User's Manual

DALI Master Controller GUI

Renesas Electronics
www.renesas.com

Rev.4.00 Nov. 2022

Notice

1. Descriptions of circuits, software and other related information in this document are provided only to illustrate the operation of semiconductor products and application examples. You are fully responsible for the incorporation or any other use of the circuits, software, and information in the design of your product or system. Renesas Electronics disclaims any and all liability for any losses and damages incurred by you or third parties arising from the use of these circuits, software, or information.
2. Renesas Electronics hereby expressly disclaims any warranties against and liability for infringement or any other claims involving patents, copyrights, or other intellectual property rights of third parties, by or arising from the use of Renesas Electronics products or technical information described in this document, including but not limited to, the product data, drawings, charts, programs, algorithms, and application examples.
3. No license, express, implied or otherwise, is granted hereby under any patents, copyrights or other intellectual property rights of Renesas Electronics or others.
4. You shall be responsible for determining what licenses are required from any third parties, and obtaining such licenses for the lawful import, export, manufacture, sales, utilization, distribution or other disposal of any products incorporating Renesas Electronics products, if required.
5. You shall not alter, modify, copy, or reverse engineer any Renesas Electronics product, whether in whole or in part. Renesas Electronics disclaims any and all liability for any losses or damages incurred by you or third parties arising from such alteration, modification, copying or reverse engineering.
6. Renesas Electronics products are classified according to the following two quality grades: “Standard” and “High Quality”. The intended applications for each Renesas Electronics product depends on the product’s quality grade, as indicated below.
   "Standard": Computers; office equipment; communications equipment; test and measurement equipment; audio and visual equipment; home electronic appliances; machine tools; personal electronic equipment; industrial robots; etc.
   "High Quality": Transportation equipment (automobiles, trains, ships, etc.); traffic control (traffic lights); large-scale communication equipment; key financial terminal systems; safety control equipment; etc.

   Unless expressly designated as a high reliability product or a product for harsh environments in a Renesas Electronics data sheet or other Renesas Electronics document, Renesas Electronics products are not intended or authorized for use in products or systems that may pose a direct threat to human life or bodily injury (artificial life support devices or systems; surgical implantations; etc.), or may cause serious property damage (space system; undersea repeaters; nuclear power control systems; aircraft control systems; key plant systems; military equipment; etc.). Renesas Electronics disclaims any and all liability for any damages or losses incurred by you or any third parties arising from the use of any Renesas Electronics product that is inconsistent with any Renesas Electronics data sheet, user’s manual or other Renesas Electronics document.
7. No semiconductor product is absolutely secure. Notwithstanding any security measures or features that may be implemented in Renesas Electronics hardware or software products, Renesas Electronics shall have absolutely no liability arising out of any vulnerability or security breach, including but not limited to any unauthorized access to or use of a Renesas Electronics product or a system that uses a Renesas Electronics product. RENESAS ELECTRONICS DOES NOT WARRANT OR GUARANTEE THAT RENESAS ELECTRONICS PRODUCTS, OR ANY SYSTEMS CREATED USING RENESAS ELECTRONICS PRODUCTS WILL BE INVULNERABLE OR FREE FROM CORRUPTION, ATTACK, VIRUSES, INTERFERENCE, HACKING, DATA LOSS OR THEFT, OR OTHER SECURITY INTRUSION (“Vulnerability Issues”). RENESAS ELECTRONICS DISCLAIMS ANY AND ALL RESPONSIBILITY OR LIABILITY ARISING FROM OR RELATED TO ANY VULNERABILITY ISSUES. FURTHERMORE, TO THE EXTENT PERMITTED BY APPLICABLE LAW, RENESAS ELECTRONICS DISCLAIMS ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THIS DOCUMENT AND ANY RELATED OR ACCOMPANYING SOFTWARE OR HARDWARE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE.
8. When using Renesas Electronics products, refer to the latest product information (data sheets, user’s manuals, application notes, “General Notes for Handling and Using Semiconductor Devices” in the reliability handbook, etc.), and ensure that usage conditions are within the ranges specified by Renesas Electronics with respect to maximum ratings, operating power supply voltage range, heat dissipation characteristics, installation, etc. Renesas Electronics disclaims any and all liability for any malfunctions, failure or accident arising out of the use of Renesas Electronics products outside of such specified ranges.
9. Although Renesas Electronics endeavors to improve the quality and reliability of Renesas Electronics products, semiconductor products have specific characteristics, such as the occurrence of failure at a certain rate and malfunctions under certain use conditions. Unless designated as a high reliability product or a product for harsh environments in a Renesas Electronics data sheet or other Renesas Electronics document, Renesas Electronics products are not subject to radiation resistance design. You are responsible for implementing safety measures to guard against the possibility of bodily injury, injury or damage caused by fire, and/or danger to the public in the event of a failure or malfunction of Renesas Electronics products, such as safety design for hardware and software, including but not limited to redundancy, fire control and malfunction prevention, appropriate treatment for aging degradation or any other appropriate measures. Because the evaluation of microcomputer software alone is very difficult and impractical, you are responsible for evaluating the safety of the final products or systems manufactured by you.
10. Please contact a Renesas Electronics sales office for details as to environmental matters such as the environmental compatibility of each Renesas Electronics product. You are responsible for carefully and sufficiently investigating applicable laws and regulations that regulate the inclusion or use of controlled substances, including without limitation, the EU RoHS Directive, and using Renesas Electronics products in compliance with all these applicable laws and regulations. Renesas Electronics disclaims any and all liability for damages or losses occurring as a result of your noncompliance with applicable laws and regulations.
11. Renesas Electronics products and technologies shall not be used for or incorporated into any products or systems whose manufacture, use, or sale is prohibited under any applicable domestic or foreign laws or regulations. You shall comply with any applicable export control laws and regulations promulgated and administered by the governments of any countries asserting jurisdiction over the parties or transactions.
12. It is the responsibility of the buyer or distributor of Renesas Electronics products, or any other party who distributes, disposes of, or otherwise sells or transfers the product to a third party, to notify such third party in advance of the contents and conditions set forth in this document.
13. This document shall not be reprinted, reproduced or duplicated in any form, in whole or in part, without prior written consent of Renesas Electronics.
14. Please contact a Renesas Electronics sales office if you have any questions regarding the information contained in this document or Renesas Electronics products.

(Note1) “Renesas Electronics” as used in this document means Renesas Electronics Corporation and also includes its directly or indirectly controlled subsidiaries.
(Note2) “Renesas Electronics product(s)” means any product developed or manufactured by or for Renesas Electronics.

(Rev.5.0-1 October 2020)

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,
Koto-ku, Tokyo 135-0061, Japan

www.renesas.com

Contact information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit:
www.renesas.com/contact/.

Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.

General Precautions in the Handling of Microprocessing Unit and Microcontroller Unit Products

The following usage notes are applicable to all Microprocessing unit and Microcontroller unit products from Renesas. For detailed usage notes on the products covered by this document, refer to the relevant sections of the document as well as any technical updates that have been issued for the products.

1. Precaution against Electrostatic Discharge (ESD)
   A strong electrical field, when exposed to a CMOS device, can cause destruction of the gate oxide and ultimately degrade the device operation. Steps must be taken to stop the generation of static electricity as much as possible, and quickly dissipate it when it occurs. Environmental control must be adequate. When it is dry, a humidifier should be used. This is recommended to avoid using insulators that can easily build up static electricity. Semiconductor devices must be stored and transported in an anti-static container, static shielding bag or conductive material. All test and measurement tools including work benches and floors must be grounded. The operator must also be grounded using a wrist strap. Semiconductor devices must not be touched with bare hands. Similar precautions must be taken for printed circuit boards with mounted semiconductor devices.
2. Processing at power-on
   The state of the product is undefined at the time when power is supplied. The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the time when power is supplied. In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the time when power is supplied until the reset process is completed. In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the time when power is supplied until the power reaches the level at which resetting is specified.
3. Input of signal during power-off state
   Do not input signals or an I/O pull-up power supply while the device is powered off. The current injection that results from input of such a signal or I/O pull-up power supply may cause malfunction and the abnormal current that passes in the device at this time may cause degradation of internal elements. Follow the guideline for input signal during power-off state as described in your product documentation.
4. Handling of unused pins
   Handle unused pins in accordance with the directions given under handling of unused pins in the manual. The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of the LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible.
5. Clock signals
   After applying a reset, only release the reset line after the operating clock signal becomes stable. When switching the clock signal during program execution, wait until the target clock signal is stabilized. When the clock signal is generated with an external resonator or from an external oscillator during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Additionally, when switching to a clock signal produced with an external resonator or by an external oscillator while program execution is in progress, wait until the target clock signal is stable.
6. Voltage application waveform at input pin
   Waveform distortion due to input noise or a reflected wave may cause malfunction. If the input of the CMOS device stays in the area between V_{IL} (Max.) and V_{IH} (Min.) due to noise, for example, the device may malfunction. Take care to prevent chattering noise from entering the device when the input level is fixed, and also in the transition period when the input level passes through the area between V_{IL} (Max.) and V_{IH} (Min.).
7. Prohibition of access to reserved addresses
   Access to reserved addresses is prohibited. The reserved addresses are provided for possible future expansion of functions. Do not access these addresses as the correct operation of the LSI is not guaranteed.
8. Differences between products
   Before changing from one product to another, for example to a product with a different part number, confirm that the change will not lead to problems. The characteristics of a microprocessing unit or microcontroller unit products in the same group but having a different part number might differ in terms of internal memory capacity, layout pattern, and other factors, which can affect the ranges of electrical characteristics, such as characteristic values, operating margins, immunity to noise, and amount of radiated noise. When changing to a product with a different part number, implement a system-evaluation test for the given product.

How to Use This Manual

Intended readers: This manual describes the DALI Master Controller GUI.
This manual is intended for users who have general knowledge of Windows. Note that the descriptions in this manual are based on examples using the DALI Master Controller GUI in Windows 10.

Purpose: This manual is intended to help users understand the basic specifications of the DALI Master Controller GUI and how to use it correctly, and serve as a reference for developing hardware and software of the system that uses the DALI Master Controller GUI.

Organization: This manual is organized into the following chapters:

- **1.** Introduction
- **2.** Installing the Visual C++ Redistributable Package
- **3.** Installing the DALI Master Controller GUI
- **4.** Start and Termination
- **5.** Operating the DALI Master Controller GUI
- **6.** Window Reference

How to Read This Manual

Readers of this manual are required to have general knowledge of electricity, logic circuits, and microcomputers.

To achieve general understanding of functions of the DALI Master Controller GUI:
→ Sequentially read this manual from **1.** Introduction.

Legend: This manual uses the following notations.

Significance of data:	High-order digits are on the left, and low-order digits are on the right
Note:	Description of a footnote marked with Note in the text
Precaution:	Information that requires particular attention
Remarks:	Supplementary information in the text
Numeric representation:	Binary: ×××× or ××××B Decimal: ×××× Hexadecimal: ××××H

Related documents: The related documents might include preliminary versions. However, preliminary versions are not marked "Provisional" in this manual.
Please understand this before using such information.
- DALI Master Controller GUI User's Manual (this manual)
- RL78/I1A Lighting Communication Master Evaluation Board User's Manual
- RX65N Group Application Note DALI-2 Lighting Communications Using Cloud Kit (Control Device/Application Controller)
- RL78/G23 Lighting Communication Master Evaluation Board User's Manual

Remarks: Descriptions of the DALI standard are based on the International standard IEC62386. For details, refer to IEC62386.

Contents

DALI Master Controller GUI

User's Manual

1. Introduction

1.1 Overview

The DALI Master Controller GUI is a GUI (Graphical User Interface) that controls the lighting communication master evaluation board capable of communication conforming to the DALI standard. The following lighting communication master evaluation boards are applicable in this document.

- RL78/I1A Lighting Communication Master Evaluation Board (TCM-RL78I1A from TESSERA TECHNOLOGY INC.)
- RX65N Cloud Kit + DALI-2 option boards RTK5RX65N0S00000BE from Renesas and TCM-RX65N-OP1 from TESSERA TECHNOLOGY)
- RL78/G23 Lighting Communication Master Evaluation Board (RTK7RL23LMP00000BJ from Renesas)

The DALI Master Controller GUI features the following functions:

- Easily checking operation of the Control Gear and Control Device
- Showing a tree of short addresses that belong to each gear group for Control Gears
- Showing a tree of short addresses that belong to each device group for Control Devices
- Showing a tree of instance numbers of devices that belong to each instance group for Control Devices
- Displaying the communication status on the DALI communication bus (received frame and system failure detection status)
- Sending a user-specified 16-bit Forward Frame when an Event Message is received

The DALI master Controller GUI starts in either of two operation modes depending on the connected Lighting Communication Master Evaluation Board and firmware. The following lists and describes the functions available in each operation mode.

Table 1-1Operation modes of the DALI Master Controller GUI

Operation mode	Description	Available functions	
Control Gear Only Mode	The functions that control only the Control Gear can only be used.	[Control Gear] tab	Yes
		[Control Device] tab	No
		[Event Control] tab	No
		Command Log	Yes
		Bus Monitor View	No
		Query View	Yes
All Device Mode	In addition to the Control Gear, the Control Device can also be controlled.	[Control Gear] tab	Yes
		[Control Device] tab	Yes
		[Event Control] tab	Yes
		Command Log	Yes
		Bus Monitor View	Yes
		Query View	Yes

The following describes the operation modes available for the Lighting Communication Master Evaluation Board connected to the DALI master Controller GUI and the supported firmware versions.

Table 1-2 Correspondence between Lighting Communication Master Evaluation Boards and operation modes

Lighting Communication Master Evaluation Boards	Operation mode	Firmware version
RL78/I1A Lighting Communication Master Evaluation Board	Control Gear Only Mode	V1.0 or later
	All Device Mode	Not supported
RX65N Cloud Kit + DALI-2 option board	Control Gear Only Mode	V1.0 or later
	All Device Mode	V2.0 or later
RL78/G23 Lighting Communication Master Evaluation Board	Control Gear Only Mode	V2.0 or earlier
	All Device Mode	V2.1 or later

When the connection with the DALI Master Controller GUI is complete, the title bar shows [Operation mode] and the firmware version of the Lighting Communication Master Evaluation Board connected to ROOT in the address tree.

For details about the Lighting Communication Master Evaluation Board to be connected, see the user's manual.

1.1.1 Operating environment

1.1.1.1 Host machine

OS: Windows 10 (32-bit or 64-bit)

CPU: At least 1 [GHz]

Memory: At least 4 [GB]

1.1.1.2 Lighting Communication Master Evaluation Boards

To use the DALI Master Controller GUI, you need a lighting communication master evaluation board. Prepare one of the following boards:

- RL78/I1A Lighting Communication Master Evaluation Board (TCM-RL78I1A from TESSERA TECHNOLOGY INC.)
- RX65N Cloud Kit + DALI-2 option board RTK5RX65N0S00000BE from Renesas or TCM-RX65N-OP1 from TESSERA TECHNOLOGY)
- RL78/G23 Lighting Communication Master Evaluation Board (RTK7RL23LMP00000BJ from Renesas)

Note: EZ-0008 is not supported.

1.1.1.3 Additional components

To use the DALI Master Controller GUI, you must install the following software in advance. We recommend that you install the latest version of Service Pack irrespective of OS and components.

- Microsoft .NET Framework 4.8[Note]
- Microsoft .NET Framework 4.8 Language pack[Note] (required only in the Japanese edition Windows environment)
- Microsoft Visual C++ 2015-2022 redistributable package

For details about the Microsoft Visual C++ 2015-2022 redistributable package, see 2. Installing the Visual C++ Redistributable Package.

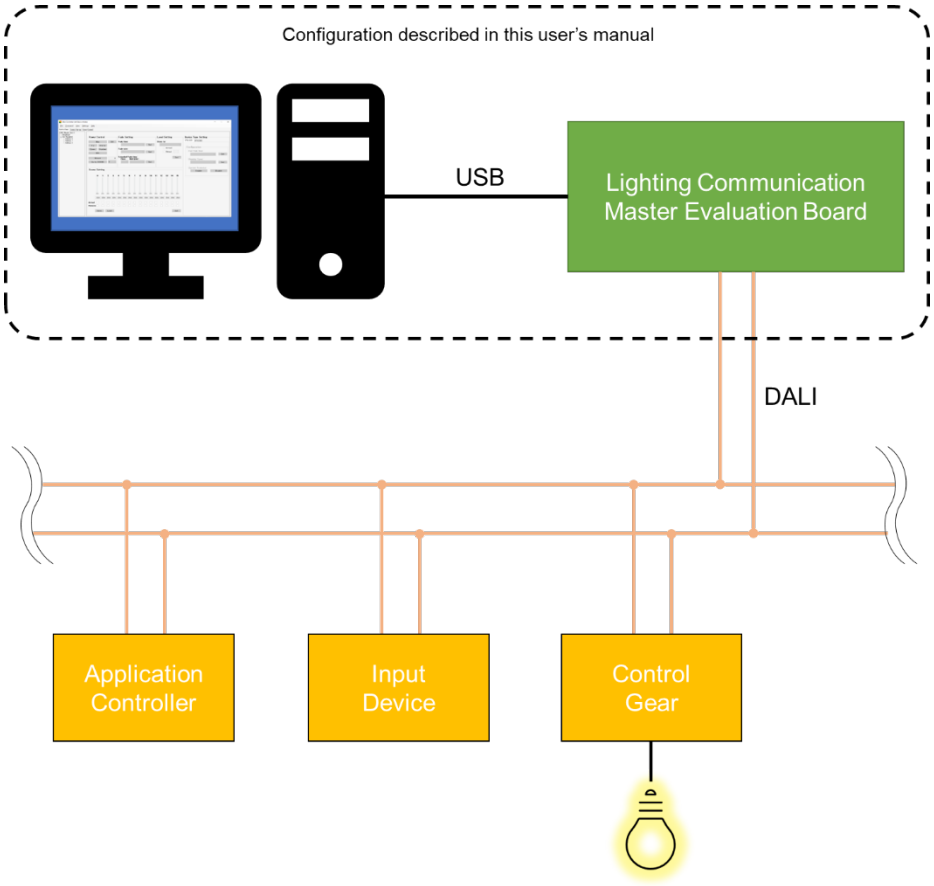
Note: Separately install the software from Microsoft only when it is not installed.

1.1.2 Overall structure

The following shows an example of overall structure.

Connect the DALI Master Controller GUI started on the PC to the Lighting Communication Master Evaluation Board by using a USB cable. After that, DALI communication can be performed via the DALI interface on the Lighting Communication Master Evaluation Board.

Figure 1-1 Example of overall structure



1.1.3 DALI communication

Serial communication is performed between the PC and the Lighting Communication Master Evaluation Board by using virtual COM-USB.

The Lighting Communication Master Evaluation Board can control DALI devices on the DALI subnet by using DALI communication.

Note: The following standards are supported:

- IEC62386-102ed2.0
- IEC62386-207ed1.0
- IEC62386-209ed1.0
- IEC62386-103ed1.1

1.2 Setup Procedure

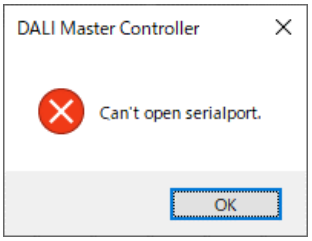
The following describes the setup procedure.

<1> Installing the Visual C++ Redistributable Package
(See 2 Installing the Visual C++ Redistributable Package.)

<2> Installing the DALI Master Controller GUI on the PC
(See 3 Installing the DALI Master Controller GUI.)

<3> Installing the driver
Connecting the Lighting Communication Master Evaluation Board and the PC via USB
Installing the driver on the PC (See 3 Installing the DALI Master Controller GUI.)

<4> Configuring the COM ports
Double-click the [DALI Master Controller GUI] icon to display [DALI Master Controller].
(See 4 Start and Termination.)
The Baud rate setting is fixed to "auto", and a connection is automatically attempted according to the device to be connected.
In other cases, the following dialog box appears. Click the [OK] button under "Can't open serialport".



Configure a COM port in the Serial window.
Ports (COM1 to COM255) differ depending on the PC to be connected.
For details about the operation procedure, see 5 Operating the DALI Master Controller GUI.
For details about each window, see 6 Window Reference.

2. Installing the Visual C++ Redistributable Package

This chapter describes how to install the Microsoft Visual C++ 2015-2022 redistributable package.

2.1 Required Files

You need the files appropriate for the OS environment.

Download the files from the Microsoft website.

(1) Microsoft Visual C++ 2015-2022 redistributable package (32-bit environment)
VC_redist.x86.exe

(2) Microsoft Visual C++ 2015-2022 redistributable package (64-bit environment)
VC_redist.x64.exe

2.2 Installing the Visual C++ Redistributable Package

Install the Visual C++ redistributable package required for the DALI Master Controller GUI.

The following describes the procedure for installation in Windows 10 (64-bit environment).

<1> Double-click [VC_redist.x64.exe]. The Visual C++ Redistributable Package Setup window appears. Confirm the license agreements and, if you agree, select the [I accept the terms of the license agreements (A)] check box, and then click the [Install] button.

<2> The User Account Control window appears. Click the [Yes] button.

<3> Install the package according to the procedure.

<4> When the installation is complete, click the [Close (C)] button.

3. Installing the DALI Master Controller GUI

This chapter describes how to install the DALI Master Controller GUI.

3.1 Installer

The DALI Master Controller GUI has the following installer.

Double-click the installer to install the package.

Figure 3-1 DALI Master Controller (Installer)

3.1.1 Installation procedure

The following describes the installation procedure.

<1> Double-click the installer. The window in Figure 3-2 appears.
Click the [Next (N)] button.

<2> Double-click the installer. The window in Figure 3-3 appears.
If you agree to the license agreement, select [Agree], and then click the [Next (N)] button.

<3> In the [Select installation folder] page, select the folder, and then click the [Next (N)] button.

<4> The Confirm Installation window appears. Click the [Next (N)] button to start installation.

<5> Installation starts.

<6> Complete the installation.

<7> The icon appears on the desktop.
Double-clicking the icon starts the DALI Master Controller GUI.

Figure 3-2 DALI Master Controller (installation complete)

3.1.2 Uninstallation procedure

The following describes the uninstallation procedure.

<1> In the [Start] menu, scroll to [W], and then select [Windows System Tools], [Control Panel], and [Programs and Features].

<2> Select [DALI Master Controller GUI] from the displayed programs, and then display the menu by right-clicking.

<3> Click [Uninstall (U)] in the menu.

<4> The DALI Master Controller GUI is uninstalled.

Note: You can also perform uninstallation from the installer.
Double-click the installer icon and then follow the instructions.

3.2 Driver

Because the drivers are installed by default in Windows, separate installation is not required.

4. Start and Termination

When the Visual C++ redistributable package and DALI Master Controller GUI are installed, you can start the DALI Master Controller GUI.

4.1 Start

<1> Connect the Lighting Communication Master Evaluation Board to the host PC.

<2> Double-click the [Master Controller GUI] icon.
Alternatively, from the [Start] menu, select [All Programs], [DALI Master Controller Ver3.00], and then [DALI Master Controller GUI Ver3.00].

<3> The DALI Master Controller window appears.

<4> In the default COM port settings, the [Port] field is blank and [Baud rate] is set to [auto].
At the initial startup, a connection is not established because Port settings are not specified yet.
From the second startup, a connection is established with the COM port that was previously configured.
If the connection is attempted to a COM port that has already been opened by another application, a dialog box indicating "Can’t open serialport." appears.
If the COM port attempted to be connected is opened successfully but the connection communication fails, a dialog box indicating "No response from the master board" appears.
At the initial startup or if the connection is not successful, configure the appropriate COM port in the Serial window (window for configuring a COM port).

Figure 4-1 Window at startup (COM port open failed)

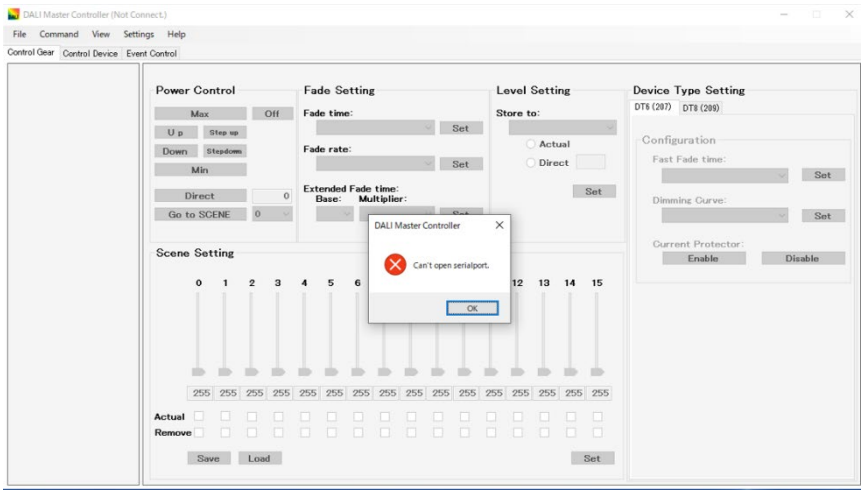
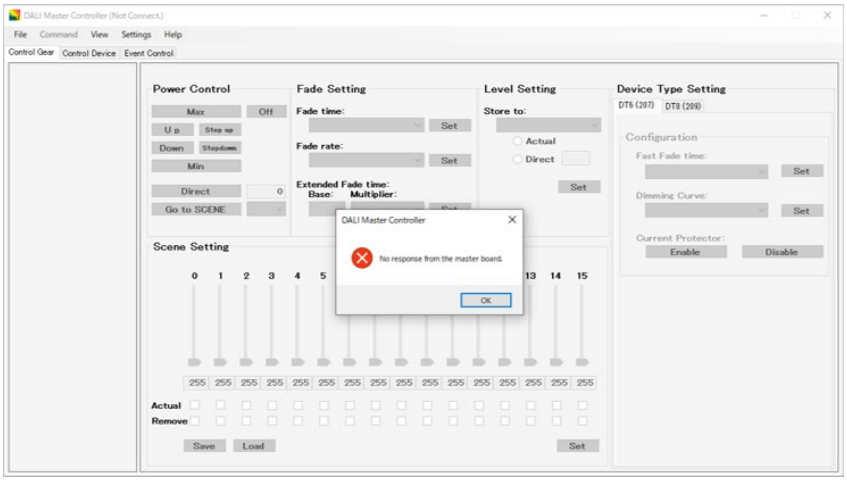


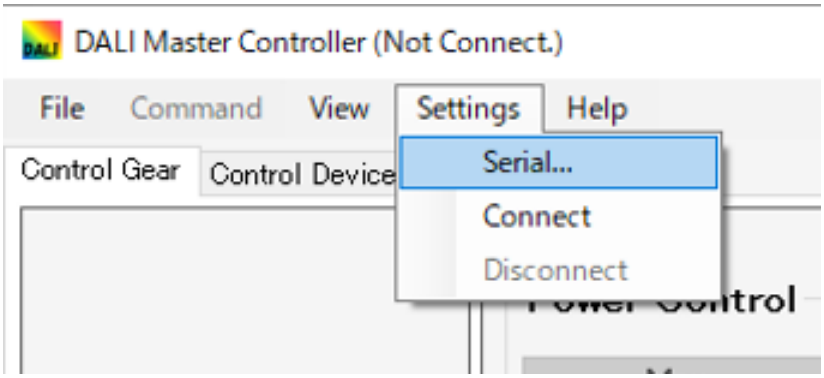
Figure 4-2 Window at startup (connection communication failed)



<5> Click the [OK] button.

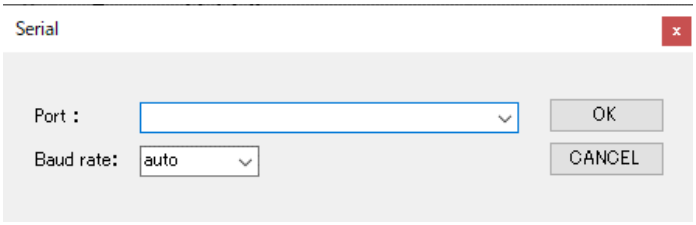
<6> On the menu bar, select [Settings], [Serial], and then specify the COM port and baud rate.

Figure 4-3 DALI Master Controller window



<7> In the Serial window, configure the COM port, and then click the [OK] button.
Ports (COM1 to COM255) differ depending on the PC to be connected.

Figure 4-4 Serial window



<8> When the connection with the Lighting Communication Master Evaluation Board is successful, you can specify settings.

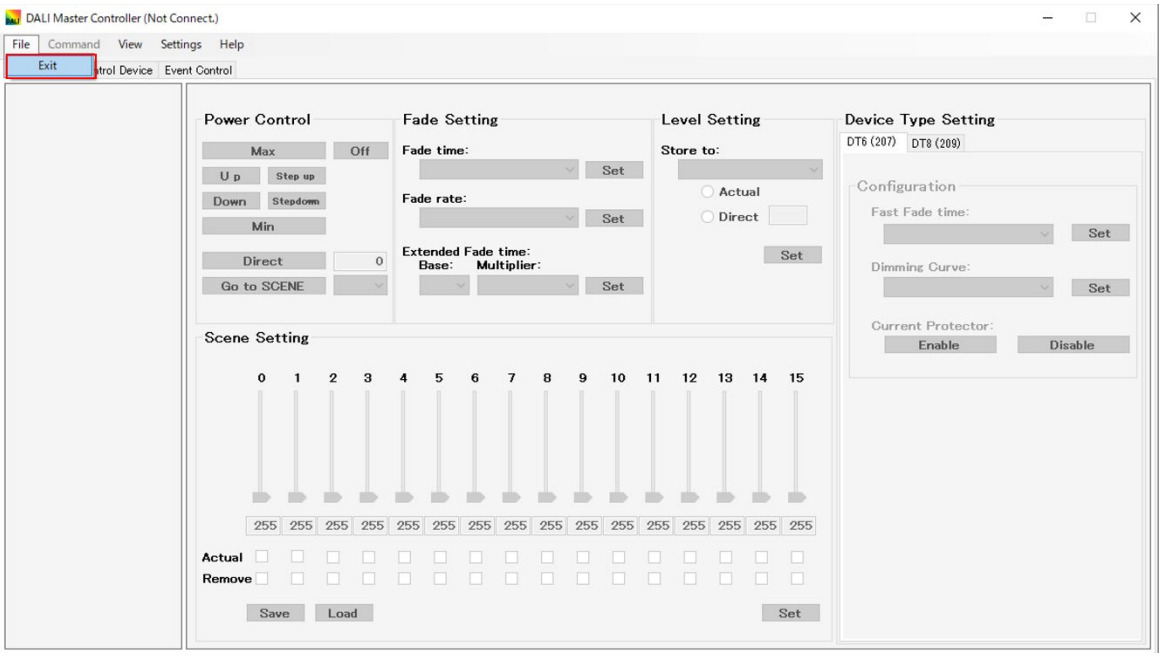
Table 4-1 Recommended baud rate settings for Lighting Communication Master Evaluation Boards

Lighting Communication Master Evaluation Boards	Recommended baud rate setting
RL78/I1A Lighting Communication Master Evaluation Board	250000 [bps]
RX65N Cloud Kit + DALI-2 option board	115200 [bps]
RL78/G23 Lighting Communication Master Evaluation Board	250000 [bps]

4.2 Exit

<1> Select [File], and then [Exit].

Figure 4-5 Window when exiting



<2> Close the DALI Master Controller window.

5. Operating the DALI Master Controller GUI

This chapter provides some examples of DALI Master Controller GUI operations.

5.1 [Control Gear] tab

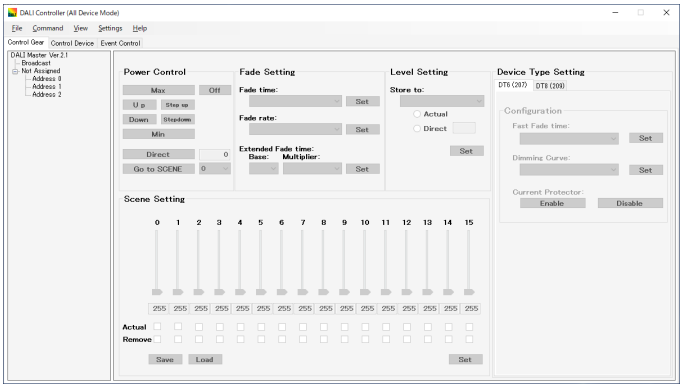
This tab is used to control the Control Gears connected to the DALI subnet.

5.1.1 Assigning short addresses

The following provides an example of assigning short addresses.

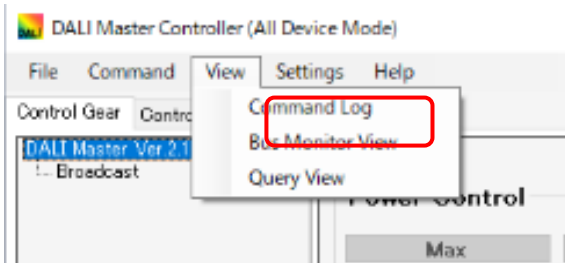
<1> Start the DALI Master Controller GUI by double-clicking the [Master Controller GUI] icon.

Figure 5-1 Assigning short addresses (1)



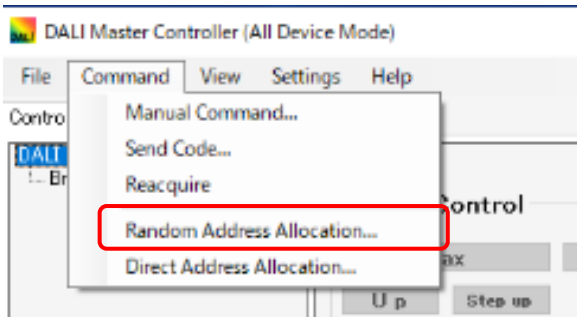
<2> In the main menu, select [View] and then [Command Log]. The Command Log window appears. The sent command and its response can be displayed in text format in another Command Log window.

Figure 5-2 View (menu)



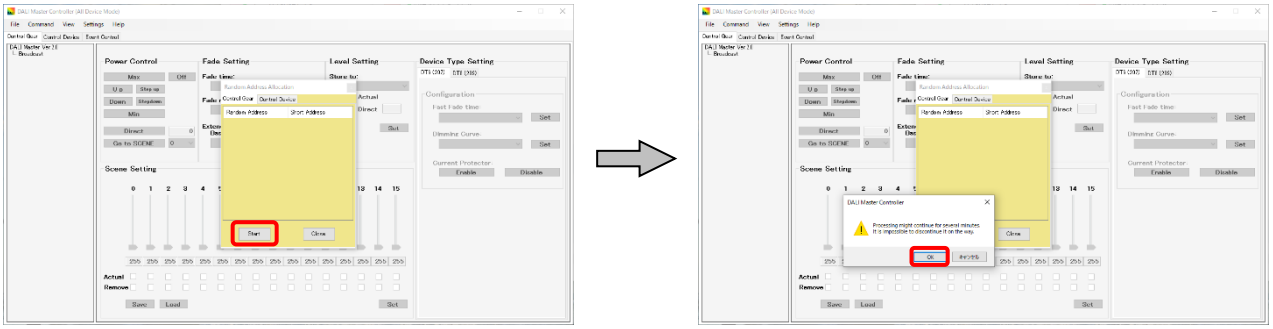
<3> In the main menu, select [Command] and then [Random Address Allocation].

Figure 5-3 Command (menu)



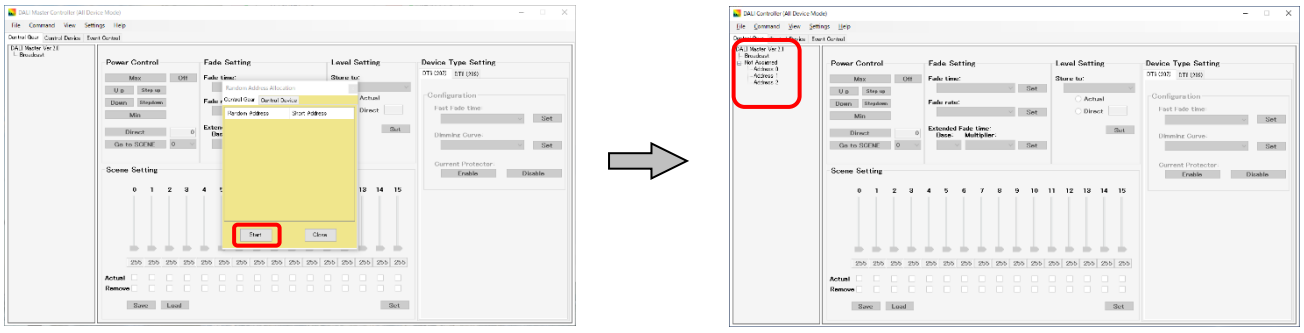
<4> The Random Address Allocation window appears.
Click the [Start] button, and then click the [OK] button.

Figure 5-4 Random Address Allocation window (1)



<5> The short address is assigned. Click the [Close] button to close the window.
Short addresses are assigned under [Not Assigned].

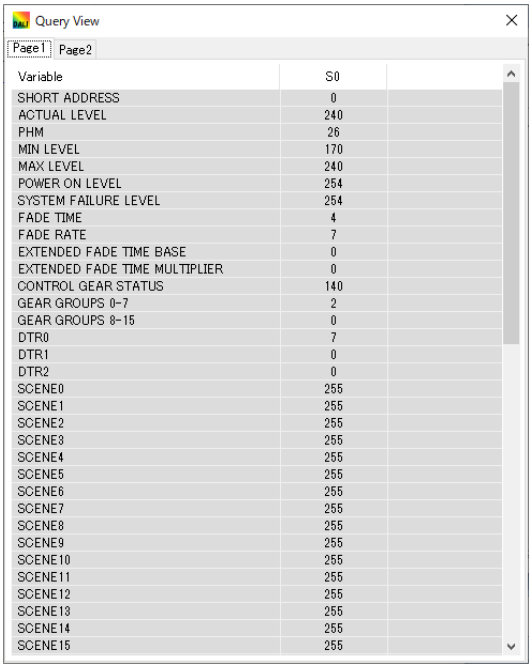
Figure 5-5 Random Address Allocation window (2)



<6> In the main menu, select [View] and then [Query view]. The [Query view] window appears.

<7> Right-click [Short Address 0], and then click [Query]. The window changes as follows.

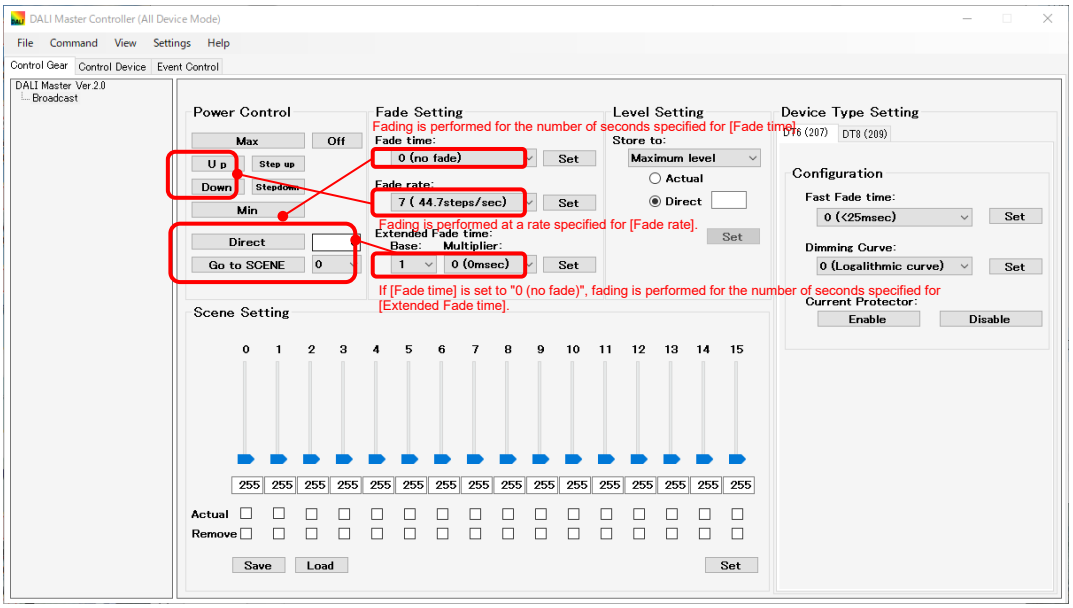
Figure 5-6 Query View window

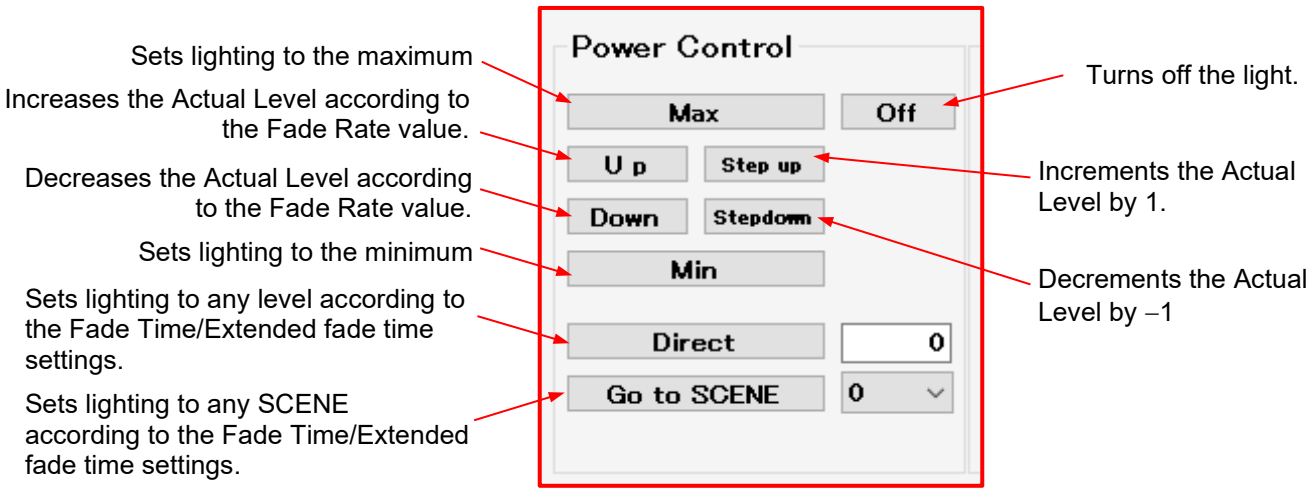


5.1.2 Power Control

The [Power Control] field allows you to control lighting for the selected address.

Figure 5-7 Power Control





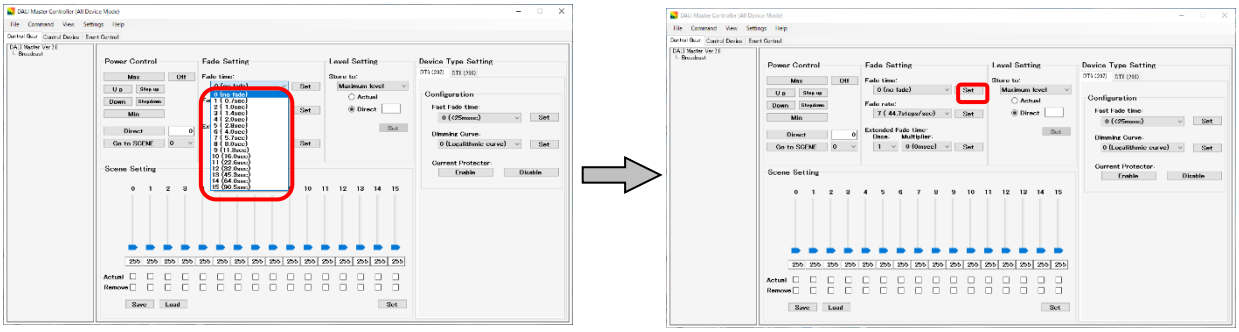
5.1.3 Fade Setting

The [Fade Setting] field allows you to specify the Fade time and Fade rate.

The following provides an operation example of turning off the lighting after two seconds of fading for Address 0 with the maximum level (240).

<1> Select [Address 0], select [4 (2.000sec)] for [Fade time], and then click the [Set] button.

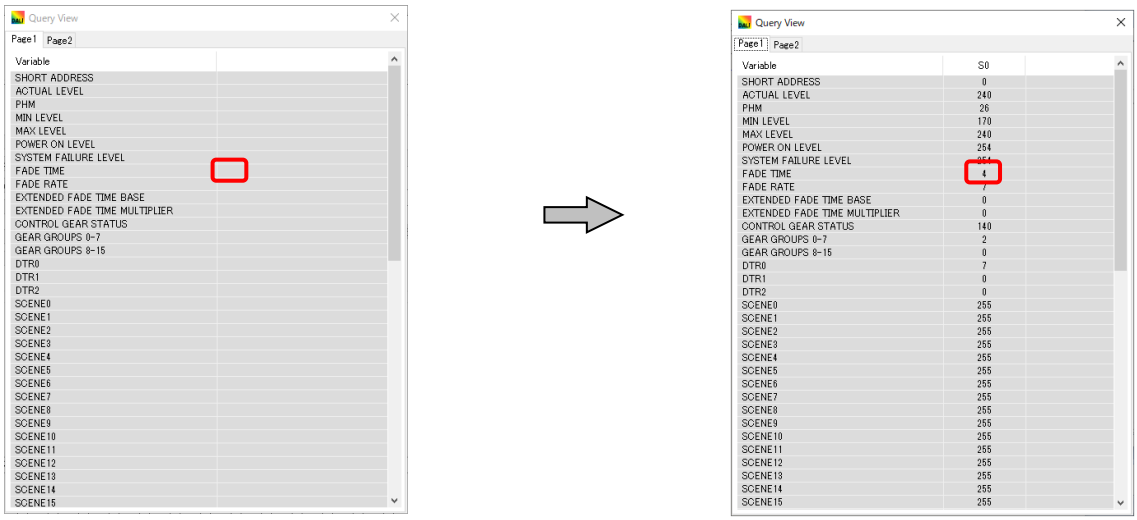
Figure 5-8 Fade time setting example (1)



<2> In the main menu, select [View] and then [Query view]. The [Query view] window appears.

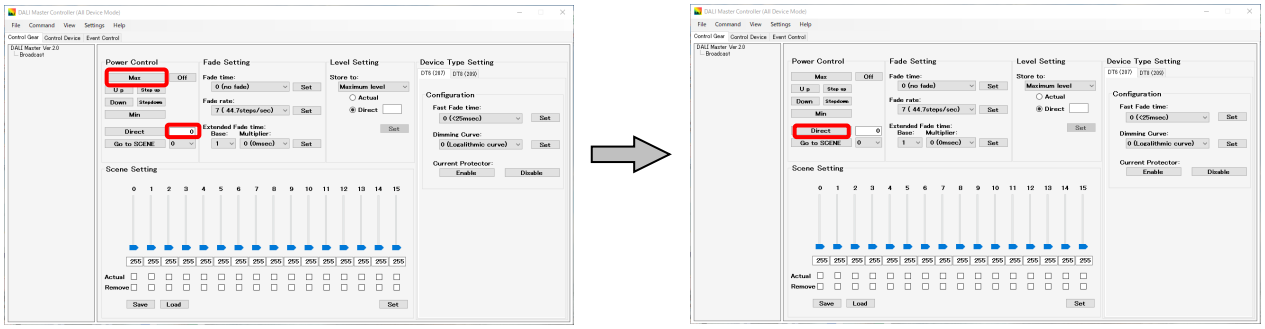
<3> Right-click [Short Address 0], and then click [Query]. Then the [Fade time] column displays "4".

Figure 5-9 Fade time setting example (2)



<4> Click the [Max] button to set lighting at the maximum level. Enter "0" in the text box beside the [Direct] button and then click the [Direct] button. The lighting is turned off after two seconds of fading.

Figure 5-10 Fade time setting example (3)



Note: When using the [Extended Fade time] option, you must set [Fade time] to "0 (no fade)".

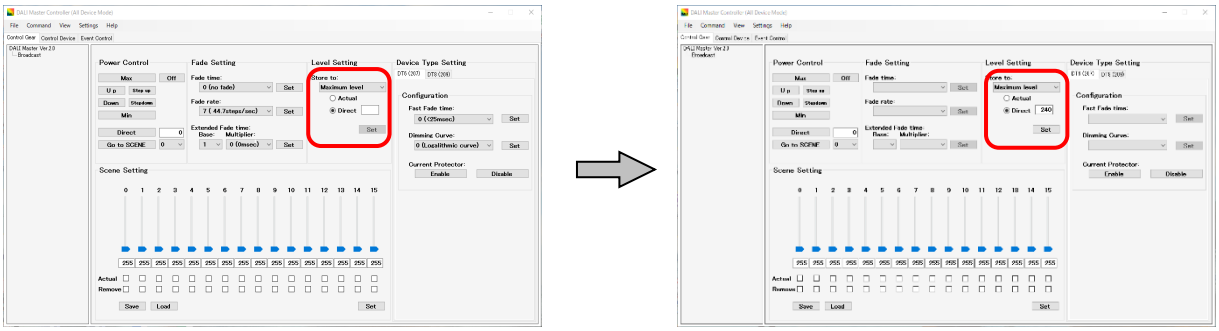
5.1.4 Level Setting

The [Level Setting] field allows you to specify the upper and lower limits of the Actual Level, Power On Level, and System Failure Level.

The following provides an example of setting Max. Level (254) for Address 0 to Max. Level (240).

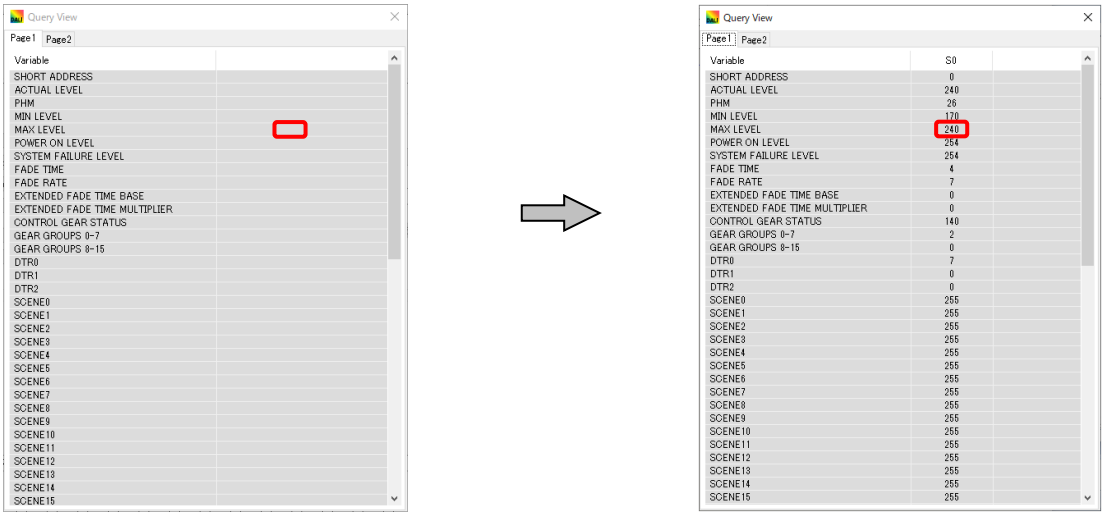
<1> Select [Address 0], and then select [Maximum level] from the drop-down list for [Store to]. Select [Direct], and then directly enter "240". Click the [Set] button.

Figure 5-11 Level Setting specification example (1)



<2> Right-click [Address 0], and then click [Query]. Then, the [Max. level] column indicates "240".

Figure 5-12 Level Setting specification example (2)



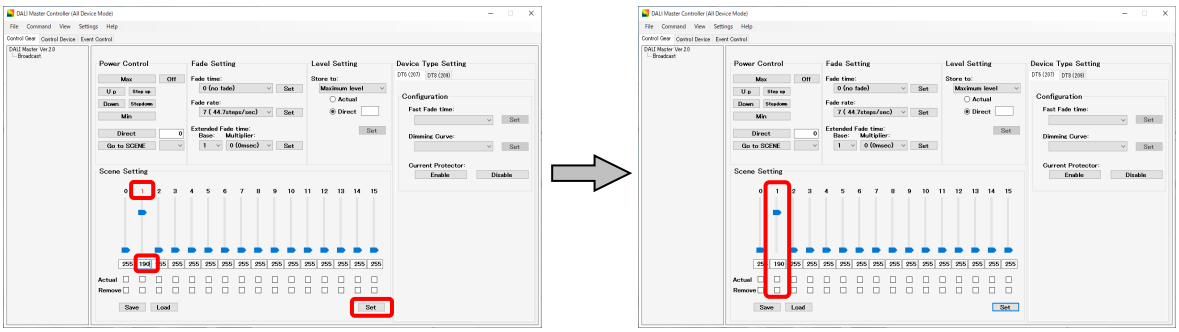
5.1.5 Scene Setting

The [Scene Setting] field allows you to specify the Actual Level for each of Scenes 0 to 15.

The following provides an example of setting the lighting level to 190 after two seconds of fading for Scene 1 of Address 0 by specifying "190" for the Actual Level and using the [Go to SCENE] button.

<1> Select [Address 0], and then directly enter "190" for the Actual Level for Scene 1 (you can also set the level to 190 by using the slider bar).
When the value is changed, the number of Scene 1 turns red.
Click the [Set] button. When the value of Scene 1 is set, the corresponding number turns black.

Figure 5-13 Scene Setting specification example (1)



<2> Set [Fade time] to [4 (2.000sec)], and then click the [Set] button.

<3> Select "1" (Scene number) in the drop-down list beside the [Go to SCENE] button, and then click the [Go to SCENE] button. The lighting level is set to 190 after two seconds of fading.

5.1.6 Device Type Setting

You can specify the settings related to the device type (EC62386-2XX).

The DALI Master Controller GUI supports the following device types:

- Device type 6 (standard: IEC62386-207 ed1.0)
- Device type 8 (standard IEC62386-209 ed1.0)

5.2 [Control Device] tab

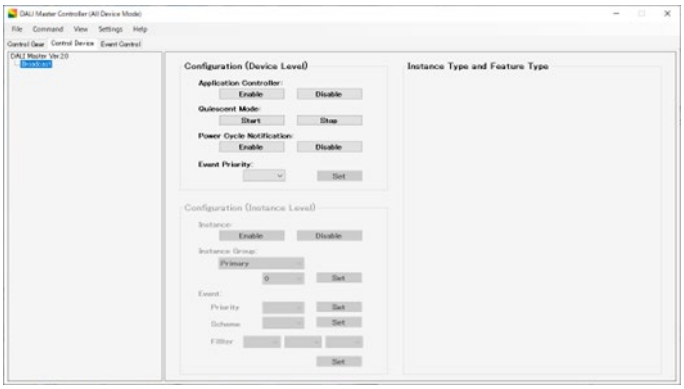
This tab is used to control the Control Devices (Application Controller and Input Device) connected to the DALI subnet.

5.2.1 Assigning short addresses

The following provides an example of assigning short addresses.

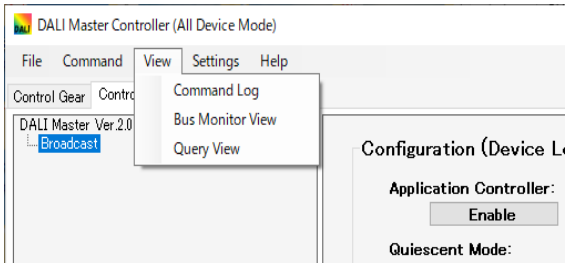
<1> Start the DALI Master Controller GUI by double-clicking the [Master Controller GUI] icon.
Click the [Control Device] tab.

Figure 5-14 Assigning short addresses (1)



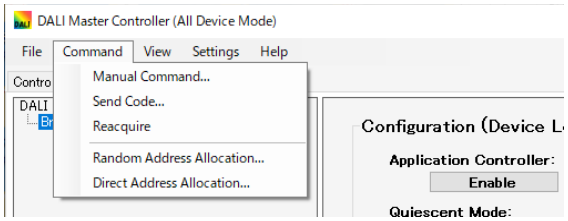
<2> In the main menu, select [View] and then [Log]. The Command Log window appears.
The sent command and its response can be displayed in text format in another Command Log window.

Figure 5-15 View (menu)



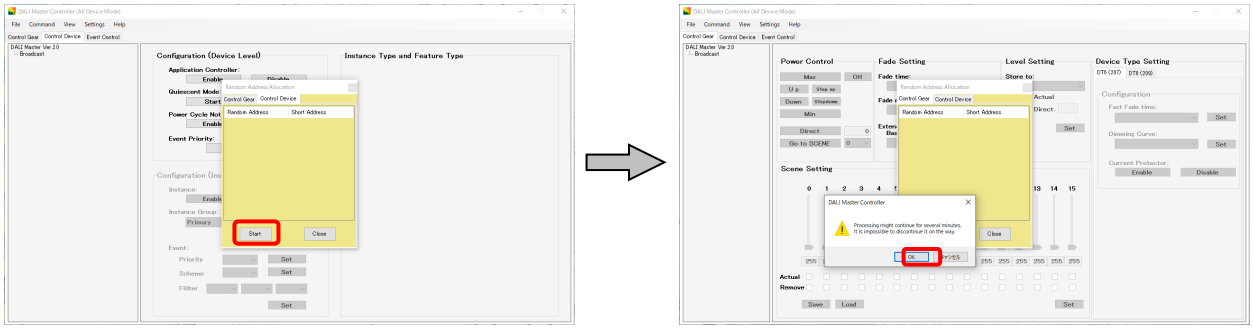
<3> In the main menu, select [Command] and then [Random Address Allocation].

Figure 5-16 Command (menu)



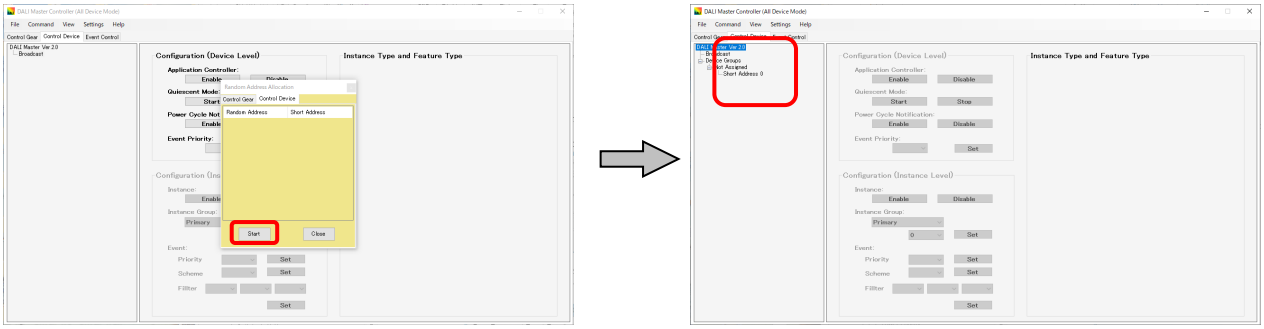
<4> The Random Address Allocation window appears. Click the [Control Device] tab.
Click the [Start] button, and then click the [OK] button.

Figure 5-17 Random Address Allocation window (1)



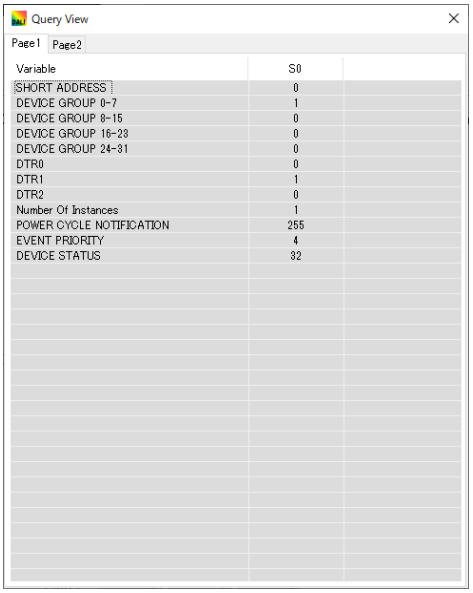
<5> Short addresses are assigned. Click the [Close] button to close the window.
Short addresses are assigned under [Not Assigned].

Figure 5-18 Random Address Allocation window (2)



<6> Right-click [Short Address 0], and then click [Query]. The window changes as follows.

Figure 5-19 Assigning short addresses (2)



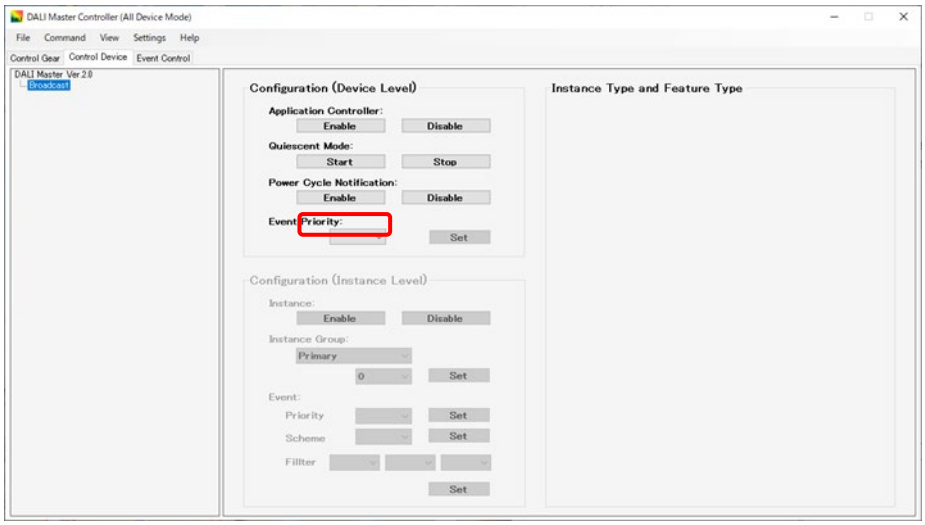
5.2.2 Configuration (Device Level)

In the [Configuration (Device Level)] field, you can specify the Device Level for the Control Device.

The following provides an example of specifying [Enable] for [Power cycle Notification] for Address 0.

<1> Select [Address 0], and then click the [Enable] button for [Power Cycle Notification].

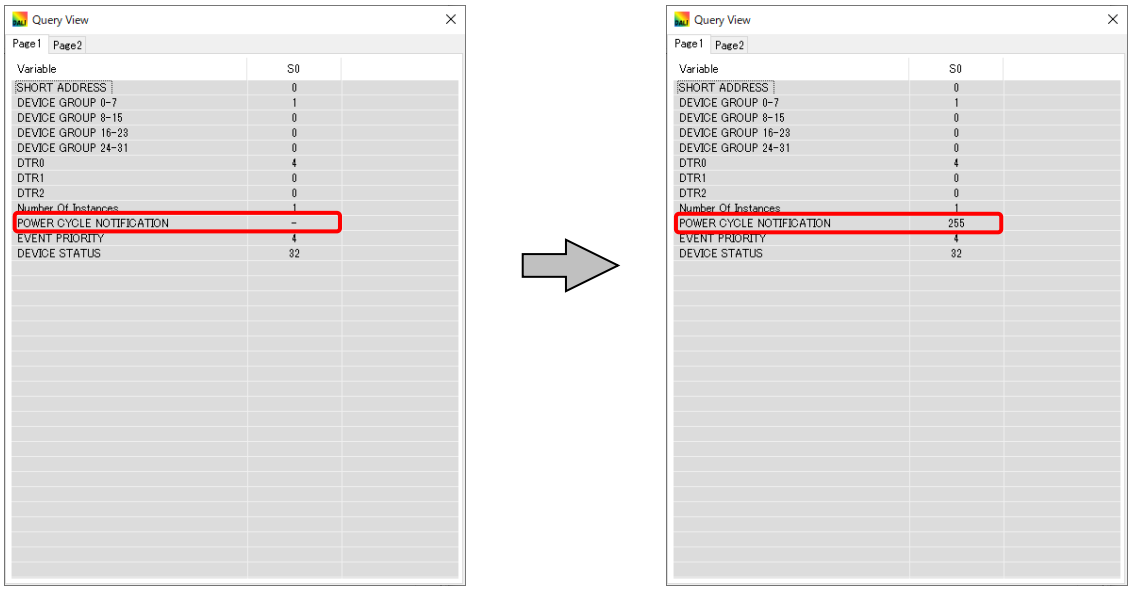
Figure 5-20 Configuration (Device Level) specification example (1)



<2> In the main menu, select [View] and then [Query view]. The [Query view] window appears.

<3> Right-click [Short Address 0], and then click [Query]. Then, the [POWER CYCLE NOTIFICATION] column indicates "255".

Figure 5-21 Configuration (Device Level) specification example (2)



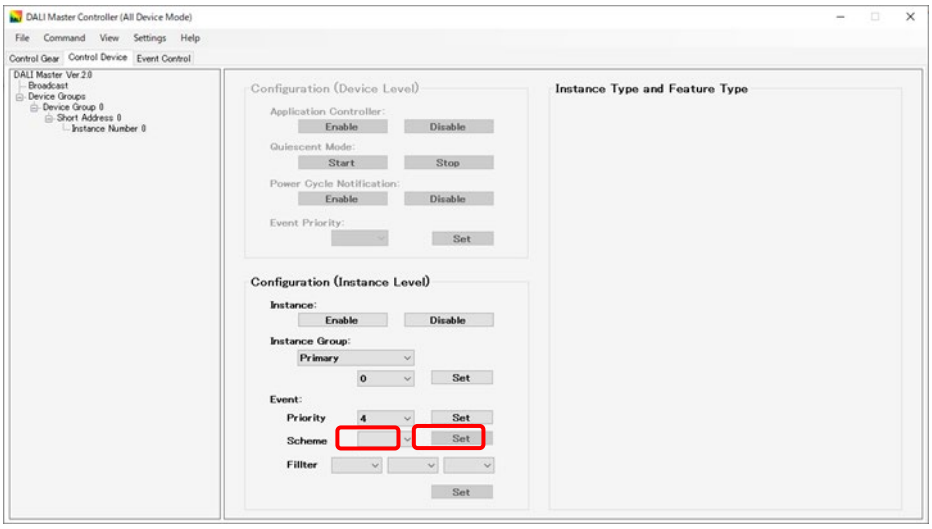
5.2.3 Configuration (Instance Level)

The [Configuration (Instance Level)] field allows you to specify the Instance Level for the Control Device.

The following provides an example of specifying [Enable] for the instance of [Instance Number 0] for Short Address 0.

<1> Select [Address 0], and then select [Instance Number 0]. Then, under [Event:], select "4" for [Priority], and then click the [Set] button.

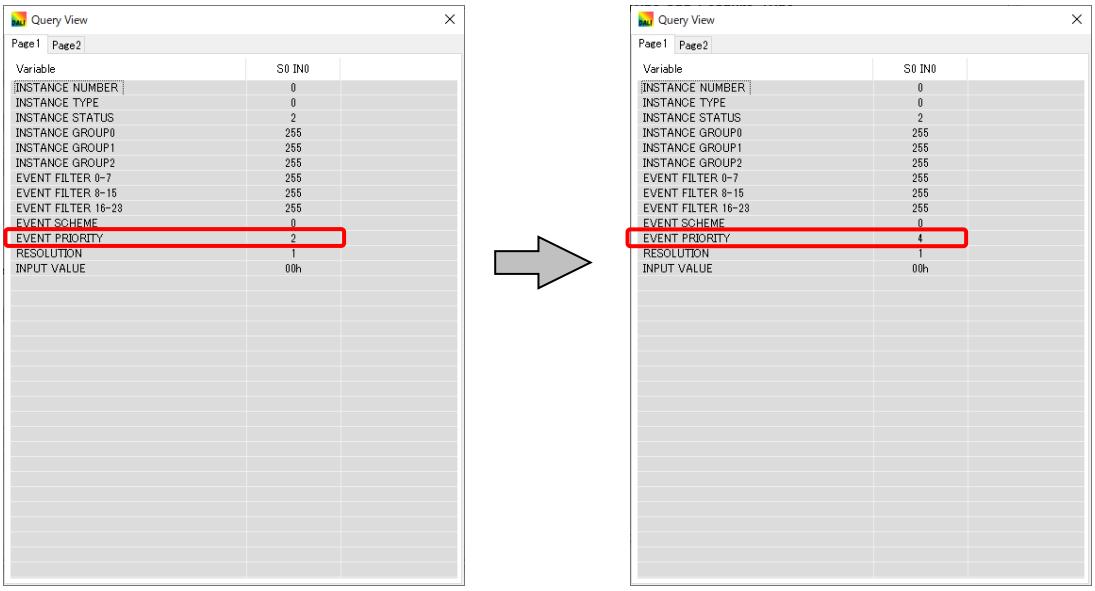
Figure 5-22 Configuration (Instance Level) specification example (1)



<2> In the main menu, select [View] and then [Query view]. The [Query view] window appears.

<3> Right-click [Short Address 0], and then click [Query]. Then, the [EVENT PRIORITY] column indicates "4".

Figure 5-23 Configuration (Instance Level) specification example (2)



5.2.4 Instance Type and Feature Type

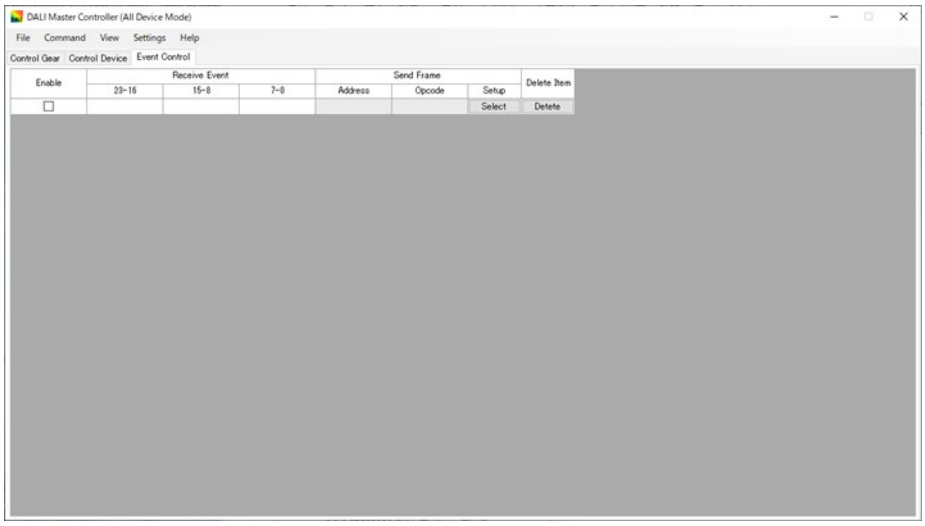
You can specify the settings related to the Instance Type (IEC62386-3XX, where XX is 01 to 31) and Feature Type (IEC62386-3XX, where XX is 32 to 96).

The current version of the DALI Master Controller GUI does not support any Instance Type or Feature Type.

5.3 [Event Control] tab

Event Messages exist as DALI frames that notify the device status of the Control Device. Like the Application Controller, the DALI Master Controller GUI can automatically send a 16-bit Forward Frame when receiving an Event Message.

Figure 5-24 [Event Control] tab



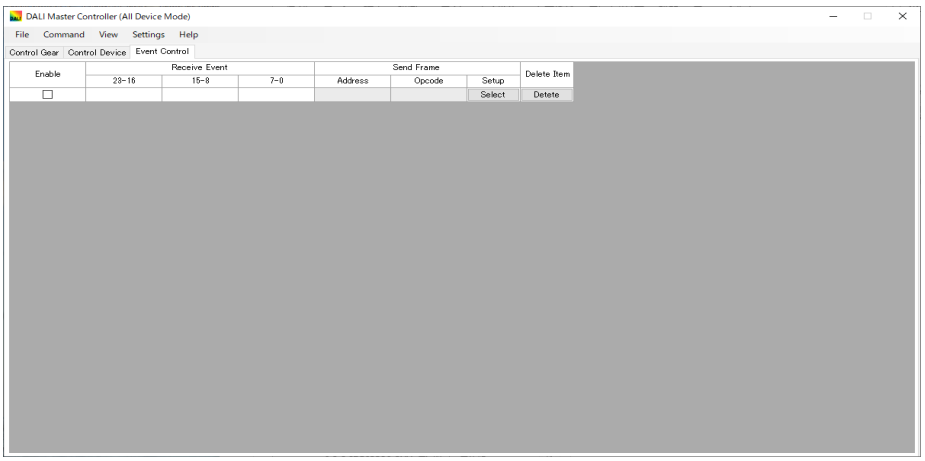
The DALI Master Controller GUI displays a received Event Message in the [Event Control] tab. By registering a 16-bit Forward Frame corresponding to that message, the registered 16-bit Forward Frame will be automatically sent when the same Event Message is received.

The following provides an example of registering the DIRECT ARC POWER CONTROL frame for the received Event Message so that the corresponding response frame will be automatically sent when the same Event Message is received.

<1> Start the DALI Master Controller GUI by double-clicking the [Master Controller GUI] icon.

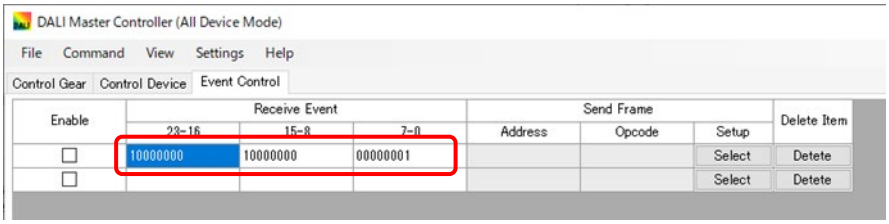
<2> Click the [Event Control] tab.

Figure 5-25 [Event Control] tab operation example (1)



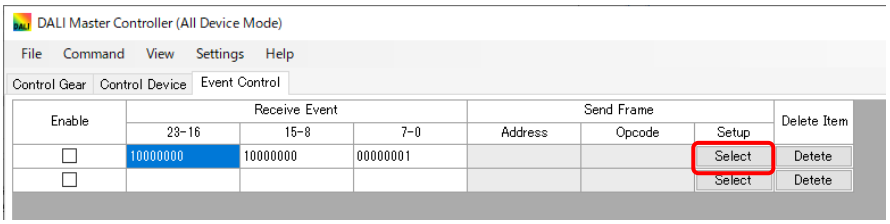
<3> Press the Touch Key of the RL78/G23 to send an Event Message.
When the Event Message is received, the received frame is displayed in the [Event Control] tab.

Figure 5-26 [Event Control] tab operation example (2)



<4> Click the [Select] button to display the Event Response Setting window.

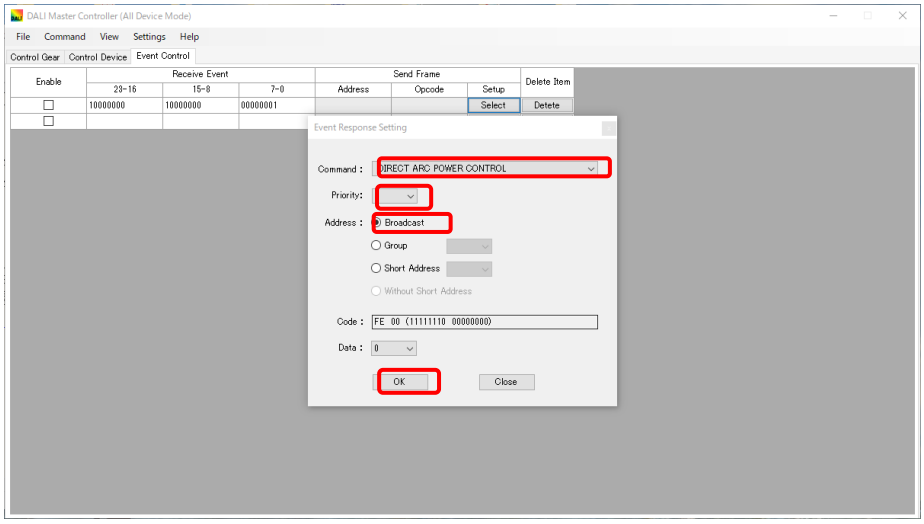
Figure 5-27 [Event Control] tab operation example (3)



<5> In the Event Response Setting window, specify the settings as follows:
[Command]: "DIRECT ARC POWER CONTROL"
[Property]: "2"
[Address]: Select "Broadcast".

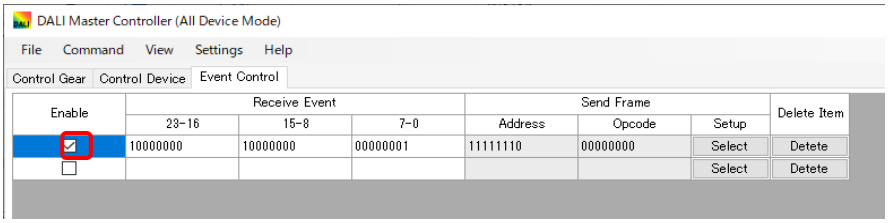
<6> Click the [OK] button.

Figure 5-28 [Event Control] tab operation example (4)



<7> Click to select the [Enable] check box.

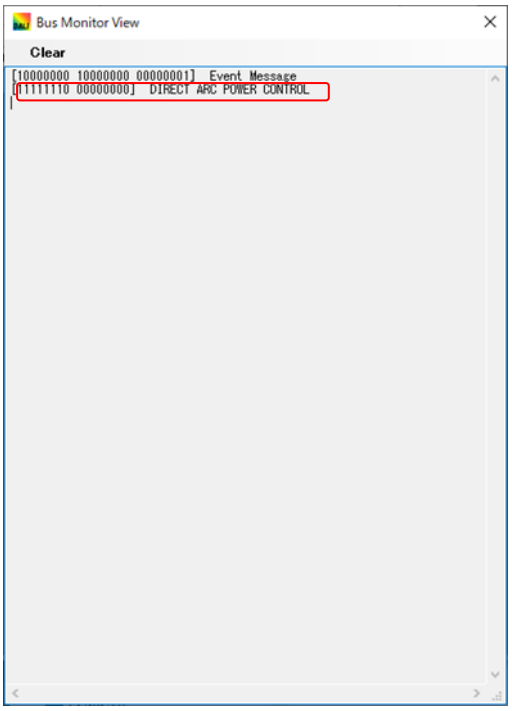
Figure 5-29 [Event Control] tab operation example (5)



<8> In the main menu, select [View] and then [Bus Monitor view]. The Bus Monitor View window appears.

<9> When you send the same Event Message again, the registered response frame is automatically sent.

Figure 5-30 [Event Control] tab operation example (6)



6. Window Reference

6.1 List of Windows

The following shows a list of windows

Table 6-1 List of windows

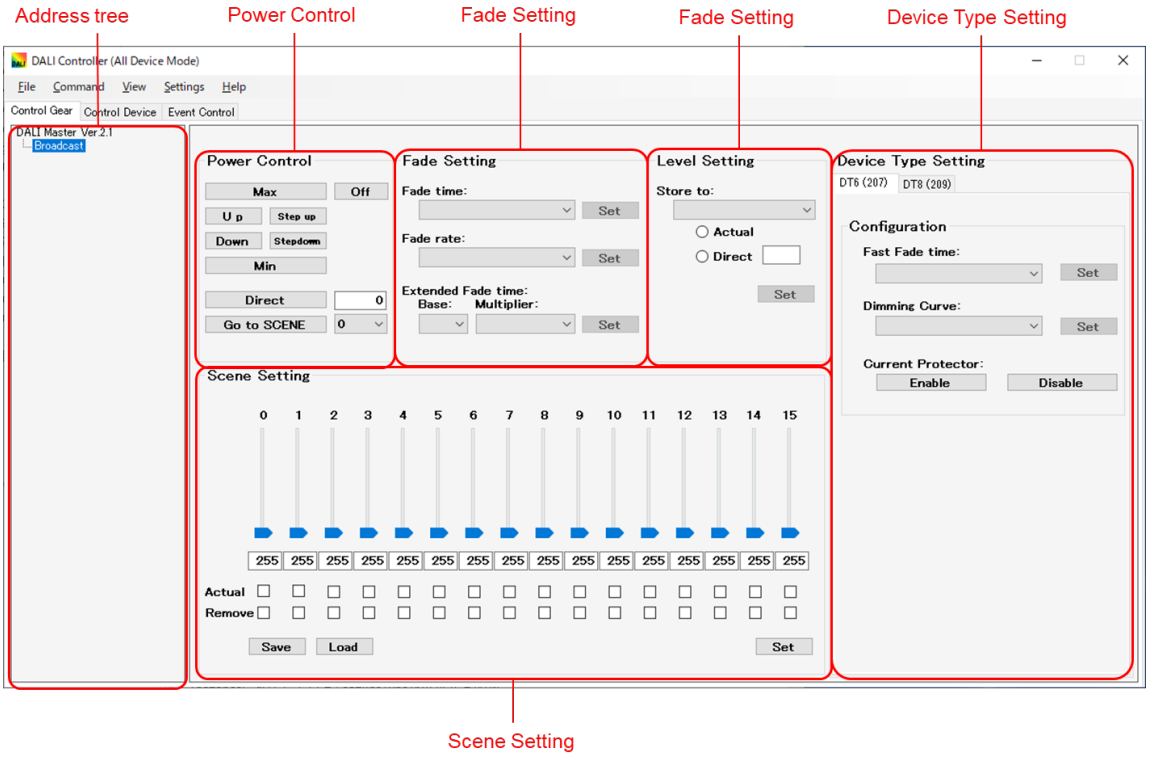
Window	Description	Reference
Main window	This window is first displayed when the DALI Master Controller GUI starts.	6.2
Manual Command window	This window is used to select a command to be sent from the drop-down list and send the command code.	6.3
Manual Command (By Code) window	This window is used to directly enter a command to be sent and send the command code.	6.4
Random Address Allocation window	This window displays a list of assigned random addresses and short addresses.	6.5
Direct Address Allocation window	This window is used to directly assign short addresses.	6.6
Command Log window	This window displays transmission and reception results in text format, assuming the DALI Master Controller GUI as the starting point.	6.7
Bus Monitor View	This window monitors the bus status on the DALI subnet connected to the Lighting Communication Master Evaluation Board.	6.8
Query View	This window is used to perform a query of variables for the specified DALI devices and display the results.	6.9
Serial window	This window is used to configure serial ports.	6.10
Change Address window	This window is used to change short addresses.	6.11
Version window	This window is used to confirm the version.	6.12

6.2 Main Window

6.2.1 [Control Gear] tab

The [Control Gear] tab contains the following function groups. The following describes each function group.

Figure 6.1 Main window ([Control Gear] tab)



6.2.1.1 Address tree

A tree consisting of Broadcast, Groups 0 to 15, and Short Addresses is displayed for Control Gears.

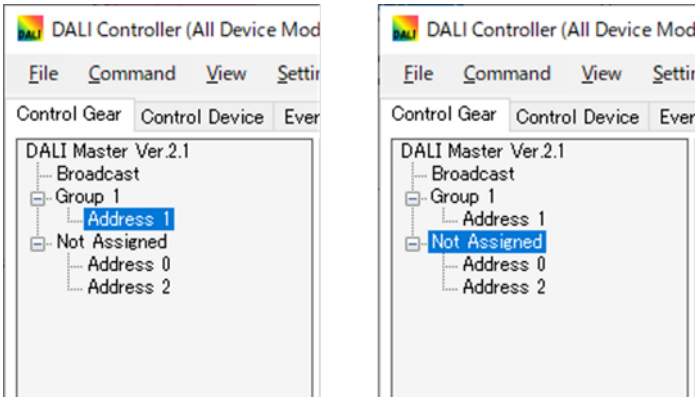
The short address of a Control Gear that does not belong to any group is displayed under [Not Assigned].

A Control Gear without a short address assigned is not displayed.

The displayed short addresses are sorted in ascending order in the group.

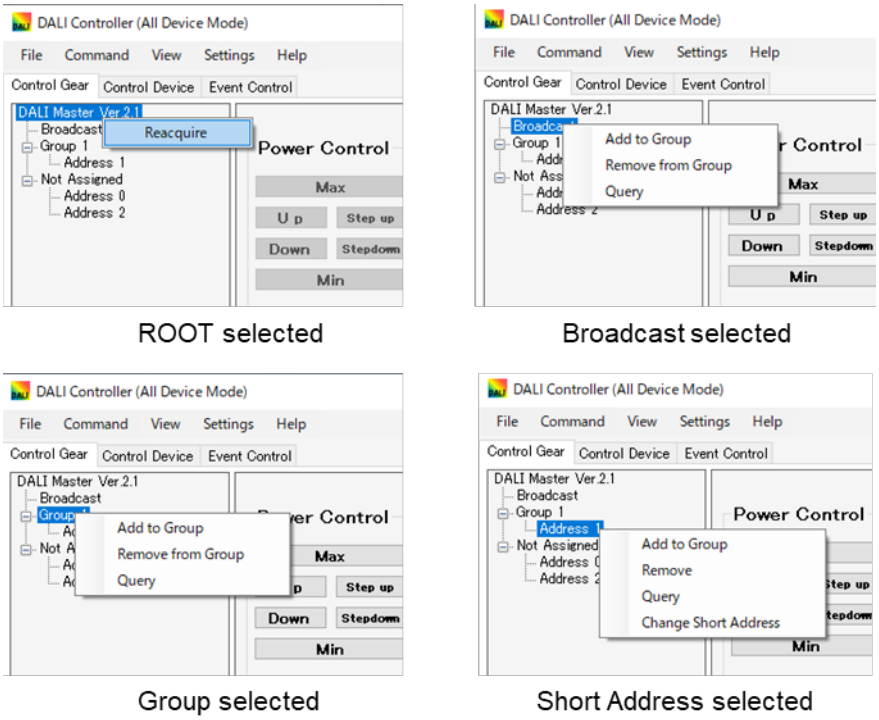
Multiple items cannot be selected.

Figure 6-2 Address tree ([Control Gear] tab)



You can perform operations on Broadcast, Group, and Short Address in the tree by using the right-click menus.

Figure 6-3 Address tree (right-click menus on the [Control Gear] tab)



(1) Root selected

[Reacquire]: Acquires information about the connected Control Gear and redisplays the address tree.

(2) Broadcast selected

[Add to Group]: Adds all Control Gears to any Group.

[Remove From Group]: Removes all Control Gears from any Group.

[Query]: Acquires the latest settings of all Control Gears and applies the settings to the Query View.

(3) Group selected

[Add to Group]: Adds all Control Gears belonging to the specified Group to any Group.

[Remove From Group]: Removes all Control Gears belonging to the specified Group from any Group.

[Query]: Acquires the latest settings of all Control Gears belonging to the specified Group and applies the settings to the Query View.

(4) Short Address selected

[Add to Group]: Adds the Control Gear with the specified short address to any Group.

[Remove]: Removes the Control Gear with the specified short address from any Group.

[Query]: Acquires the latest settings of the Control Gear with the specified short address and applies the settings to the Query View.

[Change Short Address]: Changes the short address of the Control Gear with the specified short address to any address.

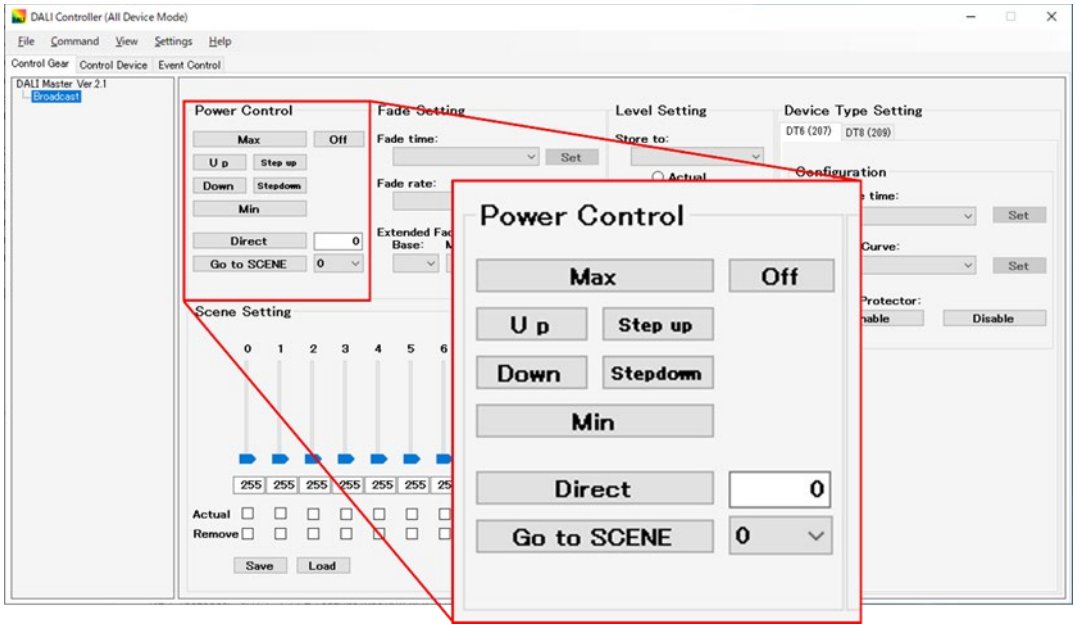
Note: You cannot use the fields such as [Power Control] and [Fade Setting] until the valid Broadcast, Group, and Short Address are selected.

6.2.1.2 Power Control

The [Power Control] field has buttons for manipulating the Actual Level.

Clicking a button in the [Power Control] field sends a command to the selected address.

Figure 6-4 Power Control



(1) [Max] button

Sends the RECALL MAX LEVEL command to the selected address.

(2) [Min] button

Sends the RECALL MIN LEVEL command to the selected address.

(3) [Up] button

Sends the UP command to the selected address.

(4) [Down] button

Sends the DOWN command to the selected address.

(5) [Step up] button

Sends the STEP UP command to the selected address.

(6) [Step down] button

Sends the STEP DOWN command to the selected address.

(7) [Off] button

Sends the OFF command to the selected address.

(8) [Direct] button

Sends the value in the text box to the selected address by using the DIRECT ARC POWER CONTROL command. The range of valid input values is from 0 to 255 (the default setting is 0).

If 255 is entered in the text box, the displayed button changes to [Stop Fading].

If an invalid value is entered in the text box, the [Direct] button is disabled.

(9) [Go to SCENE] button

Sends the GO TO SCENE command to the selected address.

You can select a value from 0 to 15 in the drop-down list corresponding to the [Scene Setting] field (the default setting is 0).

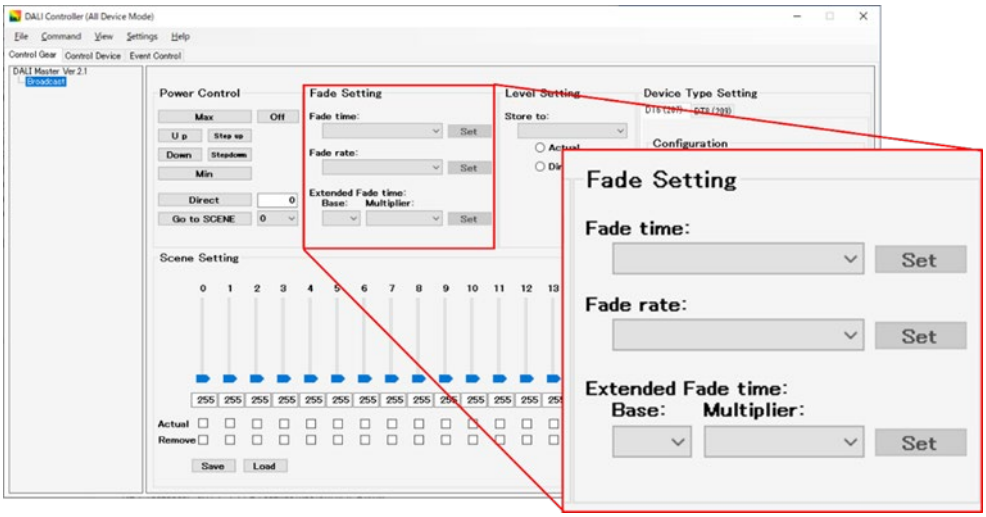
6.2.1.3 Fade Setting

The [Fade Setting] field contains the drop-down lists used to specify the fade time and fade rate.

The specified settings are not sent to the Control Gear unless the [Set] button is clicked.

To apply the settings, you must click the [Set] button.

Figure 6-5 Fade Setting



(1) Fade time

Select one of the following 16 options in the drop-down list: "0 (no fade)" and "1 (0.707sec)" to "15 (90.510sec)".

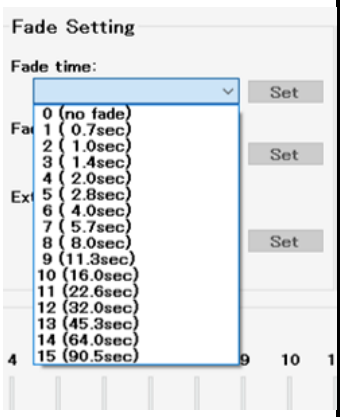
(The default is empty.)

If the selected address is a short address, the set value is displayed.

Clicking the [Set] button sends the DTR0 command and then SET FADE TIME command to the selected address.

The command can't be sent if the Fade time is not changed for the selected address.

Table 6-2 Fade time

Setting	Fade time (sec)	Drop-down list
0	no fade	
1	0.707	
2	1.000	
3	1.414	
4	2.000	
5	2.828	
6	4.000	
7	5.657	
8	8.000	
9	11.314	
10	16.000	
11	22.627	
12	32.000	
13	45.255	
14	64.000	
15	90.510	

Note: The default value is "0 (no fade)".

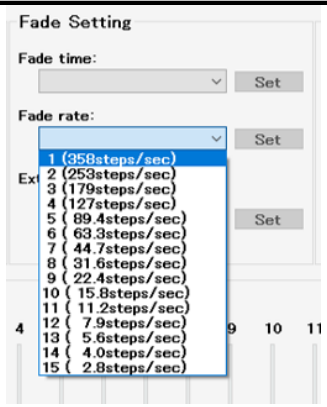
(2) Fade rate

Select one of the following 15 options in the drop-down list (the default is empty): "1 (357.796steps/sec)" to "15 (2.795steps/sec)".

If a short address is selected, the value specified for this address is displayed.

Clicking the [Set] button sends the DTR0 command and then SET FADE RATE command to the selected address. The command can't be sent if the Fade rate is not changed for the selected address.

Table 6-3 Fade rate

Setting	Fade rate (steps/sec)	Drop-down list
1	357.796	
2	253.000	
3	178.898	
4	126.500	
5	89.449	
6	63.250	
7	44.725	
8	31.625	
9	22.362	
10	15.813	
11	11.181	
12	7.906	
13	5.591	
14	3.953	
15	2.795	

Note: The default value is [7 (44.7steps/sec)].

(3) Extended Fade time

For [Base] under [Extended Fade time], you can select one of the 16 options "1 (0000B)" to "16 (1111B)" in the drop-down list. For [Multiplier] under [Extended Fade time], you can select one of five options "0 (0msec)" to "4 (1min)" in the drop-down list.

If a short address is selected, the value specified for this address is displayed.

Clicking the [Set] button sends the DDTR0 command and then SET EXTENDED FADE TIME command to the selected address. The command can't be sent if the Extended Fade time is not changed for the selected address.

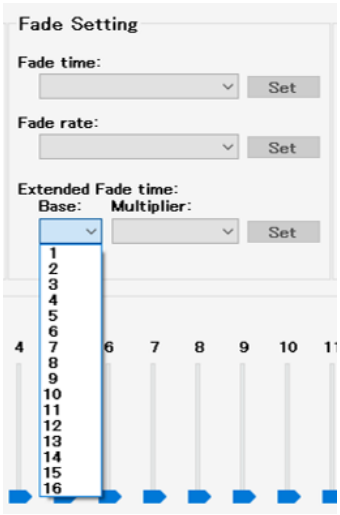
The [Extended Fade time] setting determines the fade time by using a combination of the [Base] and [Multiplier] settings. The [Base] and [Multiplier] settings are specified at the same time by using the SET EXTENDED FADE TIME command.

When DTR0 is set, the setting data combined with *YYYAAAA*B (*YYY*: Multiplier, *AAAA*: Base) is sent.

Note: To use the [Extended Fade time] setting, you must specify as follows:

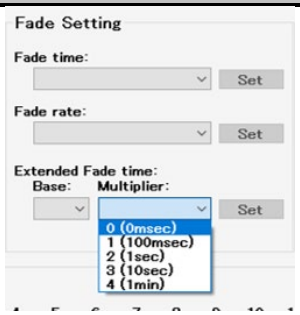
1. Set [Fade time] to "0(no fade)".
2. Set [Fast Fade Time] to "0 (<25msec)".
   Note: [Fast Fade Time] is only applicable to Control Gears extended with Device Type 6 (standard: IEC62386-207).

Table 6-4 Extended Fade time base

Setting	Fade time base	Drop-down list
1	0000B	
2	0001B	
3	0010B	
4	0011B	
5	0100B	
6	0101B	
7	0110B	
8	0111B	
9	1000B	
10	1001B	
11	1010B	
12	1011B	
13	1100B	
14	1101B	
15	1110B	
16	1111B	

Note: The default value is "1 (0000B)".

Table 6-5 Extended Fade time multiplier

Setting	Fade time multiplier	Drop-down list
0	000B (0ms)	
1	001B (100ms)	
2	010B (1s)	
3	011B (10s)	
4	100B (1min)	

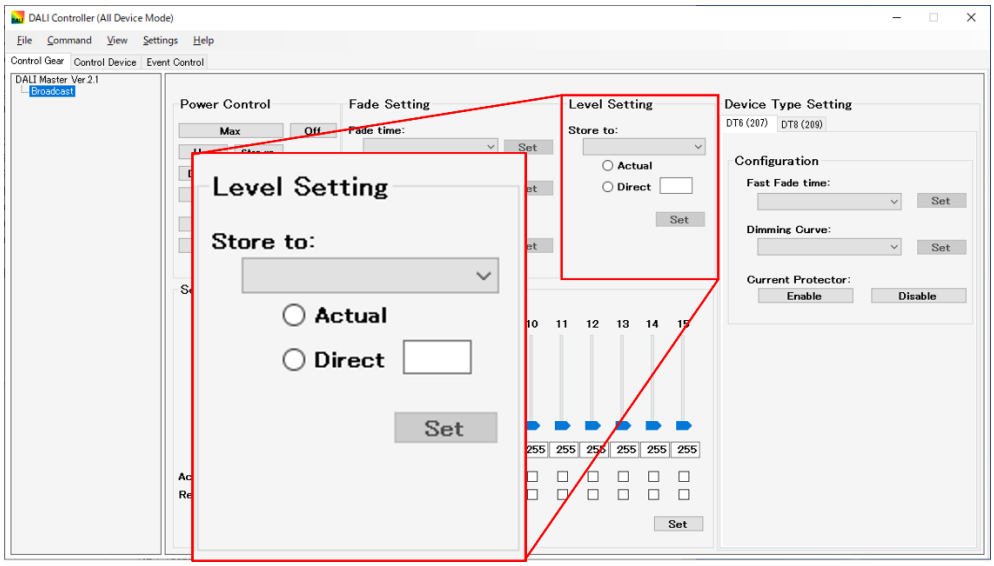
Note: The default value is "0 (000B(0ms)".

6.2.1.4 Level Setting

The [Level Setting] field contains the drop-down list and buttons used to specify the upper and lower limits of the Actual Level, Power On Level, and System Failure Level.

The specified settings are not sent to the Control Gear unless the [Set] button is clicked. To apply the settings, you must click the [Set] button.

Figure 6-6 Level Setting



(1) Store to

Select one of the following in the drop-down list:

Maximum Level: Select this item to set the upper limit of the Actual Level.

Minimum Level: Select this item to set the lower limit of the Actual Level.

Power-On Level: Select this item to set the Power On Level.

System Failure Level: Select this item to set the lower limit of the System Failure Level.

(2) Actual

Select this radio button to use the Actual value (current Actual Level) as the set value.

(3) Direct

Select this radio button to directly specify the value of the Actual Level (the default is empty).

(4) [Set] button

The [Set] button is inactive (cannot be clicked) when settings are incomplete

Clicking the [Set] button sends one of the following commands to the selected address after sending the DTR0 command.

When Maximum Level is selected: SET MAX LEVEL command

When Minimum Level is selected: SET MIN LEVEL command

When Power-On Level is selected: SET POWER ON LEVEL command

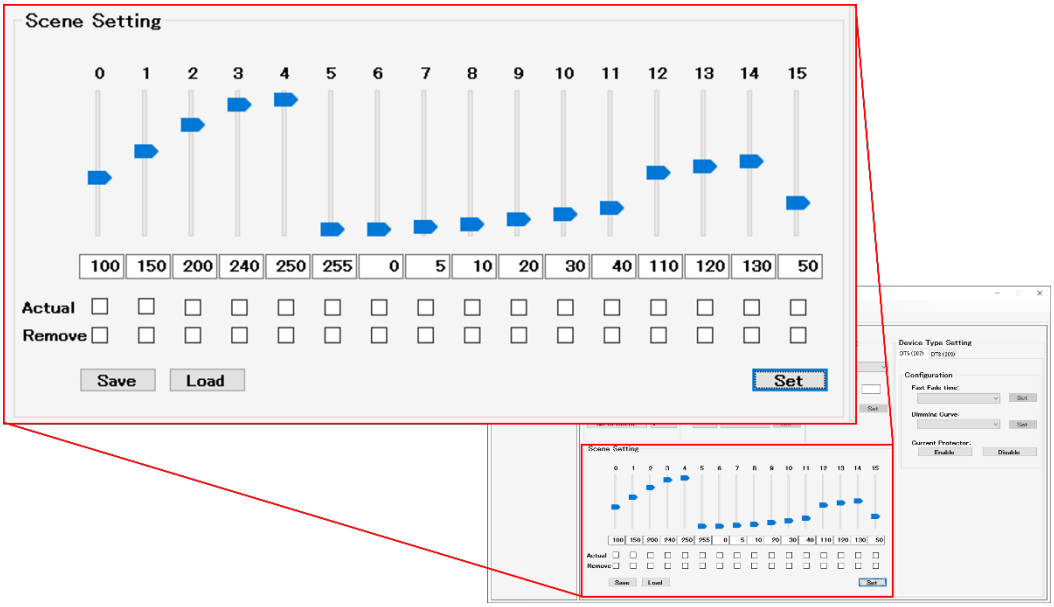
When System Failure Level is selected: SET SYSTEM FAILURE LEVEL command

6.2.1.5 Scene Setting

The [Scene Setting] field has bars and buttons that specify the Actual Level for each of Scenes 0 to 15.

The specified settings are not sent to the Control Gear unless the [Set] button is clicked. To apply the settings, click the [Set] button.

Figure 6-7 Scene Setting



(1) Scene number

When the Scene setting is changed, the corresponding Scene number is displayed in red until the setting is applied.

When the [Set] button is clicked, the setting is sent to the Control Gear and the Scene number returns to black.

(2) Track slider bars

When the value in the text bot is set to 255 (MASK), the slider is positioned to 0 (the default position).

When the value in the text box is changed, the slider position is automatically updated accordingly.

(3) Text box

A value from 0 to 255 can be entered (the default value is 255).

The value is updated according to the position of the slider on the track bar.

The text box is inactive when the [Actual] or [Remove] check box is selected.

(4) Actual

Select this radio button to use the Actual value (current Actual Level) as the set value.

(5) Remove

Select this check box to remove the Scene (that is, set the value to 255).

(6) [Set] button

Sends the DTR command and then sends one of the following commands to the selected address according to which check box is selected.

SET SCENE command

STORE ACTUAL LEVEL IN THE DTR0 command

REMOVE FROM SCENE command

(7) [Save] button

Saves the configuration patterns (0 to 15) of the Scenes in a CSV format file.

The CSV format file can be saved in any location.

(8) [Loads] button

Reads the configuration patterns (0 to 15) of the Scenes from the CSV format file.

6.2.1.6 Device Type Setting

The [Device Type Setting] field has buttons that specify settings related to Device Type that is an extended standard of Control Gears. Functions of each supported Device Type are provided on separate tabs.

These buttons are always enabled. However, the commands might be ignored in Control Gears that are not extended for their respective Device Type. The following shows the currently supported Device Types and corresponding DALI standards.

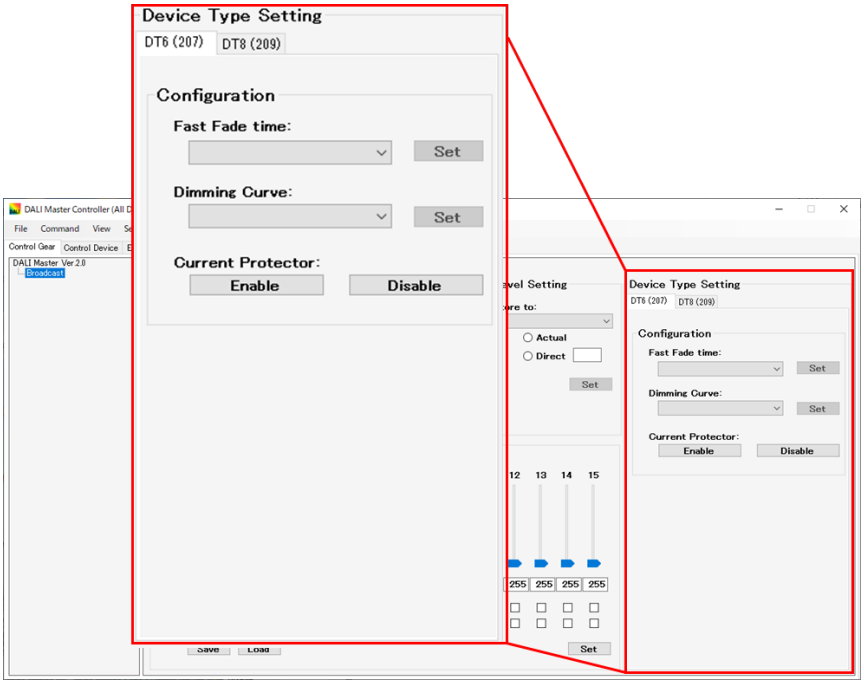
Table 6-6 List of supported Device Types

No.	Device Type	Standard	Display
1	DT6	IEC62386-207ed1.0	DT6 (207)
2	DT8	IEC62386-209ed1.0	DT8 (209)

(1) DT6 (207)

This tab provides the functions for performing operations on Control Gears extended for Device Type 6.

Figure 6-8 Device Type Setting (DT6 (207))



(2) Fast Fade Time

Select one of the following 28 options in the drop-down list (the default is empty): "0 (<25msec)" and "1 (25msec)" to "27 (675msec)". Clicking the [Set] button sends the following commands to the selected address.

Table 6-7 Fast Fade Time

Order of sending	Command to be sent
1	DTR0
2	ENABLE DEVICE TYPE 6
3	STORE DTR AS FAST FADE TIME

Note: To use the [Fast Fade time] setting, you must specify as follows:
1. Set [Fade time] to "0(no fade)".

(3) Dimming Curve

Select "0 (Logarithmic curve)" or "1 (Linear curve)" in the drop-down list (the default is empty). Clicking the [Set] button sends the following commands to the selected address.

Table 6-8 Dimming Curve

Order of sending	Command to be sent
1	DTR0
2	ENABLE DEVICE TYPE 6
3	SELECT DIMMING CURVE

(4) Current Protector

Clicking the [Enable] button sends the following commands to the selected address.

Table 6-9 Current Protector (Enable)

Order of sending	Command to be sent
1	ENABLE DEVICE TYPE 6
2	ENABLE CURRENT PROTECTOR

Clicking the [Disable] button sends the following commands to the selected address.

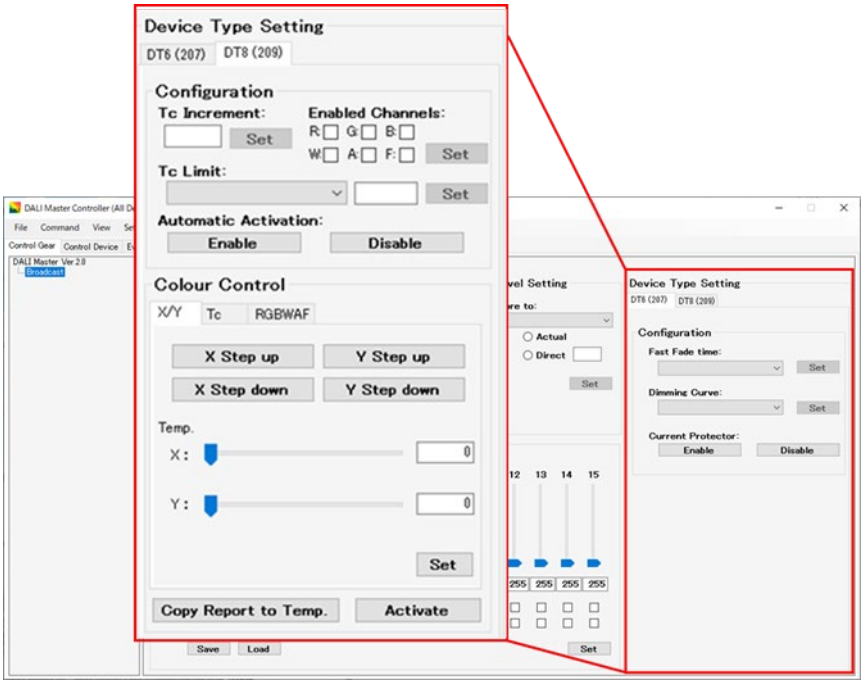
Table 6-10 Current Protector (Disable)

Order of sending	Command to be sent
1	ENABLE DEVICE TYPE 6
2	DISABLE CURRENT PROTECTOR

6.2.1.7 DT8 (209)

This tab provides the functions for performing operations on Control Gears extended for Device Type 8.

Figure 6-9 Device Type Setting (DT8 (209))



(1) Tc Increment

Enter a value in the range from 1 to 100 in the text box. (The default is empty). Clicking the [Set] button sends the following commands to the selected address.

Table 6-11 Tc increment

Order of sending Command to be sent

Order of sending	Command to be sent
1	DTR0
2	ENABLE DEVICE TYPE 8
3	STORE COLOUR TEMPERATURE Tc STEP INCREMENT

(2) Tc Limit

Select one of the following four options in the drop-down list: "0 (Coolest)", "1 (Warmest)", "2 (Physical Coolest)", and "3 (Physical Warmest)]". Alternatively, enter a value in the range from 1 to 65535 in the text box. (The default is empty). Clicking the [Set] button sends the following commands to the selected address.

Table 6-12 Tc Limit

Order of sending	Command to be sent
1	DTR0
2	DTR1
3	DTR2
4	ENABLE DEVICE TYPE 8
5	STORE COLOUR TEMPERATURE TC LIMIT

(3) Automatic Activation

Clicking the [Enable] or [Disable] button sends the following commands to the selected address.

Table 6-13 Automatic Activation

Order of sending	Command to be sent
1	DTR0
2	ENABLE DEVICE TYPE 8
3	STORE GEAR FEATURES/STATUS

(4) Enabled Channels

You can select one of the following check boxes: [R:], [G:], [B:], [W:], [A:], and [F:]. The default is empty. Clicking the [Set] button sends the following commands to the selected address.

Table 6-14 Enabled Channels

Order of sending	Command to be sent
1	DTR0
2	ENABLE DEVICE TYPE 8
3	STORE ENABLED CHANNELS

(5) X Step Up

Clicking the [X Step UP] button sends the following commands to the selected address.

Table 6-15 X Step Up

Order of sending	Command to be sent
1	ENABLE DEVICE TYPE 8
2	x-COORDINATE STEP UP

(6) X Step Down

Clicking the [X Step Down] button sends the following commands to the selected address.

Table 6-16 X Step Down

Order of sending	Command to be sent
1	ENABLE DEVICE TYPE 8
2	x-COORDINATE STEP DOWN

(7) Y Step Up

Clicking the [X Step Down] button sends the following commands to the selected address.

Table 6-17 Y Step Up

Order of sending	Command to be sent
1	ENABLE DEVICE TYPE 8
2	y-COORDINATE STEP UP

(8) Y Step down

Clicking the [X Step Down] button sends the following commands to the selected address.

Table 6-18 Y Step Down

Order of sending	Command to be sent
1	ENABLE DEVICE TYPE 8
2	y-COORDINATE STEP Down

(9) Temp X/Y

Enter a value in the range from 0 to 65535 in the text box, or specify a value by using the track slider bar. (The default is empty). Clicking the [Set] button sends the following commands to the selected address.

Table 6-19 Temp X/Y

Order of sending	Command to be sent
1	DTR0
2	DTR1
3	ENABLE DEVICE TYPE 8
4	SET TEMPORARY x-COORDINATE”
5	DTR0
6	DTR1
7	ENABLE DEVICE TYPE 8
8	SET TEMPORARY y-COORDINATE

[Tc] tab

(10) Tc Step Cooler

Clicking the [X Step Cooler] button sends the following commands to the selected address.

Table 6-20 Tc Step Cooler

Order of sending	Command to be sent
1	ENABLE DEVICE TYPE 8
2	COLOUR TEMPERATURE Tc STEP Cooler

(11) Tc Step Warmer

Clicking the [X Step Cooler] button sends the following commands to the selected address.

Table 6-21 Tc Step Warmer

Order of sending	Command to be sent
1	ENABLE DEVICE TYPE 8
2	COLOUR TEMPERATURE Tc STEP WARMER

(12) Temp Tc

Enter a value in the range from 0 to 65535 in the text box, or specify a value by using the track slider bar. (The default is empty). Clicking the [Set] button sends the following commands to the selected address.

Table 6-22 Temp Tc

Order of sending	Command to be sent
1	DTR0
2	DTR1
3	ENABLE DEVICE TYPE 8
4	SET TEMPORARY COLOUR TEMPERATURE Tc

[RGBWAF] tab

(13) Temp RGB

Enter a value in the range from 0 to 255 in the text box, or specify a value by using three track slider bars. (The default is empty). Clicking the [Set] button sends the following commands to the selected address.

Table 6-23 Temp RGB

Order of sending	Command to be sent
1	DTR0
2	DTR1
3	DTR2
4	ENABLE DEVICE TYPE 8
5	SET TEMPORARY RGB DIMLEVEL

(14) Temp WAF

Enter a value in the range from 0 to 255 in the text box, or specify a value by using three track slider bars. (The default is empty). Clicking the [Set] button sends the following commands to the selected address.

Table 6-24 Temp WAF

Order of sending	Command to be sent
1	DTR0
2	DTR1
3	DTR2
4	ENABLE DEVICE TYPE 8
5	SET TEMPORARY WAF DIMLEVEL

(15) Temp RGBWAF Control

Select "80h (Normalised colour control)" or "C0h (Extended colour control" from the drop-down list (the default is empty). Clicking the [Set] button sends the following commands to the selected address.

Table 6-25 Temp RGBWAF Control

Order of sending	Command to be sent
1	DTR0
2	ENABLE DEVICE TYPE 8
3	SET TEMPORARY RGBWAF CONTROL

(16) Copy Report to Temp

Clicking the [Copy Report to Temp] button sends the following commands to the selected address.

Table 6-26 Copy Report to Temp

Order of sending	Command to be sent
1	ENABLE DEVICE TYPE 8
2	COPY REPORT TO TEMPORARY

(17) Activate

Clicking the [Activate] button sends the following commands to the selected address.

Table 6-27 Activate

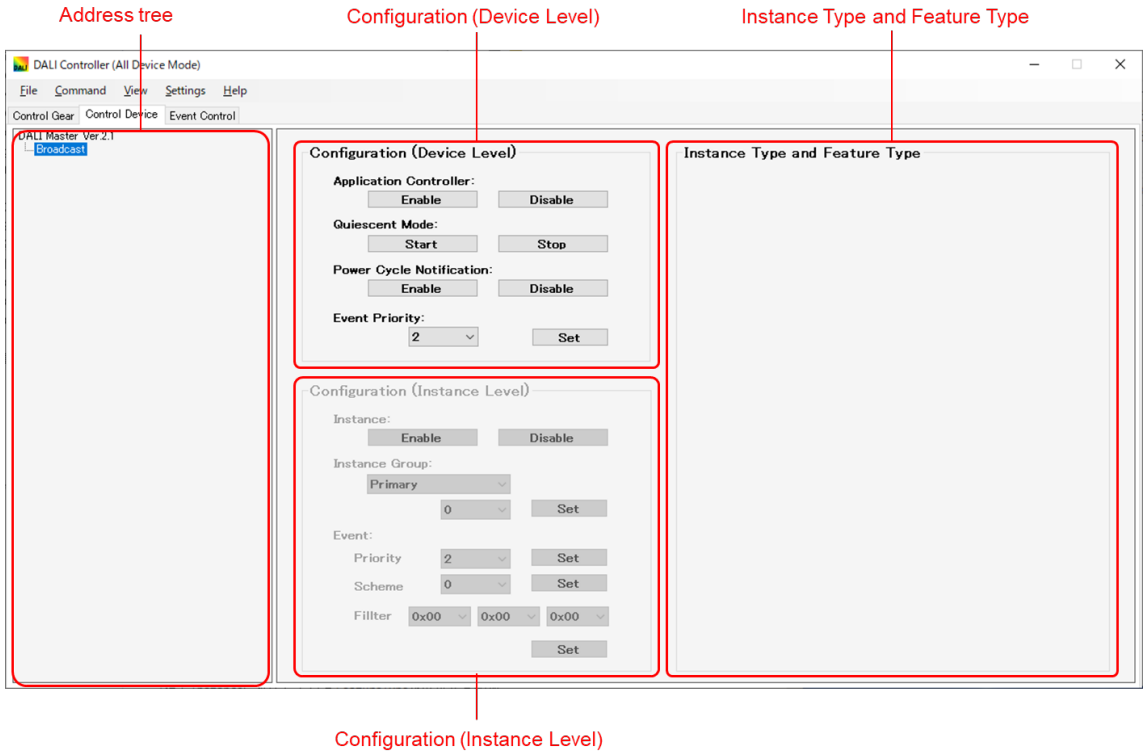
Order of sending	Command to be sent
1	ENABLE DEVICE TYPE 8
2	ACTIVATE

6.2.2 [Control Device] tab

The [Control Device] tab contains the following function groups. The following describes each function group.

The [Control Device] tab is available in All Device Mode only.

Figure 6.9 Main window ([Control Device] tab)



6.2.2.1 Address tree

A tree consisting of Broadcast, Groups 0 to 31, Short Addresses, and Instance Numbers is displayed for Control Devices.

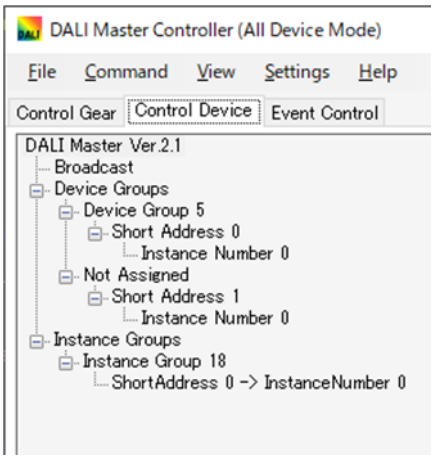
The short address of a Control Device that does not belong to any group is displayed under [Not Assigned].

A Control Device without a short address assigned is not displayed.

The displayed short addresses are sorted in ascending order in the group.

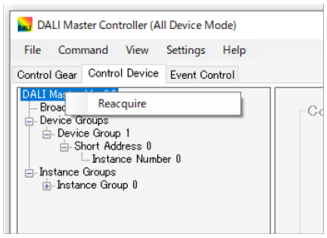
Multiple items cannot be selected.

Figure 6-10 Address tree ([Control Device] tab)

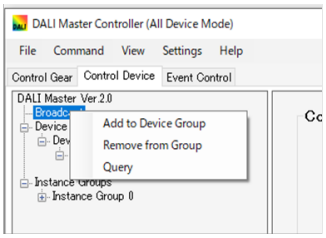


You can perform operations on Broadcast, Group, and Short Address in the tree by using the right-click menus.

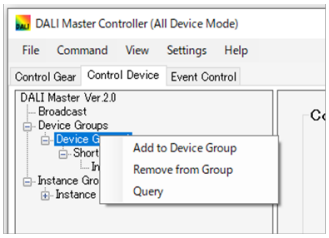
Figure 6-11 Address tree (right-click menus on the [Control Device] tab)



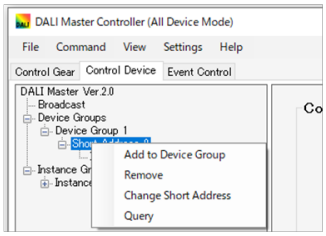
ROOT selected



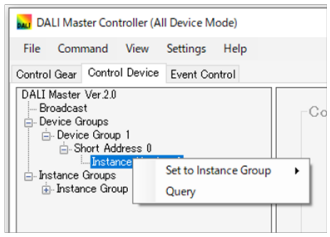
Broadcast selected



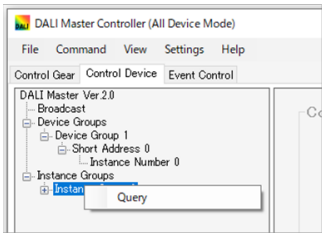
Group selected



Short Address selected



Instance Number selected



Instance Group selected

(1) Root selected

[Reacquire]: Acquires information about the connected Control Gear and redisplays the address tree.

(2) Broadcast selected

[Add to Group]: Adds all Control Devices to any Group.

[Remove From Group]: Removes all Control Devices from any Group.

[Query]: Acquires the latest settings of all Control Devices and applies the settings to the Query View.

(3) Group selected

[Add to Group]: Adds all Control Devices belonging to the specified Group to any Group.

[Remove From Group]: Removes all Control Devices belonging to the specified Group from any Group.

[Query]: Acquires the latest settings of all Control Devices belonging to the specified Group and applies the settings to the Query View.

(4) Short Address selected

[Add to Group]: Adds the Control Device with the specified short address to any Group.

[Remove]: Removes the Control Device with the specified short address from any Group.

[Query]: Acquires the latest settings of the Control Device with the specified short address and applies the settings to the Query View.

[Change Short Address]: Changes the short address of the Control Device with the specified short address to any address.

(5) Instance Number selected

[Set to instance group]: Adds the Control Device instance with the specified Instance Number to any Group.

[Clear]: Removes the Control Device instance with the specified Instance Number from any Group.

[Query]: Acquires the latest settings of all Control Device instances belonging to the specified Instance Number and applies the settings to the Query View.

(6) Instance Group selected

[Query]: Acquires the latest settings of all Control Devices belonging to the specified Instance Group and applies the settings to the Query View.

Note: You cannot use the fields such as [Power Control] and [Fade Setting] until the valid Broadcast, Group, Short Address, Instance Number, and Instance Group are selected.
You cannot use the [Configuration (Device Level)] and [Configuration (Instance Level] fields until the valid Broadcast, Group, Short Address, Instance Number, and Instance Group are selected.

6.2.2.2 Configuration (Device Level)

Use this field to specify the Device Level settings.

(1) Application Controller

Clicking the [Enable] button sends "ENABLE APPLICATION CONTROLLER" to the selected address.

Clicking the [Disable] button sends "DISABLE APPLICATION CONTROLLER" to the selected address.

(2) Quiescent Mode

Clicking the [Start] button sends "START QUIESCENT MODE" to the selected address.

Clicking the [Stop] button sends "STOP QUIESCENT MODE" to the selected address.

(3) Power Cycle Notification

Clicking the [Enable] button sends "ENABLE POWER CYCLE" to the selected address.

Clicking the [Disable] button sends "DISABLE POWER CYCLE" to the selected address.

(4) Event Priority

Select a value from 2 to 5 in the drop-down list (the default is empty). Clicking the [Set] button sends the following commands to the selected address.

Table 6-28 Event Priority

Order of sending	Command to be sent
1	DTR0
2	SET EVENT PRIORITY

6.2.2.3 Configuration (Instance Level)

Use this field to specify the Instance Level settings.

(1) Instance

Clicking the [Enable] button sends "ENABLE INSTANCE" to the selected instance.

Clicking the [Disable] button sends "DISABLE INSTANCE" to the selected instance.

(2) Instance Group

Select "Primary", "Group 1", or "Group 2" in the drop-down list. Alternatively, enter a value in the range from 1 to 100 in the text box. (The default is empty). Clicking the [Set] button sends the following commands to the selected instance.

Table 6-29 Instance Group

Order of sending	Command to be sent
1	DTR0
2	When "Primary" is selected: SET PRIMARY INSTANCE GROUP When "Group 1" is selected: SET INSTANCE GROUP1 When "Group 2" is selected: SET INSTANCE GROUP2

(3) Event: Priority

Select a value from 2 to 5 in the drop-down list (the default is empty). Clicking the [Set] button sends the following commands to the selected instance.

Table 6-30 Event: Priority

Order of sending	Command to be sent
1	DTR0
2	SET EVENT PRIORITY

(4) Event: Scheme

Select a value from 0 to 4 in the drop-down list (the default is empty). Clicking the [Set] button sends the following commands to the selected instance.

Table 6-31 Event Scheme

Order of sending	Command to be sent
1	DTR0
2	SET EVENT SCHEME

(5) Event: Filter

For each of the three combo boxes, select a value from 256 options (0x00h to 0xFFh) in the drop-down list (the default is empty). Clicking the [Set] button sends the following commands to the selected instance.

Table 6-32 Event Filter

Order of sending	Command to be sent
1	DTR0
2	DTR1
3	DTR2
4	SET EVENT FILTER

Note: You must select the values in the three combo boxes.

6.2.2.4 Instance Type and Feature Type

You can specify the settings related to the Instance Type (IEC62386-3*XX*, where *XX* is 01 to 31) and Feature Type (IEC62386-3*XX*, where *XX* is 32 to 96).

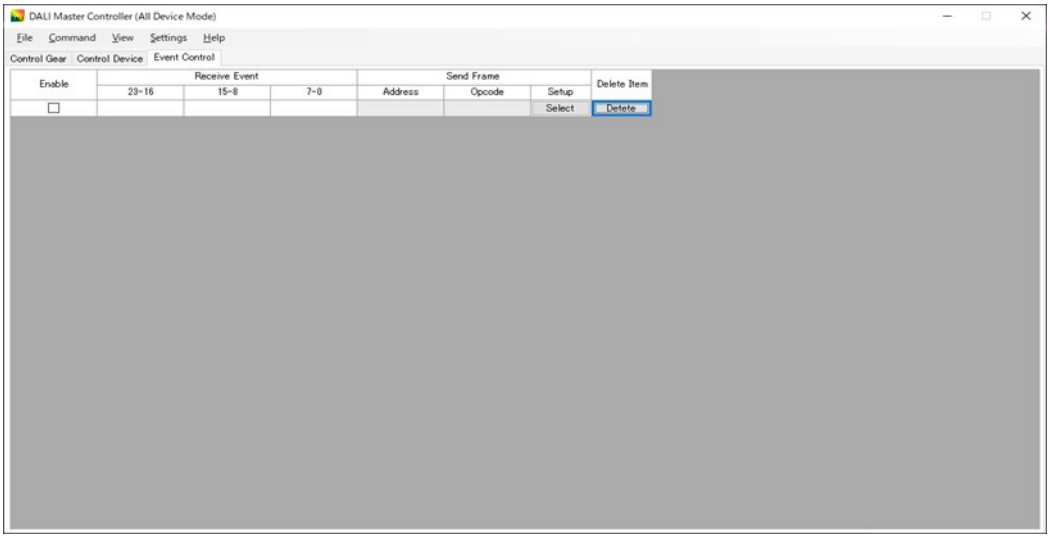
The current version of the DALI Master Controller GUI does not support any Instance Type or Feature Type.

6.2.3 [Event Control] tab

The [Event Control] tab contains the following table functions. The following describes the table functions.

The [Event Control] tab is available in All Device Mode only.

Figure 6-12 [Event Control] tab



6.2.3.1 Enable

Select the check box to register a response frame corresponding to the received Event Message.

The [Enable] setting is valid when values are set for [Receive Event] and [Send Frame].

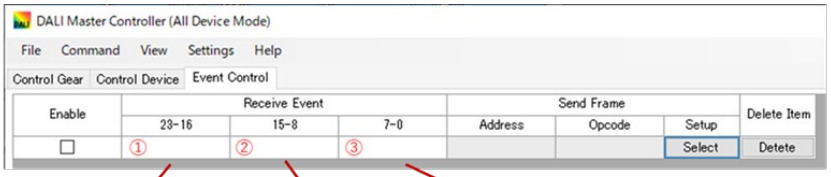
6.2.3.2 Receive Event

The Event Message received on the DALI communication bus is displayed in binary format.

You can also enter the Event Message by double-clicking.

For the Event Message, the functions corresponding to the bits in "Event source information" and "Event info" in Figure 6-13 Receive Event are displayed.

Figure 6-13 Receive Event



Bits								
Event source information						Event info		
① 23	22	21-17	16	② 15	14-10	9	8	③ 7-0
0	short addresses		0	0	instance types	Event		
0	short addresses		0	1	instance numbers			
1	0	device groups	0	0	instance types			
1	0	instance types	0	1	instance numbers			
1	1	instance groups	0	0	instance types			

6.2.3.3 Send Frame

Clicking the [Select] button displays the Event Response Setting window in Figure 6-14.

When a response frame is selected in the Event Response Setting window, the selected frame is displayed in binary format in the [Address] and [Opcode] cells.

(1) Event Response Setting

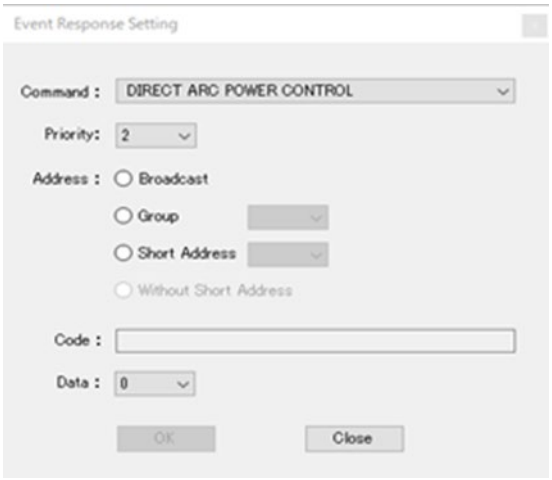
This window is used to select a16-bit Forward Frame to be automatically sent in response to the received Event Message.

Select a command to be sent in the drop-down list. Click the [OK] button, select the code, and then close the Event Response Setting window.

The [OK] button cannot be clicked if the settings are incomplete.

Clicking the [Close] button closes the Event Response Setting window.

Figure 6-14 Event Response Setting



(2) Command

Select a command to be sent in the drop-down list.

Information displayed for [Address] and [Data] varies depending on the selected command.

(3) Priority

Select the priority of the command to be sent in the drop-down list.

This setting is valid only on the Lighting Communication Master Evaluation Board with the Multi-Master driver.

(4) Address

Select one of the following options to specify Broadcast, Group, Short Address, or Without Short Address.

[Broadcast]:	Select this item to specify "Broadcast".
[Group]:	Select this item to specify a Gear Group (selectable from 0 to 15).
[Short Address]:	Select this item to specify a short address (selectable from 0 to 63).
[Without Short Address]:	Currently, this item cannot be selected.

(5) Code

The specified command code is displayed in hexadecimal and binary format.

(6) Data

Data can be selected according to the selected command. Select a value in the drop-down list.

6.2.3.4 Delete Item

Removes the registered Receive Frame and Send Frame.

6.3 Manual Command Window

The Manual Command window allows you to select a command to be sent in the drop-down list, and then send the code by clicking the [Send] button. The [Send] button cannot be clicked if the settings are incomplete.

Clicking the [Close] button closes the Manual Command window.

The Manual Command window is displayed by selecting [Command] and then [Manual Command] in the main menu.

6.3.1 [Control Gear] tab

This tab is used to send 16-bit Forward Frames for Control Gears.

Figure 6-15 Manual Command window ([Control Gear] tab)

6.3.1.1 Command

Select a command to be sent in the drop-down list.

Information displayed for [Address] and [Data] varies depending on the selected command.

For details about each command, see each standard book of DALI.

6.3.1.2 Priority

Select the priority of the command to be sent in the drop-down list.

This setting is valid only on the Lighting Communication Master Evaluation Board with the Multi-Master driver.

6.3.1.3 Address

Select one of the following options to specify Broadcast, Group, Short Address, or Without Short Address.

[Broadcast]:	Select this item to specify "Broadcast".
[Group]:	Select this item to specify a Gear Group (selectable from 0 to 15).
[Short Address]:	Select this item to specify a short address (selectable from 0 to 63).
[Without Short Address]:	Select this item to specify Without Short Address (for INITIALIZE command only).

6.3.1.4 Data

Data is displayed in decimal or hexadecimal format depending on the selected command.

In decimal format, a value from 0 to 255 can be selected. In hexadecimal format, a value from 00H to FFH can be selected.

6.3.1.5 Code

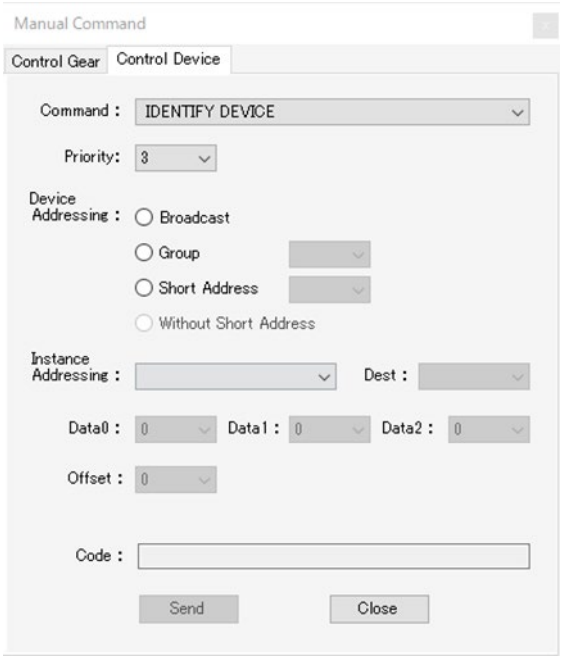
The specified command code is displayed in hexadecimal and binary format. The code is not displayed until the settings are complete.

6.3.2 [Control Device] tab

This tab is used to send 24-bit Forward Frames for Control Devices.

This tab is available in All Device Mode only.

Figure 6-16 Manual Command window ([Control Device] tab)



6.3.2.1 Command

Select a command to be sent in the drop-down list.

Information displayed for [Device Addressing], [Instance Addressing], [Dest], [Data0], [Data1], [Data2], and [Offset] varies depending on the selected command.

For details about each command, see each standard book of DALI.

6.3.2.2 Priority

Select the priority of the command to be sent in the drop-down list.

This setting is valid only on the Lighting Communication Master Evaluation Board with the Multi-Master driver.

6.3.2.3 Device Addressing

Select one of the following options to specify Broadcast, Group, Short Address, or Without Short Address.

[Broadcast]:	Select this item to specify "Broadcast".
[Group]:	Select this item to specify a Device Group (selectable from 0 to 31).
[Short Address]:	Select this item to specify a short address (selectable from 0 to 63).
[Without Short Address]:	Select this item to specify Without Short Address. (For the INITIALIZE command only)

6.3.2.4 Instance Addressing and Dest

You can specify the following: Instance number, Instance group, Instance type, Feature on instance number level, Feature on instance group level, Feature on instance type level, Feature broadcast, Feature on instance broadcast level, Feature on device level, Device.

[Instance Broadcast]:	Select this item to specify "Instance Broadcast".
[Instance number]:	Select this item to specify an instance number. (Selectable from 0 to 31 for [Dest])
[Instance Group]	Select this item to specify an instance group. (Selectable from 0 to 31 for [Dest])
[Instance type]:	Select this item to specify an instance type. (Selectable from 0 to 31 for [Dest])
[Device]:	Select this item to specify a device.

6.3.2.5 Data0, Data1, Data2, and Offset

Data is displayed in decimal or hexadecimal format depending on the selected command.

In decimal format, a value from 0 to 255 can be selected. In hexadecimal format, a value from 00H to FFH can be selected.

6.3.2.6 Code

The specified command code is displayed in hexadecimal and binary format. The code is not displayed until the settings are complete.

6.4 Manual Command (By Code) Window

The Manual Command (By Code) window allows you to directly enter a binary command to be sent, and then send the code by clicking the [Send] button. The [Send] button can be clicked after a binary number (16 bits) or hexadecimal number is entered. Whether the entered code is a valid DALI command is not checked.

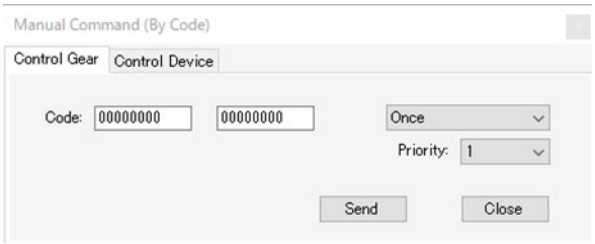
Clicking the [Close] button closes the Manual Command window.

The Manual Command (By Code) window is displayed by selecting [Command] and then [Send Code] in the main menu.

6.4.1 [Control Gear] tab

This tab is used to send 16-bit Forward Frames for Control Gears.

Figure 6-17 Manual Command (By Code) window ([Control Gear] tab)



6.4.1.1 Code

Enter the command to be sent. The available input formats are binary and hexadecimal.

You can enter eight digits for the binary format or two digits (example: 7f or 7F) for the hexadecimal format.

For details about each command, see each standard book of DALI.

[Code1]: Enter the first byte of the code.

[Code2]: Enter the second byte of the code.

Optionally, you can select "Once", "Twice", "Query Yes/No", or "Query 8-bit Info" in the drop-down list.

Once:	Send once
Twice:	Send twice
Query Yes/No:	Mode in which a response from the slave is displayed as "Yes" or "No"
Query 8-bit Info:	Mode in which a response from the slave is displayed in eight bits.

6.4.1.2 Priority

Select the priority of the command to be sent in the drop-down list.

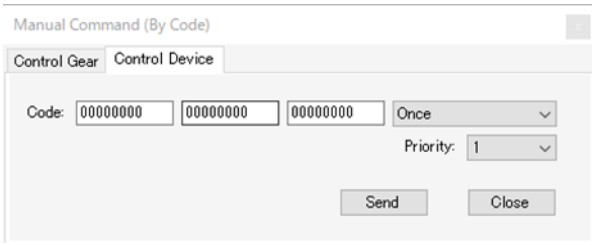
This setting is valid only on the Lighting Communication Master Evaluation Board with the Multi-Master driver.

6.4.2 [Control Device] tab

This tab is used to send 24-bit Forward Frames for Control Devices.

This tab is available in All Device Mode only.

Figure 6-18 Manual Command (By Code) window ([Control Device] tab)



6.4.2.1 Command

Enter the command to be sent. The available input formats are binary and hexadecimal.

You can enter eight digits for the binary format or two digits (example: 7f or 7F) for the hexadecimal format.

For details about each command, see each standard book of DALI.

[Code1]: Enter the first byte of the code.

[Code2]: Enter the second byte of the code.

[Code3]: Enter the third byte of the code.

Optionally, you can select "Once", "Twice", "Query Yes/No", or "Query 8-bit Info" in the drop-down list.

Once: Send once

Twice: Send twice

Query Yes/No: Mode in which a response from the slave is displayed as "Yes" or "No"

Query 8-bit Info: Mode in which a response from the slave is displayed in eight bits.

6.4.2.2 Priority

Select the priority of the command to be sent in the drop-down list.

This setting is valid only on the Lighting Communication Master Evaluation Board with the Multi-Master driver.

6.5 Random Address Allocation window

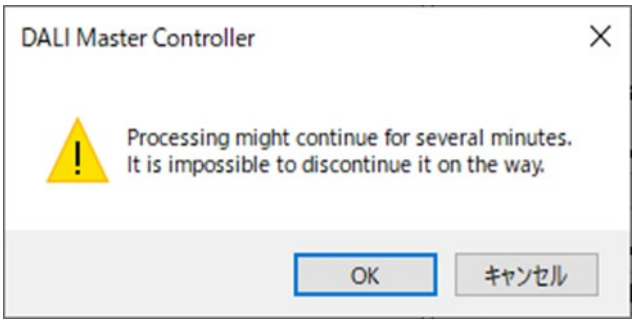
The Random Address Allocation window displays a list of random addresses and assigned short addresses of the target device. The Random Address Allocation window is displayed by selecting [Command] and then [Random Address Allocation] in the main menu.

6.5.1 [Control Gear] tab

This tab is used to perform Random Address Allocation for the target Control Gear.

Figure 6-19 Random Address Allocation window ([Control Gear] tab)

When you click the [Start] button, the following dialog box appears.



Click the [OK] button to start Random Address Allocation (no other operation can be performed during allocation).

Click the [Close] button to close the Random Address Allocation window.

Note: This operation might take an extended time depending on the connection status.

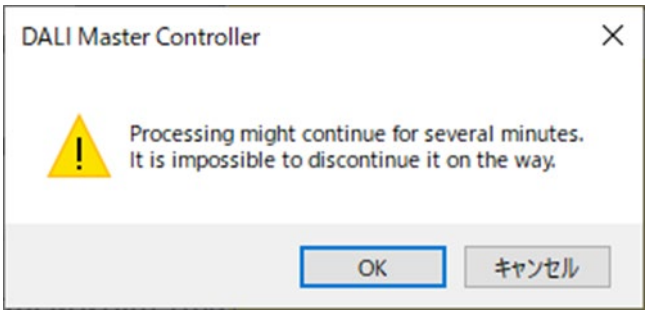
6.5.2 [Control Device] tab

This tab is used to perform Random Address Allocation for the target Control Device.

This tab is available in All Device Mode only.

Figure 6-20 Random Address Allocation window ([Control Device] tab).

When you click the [Start] button, the following dialog box appears.



Click the [OK] button to start Random Address Allocation (no other operation can be performed during allocation).

Click the [Close] button to close the Random Address Allocation window.

Note: This operation might take an extended time depending on the connection status.

6.6 Direct Address Allocation window

The Direct Address Allocation window allows you to directly assign a short address.

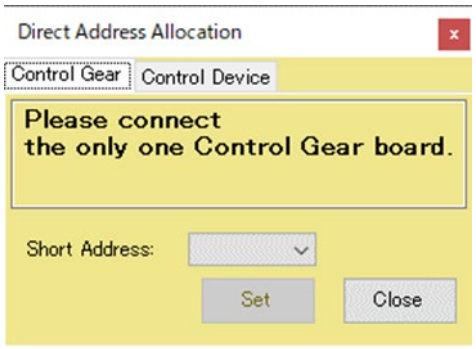
When using this function, make sure that only one target DALI device is connected to the DALI subnet.

The Direct Address Allocation window is displayed by selecting [Command] and then [Direct Address Allocation] in the main menu.

6.6.1 [Control Gear] tab

This tab is used to perform Direct Address Allocation for the target Control Device.

Figure 6-21 Direct Address Allocation window ([Control Gear] tab)



6.6.1.1 Short Address

You can select from a list of short addresses that can be assigned.

When you select the short address and then click the [Set] button, the following dialog box appears.

Click the [OK] button to start assignment of the short address.

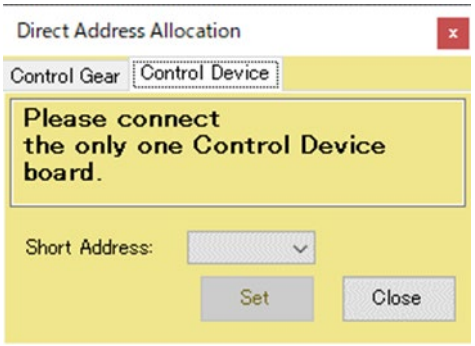
Click the [Close] button to close the Direct Address Allocation window.

6.6.2 [Control Device] tab

This tab is used to perform Direct Address Allocation for the target Control Device.

This tab is available in All Device Mode only.

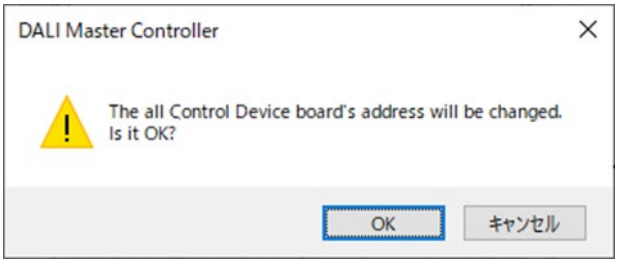
Figure 6-22 Direct Address Allocation window ([Control Device] tab)



6.6.2.1 Short Address

You can select from a list of short addresses that can be assigned.

When you select the short address and then click the [Set] button, the following dialog box appears.



Click the [OK] button to start assignment of the short address.

Click the [Close] button to close the Direct Address Allocation window.

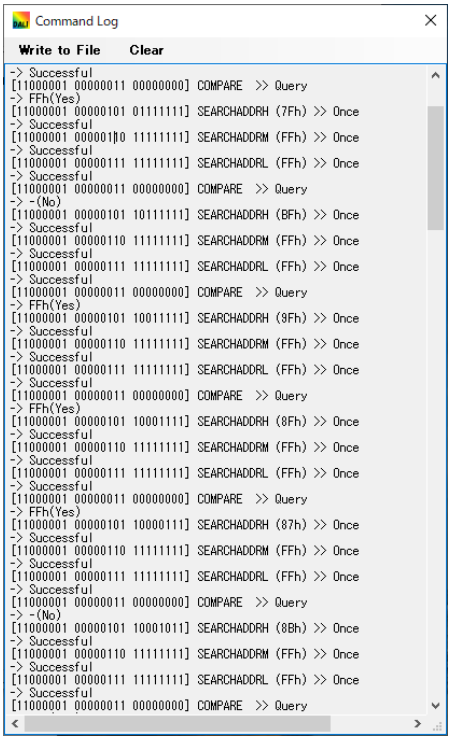
6.7 Command Log Window

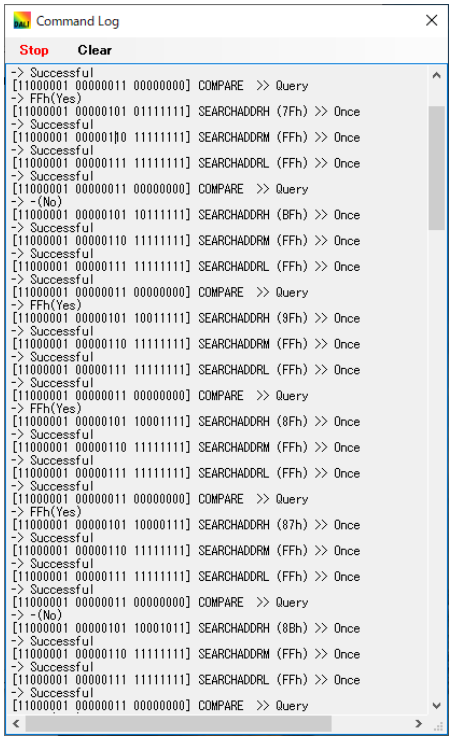
The Command Log window displays the sent commands and their responses in text format.

To close the Command Log window, click ×.

The Command Log window is displayed by selecting [View] and then [Log] in the main menu.

Figure 6-23 Command Log window

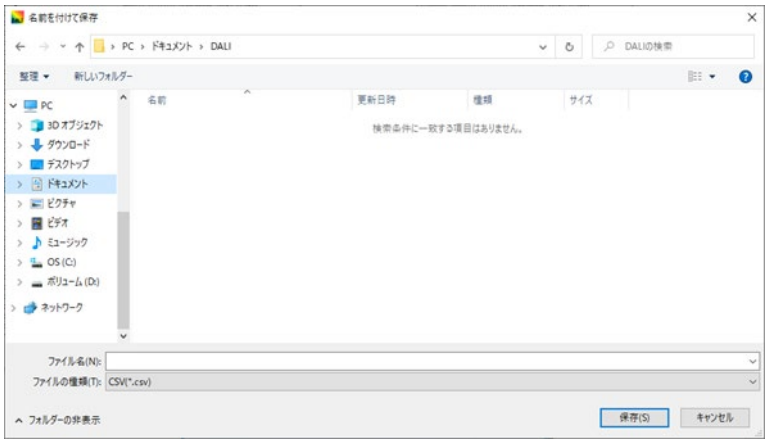




6.7.1.1 Write to File

Clicking [Write to File] opens the dialog box for saving a file.

Figure 6-24 Write to File



Select the storage folder, and then specify the name of the file to be saved. (CSV format files can only be saved.)

Clicking the [Save (s)] button starts saving of log data from that point of time.

When saving starts, [Write to File] changes to [Stop].

Clicking the [Cancel] button closes the dialog box without starting saving.

6.7.1.2 Clear

Clicking [Clear] clears the log data displayed in the Command Log window.

6.7.1.3 Stop

Clicking [Stop] stops saving of log data.

6.7.1.4 Displayed information

Figure 6-25 Displayed information

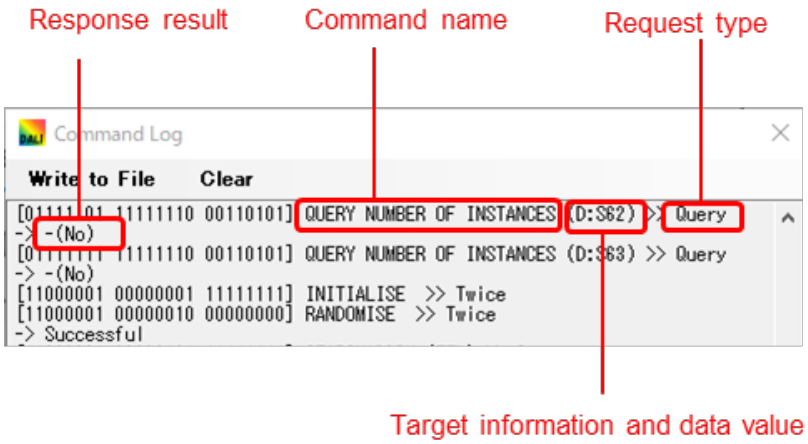


Table 6-33 Response result (normal)

Request type	Response result	Meaning
Once, Twice	Successful	The command is successfully sent to the DAL network.
Query (Yes/No)	FFh (Yes)	The command is successfully sent to the DAL network and a Backward Frame is received (FFh).
	- (No)	The command is successfully sent to the DAL network and no Backward Frame is received (No).
	xxh	The command is successfully sent to the DAL network and a Backward Frame is received (other than FFh).
	YES (Corrupted Backward Frame)	The command is successfully sent to the DAL network and a Corrupted Backward Frame is received.
Query (Data)	xxh	The command is successfully sent to the DAL network and a Backward Frame is received.
	- (No)	The command is successfully sent to the DAL network and no Backward Frame is received (No).
	Corrupted Backward Frame Detected	The command is successfully sent to the DAL network and a Corrupted Backward Frame is received.

Table 6-34 Response result (abnormal)

Display	Meaning
Sending Error	Retry limit exceeded during resend processing due to a timing violation
Sending Timeout	Unsent status continued for a certain period of time (due to a bus error or high load)
System Failure Detected	A system failure has occurred.

Table 6-35 Target information and data values for Control Gears

Display	Meaning
BCast	Broadcasting to all devices
w/oS	Without Short Address
Gn	Device Group n
Sn	Device Short Address n

Table 6-36 Target information and data values for Control Devices

Display	Meaning
D: BCast	Broadcasting to all devices
D: W/oS	Without Short Address
D: Gn	Device Group n
D: Sn	Device Short Address n
I: Bcast	Broadcasting to all instances
I: NUMn	Instance Number n
I: Gn	Instance Group n
I: TYPEn	Instance Type n

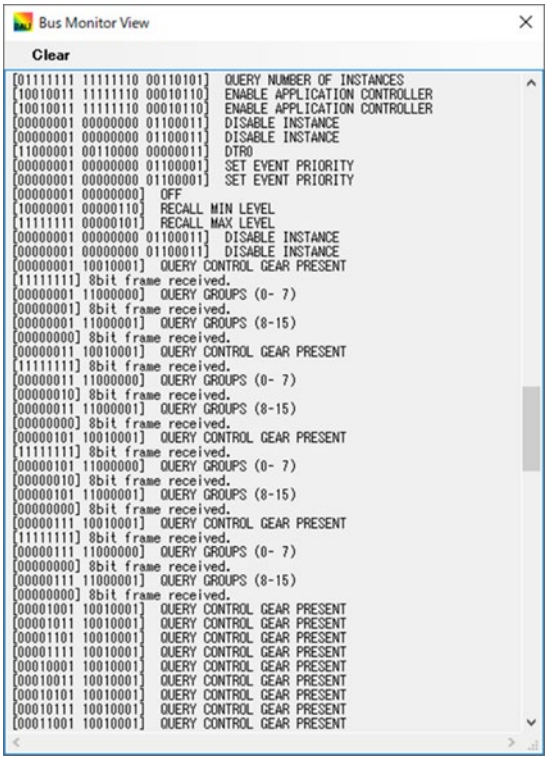
6.8 Bus Monitor View Window

The Bus Monitor View window displays all communication frames and abnormality information generated on the DALI communication bus.

To close the Bus Monitor View window, click the button on in the upper right corner of the window.

The Bus Monitor View window is displayed by selecting [View] and then [Bus Monitor view] in the main menu.

Figure 6-26 Bus Monitor View window



6.8.1 Clear

Clicking [Clear] clears the log data displayed in the Bus Monitor View window.

6.8.2 Displayed information

Figure 6-27 Information displayed in the Bus Monitor View window

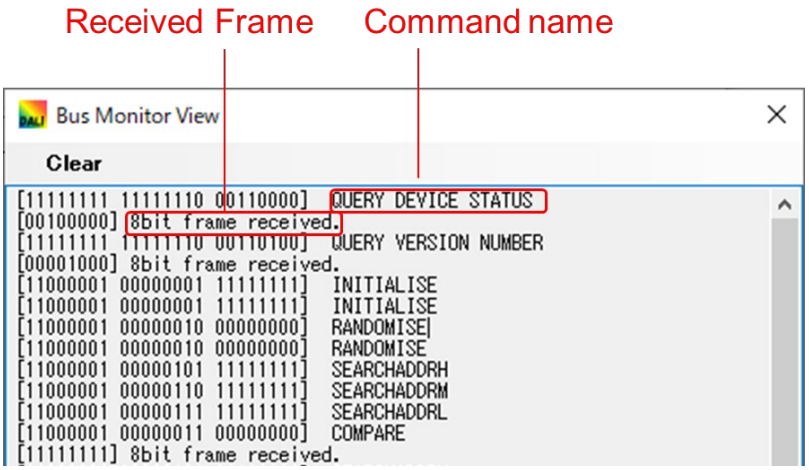


Table 6-37 Displayed information (abnormal)

Display	Description
bit timing violation detected	A bit timing violation is received.
corrupted backward frame received	A corrupted backward frame is received.
system failure detected	A system failure is detected.
return from system failure detected	Return from the system failure is detected.
Received frames longer 24bit	The received frame contains more than 24 bits.

6.9 Query View Window

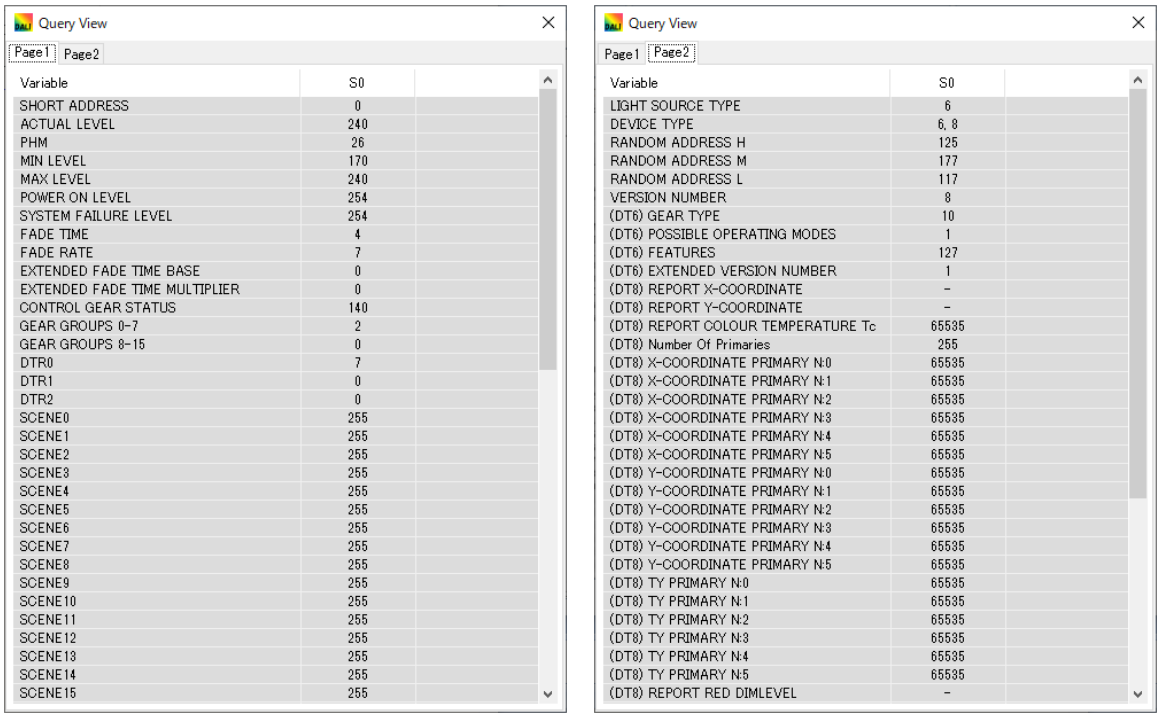
The Query View window displays the settings of each slave.

To close the Query View window, click ×.

The Query View window is displayed by selecting [View] and then [Query] in the main menu.

6.9.1 [Control Gear] tab

Figure 6-28 Query View window (Control Gear)



6.9.1.1 Query

When Broadcast is selected, a list of all short addresses is displayed.

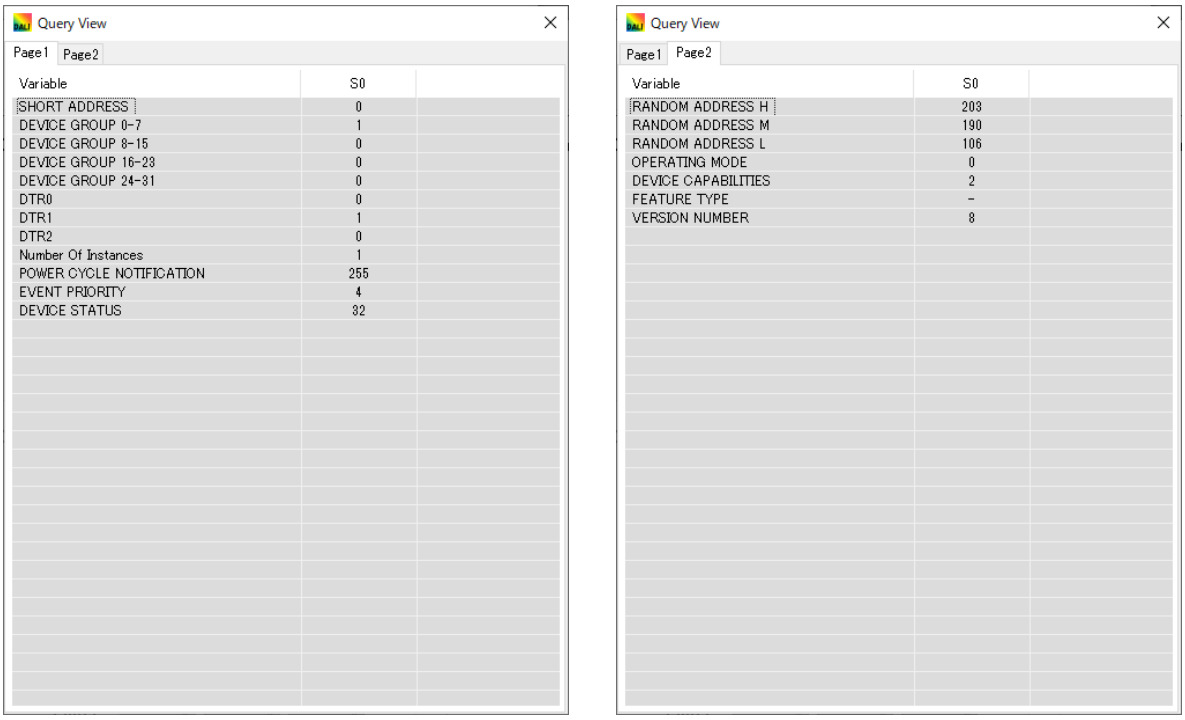
When a group is selected, a list of short addresses belonging to that group is displayed.

When a short address is selected, only that short address is displayed.

You can update the displayed value by clicking [Query] in the right-click menu.

6.9.2 [Control Device] tab

Figure 6-29 Query View window (Control Device)



6.9.3 Query

When Broadcast is selected, a list of all short addresses is displayed.

When a group is selected, a list of short addresses belonging to that group is displayed.

When a short address is selected, only that short address is displayed.

When an instance number is selected, only that instance number is displayed.

When an instance group is selected, a list of instance numbers belonging to that instance group is selected.

You can update the displayed value by clicking [Query] in the right-click menu.

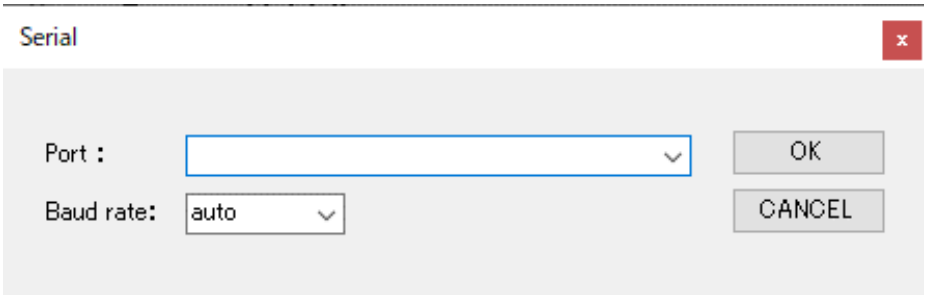
6.10 Serial Window

This window is used to configure a serial port.

A connection is not established if the previous configuration information is not found.

The Serial window is displayed by selecting [Setting] and then [Serial] in the main menu.

Figure 6-30 Serial window



6.10.1 Port

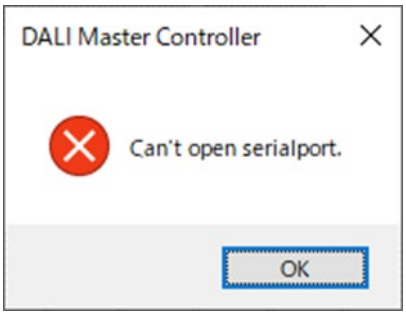
The port that was connected the last time is displayed by default.

Ports (COM1 to COM255) differ depending on the PC to be connected.

6.10.2 Baud rate

The setting is fixed to "auto".

If the port cannot be connected, the following dialog box appears.



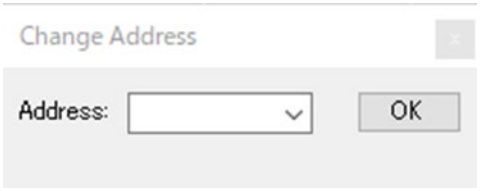
6.11 Change Address Window

This window is used to change a short address.

When an address (0 to 63) is selected, clicking the [OK] button changes the address.

See Figure 6-3 Address tree (right-click menus on the [Control Gear] tab).

Figure 6-31 Change Address window



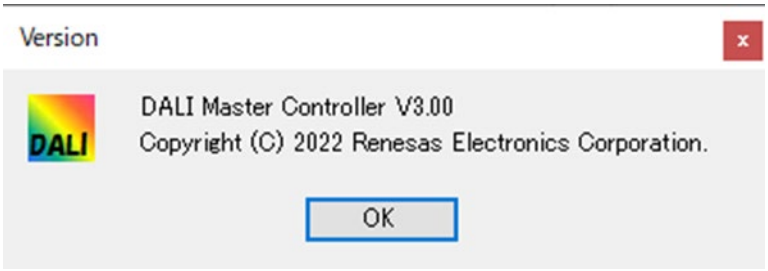
6.12 Version Window

This window is used to confirm the version of the DALI Master Controller GUI.

The Version window is displayed by selecting [Help] and then [Version] in the main menu.

Clicking the [OK] button closes the Version window.

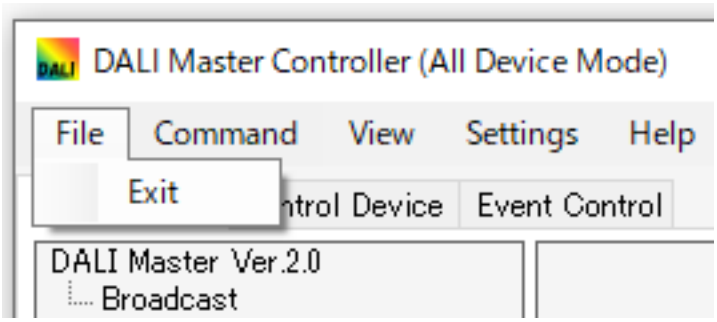
Figure 6-32 Version window



6.13 Menus

6.13.1 File

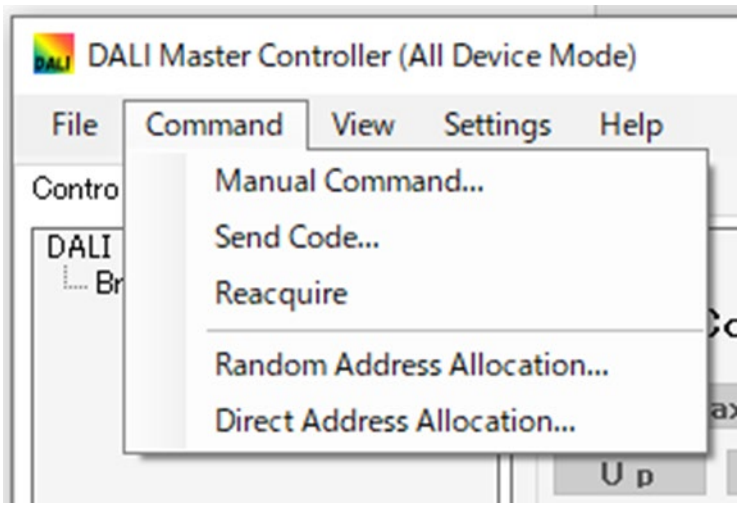
Figure 6-33 File (menu)



[Exit]: Exits the DALI Master Controller GUI.

6.13.2 Command

Figure 6-34 Command (menu)



[Manual Command]: Displays the Manual Command window.
(See 6.3 Manual Command Window.)

[Send Code]: Displays the Manual Command (By Code) window.
(See 6.4 Manual Command (By Code) Window.)

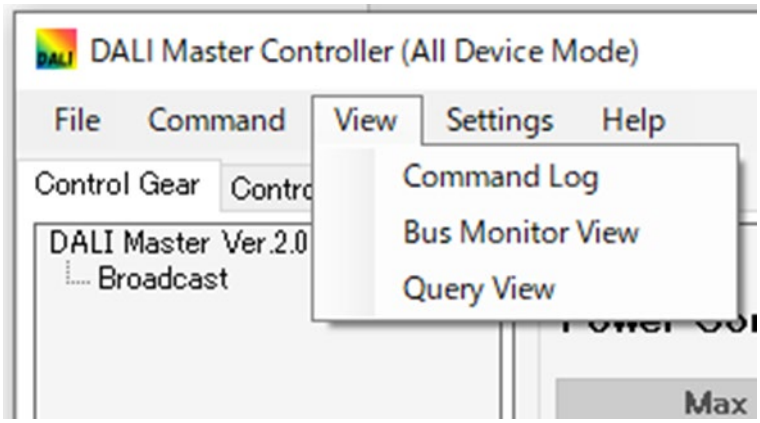
[Reacquire]: Acquires information about the connected slaves and then redisplays the address tree.

[Random Address Allocation]: Displays the Random Address Allocation window.
(See 6.5 Random Address Allocation window.)

[Direct Address Allocation]: Displays the Direct Address Allocation window.
(See 6.6 Direct Address Allocation window.)

6.13.3 View

Figure 6-35 View (menu)



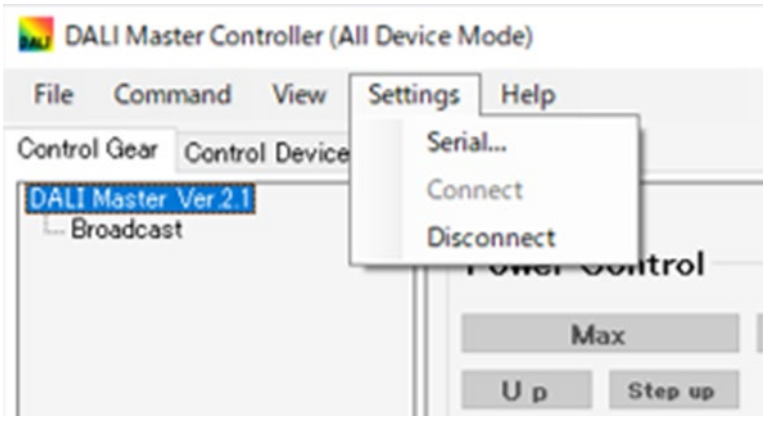
[Command Log]: Displays the Command Log window. (See 6.7 Command Log Window.)

[Bus Monitor View]: Displays the Bus Monitor View window. (See 6.8 Bus Monitor View Window.)

[Query View]: Displays the Query View window. (See 6.9 Query View Window.)

6.13.4 Settings

Figure 6-36 Settings (menu)



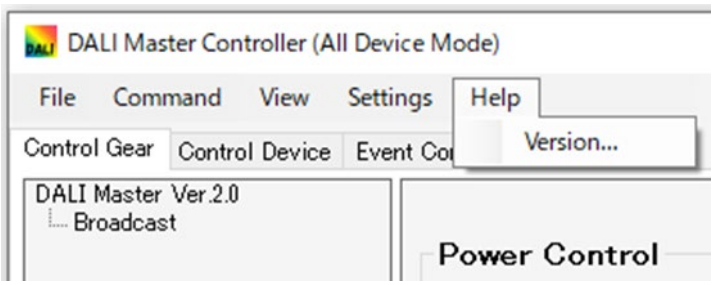
[Serial]: Displays the Serial window. (See 6.10 Serial Window.)

[Connect]: Connects the COM port.

[Disconnect]: Disconnects the COM port.

6.13.5 Help

Figure 6-37 Help (menu)



[Version]: Displays the Version window. (See 6.12 Version Window.)

Revision History	DALI Master Controller GUI

Rev.	Date	Description	
		Page	Summary
1.00	Mar.01.09	—	First Edition issued
2.00	Mar.23.12	—	Second Edition issued
3.00	Mar.31.16	—	Correspondence of IEC62386-102ed2.0 and IEC62386-207ed1.0
4.00	Nov.9.22	—	Correspondence of IEC62386-209 and RX65N cloud kit

DALI Master Controller GUI User's Manual

Publication Date	March 1, 2009	Rev.1.00
	March 23, 2012	Rev.2.00
	March 31, 2016	Rev 3.00
	November 9, 2022	Rev 4.00

Published by Renesas Electronics Corporation

DALI Master Controller GUI

Renesas Electronics Corporation

R20UT0715EJ0400