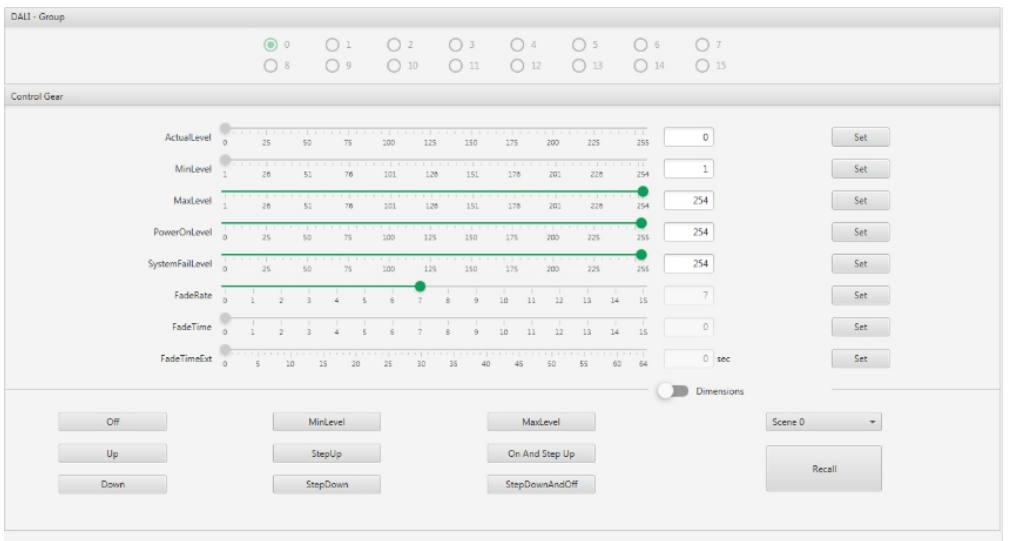


Figure 18 Group Configuration

2.2.5 Control Gear Configuration

Here we take DT8 RGBWA control gear as an example, configuration functionality includes direct lighting control, control gear group control, scene configuration, and control gear DALI parameter configuration.

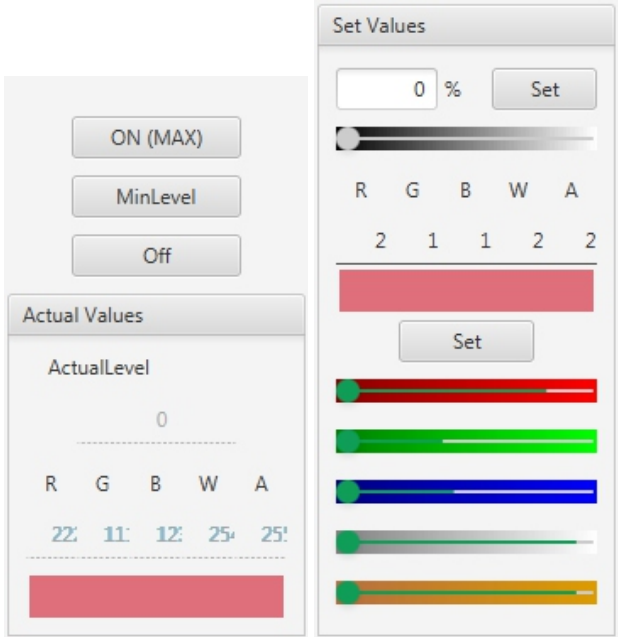


Figure 19 RGBWA Direct Lighting Control

The direct lighting control area enables the user to set control gear's brightness level and corresponding channel color, once set successfully, the real values will be displayed on the actual value area.

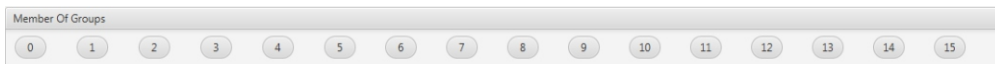


Figure 20 Control Gear Group

The master controller can set total 16 groups, in the group configuration area of the control gear configuration interface, the user can add the control gear to designated groups or remove the control gear from designated groups by clicking the group numbers 0-15 as shown in Figure 20. This operation is real time operation.

Scene Light Levels [0-100%], Mask, Color RGBW												
	R	G	B	W	A							
<input checked="" type="checkbox"/> 0	61.173 %	245	226	203	210	255	<input type="checkbox"/> 8 MASK %	MASK	MASK	MASK	MASK	MASK
<input checked="" type="checkbox"/> 1	19.433 %	222	111	123	254	255	<input type="checkbox"/> 9 MASK %	MASK	MASK	MASK	MASK	MASK
<input checked="" type="checkbox"/> 2	19.433 %	222	111	123	254	255	<input type="checkbox"/> 10 MASK %	MASK	MASK	MASK	MASK	MASK
<input checked="" type="checkbox"/> 3	19.433 %	222	111	123	254	255	<input type="checkbox"/> 11 MASK %	MASK	MASK	MASK	MASK	MASK
<input type="checkbox"/> 4	MASK %	MASK	MASK	MASK	MASK	MASK	<input type="checkbox"/> 12 MASK %	MASK	MASK	MASK	MASK	MASK
<input checked="" type="checkbox"/> 5	19.971 %	222	111	123	254	255	<input type="checkbox"/> 13 MASK %	MASK	MASK	MASK	MASK	MASK
<input checked="" type="checkbox"/> 6	19.433 %	222	111	123	254	255	<input type="checkbox"/> 14 MASK %	MASK	MASK	MASK	MASK	MASK
<input checked="" type="checkbox"/> 7	0 %	0	0	0	0	255	<input checked="" type="checkbox"/> 15 0.151 %	0	0	0	0	255

Figure 21 Control Gear Scene Configuration

To enable the configuration of designated scene numbers, you have to tick the checkbox of the designated scene numbers, and modify the level percentage and color value of each channel as shown in Figure 21, default value MASK (255) means invalid.

Note: the dimming curve of DT6 control gear can be configured as shown in Figure 22:

Scene Light Levels [0-100%], Mask					
<input checked="" type="checkbox"/> 0	59.526 %	<input type="checkbox"/> 4	MASK %	<input type="checkbox"/> 8	MASK %
<input type="checkbox"/> 1	MASK %	<input type="checkbox"/> 5	MASK %	<input type="checkbox"/> 9	MASK %
<input type="checkbox"/> 2	MASK %	<input type="checkbox"/> 6	MASK %	<input type="checkbox"/> 10	MASK %
<input type="checkbox"/> 3	MASK %	<input type="checkbox"/> 7	MASK %	<input type="checkbox"/> 11	MASK %
				<input checked="" type="radio"/> logarithmic	<input type="radio"/> linear

Figure 22: DT6 Dimming Curve Configuration

Control gear status, DT6, DT8 control gears will present general status and specific information, DT6 specific information is control gear failure status as shown in Figure 24, DT8 specific information is color specific information as shown in Figure 23, when the user stays at the status tab, all status information displayed on the interface will update automatically and periodically.

DALI Parameters		Status	
General		Colour specific	
Control gear failure:	No	xy-coordinate colour point out of range:	No
Lamp failure:	No	Colour temperature TC out of range:	No
Lamp On:	No	Auto calibration running:	No
Limit Error:	No	Auto calibration successful:	No
Fade Running:	No	Colour type xy-coordinate active:	No
Reset state:	No	Colour type colour temperature Tc active:	No
Missing short address:	No	Colour type primary N active:	No
Power cycle seen:	No	Colour type RGBWAF active:	Yes

Figure 23: DT8 Status Information

DALI Parameters		Status	
General		Failure status	
Control gear failure:	No	Short-circuit:	No
Lamp failure:	No	Open-circuit:	No
Lamp On:	No	Load decrease:	No
Limit Error:	No	Load increase:	No
Fade Running:	No	Over current protection:	No
Reset state:	No	Thermal shut down:	No
Missing short address:	No	Thermal overload:	No
Power cycle seen:	No	Reference measurement failed:	No

Figure 24: DT6 Failure Status

Finally, DALI control configuration mainly restricts or directly defines specific attributes of control gears as shown in Figure 25.

Figure 25: DALI Control Configuration

2.2.6 Control Device Configuration

Control device configuration includes general configuration, instances configuration, application configuration, and feedback configuration as shown in Figure 26:

Figure 26: Control Device Configuration

The general configuration area can activate or deactivate device itself and functionality of instances, meanwhile the device can be assigned to or removed from designated groups by clicking on the group number buttons on the right side so that the corresponding group control logic can be applied.

Figure 27-1: Type 301 Push Button Instance Configuration

Figure 27-2: Type 302 Absolute Input Device Configuration

Figure 27-3: Type 303 Occupancy Sensor Input Device Configuration

Figure 27-4: Type 304 Light Sensor Input Device Configuration



Figure 27 series are configuration interfaces of different instance types (currently supported by the software), change the instance trigger source by clicking on different event buttons: tick the checkbox of the event as shown in Figure 27 series, and configure command for corresponding event of current instance, after the parameter sent to the device, the real effect can be viewed (the instance must be activated so that it can send the event notification).

Figure 28-1: Type 301 Push Button Instance Application Configuration

If the user would like to configure more events for the push button instance, please go to the instance configuration interface and tick the checkbox of the required events as shown in Figure 27-1, then go back to Application configuration interface to configure command as shown in Figure 28-1.

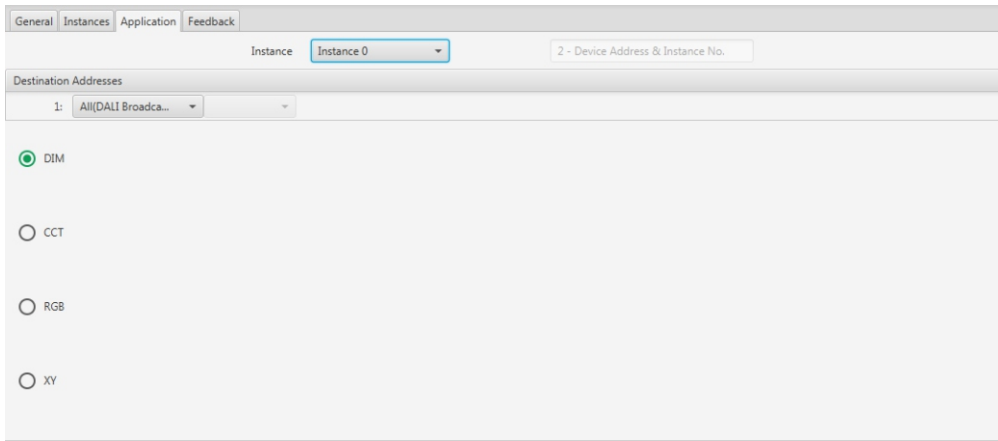


Figure 28-2: Type 302 Absolute Input Device Instance Application Configuration

The application configuration of absolute input device instance is simple, the user can select corresponding control type according to their detailed requirements.

Please configure controlled address range for both two instances, if address range is not configured, the application of specific control device will be affected and can not reach the expected effect.

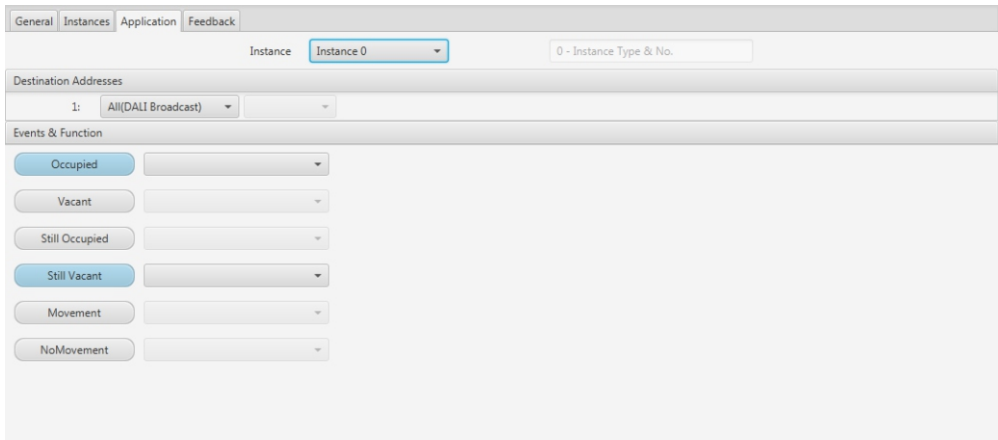


Figure 28-3: Type 303 Occupancy Sensor Instance Application Configuration

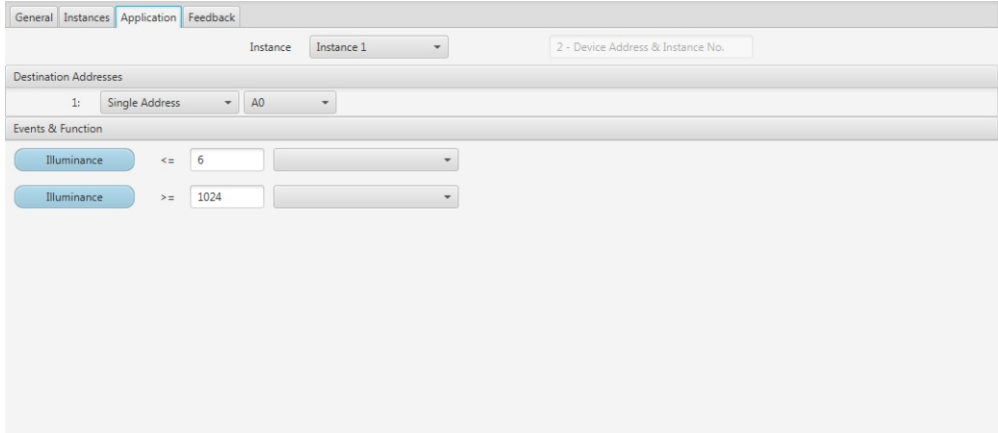


Figure 28-4: Type 304 Light Sensor Instance Application Configuration

The application configuration of sensor input device instance is to define the upper limitation value and lower limit value of illuminance, when the actual illuminance value is within the limitation range, the configured command will be triggered.

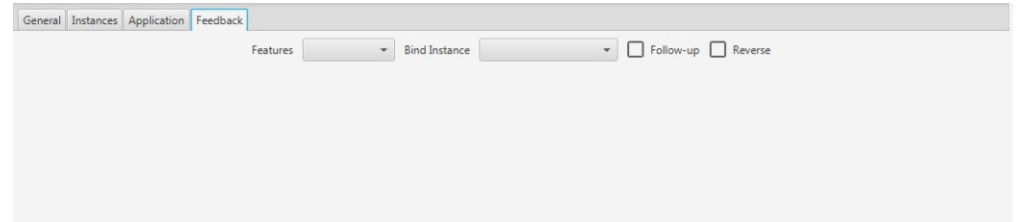


Figure 29: Feedback Configuration

The user can get the control range (address) of the instance by switching the bind instance, and form fixed association with current specific control device, and achieve logic association through follow-up or reverse effect.

2.2.7 Menu Main Functionality

DALI Command Monitor:

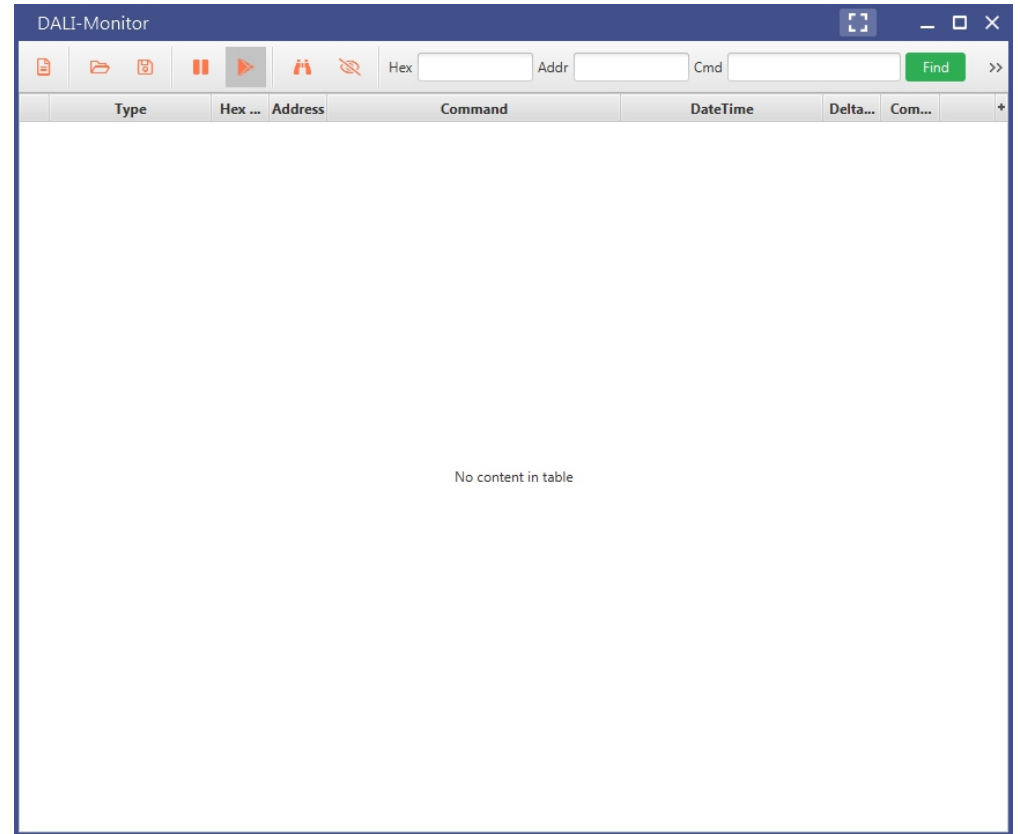


Figure 30: DALI Command Monitor

All commands between PC and DALI master controller, and the response information from the master to the PC will be displayed on this window, multiple monitor windows can be opened to control monitor list table rolling output according to the requirements.

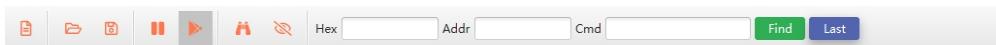


Figure 31: Command Monitor Tool Bar

The functions of the icons on the tool bar from left to right are: clear list table, import record (under development), save record (under development), current list table stops receiving, current list table continues to receive, filter find (under development), filter display (under development).

DALI Command Sending and Continuous Testing

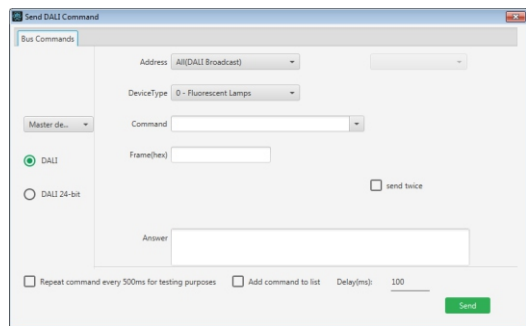


Figure 32: DALI Command Sending

The user can customize the send command, according to device's actual status and response data, conclude the indexed results, and test and apply according to the environment. Command test function is still under development and will be released on the next revision.

Scene Configuration:

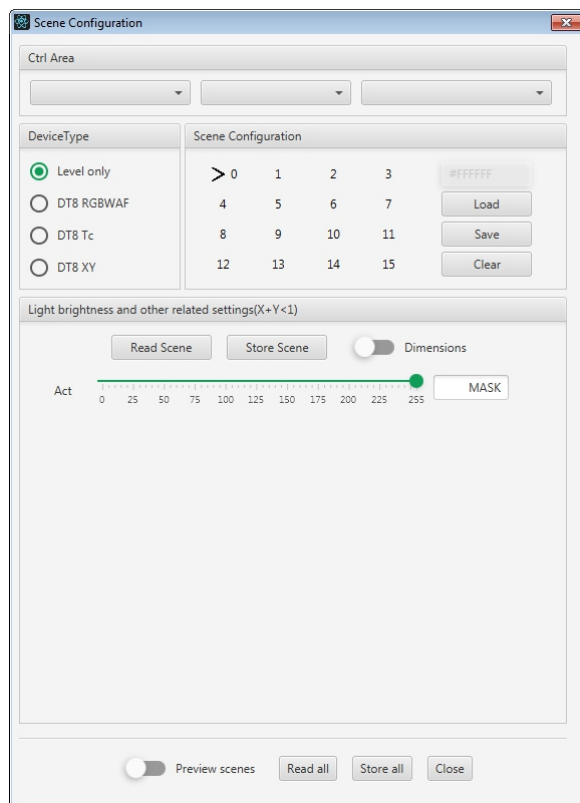


Figure 33: Scene Configuration

This function is the extension of control gear scene configuration function, the user can configure real time scene to the control gears from the master by switching the control area condition (scene preview switch shall be enabled). The scene configuration can also be saved as a file, which will be convenient for the user to load and apply next time, every time open the configuration, it will automatically load the system cached configuration (the cache will be cleared after restarted). When the user read or send the scene configuration, the control area condition needs to be filtered, if it's for the short address control gear, the device type of the control area must be in accordance with selected device type condition, so that the scene data can be executed.

2.2.8 Extended Functionality

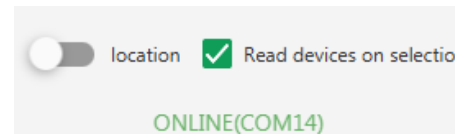
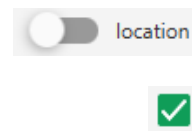


Figure 34: Status and Extended Functionality Icons

As shown in Figure 34, from left to right, the icons are control gear location, serial communication port connection status, read device on selection.



Location functionality is only valid when a control gear node on the left side device tree diagram of the home interface is selected, by clicking the location button, the lighting of the selected control gear will flash 10 times, which will be convenient for the user to find the control gear.

Read Device on Selection
When tick the checkbox of this item, then the device data will be read automatically when it is selected by the user in the device tree diagram on the left of home page, if the checkbox is not ticked, the cached data will be loaded and applied, the check box is ticked by default.

2.2.9 Firmware OTA Functionality

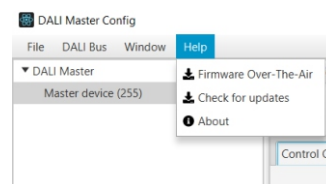


Figure 35: Firmware OTA Update & PC Software Update Checking

Choose corresponding "device type", "MCU", "firmware name & version". Click on "Download" button to start firmware OTA update. If you would like to stop update, just click on "Abort" button.

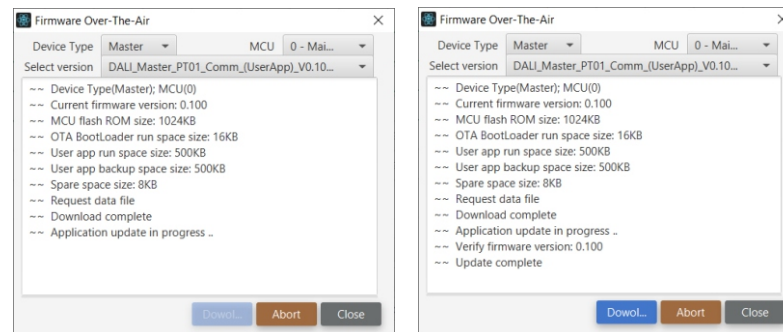


Figure 36: Firmware OTA Update Process & Update Complete Interfaces

3 INSTALLATION PROCESS & NOTES

3.1 Installation Steps

- Run the installation file
- Select installation mode

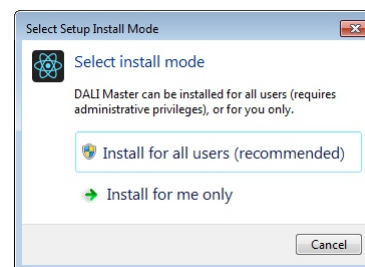


Figure 37: Select Installation Mode

- Select language

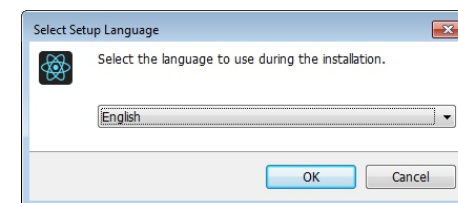


Figure 38 Installation Language

• Select installation path

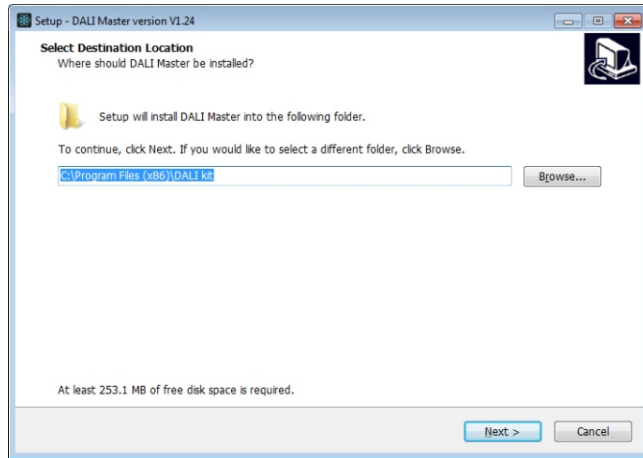


Figure 39: Installation Path

• Starting installation

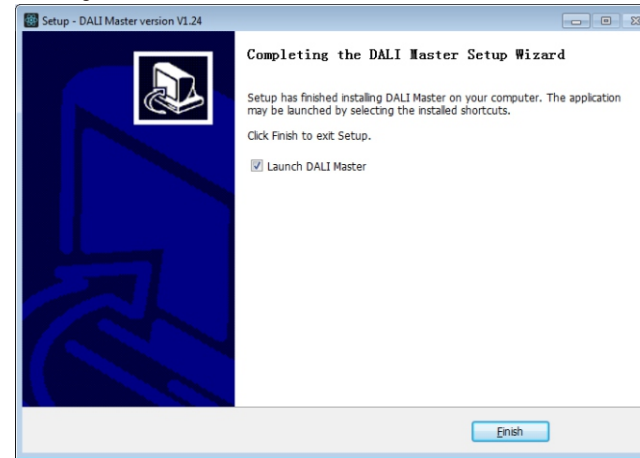


Figure 42: Complete Installation

• Create desktop shortcut

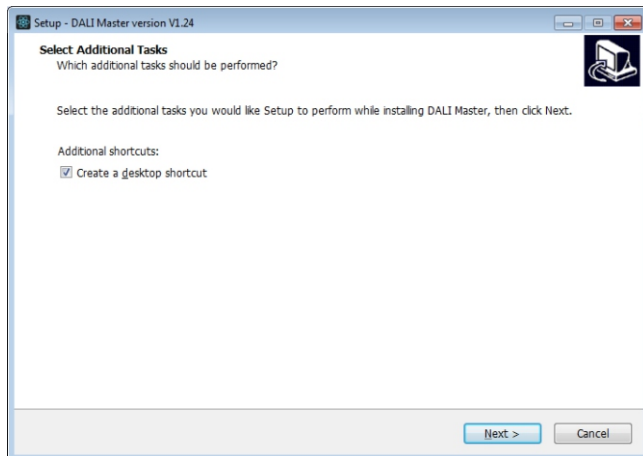


Figure 40: Create Desktop Shortcut

• Starting installation

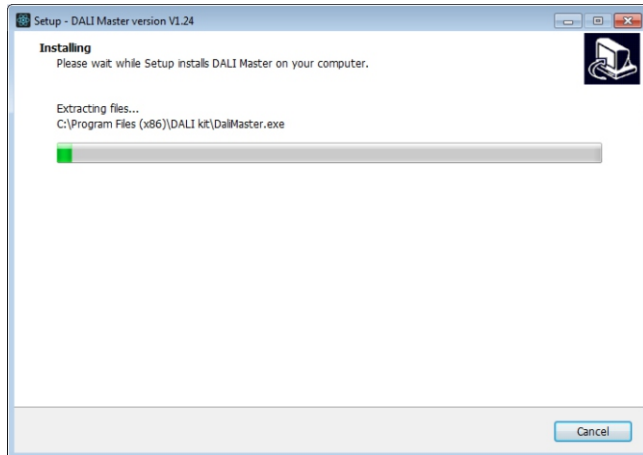
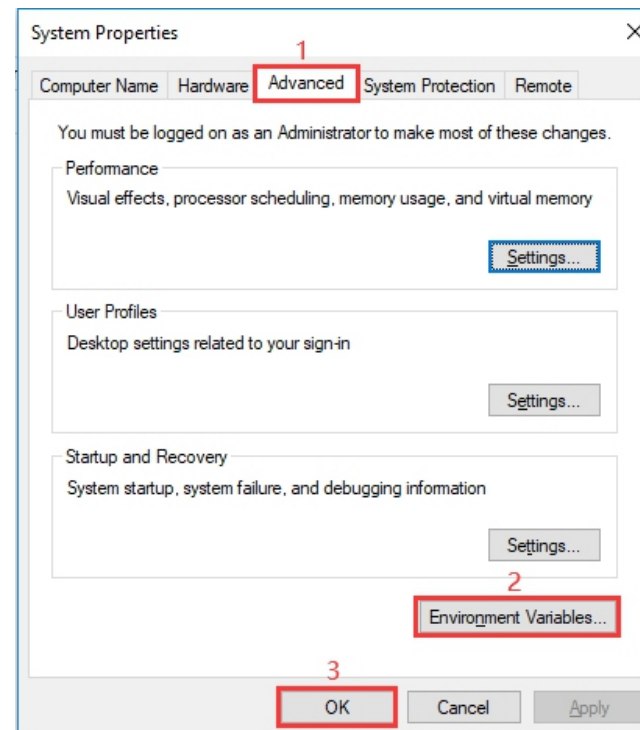


Figure 41: Starting Installation

3.2 JRE Environment Variables Configuration




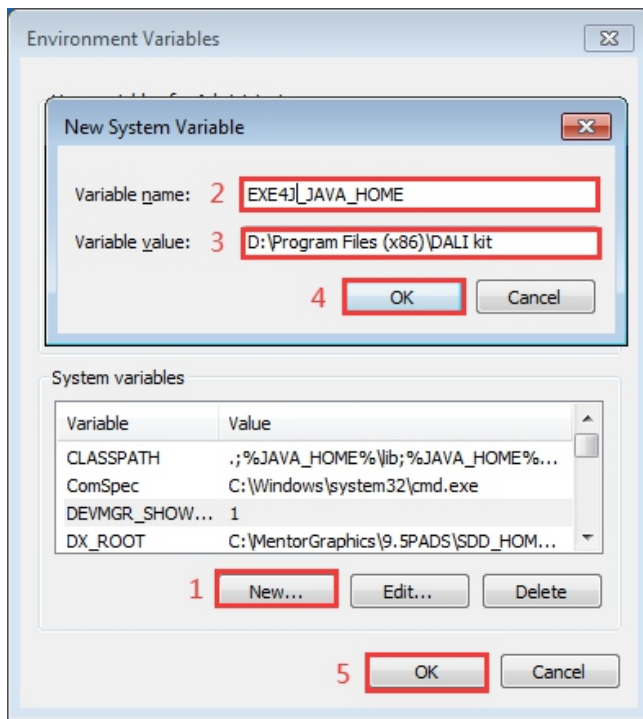
Step 1: right click the computer icon  on the desktop, select "Properties", then "Advanced system settings" to open the system properties setting window as shown in Figure 43:

Figure 43: System Properties Window



Step 2: switch to "Advanced" tab, then click button "Environment Variables" to open the environment variables setting window as shown in Figure 44:

Figure 44: Environment Variables Setting Window


Step 3: Click "New" button, the parameter setting window will pop-up, Variable name must be set as "EXE4J_JAVA_HOME", Variable value should be set as the installation path of the software (the parameter in Figure 44 is just for your reference), then click "OK" one by one to go back to the window in Figure 43, then click "OK" to save the environment variables setting.

Step 4: Re-start the computer to apply the environment variables configuration.

3.3 Notes:

(1) Please install the software according to the installation steps, otherwise it can not be started correctly.

(2) This software is installed to disk C by default, if the installation path is not modified, please run the software as administrator, detailed method is as follows:

Right click the desktop icon  to check the properties, switch to "Compatibility" tab, and check item "Run this program as an administrator".

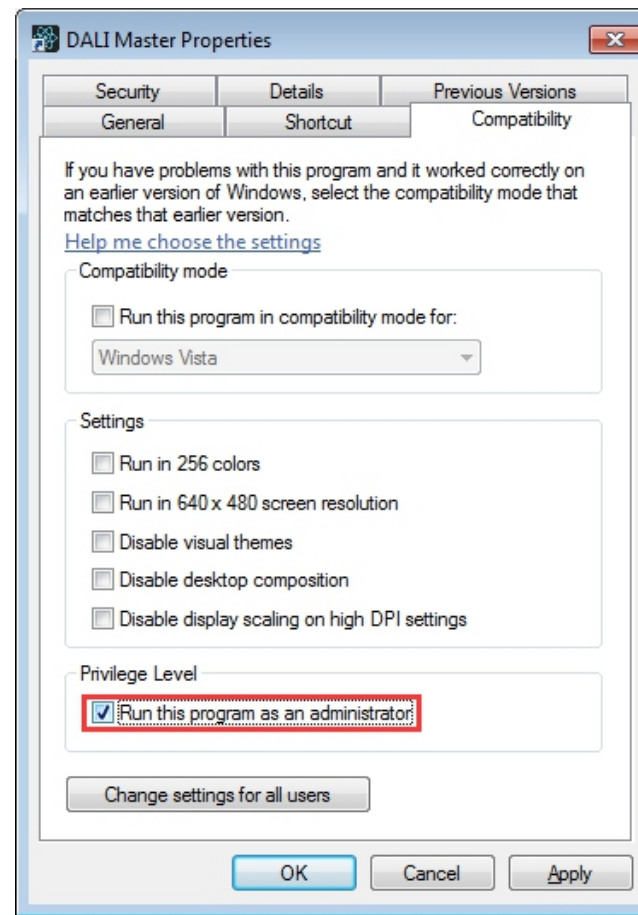


Figure 45: Run this program as an administrator

Click "OK" to complete the setting.

(3) If you need to re-install the software, if you need to change the installation path please first uninstall previous installation, otherwise just install to cover the previous installation.

4 INSTALL CH340 DRIVER

(1) Connect the USB serial communication port wire, double click the file "CH341SER.EXE" to install.



Figure 46: Double Click "CH341SER.EXE"

(2) If there is an indication that installation failed, please first uninstall the installation, then install again.

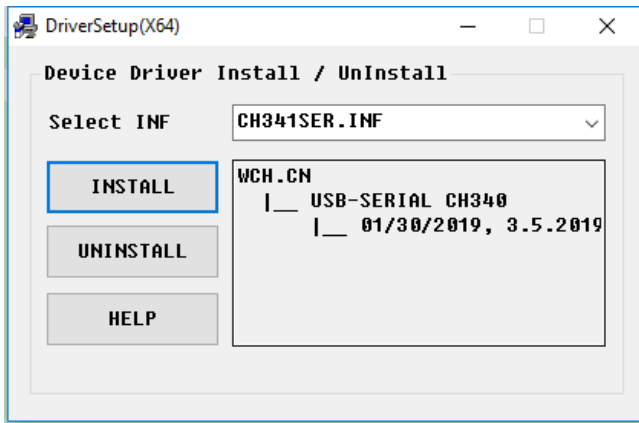


Figure 47: Driver Installation

(3) Right click "This PC", then click "Management", then click "Device Manager", then you can check whether the installation is successful or not.

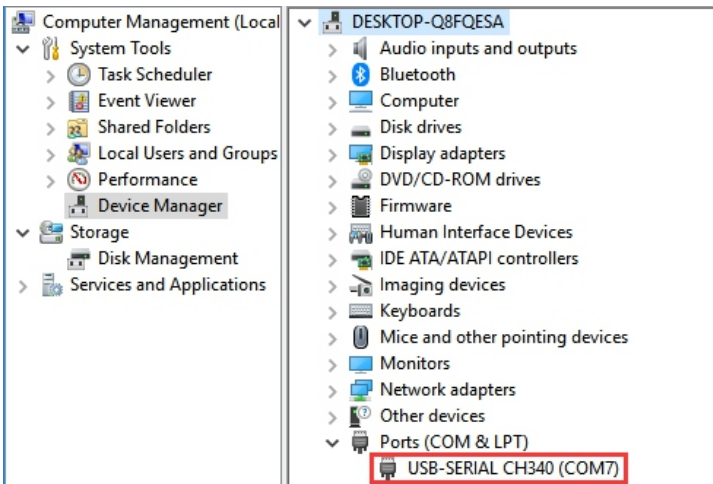


Figure 48: Driver Installation Successful