

CAN EDITOR

The latest edition of the instruction manual



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Introduction

“CAN Editor” is an application software exclusively for the following instruments.

Model number	Model name	Supported CAN Unit	Communication interface
LR8450*1	Memory HiLogger	U8555 CAN Unit	LAN, USB
LR8450-01*1	Memory HiLogger	U8555 CAN Unit LR8535 Wireless CAN Unit	LAN, USB
LR8102	Data Logger	CAN output external terminal on the LR8102	LAN (Use LAN 1)

*1: Version 2.00 and later versions are supported.

For the specifications of CAN, refer to the instruction manuals that came with each instrument.

The latest edition of the instruction manual

The contents of this manual are subject to change, for example as a result of product improvements or changes to specifications.

The latest edition can be downloaded from Hioki's website.

<https://www.hioki.com/global/support/download/>



Product registration

Register your product in order to receive important product information.

<https://www.hioki.com/global/support/myhioki/registration/>



Trademarks

- Microsoft and Windows are trademarks of the Microsoft group of companies.
- Intel and the Intel logo are trademarks of Intel Corporation or its subsidiaries.

Safety standards and notations

Safety notations

In this document, the severity levels of risk and hazard are classified as follows.




CAUTION

Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury, or potential risks of damage to the supported product (or to other property).

IMPORTANT

Indicates information or content that is particularly important from the standpoint of operating or maintaining the Logger.

Notation

(p.)	Indicates the page number to reference.
	Indicates useful advice concerning instrument performance and operation.
*	Indicates additional information is described below.
[]	The names of user interface elements on the screen are enclosed in brackets ([]).
<input checked="" type="checkbox"/>	Indicates the default setting. When initialized, the instrument will revert to this value.
CURSOR (Bold letters)	The bold alphanumeric characters in this manual indicate the characters displayed on the PC keyboard.
Windows	Unless otherwise noted, the term “Windows” is used generically to refer to Windows 10 or Windows 11.

Logger	Memory HiLogger and Data Logger are referred to as “Logger” in this manual.
CAN Unit	The following items in this manual are collectively referred to as “CAN Unit”. <ul style="list-style-type: none"> • U8555 • LR8535 • CAN output external terminal on the LR8102
PC	Computers are referred to as “PC” in this manual.

Mouse operation

Click	Press and quickly release the left button of the mouse.
Right-click	Press and quickly release the right button of the mouse.
Double-click	Quickly click the left mouse button twice.
Drag	While holding down the left button of the mouse, move the mouse and then release the left button to deposit the chosen item in the desired position.
Active	Click on a window on the screen to activate that window.

Precautions related to disc usage



CAUTION

- Exercise care to keep the recording surface of the disc free of dirt and damage. If you need to label the disc, for example with text, use a marker with a soft tip.
- Store discs in protective cases. Avoid exposing the disc to direct sunlight, high temperatures, or high humidity.
- Hioki is not liable for any computer system issues that arise in connection with the use of this disc.

1 Overview

1.1 CAN Editor Overview

CAN Editor is application software for setting CAN signal measurements and output of the Logger to which the CAN Unit is connected. The following operations can be performed when the CAN Unit is set.

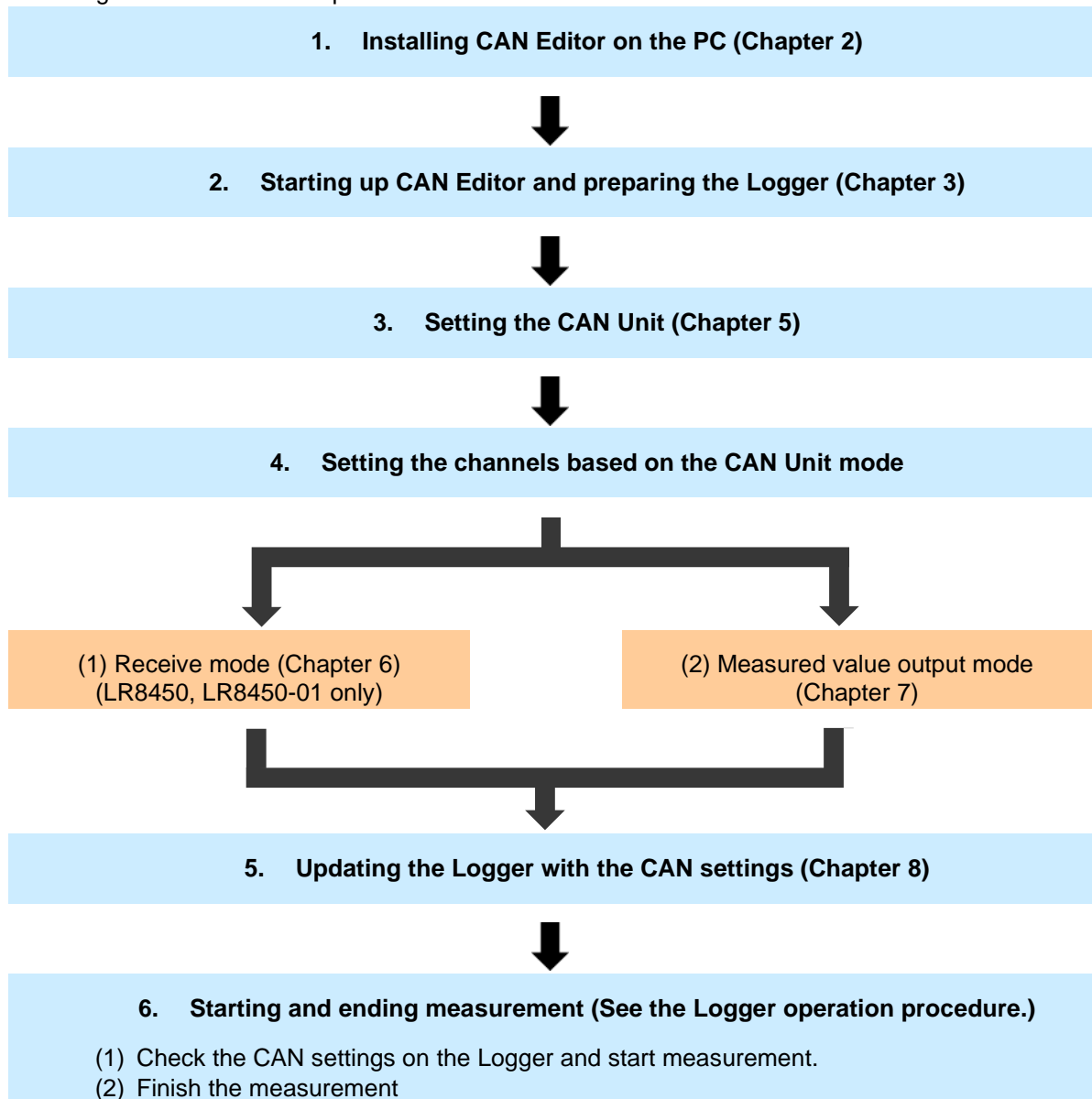
✓: Possible, –: Impossible

Mode	Description	LR8450, LR8450-01	LR8102
Receive mode	Measures the CAN signals using the Logger.	✓	–
	Sends a signal to the CAN bus from the Logger.	✓	–
Measured value output mode	Sends data measured using the Logger to the CAN bus.	✓*1	✓

*1: Data measured by the plug-in module only

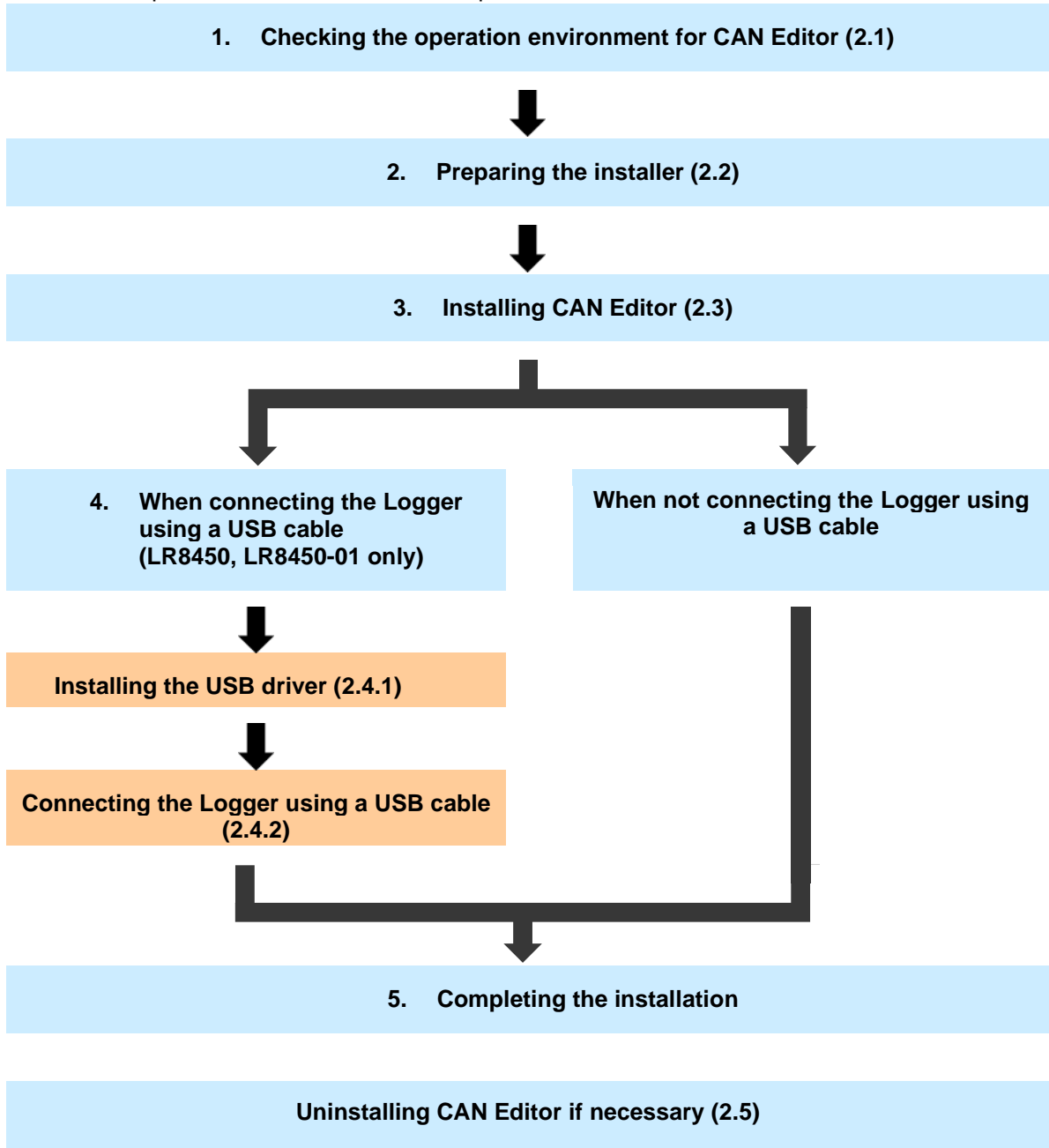
1.2 Settings and Measurement Procedure

The settings and measurement procedure are shown below.



2 Installing CAN Editor

Install CAN Editor on the PC according to the following instructions.
The installation procedure described in this chapter is shown below.



2.1 System Requirements for CAN Editor

Before installing CAN Editor, check the system requirements of the PC.

OS	Windows 10 (32 bits/64 bits) / Windows 11 (64 bits)
CPU	1 GHz or faster 32 bit (x86) or 64 bit (x64) processor
Display	1280 × 1024 dots or more 65,536 colors or more
Memory	2 GB or more
Hard disk	3 GB or more of available space
Interface	With an Ethernet or USB terminal
Required framework	Microsoft .NET Framework 4.6 and a language pack applicable for the execution environment must be installed.

2.2 Preparing the Installer

CAN Editor can be installed in the following two methods.

2.2.1 Using the installer from the CD that comes with the Logger

Install CAN Editor using the installer from the CD that comes with the Logger.

2.2.2 Using the installer from the HIOKI website

Install CAN Editor using the installer downloaded from Hioki's website.

The latest installer for CAN Editor can be downloaded.

<https://www.hioki.com/global>

2.3 Installing CAN Editor

The procedure for installing CAN Editor is described in this section. Displayed messages and operations may be different depending on the operating system or settings.

IMPORTANT

If any anti-virus software is running, make sure to close it before starting the installation. If anti-virus software is running, the software may not be installed properly.

1. Start up Windows.

Close all the software that is running.

2. Set the supplied CD in the CD-ROM drive.

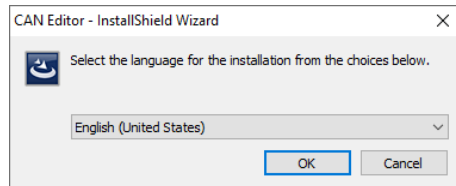
The Logger Application Disc page is displayed.



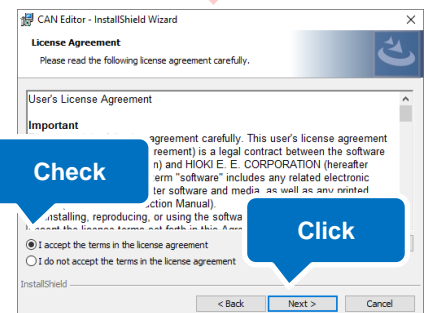
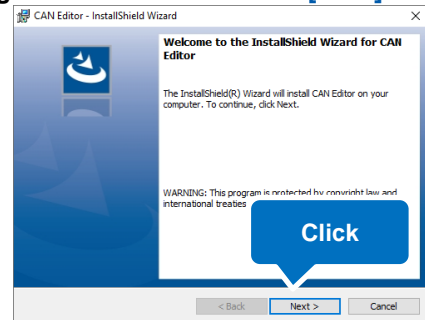
Select a language and select **[CAN Editor]** → **[Install]**.

3. Select the language to use for the installation and click **[OK]**.

The procedure for when English is selected is described in this manual.



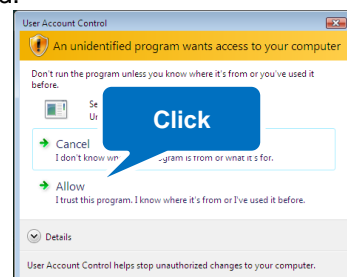
4. Click **[Next]**. Accept the license agreement and then click **[Next]**.



Tips

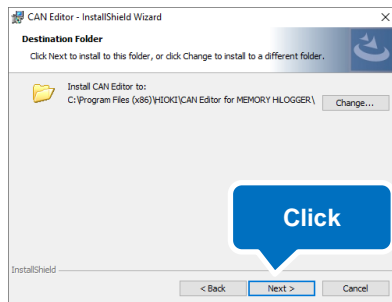
When the Logger Application Disc page is not displayed

Execute **[index.htm]** on the CD. If a dialog box asking for permission for application installation is displayed, click **[Allow]** and proceed.



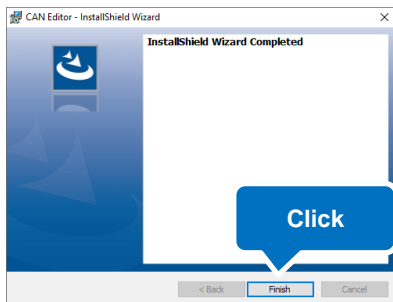
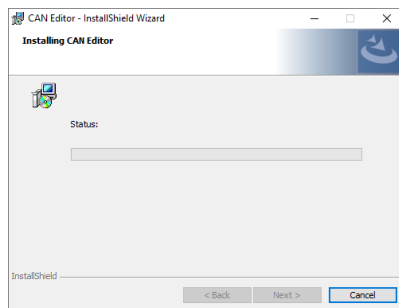
5. Click [Next].

Installation starts.



How to change the installation destination

Click **[Change]** and change the folder to which CAN Editor is to be installed. Normally this setting does not need to be changed.



The installation is now complete.

2.4 Connecting the Logger and PC Using a USB Cable

2.4.1 Installing the USB driver

When connecting the Logger using a USB cable, install the USB driver.

1. Install the USB driver.

Execute [**DriverSetupWin10.msi**] in the USB Driver folder on the CD.

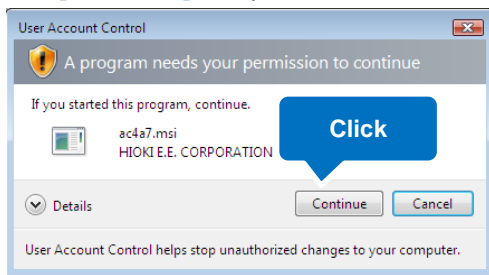
If CAN Editor has already been installed, execute the program at the following location.

[**C:\Program Files (x86)\HIOKI\CAN Editor for MEMORY HiLOGGER\Driver\DriverSetupWin10.msi**]

Please wait as it may take time for a dialog box to be displayed depending on the PC. If the installation destination has been changed, refer to the location.

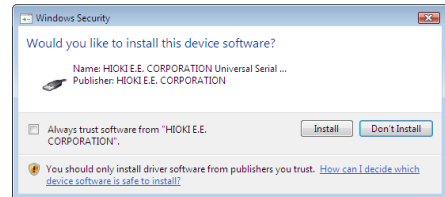
2. Click [Continue].

When a dialog box asking for permission for application installation is displayed, click [**Continue**] and proceed.

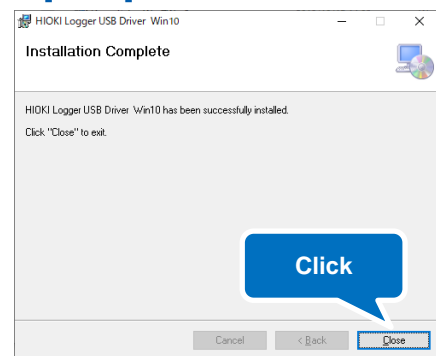


3. Click [Install].

If a dialog box asking for permission for application installation is displayed, check the [**Always trust software from "HIOKI E.E. CORPORATION"**] check box and click [**Install**] to proceed.



4. When the installation is completed and the following dialog box is displayed, click [Close].



The driver installation is now complete.

2.4.2 Connecting the Logger and PC using a USB Cable

After installing the USB driver, connect the Logger and PC using a USB cable.

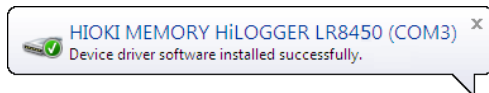


CAUTION

Do not plug in or unplug the USB cable while the instrument is operating.

- 1. Connect the AC adapter to the Logger and turn on the power.**
- 2. Connect the PC and Logger using the provided USB cable.**

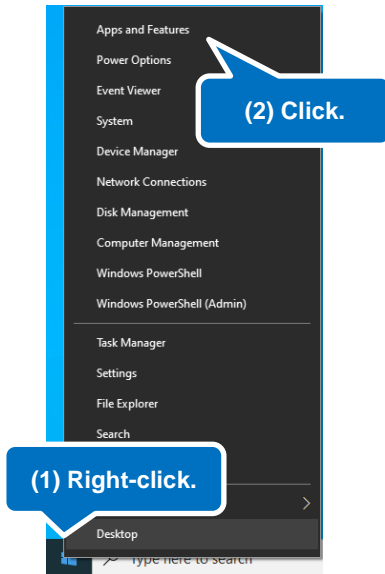
The Logger is automatically recognized and the preparation to use the Logger is completed.



2.5 Uninstalling CAN Editor

The procedure for uninstalling CAN Editor is described in this section.

1. Right-click the Start button of Windows and then click [Apps and Features].



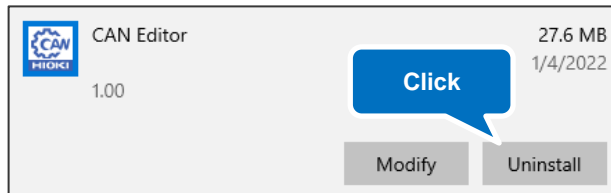
2. From the displayed application list, select and click [CAN Editor].



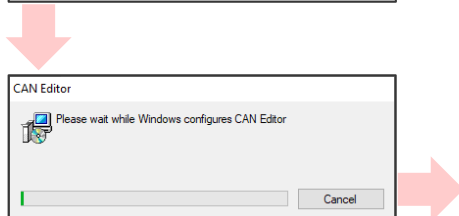
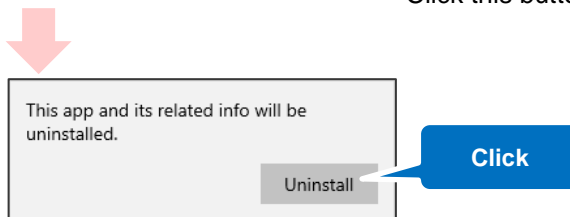
Click this button to display [Uninstall].

3. Click [Uninstall].

The installer starts automatically.



Click this button to display the confirmation dialog box.



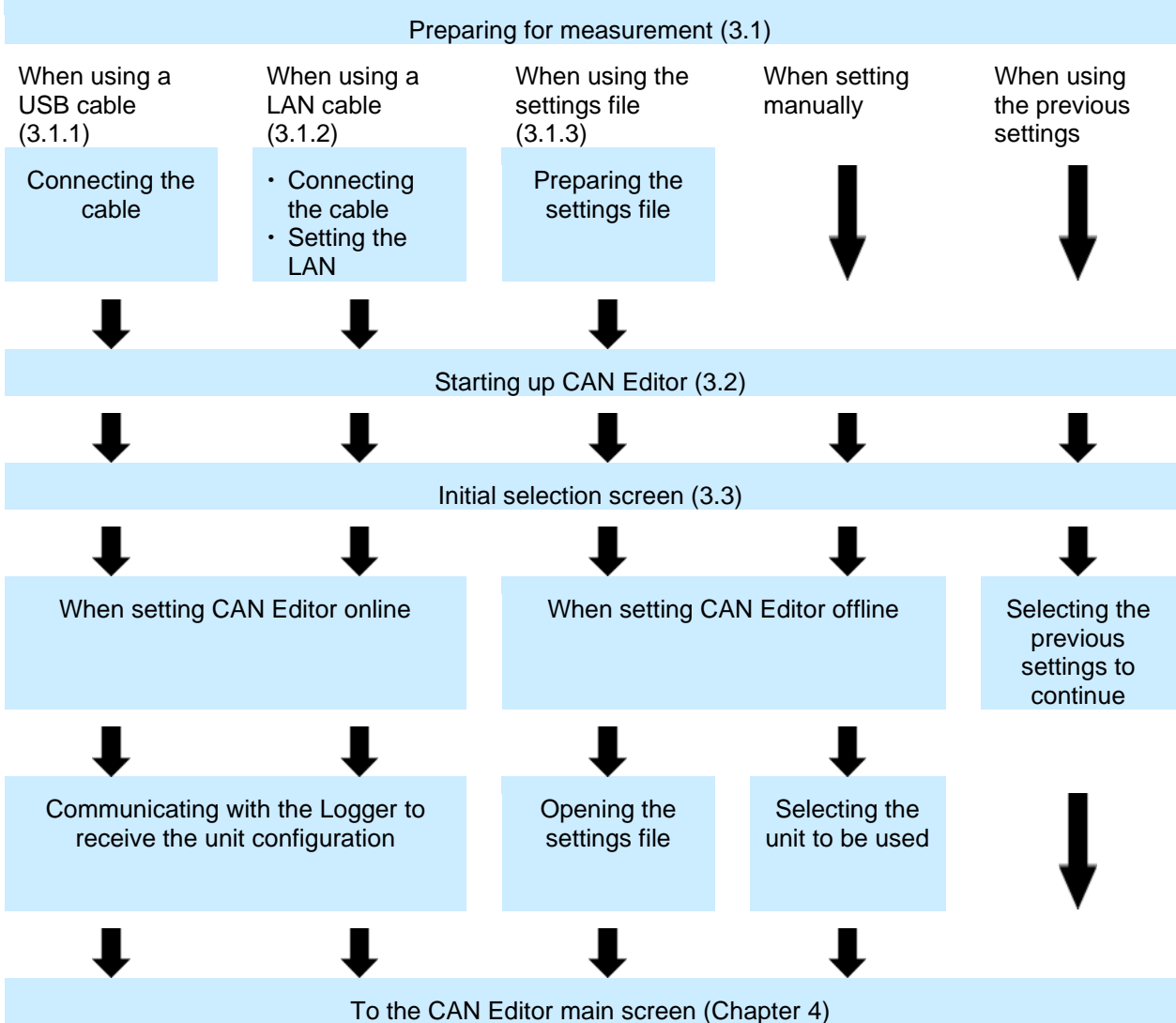
The uninstallation is now complete.

The [Apps and Features] dialog box is displayed again. The settings files, etc. remain unchanged. Delete them manually if they are not needed.

3 Starting Up CAN Editor and Preparing the Logger

The procedure from starting up CAN Editor to starting Logger settings is shown below.

When connecting the Logger and PC When not connecting the Logger and PC



3.1 Preparing for Measurement

Make all the settings except for the CAN Unit on the Logger in advance.

3.1.1 When connecting the Logger using a USB cable

Prepare a USB cable and connect the Logger and PC with CAN Editor installed.
The USB driver needs to be installed.
See "2.4.1 Installing the USB driver"

3.1.2 When connecting the Logger using a LAN cable

Prepare a LAN cable and connect the Logger and PC with CAN Editor installed.
The LAN communication needs to be set.
See "9.3 Configuring and Establishing a LAN Connection" in Logger Instruction Manual

3.1.3 When using the settings file

Prepare the settings files that can be loaded to CAN Editor.

Settings file that can be loaded	File extension
Settings file that has been saved in the Logger	.SET
Settings file that has been saved in CAN Editor	.CES

3.2 Starting up CAN Editor

From the Windows Start menu, click **[HIOKI] - [CAN Editor]**.
The initial selection screen is displayed when CAN Editor starts up.
See “3.3 CAN Editor Initial Selection Screen”

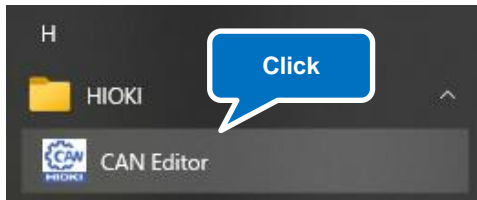
1.



2.



3.



Tips

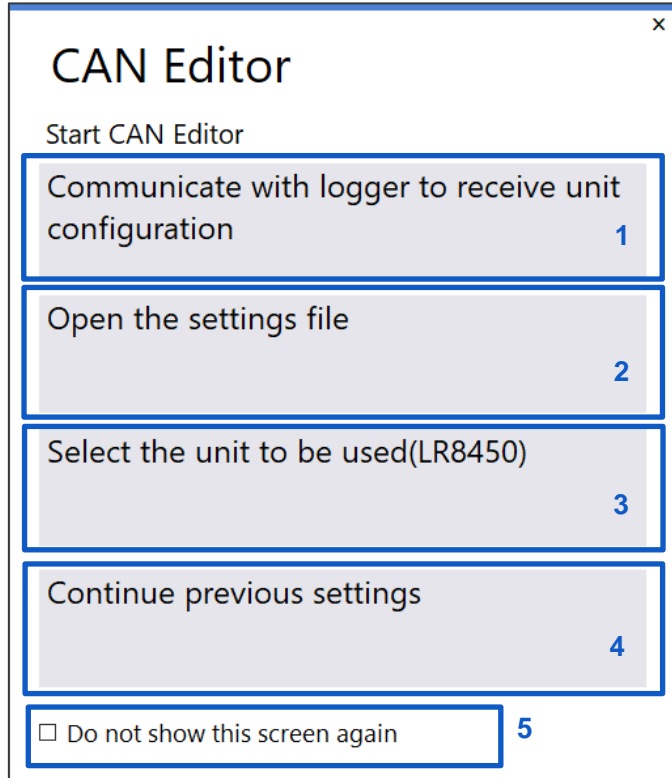
Starting up CAN Editor while holding down the **Shift** key starts up the application at the initial position and in the initial size.

3.3 CAN Editor Initial Selection Screen

The initial selection screen is displayed when CAN Editor starts up.

If the **[Do not show this screen again]** check box (5 shown below) was checked when CAN Editor was used the last time, the main screen is displayed.

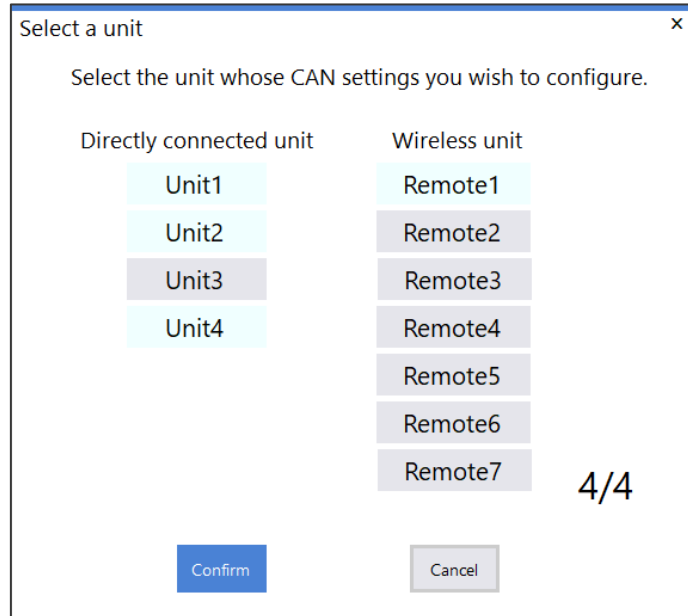
Select how to set CAN Editor.



1 Communicate with logger to receive unit configuration	Connects the Logger using a USB or LAN cable and receives the unit configuration of the Logger. See "4.3.1 Search"
2 Open the settings file	Loads the settings file. See "3.1.3 When using the settings file"
3 Select the unit to be used (LR8450)	Register the CAN Unit to be used by LR8450 or LR8450-01. See "3.3.1 Selecting the unit to be used"
4 Continue previous settings	Continues from the previous setting of CAN Editor.
5 Do not show this screen again	When this check box is checked, this dialog box is not displayed at the time of startup and the main screen is displayed. Continues from the previous setting of CAN Editor. See "4.1 Main Screen Configuration"

3.3.1 Selecting the unit to be used

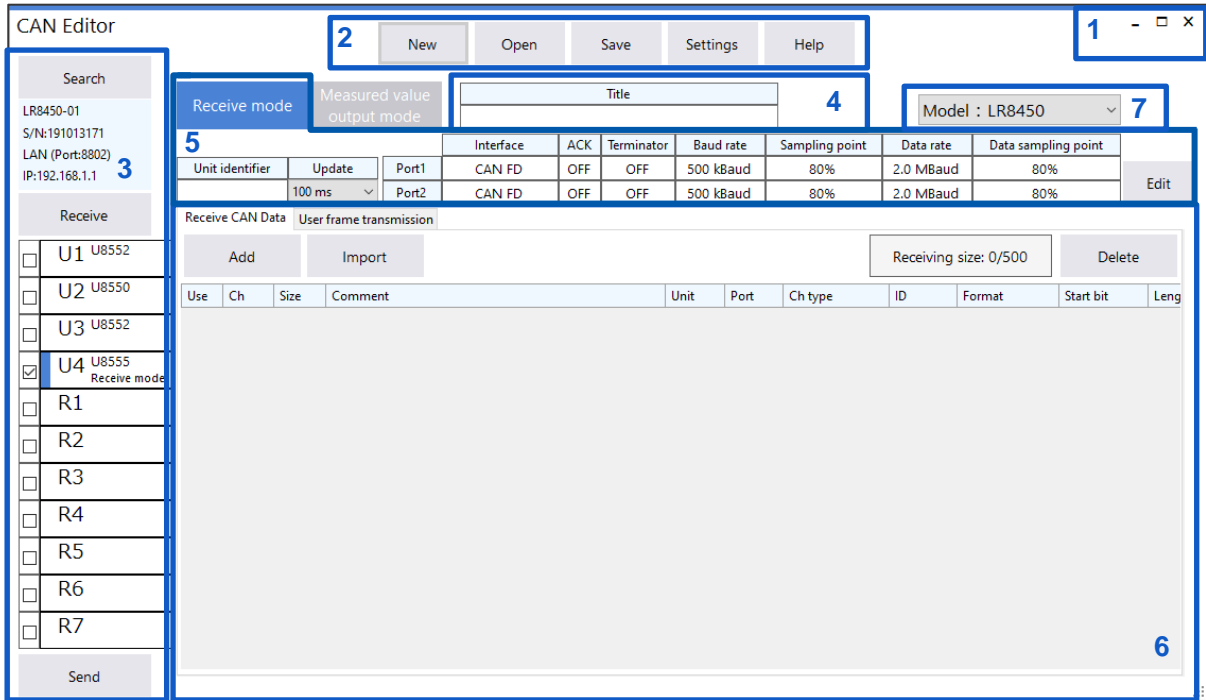
Clicking **[Select the unit to be used]** displays the unit selection screen.
Up to four units can be selected to configure with the LR8450 or LR8450-01.
The unit configuration can be changed later on.
See “4.3.4 Unit configuration change”



4 CAN Editor Main Screen

4.1 Main Screen Configuration

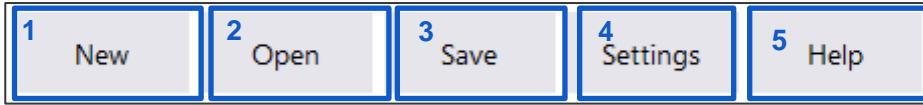
The configuration of the main screen is shown below.



1 Display change, close buttons	Changes the CAN Editor display or ends CAN Editor. If the dialog box is displayed, it is closed when [x] of the dialog box is clicked.
2 Menu bar	Displays the menu bar (list) of CAN Editor. See “4.2 Menu Bar”
3 Logger information and send/receive information	Displays the information of the units connected to the Logger. Units cannot be selected for the LR8102. Select the units that send/receive the settings to/from the Logger. See “4.3 Logger Information and Send/Receive Information”
4 Setting-title information	Allows you to enter a setting title.
5 CAN Unit information	Displays the information of the unit to be set. See “5 Configuring CAN Unit Settings”
6 CAN channel information	Displays the information of the channel to be set. See “6 Setting the Channels (Receive Mode)”, “7 Setting the Channels (Measured Value Output Mode)”
7 Model	Selects the Logger for which to configure CAN settings.

4.2 Menu Bar

The configuration of the main bar is shown below.

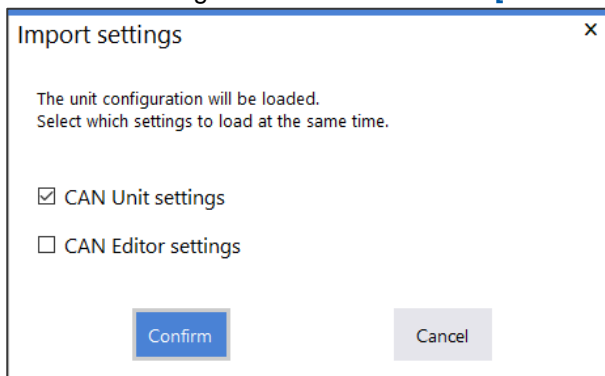


1 New	Discards the information that is being set and sets new information. Registered Logger information is also discarded.
2 Open	Loads the settings file. See "3.1.3 When using the settings file" See "4.2.1 Opening the settings file"
3 Save	Saves the CAN Editor settings as a settings file (CES file).
4 Settings	Opens the CAN Editor settings dialog box. See "4.2.2 Settings dialog box"
5 Help	Opens the Help information. See "4.2.3 Help"

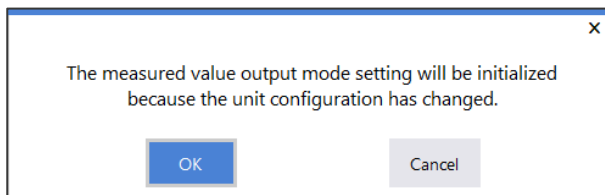
4.2.1 Opening the settings file

If the unit configuration of the settings file is the same as that of CAN Editor, clicking **[Open]** displays the following dialog box.

Select the settings to be loaded and click **[Confirm]** to load the settings.

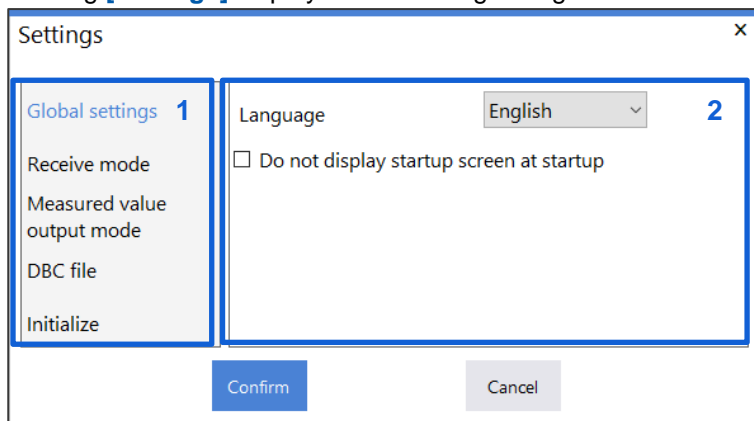


If the unit configuration of the settings file is different from that of CAN Editor, the following dialog box is displayed. Clicking **[OK]** initializes the settings of the measured value output mode after the settings are loaded.



4.2.2 Settings dialog box

Clicking **[Settings]** displays the following dialog box.



1. Parameter

Clicking an item displays the setting details at the right side of the dialog box.

2. Setting details display

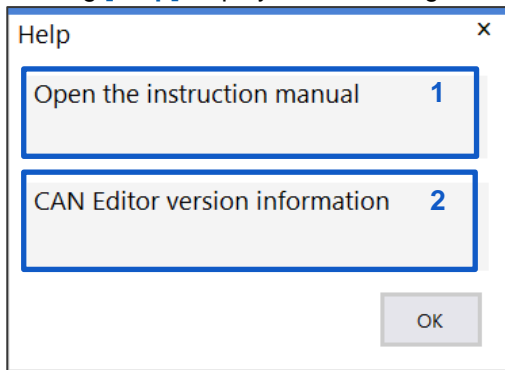
Configures various settings.

The table below lists the settings.

Parameter	Setting details display	Settings	Description
Global settings	Language	日本語 English 简体中文	Selects the display language of the CAN Editor.
	Do not display startup screen at startup	Selected Unselected	Selects whether to display the startup screen when launching the software.
Receive mode	Display format	Decimal Exponent	Selects the DBC file import value. See “6.3.2”
	Digit	0 to 10	Sets the DBC file import value. See “6.3.2”
Measured value output mode	Warning value upper limit	0 to 90	Sets the upper limit for the load factor in measured value output mode.
DBC file	Application of range auxiliary units	Selected Unselected	Selects whether to add the auxiliary units when creating a DBC file.
	Character code	Shift_jis UTF-8 UTF-16	Selects the character code for DBC file saving.
Initialize	Initialize the CAN Editor	–	Initializes the CAN editor settings.

4.2.3 Help

Clicking **[Help]** displays the following items.



1 Open the instruction manual	Opens the CAN Editor instruction manual.
2 CAN editor version information	Opens the CAN Editor version information.

4.3 Logger Information and Send/Receive Information

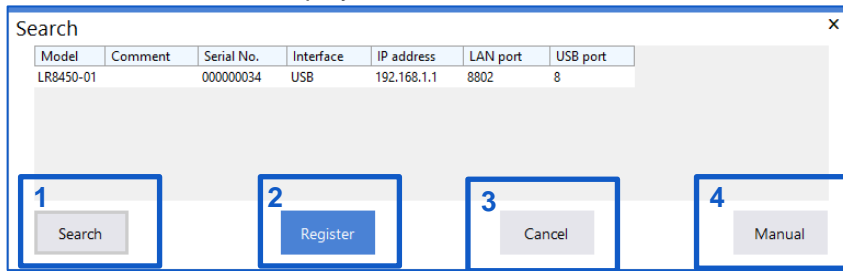
The Logger information and send/receive information configuration are shown below.

Search 1	
LR8450-01	2
S/N:000000034	
USB (Port8)	
Receive 3	
<input checked="" type="checkbox"/> U1 U8555 Receive mode	4
<input type="checkbox"/> U2 U8553	
<input type="checkbox"/> U3 U8555	
<input checked="" type="checkbox"/> U4 U8555 Receive mode	
<input checked="" type="checkbox"/> R1 LR8535 Receive mode	
<input checked="" type="checkbox"/> R2 LR8535 Receive mode	
<input type="checkbox"/> R3	
<input type="checkbox"/> R4	
<input type="checkbox"/> R5	
<input type="checkbox"/> R6	
<input type="checkbox"/> R7	
Send 5	

1 Search	Searches for the Logger to be set. (USB connection, LAN connection) See "4.3.1 Search"
2 Logger information	Displays the information of the Logger to be set. See "4.3.3 Logger information"
3 Receive	Receives the unit configuration and CAN settings from the Logger to be set.
4 Unit configuration	Displays the information of the unit connected to the Logger. Select the units that send/receive the settings to/from the Logger. Not displayed for the LR8102.
5 Send	Transfers the information set by CAN Editor to the Logger to be set.

4.3.1 Search

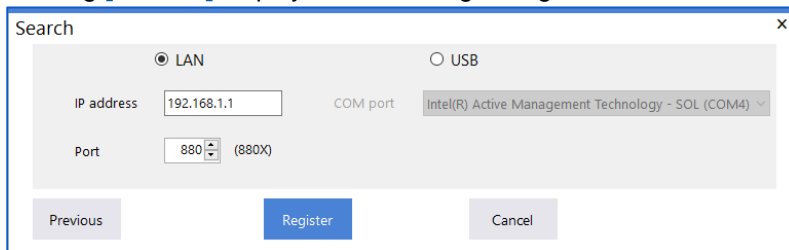
The Logger connected using a USB or LAN cable is searched.
The search result list is displayed.



1 Search	Performs a search again.
2 Register	Registers the selected Logger.
3 Cancel	Closes the dialog box without registering the Logger.
4 Manual	Registers a Logger manually when no Logger is found. See "4.3.2 Manual register"

4.3.2 Manual register

Clicking **[Manual]** displays the following dialog box.



- LAN: Enter the IP address and port number set in the Logger. For the port number, enter the first three digits out of four digits or five digits.
The last digit cannot be specified.
 - USB: Select the COM port.
- Click **[Register]** to start connection.

4.3.3 Logger information

Registered Logger information is displayed.

LR8450-01	1
S/N:000000034	2
USB	3
(Port8)	4

1 Logger name	Registered Logger name
2 Serial number	Serial number of the registered Logger
3 Communication interface	Type of communication interface of the registered Logger When a LAN cable is used, the port number is also displayed.
4 Port or IP address	Displays the following depending on the communication interface. USB: Port number LAN: IP address

4.3.4 Unit configuration change

The information of the unit to be set is displayed.

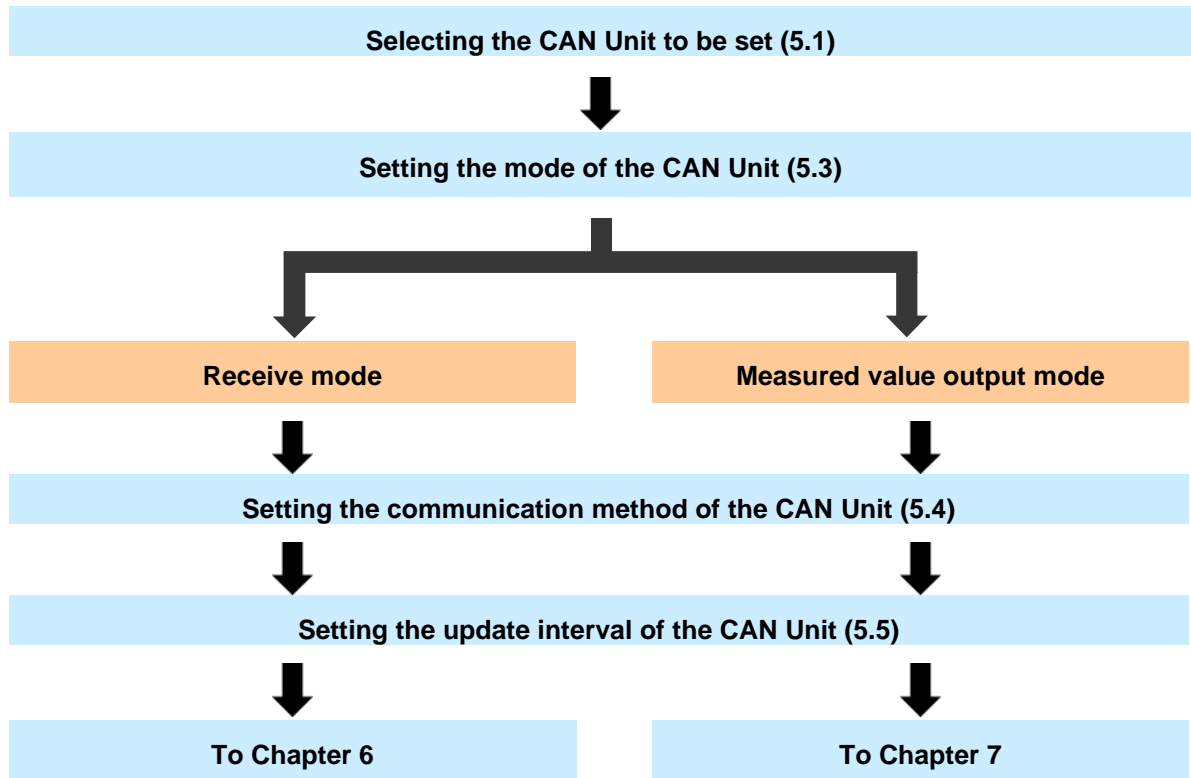
(LR8450, LR8450-01 only)

<input checked="" type="checkbox"/>	U1 U8555 Receive mode
<input type="checkbox"/>	U2 U8550
<input checked="" type="checkbox"/>	U3 U8555 Receive mode
<input type="checkbox"/>	U4
<input type="checkbox"/>	R1
<input type="checkbox"/>	R2
<input type="checkbox"/>	R3
<input type="checkbox"/>	R4
<input type="checkbox"/>	R5
<input type="checkbox"/>	R6
<input type="checkbox"/>	R7

Configuration change check box	Specifies the unit with the check box checked as a CAN unit. Only units that are not yet registered can be selected.
--------------------------------	--

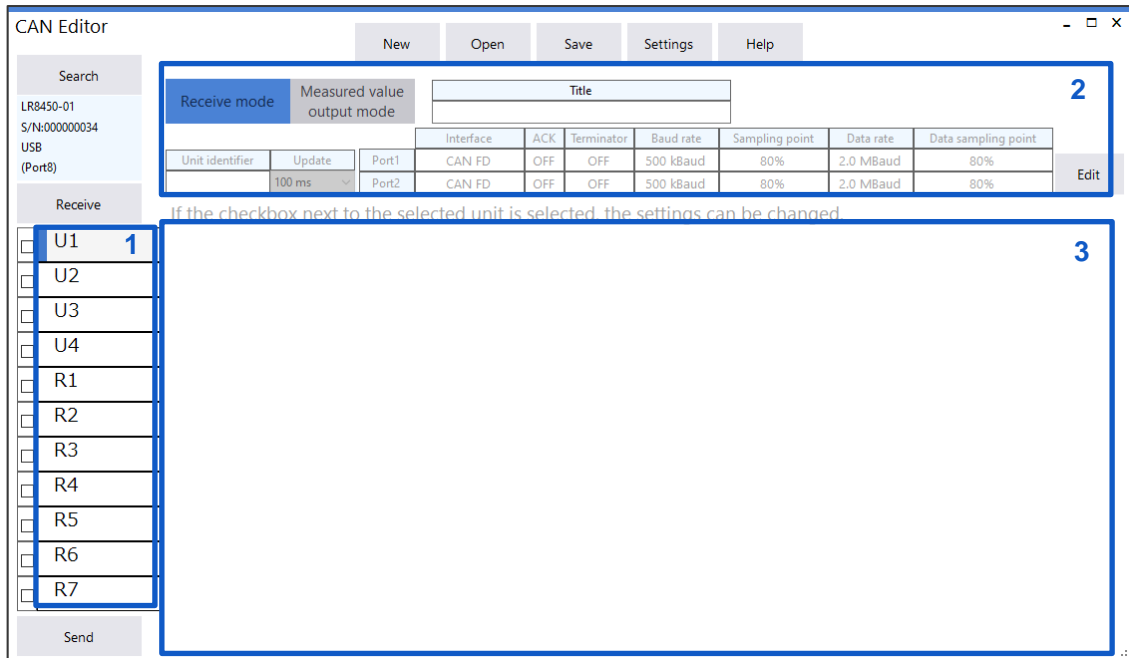
5 Configuring CAN Unit Settings

The procedure for configuring CAN Unit settings is shown below.



5.1 Selecting the CAN Unit

Specify various settings of the CAN Unit in the CAN Unit setting screen.



<p>1 Unit selection</p>	<p>Clicking the CAN Unit opens the CAN Unit setting screen. Only the CAN Unit can be selected. Units cannot be selected for the LR8102.</p>
<p>2 CAN Unit setting items</p>	<p>Displays the settings of the selected CAN Unit. See “5.2 CAN Unit Setting Items”</p>
<p>3 CAN channel setting items</p>	<p>Displays the channel settings of the selected CAN Unit.</p>

5.2 CAN Unit Setting Items

The configuration of the CAN Unit setting screen is shown below.

Receive mode		Measured value output mode		Title						
Unit identifier	Update	Port1	Interface	ACK	Terminator	Baud rate	Sampling point	Data rate	Data sampling point	Edit
3	100 ms	Port2	CAN FD	OFF	OFF	500 kBaud	80%	2.0 MBaud	80%	

1 Mode setting	Allows you to select the CAN Unit mode. See “5.3 Setting the Mode of the CAN Unit”
2 CAN bus settings	Specifies the CAN bus. See “5.4 Setting the Communication Method of the CAN Unit”
3 CAN Unit setting	Specifies the data refresh interval of the CAN Unit. Cannot be configured for the LR8102. See “5.5 CAN Unit Settings”

5.3 Setting the Mode of the CAN Unit

Select whether to set the CAN Unit in the receive mode or measured value output mode. The mode can be selected for each CAN Unit. Only the plug-in CAN Unit can be selected in the measured value output mode. (Wireless units can be set only in the receive mode.)

Receive mode	Measured value output mode
1	2

1 Receive mode <input checked="" type="checkbox"/>	Measures a signal flowing in the CAN bus. A signal is output to the CAN bus. The signal can be output while the CAN signal is measured. Receive mode cannot be selected for the LR8102. See “Chapter 6” for setting the channels after setting the CAN Unit.
2 Measured value output mode	Outputs the measured value of the Logger (plug-in module) to the CAN bus. See “Chapter 7” for setting the channels after setting the CAN Unit.

5.4 Setting the Communication Method of the CAN Unit

Clicking **[Edit]** opens the communication settings edit screen.

The settings edit screen is shown below. The ports to be used are set on this screen.

	1	2	3	4	5	6	7	
	Interface	ACK	Terminator	Baud rate	Sampling point	Data rate	Data sampling point	
Port1	CAN FD	OFF	OFF	500 kBaud	80%	2.0 MBaud	80%	Edit
Port2	CAN FD	OFF	OFF	500 kBaud	80%	2.0 MBaud	80%	

1. Select the interface.

CAN	Sets the CAN mode.
CAN FD [☑]	Sets the CAN FD mode. (ISO 11898-1:2015 compliant)
CAN FD(non-ISO)	Sets the CAN FD (non-ISO) mode. (not ISO compliant) The ACK is fixed to ON in this mode.

2. Select the ACK.

ON	Sends ACK frame from the CAN controller.
OFF [☑]	Does not send ACK frame from the CAN controller. The instrument will not be able to send user frames or operate in measured value output mode.

3. Select the terminator.

ON	Terminates the CAN bus using a 120 Ω resistor between CAN_H and CAN_L.
OFF [☑]	Opens the CAN bus between CAN_H and CAN_L.

4. Select the baud rate.

50 k, 62.5 k, 83.3 k, 100 k, 125 k, 250 k, 500 k[☑], 800 k, 1000 k (Baud)

5. Set the sampling point.

50.0% to 95.0%, 80.0%[☑]

6. Select the data rate (when the interface is not CAN).

0.5 M, 1.0 M, 2.0 M[□], 2.5 M, 4.0 M, 5.0 M (Baud)

7. Set the data sampling point (only when the interface is not CAN).

50.0% to 95.0%, 80.0%[□]

8. Sampling point value to be set

For the sampling point, a value that can be set varies depending on the baud rate.

The sampling point that can be set and is the closest to the value input on the edit screen is displayed.

This value is displayed in 5 "Sampling point".

9. Data sampling point value to be set

For the data sampling point, a value that can be set varies depending on the data rate.

The data sampling point that can be set and is the closest to the value input on the edit screen is displayed.

This value is displayed in 7 "Data sampling point".

5.5 CAN Unit Settings

Specifies the data refresh interval of the CAN Unit.
Cannot be configured for the LR8102.

Unit identifier	Update
1	10 ms 2 ▾

1. The unit identifier set in the Logger is displayed.

8 double-byte characters, 16 single-byte characters

2. Select the data refresh interval.

10 ms, 20 ms, 50 ms, 100 ms[□], 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s

The number of channels that can be measured varies depending on the selected data refresh interval.

Data refresh interval	Number of channels that can be measured
10 ms	Up to 50 channels
20 ms	Up to 100 channels
50 ms	Up to 250 channels
100 ms or greater	Up to 500 channels

5.6 Copying the CAN Unit Settings

Right-clicking the CAN Unit opens the menu. Clicking **[Copy CAN Unit settings]** allows you to copy the CAN Unit settings.

Settings cannot be copied for the LR8102.

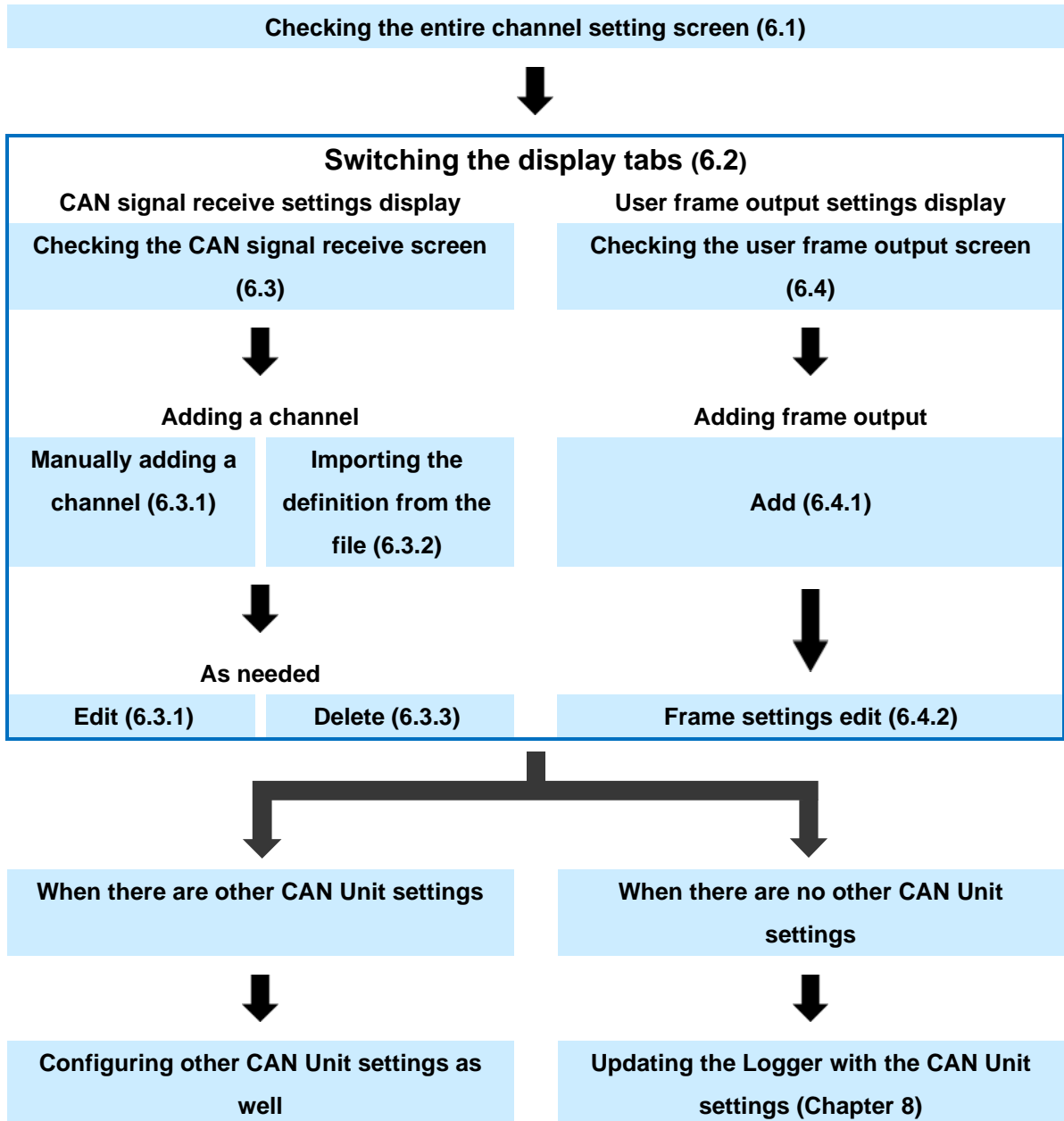
<input type="checkbox"/>	U1 U8550	<div style="border: 1px solid gray; padding: 5px;"> <div style="text-align: right; margin-bottom: 5px;">Add</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Use</th> <th style="width: 33%;">Ch</th> <th style="width: 33%;">Size</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="height: 40px;"> </td> </tr> </tbody> </table> </div>	Use	Ch	Size			
Use	Ch		Size					
<input type="checkbox"/>	U2 U8552							
<input type="checkbox"/>	U3 U8553							
<input checked="" type="checkbox"/>	U4 U8555 Receive							
<input checked="" type="checkbox"/>	R1 LR8535 Receive mode							

Right-clicking the CAN Unit with the CAN Unit settings copied opens the menu with the settings of **[Paste copied settings]** added. Clicking **[Paste copied settings]** reflects the CAN Unit settings and receive mode settings. Only the CAN Unit with the check box checked can be copied.

6 Setting the Channels (Receive Mode)

The channels of the CAN Unit set in the receive mode are set here. The CAN Unit in the receive mode can receive CAN signals and sends user frames to the CAN bus. Receive mode cannot be used for the LR8102.

The procedure for setting the receive mode is shown below.



6.1 CAN Unit Channel Setting Screen

The configuration of the channel setting screen is shown below.

1 Display selection tab	Switches the displayed items between CAN data receive and user frame transmission. See “6.2 Display Selection Tab”
2 Channel settings	Displays the channel settings and processing. The information varies depending on the selected display selection tab.
3 Channel settings list	Displays the list of channel settings. The information varies depending on the selected display selection tab.

6.2 Display Selection Tab

Receive CAN data and user frame transmission display are switched.

1 Receive CAN data	Displays the information required for the CAN data receive settings. See “6.3 Receive CAN Data”
2 User frame transmission	Displays the information required for the user frame transmission settings. See “6.4 User Frame Transmission”

6.3 Receive CAN Data

When the “Receive CAN data” tab is selected, the following items are displayed.
See “6.2 Display Selection Tab”

The screenshot shows a software interface for managing CAN data reception. At the top, there are buttons for 'Add' (1) and 'Import' (2). To the right, a box displays 'Receiving size: 2/500' (3) and a 'Delete' button (4). Below these is a table with columns: Use, Ch, Size, Comment, Unit, Port, Ch type, ID, Format, Start bit, and Leng. Two rows are visible: 'U4-1' with 'testSignal' and 'U4-2' with 'testID'. The 'Use' column has checkboxes, and the 'Ch' column has buttons. A large empty area below the table is labeled '5'. A scroll bar is at the bottom.

Use	Ch	Size	Comment	Unit	Port	Ch type	ID	Format	Start bit	Leng
<input checked="" type="checkbox"/>	U4-1	1	testSignal		1	Data	0h	Standard	0	2
<input checked="" type="checkbox"/>	U4-2	1	testID		1	ID count	0h	Standard		

1 Add	Assigns the CAN data receive channels to the CAN Unit. See “6.3.1 Dialog box for editing CAN signal receive channel”
2 Import	Assign the CAN signal receive channels from the CAN data definition file. See “6.3.2 Import dialog box”
3 Receiving size	Displays the total receiving size and maximum receiving size that can be registered of all the channels of the selected CAN Unit. Channels can be registered up to the maximum receiving size. The maximum receiving size varies depending on the CAN Unit update interval. The receiving size for each channel varies depending on the setting.
4 Delete	Deletes the information of the channels registered in the selected CAN Unit. See “6.3.3 Delete”
5 Channel list	Displays a list of registered channel settings. The menu is displayed when the right button of the mouse is clicked. See “6.3.4 CAN data receive menu”
6 Use	Measures the registered channels with the check box checked.
7 Ch	For the channels with the [Use] check box checked, the button of the target channels can be clicked. The settings of the target channels can be edited. See “6.3.1 Dialog box for editing CAN signal receive channel”

6.3.1 Dialog box for editing CAN signal receive channel

Clicking **[Add]** or the **[Ch]** button for the channel to be edited displays the following dialog box.

The settings that were determined previously after CAN Editor started up are displayed as default settings.

When there are no previously determined settings, the default value of each item is displayed.

1. Select the port to be measured.

Port 1 <input checked="" type="checkbox"/>	Measures the CAN signals received by Port 1.
Port 2 <input type="checkbox"/>	Measures the CAN signals received by Port 2.

2. Set the comment (as needed).

Up to 20 double-byte characters or 40 single-byte characters

3. Set the unit.

Up to 3 double-byte characters or 7 single-byte characters

4. Select the channel type.

Data <input checked="" type="checkbox"/>	Converts the CAN data to a physical quantity and records the data.
ID count <input type="checkbox"/>	Counts the number of times the specified ID is received. The counter is reset to 0 at the data refresh interval.

5. Select the ID format.

Standard	Expresses the ID by 11 bits.
Extended	Expresses the ID by 29 bits.

6. Set the ID.

[Standard] format: 0h to 7FFh, [Extended] format: 0h to 1FFFFFFFh

Set the ID using a hexadecimal number.

7. The value of the set ID is expressed as a decimal number.

8. Select the byte order.

Motorola	Format sending the upper byte first (big endian)
Intel	Format sending the lower byte first (little endian)

9. Set the data type.

Unsigned	Unsigned integer type
Signed	Signed integer type
IEEE Float	Single-precision floating-point format
IEEE Double	Double-precision floating-point format

10. Set the length.

1 to 64, 2

When the data type is IEEE Float, the length is fixed to 32.

When the data type is IEEE Double, the length is fixed to 64.

11. Set the start bit.

0 to 511

The setting range varies depending on the byte order and length settings.

12. Set the factor and offset.

Factor	Allows you to enter the factor and offset for converting data to a physical quantity. A physical quantity can be calculated using the following formula. (Physical quantity) = (Factor) × (Data) + (Offset) (Default value: Factor 1.0, offset 0.0)
Offset	

13. Auto (Factor and Offset)

The factor and offset are automatically set so that the measured value can change in the range from the upper limit to the lower limit.

This is enabled only when the data type is signed and unsigned.

14. Set the upper and lower limits.

Upper	Specifies the upper limit of the waveform displayed on the Logger screen. Default: 1.0
Lower	Specifies the lower limit of the waveform displayed on the Logger screen. Default: -1.0

15. Auto (Upper and Lower)

The minimum value is automatically set as the lower limit and the maximum value is automatically set as the upper limit within the range of the measured value.

16. Select the number of digits.

0 to 10, 3

The number of decimal places for the measured value displayed in the Logger is set.
The default value is 0 when the channel type is ID count.

17. Select the format.

Decimal	Specifies the number display format of the Logger to a decimal.
Exponent	Specifies the number display format of the Logger to an exponent.

18. Select the display color.

OFF, 24 colors

19. Set the threshold value.

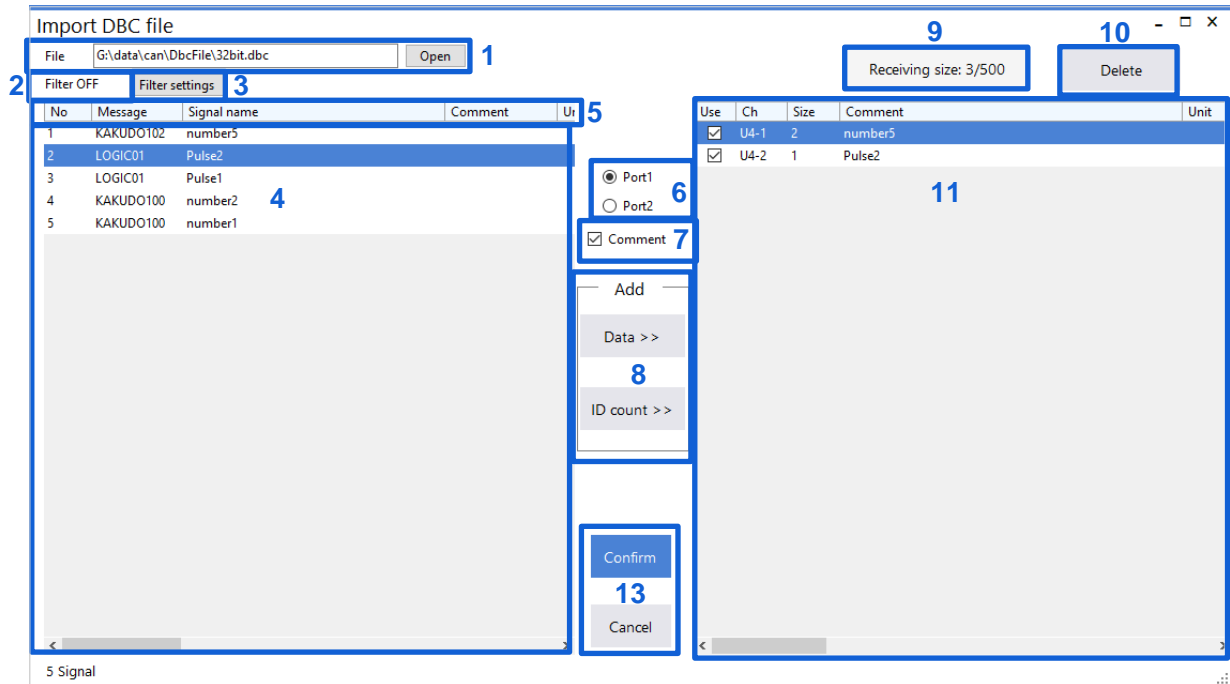
The threshold value for numerical calculation is set.

20. Confirm the settings in the dialog box.

Confirm	Reflects the settings in the dialog box and closes the dialog box.
Cancel	Discards the settings in the dialog box and closes the dialog box.

6.3.2 Import dialog box

Clicking **[Import]** displays the following dialog box.



1. Select the file to be imported.

Open	Allows you to select a file.
-------------	------------------------------

File available for import	File extension
DBC file*1	.DBC
Logger settings file	.SET
CAN Editor settings file	.CES

2. The on/off state of the filter setting is displayed.

If it is set to on, the definition list of the import file is displayed based on the conditions described in “3. Filter settings”.

3. Filter settings

Clicking the Filter settings displays the following dialog box.

(1) Select whether to use the filter.

OFF <input checked="" type="checkbox"/>	Does not use the filter.
ON <input type="checkbox"/>	Uses the filter.

(2) Enter a filter string to be used for messages.

Up to 20 double-byte characters or 40 single-byte characters

Items with this filter string in their messages are displayed in the definition list of the import file.

(3) Enter a filter string to be used for the signal name.

Up to 20 double-byte characters or 40 single-byte characters

Items with this filter string in their signal names are displayed in the definition list of the import file.

(4) Set the condition.

OR <input checked="" type="checkbox"/>	Displays items with either their message or signal name that satisfies the conditions.
AND <input type="checkbox"/>	Displays items with both their message and signal name that satisfy the conditions.

(5) Set the distinction.

OFF <input checked="" type="checkbox"/>	Compares the existence of a filter string containing half-width characters in a case-insensitive manner.
ON <input type="checkbox"/>	Compares the existence of a filter string containing half-width characters in a case-sensitive manner.

(6) Confirm the settings in the dialog box.

Confirm	Reflects the settings in the dialog box and closes the dialog box.
Cancel	Discards the settings in the dialog box and closes the dialog box.

4. List of import file definitions

A list of definitions existing for the import file is displayed.

Select the definition to be added to the measurement channel.

Clicking the definition while holding down the **Ctrl** key on the keyboard allows you to select multiple channels.

5. Import file information

Clicking the item other than No. sorts the definition list of that item.

6. Select the port to be added.

Port 1	Adds definitions with Port 1 to be used.
Port 2	Adds definitions with Port 2 to be used.

7. Comment

Check the check box to add a definition in the form of "Signal name + Comment" as an import file definition to the channel comment.

Default: Check box checked

8. Add

Data>>	Registers the channel type as data.
ID count>>	Registers the channel type as ID count.

Definitions can be dragged from the definition list and dropped to the registered channel list to be registered as data.

Up to 500 definitions can be registered for one unit.

9. Receiving size

The status of the receiving size registered in the CAN Unit is displayed.

10. Delete

Deletes the information of the channels registered in the selected CAN Unit.

See "6.3.3 Delete"

11. Registered channel list

The information of the imported channels is displayed as a preview.

12. Number of signals

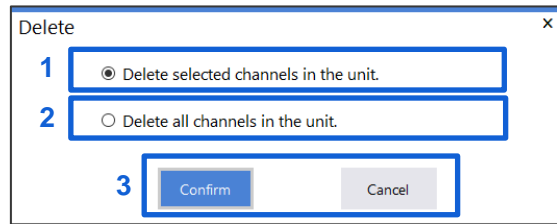
The number of the imported signals is displayed.

13. Confirm the settings in the dialog box.

Confirm	Reflects the settings in the dialog box and closes the dialog box.
Cancel	Discards the settings in the dialog box and closes the dialog box.

6.3.3 Delete

Selecting this menu displays the following dialog box.



1. Delete selected channels in the unit.

Deletes the selected channels.

2. Delete all channels in the unit.

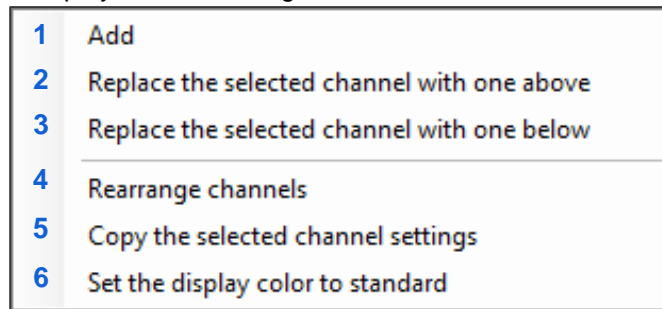
Deletes all of the channels registered in the unit.

3. Confirm the settings in the dialog box.

Confirm	Deletes the settings in the dialog box and closes the dialog box.
Cancel	Closes the dialog box without deleting the settings.

6.3.4 CAN data receive menu

The following menu is displayed when the right button of the mouse is clicked in the channel list area.



1 Add

Assigns the CAN data receive channels to the CAN Unit.
See "6.3.1 Dialog box for editing CAN signal receive channel"

2 Replace the selected channel with one above

Replaces the selected channel with one above.
It is enabled when only one channel is selected.

3 Replace the selected channel with one below

Replaces the selected channel with one below.
It is enabled when only one channel is selected.

4 Rearrange channels

Clicking this menu displays a dialog box for rearranging the channels.
See "6.3.5 Rearrange channels"

5 Copy the selected channel settings

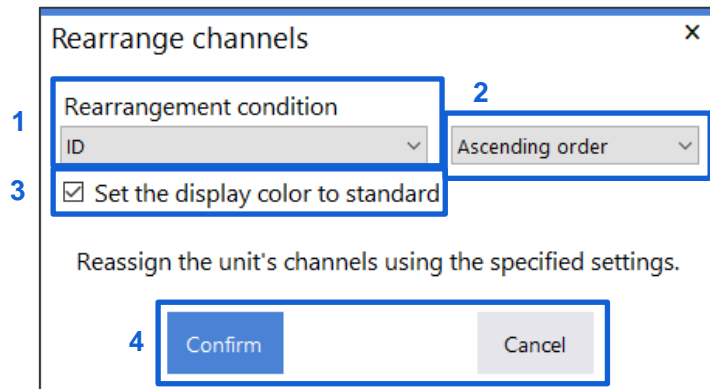
Clicking this menu displays a dialog box for copying the selected channel settings.
See "6.3.6 Copy the selected channel settings"

6 Set the display color to standard

Specifies the display color to the standard setting.
Set the display color of the channels with the "Use" check box checked that are registered in the unit in order of color 1 to 24.

6.3.5 Rearrange channels

The order of the channels registered in the unit is rearranged.



1. Rearrangement condition

Use, Comment, Unit, Port, Ch type, ID, Format, Start bit, Length, Byte order, Value type, Factor, Offset, Upper, Lower, Digit, Format, Display color, Threshold

Select the conditions for rearrangement.

2. Order

Ascending order	Rearranges the channels in the ascending order.
Descending order	Rearranges the channels in the descending order.

3. Set the display color to standard

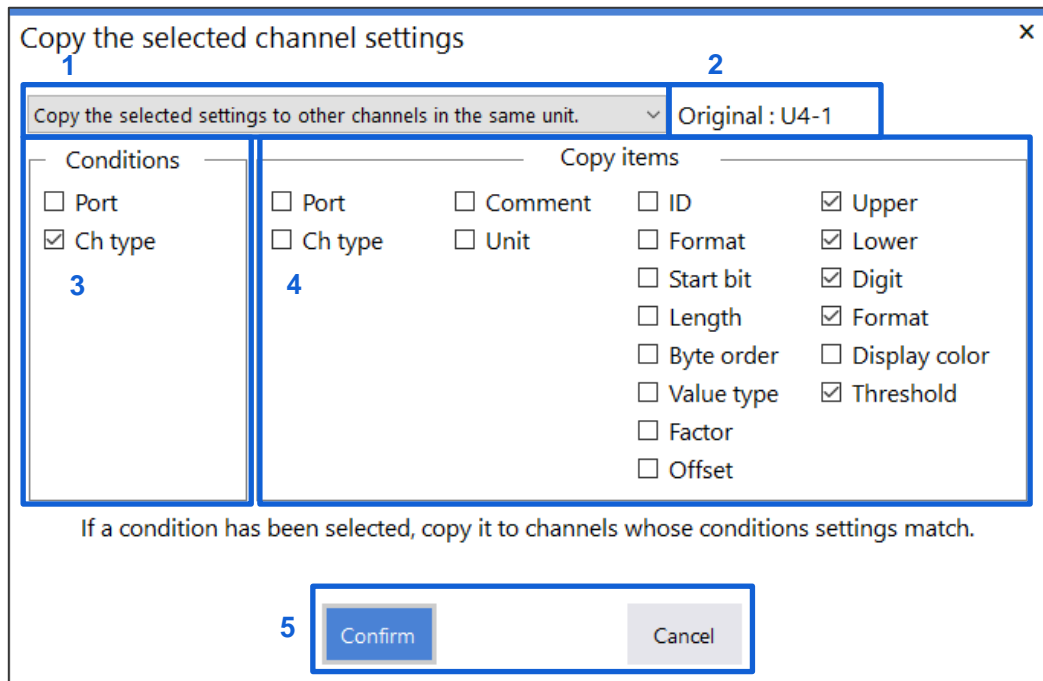
Specifies the display color to the standard setting after the order of the channels with the check box checked is rearranged. Set the display color of the channels with the "Use" check box checked that are registered in the unit in order of color 1 to 24.

4. Confirm the settings in the dialog box.

Confirm	Rearrange the channels based on the settings in the dialog box
Cancel	Closes the dialog box without rearranging the channels.

6.3.6 Copy the selected channel settings

The settings of the selected channels are copied to other channels in the unit.



1. Select the settings to be copied.

Copy the selected settings to other channels in the same unit.*1

Copy all settings to other channels in the same unit.

*1: Any condition settings that cause an error in other channels are not copied.

2. Original

Displays the channel to be copied.

3. Conditions

Port	Copies the settings to a channel with the same port as that of the channel to be copied.
Ch type	Copies the settings to a channel with the same channel type as that of the channel to be copied.

The condition can be set when **[Copy the selected settings to other channels in the same unit]** is selected.

4. Copy items

Copies the settings of the items with the check box checked.

The condition can be set when **[Copy the selected settings to other channels in the same unit]** is selected.

5. Confirm the settings in the dialog box.

Confirm	Copies the settings in the dialog box and closes the dialog box.
Cancel	Closes the dialog box without copying the settings.

6.4 User Frame Transmission

When the [\[User frame transmission\]](#) tab is selected, the following items are displayed.
See “6.2 Display Selection Tab”

2		3		1			
Use	No.	Port	Timing	Periodic	Send interval	Frame	
<input checked="" type="checkbox"/>	1	1	Start	ON	100×10 [ms]	4	
<input type="checkbox"/>	2	1	Start	OFF		1	
<input type="checkbox"/>	3	1	Start	OFF		1	
<input type="checkbox"/>	4	1	Start	OFF		1	
<input type="checkbox"/>	5	1	Start	OFF		1	
<input type="checkbox"/>	6	1	Start	OFF		1	
<input type="checkbox"/>	7	1	Start	OFF		1	
<input type="checkbox"/>	8	1	Start	OFF		1	

1 User frame list	Displays the user frame transmission settings. The menu is displayed when the right button of the mouse is clicked. See “6.4.3 User frame menu”
2 Use	Outputs the selected frames.
3 User frame No.	[No.] is available when the user frame transmission is enabled. The user frame settings are configured. See “6.4.1 Dialog box for editing user frame transmission”

6.4.1 Dialog box for editing user frame transmission

Clicking [No.] displays the following dialog box.

User frame transmission settings No.1

1 Port1 Port2

2 Timing Alarm 3 All ALM

4 Periodic

5 Send interval 9999 (×10[ms])

6 Frame 8 7

	Type	ID	DLC	Delay	Data
1	CAN FD Extended	1FFFFFFFh	4	15×10 [ms]	00000000h
2	CAN Standard	0h	1	1×10 [ms]	00h
3	CAN Standard	0h	1	1×10 [ms]	00h
4	CAN Standard	0h	1	1×10 [ms]	00h
5	CAN Standard	0h	1	1×10 [ms]	00h
6	CAN Standard	0h	1	1×10 [ms]	00h
7	CAN Standard	0h	1	1×10 [ms]	00h
8	CAN Standard	0h	1	1×10 [ms]	00h

8 9

1. Select the port to be used.

Port 1 <input checked="" type="checkbox"/>	Sends a user frame from Port 1.
Port 2	Sends a user frame from Port 2.

2. Timing

Start <input checked="" type="checkbox"/>	Starts transmission at the start of measurement.
Stop	Sends only one frame for every condition when measurement is stopped. Periodic and two or more frames cannot be set.
Start trigger	Starts transmission when a start trigger is set.
Alarm	Starts transmission when an alarm is set.
Manual	Starts transmission when the operation in the Logger CAN frame transmission dialog box is performed. See "1.5 Configuring CAN Settings" in Logger Instruction Manual

3. Target alarm

All ALM , **ALM1**, **ALM2**, **ALM3**, **ALM4**, **ALM5**, **ALM6**, **ALM7**, **ALM8**

4. Periodic

Checking the check box repeats transmission periodically after all frames are sent. If the check box is not checked, all frames are sent only once.

Default: Check box not checked

5. Send interval

1 to 9999

This setting is available only when Periodic is ON. The send interval is the set value × 10 ms.

6. Frame

1 , **2**, **3**, **4**, **5**, **6**, **7**, **8**

7. Frame setting list

Only frames for the number of frames set in Frame are displayed.
The menu is displayed when the right button of the mouse is clicked.
See “6.4.4 Frame settings menu”

8. Frame number

Clicking the frame number button opens the frame settings edit dialog box.
See “6.4.2 Frame settings edit dialog box”

9. Confirm the settings in the dialog box.

Confirm	Reflects the settings in the dialog box and closes the dialog box.
Cancel	Discards the settings in the dialog box and closes the dialog box.

6.4.2 Frame settings edit dialog box

Clicking the frame number in the User frame transmission settings dialog box displays the following dialog box.

1. Select the type.

CAN Standard [□]	Standard ID (0h to 7FFh) CAN frame
CAN Extended	Extended ID (0h to 1FFFFFFFh) CAN frame
CAN FD Standard	Standard ID (0h to 7FFh) CAN FD frame
CAN FD Extended	Extended ID (0h to 1FFFFFFFh) CAN FD frame

2. Set the ID.

[CAN Standard] or [CAN FD Standard] type: 0h[□] to 7FFh
[CAN Extended] or [CAN FD Extended] type: 0h[□] to 1FFFFFFFh

Set the ID using a hexadecimal number.

3. The value of the set ID is expressed as a decimal number.

4. Set the delay time.

Frame 1: 0[□] to 9999, Frame 2 and subsequent frames: 1[□] to 9999

The delay time is the set value × 10 ms.

5. Select the DLC.

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

6. The byte size of the data corresponding to the specified DLC is displayed.

7. The data list is displayed. The data can be edited up to the byte length specified in DLC.

8. Set the data.

0h to FFh

Set the data using a hexadecimal number one byte at a time.

9. Confirm the settings in the dialog box.

Confirm	Reflects the settings in the dialog box and closes the dialog box.
Cancel	Discards the settings in the dialog box and closes the dialog box.

6.4.3 User frame menu

The following menu is displayed when the right button of the mouse is clicked in the user frame list area.

Copy all settings for the selected conditions to other conditions for the same unit.

All settings of the selected condition are copied to other conditions within the same unit.

6.4.4 Frame settings menu

The following menu is displayed when the right button of the mouse is clicked in the frame settings list area.

Copy all settings for the selected frame to other frames for the same condition.

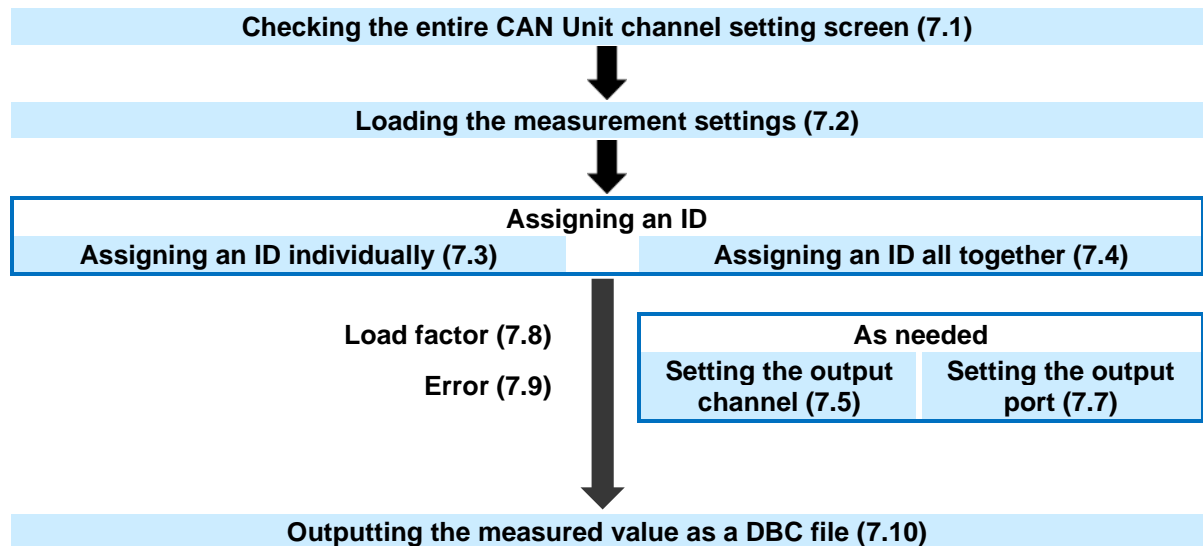
All settings of the selected frame are copied to other frames within the same condition.

7 Setting the Channels (Measured Value Output Mode)

The channel settings of the CAN Unit in the measured value output mode are described.
The CAN Unit in the measured value output mode outputs the measured value of the Logger to the CAN bus.

The definitions of the specified CAN output can be output as a DBC file.

The procedure for setting the measured value output mode is shown below.



7.1 Setting the CAN Unit Channels (Measured Value Output Mode)

The configuration of the measured value output mode screen is shown below.

1 Assign ID	Assigns the channel ID. See “7.4 Assigning an ID All Together”
2 Load factor	Displays the load factor for each port. See “10.1 Load Factor of the Measured Value Output Mode”
3 Create DBC file	Creates a DBC file. See “7.10 Outputting the Measured Value as a DBC File”
4 Status message	Displays whether transmission and DBC file output can be performed.
5 Channel settings list	Displays a list of currently set information.

7.2 Loading the Measurement Settings

The measurement settings can be loaded in two ways: Selecting the settings file by clicking 2 [Open] in 4.2 and receiving the settings file by communicating with the Logger by clicking 3 [Receive] in 4.3. When the loading has been completed, the measurement channel list is displayed as shown below.

Assign ID		Port 1 load rate	0%	Create DBC file		Output enabled						
		Port 2 load rate	0%									
Edit	Ch	Measure	Mode	Comment	Output	Port1	Port2	ID	Type	Signal name	Send interval	Scaling
Edit	U2-1	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-2	OFF	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-3	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-4	OFF	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-5	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-6	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-7	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-8	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-9	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-10	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-11	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-12	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-13	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-14	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-15	ON	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled

7.3 Assigning an ID Individually

Clicking [Edit] in the channel settings list displays a dialog box for editing channels.

Edit

Ch U2-1
Measure ON
Mode Voltage
Comment test

Output ON 1

Port Port1 Port2 2

Format Standard 3

ID 0h (0d) 4

Signal name

Scaling Enabled Ratio : 19
Offset : 8
Unit : T

Confirm Cancel

1. Change the output status.
2. Change the output port.
3. Change the format.
4. Set the ID.

[Standard] format: 0h[□] to 7FFh, [Extended] format: 0h[□] to 1FFFFFFh

Set the ID using a hexadecimal number.

7.4 Assigning an ID All Together

Clicking **[Assign ID]** displays a dialog box for assigning an ID all together.

Assign ID

Unit Unit1
 Unit2
 Unit4

Output state only Enabled

Port Port1
 Port2

Format Standard

Start ID 0h
(0d)

Grouping Enabled

Confirm Cancel

Preview
Unit1 : 30Ch
Unit2 : 14Ch
Unit4 : 5Ch
Load : 0.6%

1. Select the unit to which an ID is to be assigned.

An ID is assigned to the units with the check box checked. An ID may not be assigned to some channels depending on the anticipated load factor. Start assigning the ID with Unit 1.

2. Assign an ID to only channels in the output status only.

An ID is assigned only to the channels in the output status before the dialog box opens. For the output status, see 7.3 and 7.5. An ID may not be assigned to some channels depending on the anticipated load factor. Start assigning the ID with Unit 1.

3. Select the output port.

Select the port to be used for output. After **[Confirm]** is clicked, the channels to which an ID is to be assigned are set to the selected port.

4. Select the format.

Select the format. The selected format is applied to all IDs to assign.

5. Set the start ID.

[Standard] format: 0h to 7FFh, [Extended] format: 0h to 1FFFFFFh

Set the ID using a hexadecimal number. The ID specified here is assigned by sequence.

6. Select grouping.

Checking the **[Enabled]** check box assigns multiple output channels to one ID.
Unchecking the **[Enabled]** check box assigns one output channel to one ID.

7. Display the preview.

According to the settings from 1 to 6, the number of channels to which an ID is to be assigned for each unit is displayed. The anticipated load factor is also displayed. Clicking **[Confirm]** actually assigns an ID.

7.5 Selecting the Channel to be Output

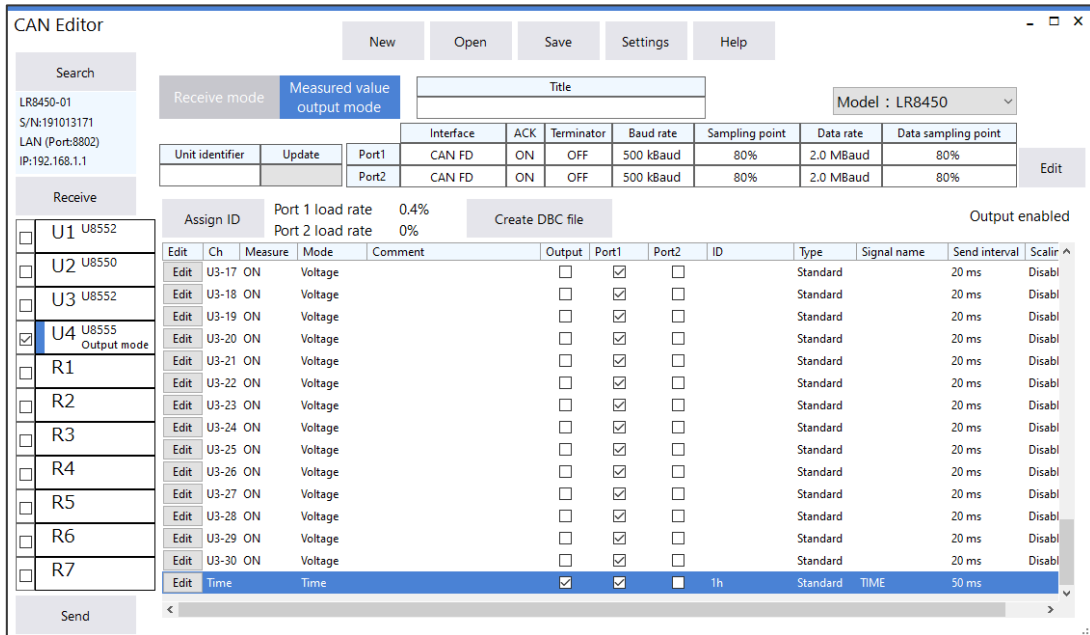
Checking the **[Output]** check box can output the channel. The channels with the check box checked are to be output.

In addition to selecting the check box, select channels for which the output status is to be changed and right-click to display the menu to change the output status.

Assign ID		Port 1 load rate	0.7%	Create DBC file		Output enabled						
		Port 2 load rate	0%									
Edit	Ch	Measure	Mode	Comment	Output	Port1	Port2	ID	Type	Signal name	Send interval	Scaling
Edit	U2-1	ON	Voltage	test	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0h	Standard	U8550_U2CH01	100 ms	Enabled
Edit	U2-2	OFF	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-3	ON	Voltage		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0h	Standard	U8550_U2CH03	100 ms	Disabled
Edit	U2-4	OFF	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-5	ON	Voltage		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0h	Standard	U8550_U2CH05	100 ms	Disabled
Edit	U2-6	ON	Voltage		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-7	ON	Voltage		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-8	ON	Voltage		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-9	ON	Voltage		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-10	ON	Voltage		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-11	ON	Voltage		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-12	ON	Voltage		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-13	ON	Voltage		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-14	ON	Voltage		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Standard		100 ms	Disabled
Edit	U2-15	ON	Voltage		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Standard		100 ms	Disabled

7.6 Outputting the Time

This section describes how to output the time along with measured values. You can select whether to output the time by selecting the **[Output]** checkbox for **[Time]**.



Times are output as six discrete values. The following table lists values and their signal names. The ID set using the CAN editor is used as the time ID.

Value	Signal name
Year	TIME_YEAR
Month	TIME_MONTH
Day	TIME_DAY
Hours	TIME_HOUR
Minutes	TIME_MINUTES
Seconds	TIME_SECONDS
Millisecond	TIME_MS

The time ID must differ from other channels.
Time data cannot be output alone.

The time output differs depending on the Logger as follows:

	LR8450 / LR8450-01	LR8102
Time output timing	When a unit acquires a measured value	When the data number advances
Time transmission interval	Same as the shortest transmission interval among measured values output from CAN units	Same as the recording interval

7.7 Selecting the Output Port

Checking the **[Port 1]** and/or **[Port 2]** check box allows you to select which port to be used for output. Only port 1 can be used for the LR8102.

In addition to selecting the check box, select channels for which the output status is to be changed and right-click to display the menu to change the output status.

7.8 Load Factor

When the ID is set, the load factor of the CAN bus is displayed for each port.

Set the output channel so that the load factor does not exceed 90% for each port.

See “10.1 Load Factor of the Measured Value Output Mode”

Assign ID	Port 1 load rate	Port 2 load rate			Create DBC file								Output enabled
Edit	Ch	Measure	Mode	Comment	Output	Port1	Port2	ID	Type	Signal name	Send interval	Scaling	
Edit	U2-1	ON	Voltage	test	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0h	Standard	U8550_U2CH01	100 ms	Enabled	
Edit	U2-2	OFF	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled	
Edit	U2-3	ON	Voltage		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0h	Standard	U8550_U2CH03	100 ms	Disabled	
Edit	U2-4	OFF	Voltage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Standard		100 ms	Disabled	
Edit	U2-5	ON	Voltage		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0h	Standard	U8550_U2CH05	100 ms	Disabled	
Edit	U2-6	ON	Voltage		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0h	Standard	U8550_U2CH06	100 ms	Disabled	
Edit	U2-7	ON	Voltage		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0h	Standard	U8550_U2CH07	100 ms	Disabled	
Edit	U2-8	ON	Voltage		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0h	Standard	U8550_U2CH08	100 ms	Disabled	
Edit	U2-9	ON	Voltage		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0h	Standard	U8550_U2CH09	100 ms	Disabled	

7.9 Error

In the following conditions, a DBC file cannot be created or settings cannot be sent to the Logger unit.

- 1. When the interface is set to CAN, the same ID is used for the same unit or port more than a certain number of times.**
If using the CAN interface, conditions which would exceed the amount of measured value information that can be included in one frame will result in an error.
- 2. The same ID is used in multiple units and the same port.**
- 3. The load factor is over 90%.**

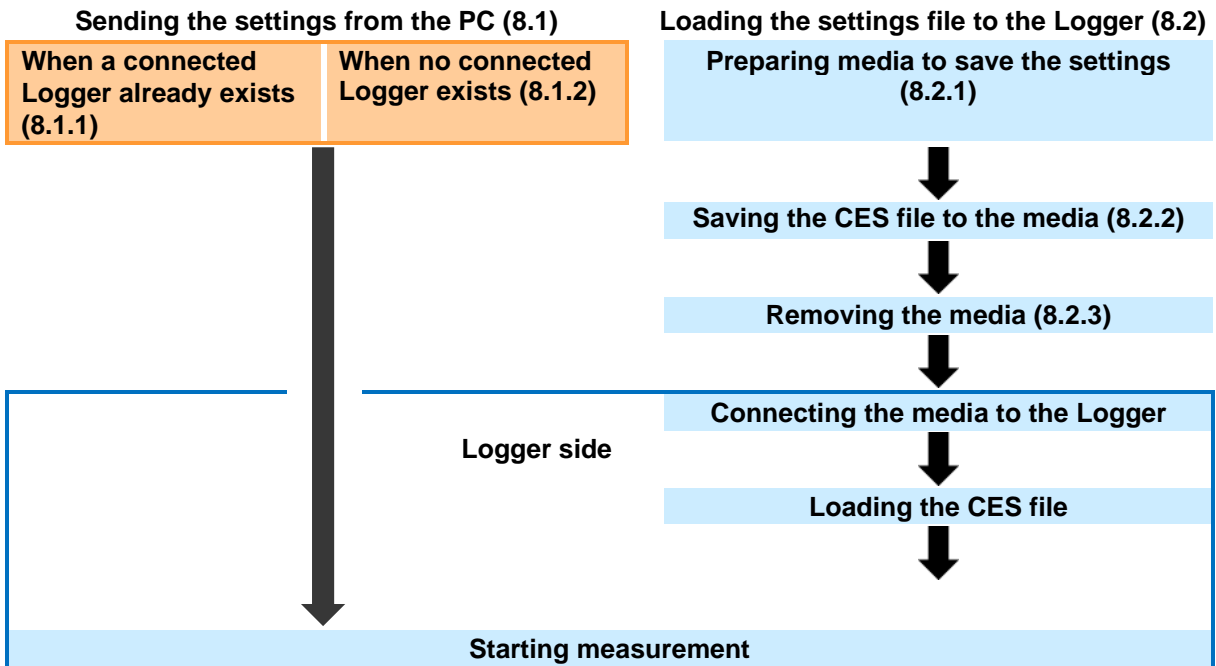
7.10 Outputting the Measured Value as a DBC File

Clicking **[Create DBC]** can output the measured value output settings as a DBC file. Clicking **[Create DBC]** displays a dialog box.

Enter a name under the folder to be saved and click **[Save]** to create a DBC file. When any of the errors in 7.8 occurs, a DBC file cannot be output.

8 Updating the Logger with CAN Settings

The Logger is updated with the information set using CAN Editor.
For details about which types of settings files can be loaded and how to do so, see the Instruction Manual of the Loggers.
The operating procedure is shown below.



8.1 Sending the Settings from the PC

8.1.1 When there is a connected Logger

Search	
LR8450-01 S/N:000000034 USB (Port8)	
Receive	
<input checked="" type="checkbox"/>	U1 U8555 Receive mode
<input type="checkbox"/>	U2 U8553
<input type="checkbox"/>	U3 U8555
<input checked="" type="checkbox"/>	U4 U8555 Receive mode
<input checked="" type="checkbox"/>	R1 LR8535 Receive mode
<input checked="" type="checkbox"/>	R2 LR8535 Receive mode
<input type="checkbox"/>	R3
<input type="checkbox"/>	R4
<input type="checkbox"/>	R5
<input type="checkbox"/>	R6
<input type="checkbox"/>	R7
Send	

1 Check the connected Logger.

2 Click [Send].

The procedure is complete when the [Success] message is displayed. When the location within the application at which the CAN Unit is registered is different from the location of the Logger at which the CAN Unit is connected, the settings cannot be sent. If there are units that are set in the measured value output mode, the settings are sent only when information of all the units is consistent.

8.1.2 When there is no connected Logger

Prepare a Logger according to 3.1.2 and register the Logger according to 4.3.1.
Refer to 8.1.1 to send the settings after registering the Logger.

8.1.3 When the Logger is busy

When the Logger is busy during measurement, file processing, or monitoring, the settings cannot be sent.

The busy state needs to be resolved.

8.1.4 When the settings that do not allow measurement to start are sent

Measurement may not be performed depending on the combination of the recording interval, save format, and number of channels to be measured.

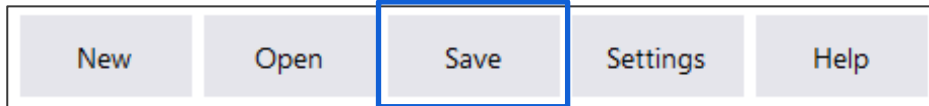
When the settings that do not allow measurement are sent, a warning dialog box is displayed. The settings need to be sent again after they are optimized.

8.2 Loading the Settings File to the Logger

8.2.1 Preparing media to be used

Prepare media (SD memory card, USB flash drive, etc.) to be used to save the settings file (CES file). Using Hioki genuine media compatible with the Logger is recommended.

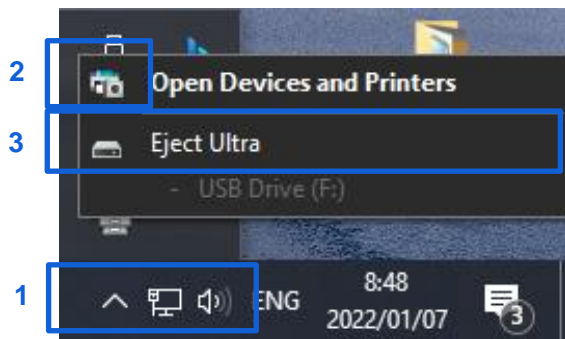
8.2.2 Saving the settings file onto the media



1 Click [Save] in the CAN Editor main screen.

In the dialog box, set the prepared media as a saving destination and name and save the file.

8.2.3 Removing the media



1 Display the indicator on the Windows screen.

2 Right-click the target media.

The list is displayed.

3 Select [Eject].

8.2.4 Loading the CES file to the Logger

Connect the media to the Logger.

Setting the CAN is completed only by loading the settings file (CES file).

For details about which types of settings files can be loaded and how to do so, see the Instruction Manual of the Loggers.

See "3.4 Loading Data" in LR8450, LR8450-01 Instruction Manual

9 Specifications

1. Basic Specifications

Operating environment	OS: Windows 10 (32 bits/64 bits) / Windows 11 (64 bits) CPU: 1.0 GHz or faster 32 bit (x86) or 64 bit (x64) processor Memory: 2 GB or more Display: 1280 × 1024 dots or more, 65,536 colors or more Hard disk: 3.0 GB or more of available space .NET Framework: Microsoft .NET Framework 4.6 and a language pack applicable for the execution environment must be installed.	
Applicable measuring instrument	HIOKI LR8450, LR8450-01 Memory HiLogger, HIOKI LR8102 Data Logger	
Interface	LR8450/LR8450-01	LAN / USB
	LR8102	LAN
Applicable language	Japanese / English / Simplified Chinese	
Unit position	LR8450/LR8450-01	Unit 1 to Unit 4 Wireless Unit 1 to Wireless Unit 7
	LR8102	External terminal communication lines of CAN_H and CAN_L
CAN interface setting	Interface Terminator Baud rate Data rate Sampling point Data sampling point ACK	
Unit operating mode	LR8450/LR8450-01	The receive mode and measured value output mode can be changed for each unit.
	LR8102	Fixed to measured value output mode

2. Receive mode settings (LR8450, LR8450-01 only)

Update interval	10 ms, 20 ms, 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s	
Receiving channel definition settings	CAN input port setting	Port 1 / Port 2
	Ch type	Data / ID count
	Common settings	1. Format: Standard / Extended 2. ID: 0 h to 1FFFFFFF h 3. Comment 4. Unit 5. Factor, Offset
	Ch type: Data	1. Start bit: 0 to 511 2. Length: 1 to 64 [bit] 3. Byte order: Motorola (trademark of another company) / Intel® 4. Value type: Unsigned / Signed / IEEE Float / IEEE Double
	LR8450 display settings	1. Display upper limit / Display lower limit 2. Number of display digits, display format 3. Numerical calculation threshold 4. Color

User frame transmission settings	Send condition number	No. 1 to No. 8
	CAN output port setting	Port 1 / Port 2
	Frame	1 to 8 frames
	Scheduled send setting	ON / OFF
	Scheduled send interval	1 to 9999 (× 10 [ms])
	Timing	Start Stop Start trigger Alarm Manual
	Frame type	CAN Standard / CAN Extended / CAN FD Standard / CAN FD Extended
	Send ID	0 h to 1FFFFFFF h
	DLC (byte)	0 to 15 (0 to 8/12/16/20/24/32/48/64)
	Sent data	Set send data using a hexadecimal number.
	Delay	0 to 9999 (× 10 [ms])

3. Measured value output mode settings

Measured value output settings	CAN output port setting	LR8450/LR8450-01	Port 1 / Port 2
		LR8102	Port 1
	Frame type	Standard / Extended	
	Send ID	0 h to 1FFFFFFF h	
	Sent data	LR8450/LR8450-01	The measured values of the following units can be set as data to be output. U8550, U8551, U8552, U8553, U8554, U8556
LR8102		The following modules and their measured values can be set as output data: M7100, M7102, M7103, alarm, pulse, logic, waveform calculation	
CAN bus load factor estimate function	Displays the CAN bus load factor when the measured value is output in the current send settings.		

4. File specifications

Save function	1. CANdb file (.dbc) for send data defined in the measured value output mode settings 2. Entire settings data (.CES) of CAN Editor
Read function	1. Reads the CANdb file (.dbc) and MR8904 definition file (.CDF) to be used for setting receiving channels. 2. Reads the LR8450 settings (.SET) /LR8102 settings (.SET)/CAN Editor settings (.CES) to be reflected on the entire settings of CAN Editor.
Title	Up to 50 single-byte characters or 25 double-byte characters can be used to set the title in the settings data (.CES).

10 Knowledge and Information

10.1 Load Factor of the Measured Value Output Mode

The load factor is a ratio of the current number of frames of CAN Editor to the number of frames that can be transmitted on the CAN bus.

It is expressed by “Number of frames to be transmitted on the CAN bus / Number of frames that can be transmitted on the CAN bus × 100”.

Set the load factor to be approximately 50%.

The load factor indicates a value for when only CAN frames that are output from the CAN Unit exist on the CAN bus. The load factor may drop if there is CAN output from other equipment or an error occurs in the CAN bus.

10.1.1 Number of frames that can be transmitted on the CAN bus

It is calculated from the interface, baud rate, data rate, and ID (standard/extended).

Example:

Parameter	Example/Recommended parameter
Interface	CAN FD
Baud rate	1M baud
Data rate	5M baud
ID	Standard

The number of frames that can be transmitted on the CAN bus in the above example is approximately 24,000 [frame/s].

10.1.2 Data volume to be transmitted on the CAN bus

The data volume is affected by the update interval of the output source unit, number of output channels, and correlation between the output channels and IDs.

Example:

Parameter	Setting example
Update interval of the output source unit	1 ms
Number of output channels of the output source unit	15 channels (U8553 × 3 units)
Correlation between output channels of the output source unit and IDs	One output channel assigned to one ID

The number of frames to be transmitted on the CAN bus in the above example is approximately 15,000 [frame/s].

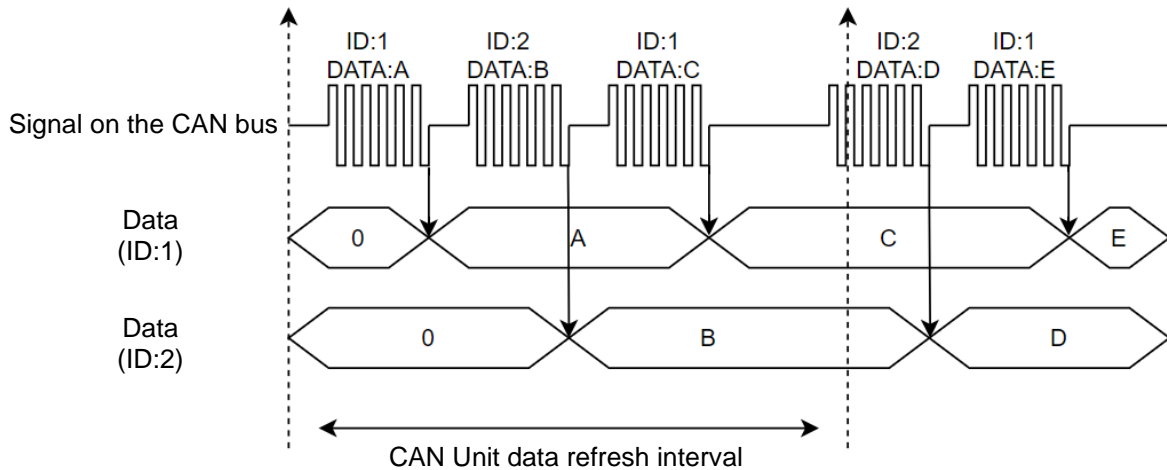
The load factor is approximately 62.5% (15,000/24,000).

10.2 Channel Type of the Receive Mode

10.2.1 When the channel type is set to Data

When Data is selected as the channel type for the receive mode, the data of the specified requirements is collected upon the start of CAN Unit recording and the received data is recorded until the sampling time is expired. If data is not received at all, 0 is recorded. Unlike ID count, the data value is not received at the data refresh interval. If data of the same conditions is received twice or more within the single data refresh interval, the most recent data is reflected on the recorded value. The example of data of ID 1 and ID 2 is shown below.

For ID 1, data "C" is received within the data refresh interval after data "A", however, only data "C" is recorded in the LR8450 unit.



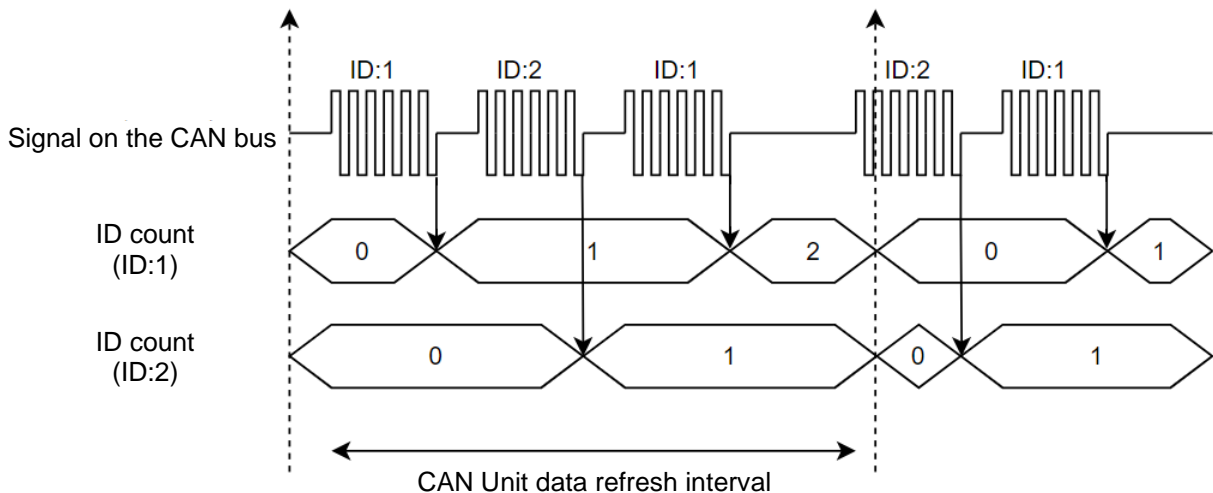
10.2.2 When the channel type is set to ID count

When ID count is selected as the channel type for the receive mode, the number of times the specified ID is received at every data refresh interval for the CAN Unit is recorded. When the data refresh interval is set to 2 seconds or more, the ID count may become 0 since the time period over the specified data refresh interval cannot be secured before the first sample after the start of measurement.

The example of ID count of ID 1 and ID 2 is shown below.

The number of times the specified ID is received within a certain time period can be checked and recorded depending on the ID count value.

The counter is reset to 0 at every data refresh interval for the CAN Unit.



10.2.3 Examples of usage

(1) Using the specific ID received as a trigger or warning

The measured value of the measurement channel for which a channel type ID count has been performed can be set as a trigger/warning source like normal measurement channels. The measured value can be used to output signals to external equipment as a trigger for measurement start or warning when the specific ID is received.

(2) Checking the data update on the CAN bus

When the channel type is set to Data, the final data received after recording starts is retained until the measurement is stopped. Therefore, it is difficult to distinguish a case in which CAN data is continuously received when CAN communication is stopped in the middle. When ID count is also used, the above case can be distinguished based on the ID count receiving count.

10.3 User Frame Transmission Operation

10.3.1 Relationship between user frame No. and number of frames

For user frame transmission, CAN frames of up to 64 conditions by combinations of the user frame No. and the number of frames can be output. The transmission order of each frame is as follows.

(1) When 8 frames are set for user frame No. 1

After frame 1 is sent, frame 2 and other frames up to frame 8 are sent in the same manner. At least a 10 ms delay is required between the frames.

(2) When 1 frame is set for user frames No. 1 to No. 8

After user frame No. 1 is sent, user frame No. 2 and other frames up to user frame No. 8 are sent in the same manner.

When the delay is set to 0 ms, the user frames are sent without any delay.

10.3.2 Relationship between scheduled send ON and number of frames

When the scheduled send setting is ON, all frames set in the user frame No. are sent and then the frames are repeatedly sent at the same condition according to the send interval setting.

(1) When schedule send is ON and 1 frame is set

One set frame is sent periodically at the send interval.

(2) When schedule send is ON and 8 frame is set

After frame 1 is sent, frame 2 and other frames up to frame 8 are sent in the same manner.

After the time set for the send interval has elapsed, the frames are sent starting with frame 1.

10.3.3 Output stop conditions

When the timing is not set to Stop, transmission of user frames of all conditions is stopped when measurement of LR8450 (-01) is stopped.

When the timing is set to Stop, one frame is sent for each user frame No. and transmission of user frames is stopped.

10.4 Counting the Bit Position

In the data frame, the position of the lowest bit (LSB) of the start byte data is 0. The value increases one by one towards the highest bit (MSB) position.

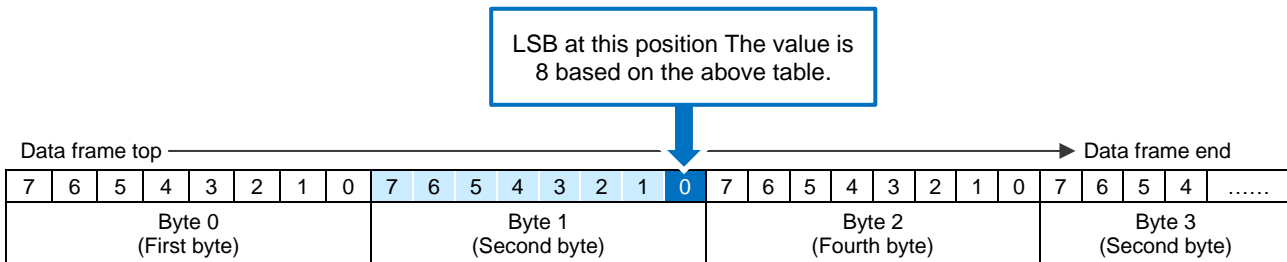
When the bit position reaches MSB, it moves onto the next byte data and the value increases one by one from the LSB position to the MSB position like the first byte (bite 0).

The data frame size is a maximum of 64 bytes (512 bits).

	MSB ←	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	→ LSB
Top		7	6	5	4	3	2	1	0	
		15	14	13	12	11	10	9	8	
		23	22	21	20	19	18	17	16	
		31	30	29	28	27	26	25	24	
		39	38	37	36	35	34	33	32	
		47	46	45	44	43	42	41	40	
		55	54	53	52	51	50	49	48	
End		63	62	61	60	59	58	57	56	

How to calculate the data start position ([Start bit])

When 8 bit data of the second byte (byte 1) is to be captured, the LSB value is 8.



Data arrangement ([Byte order])

Even when the data start position ([Start bit]) is the same as the bit length ([Length]), the data position (eject) varies depending on the data arrangement set by Motorola or Intel.

When the bit length is set to 10 bits and the data start position (LSB position) is set to bit 16, the data in the blue colored cells of the following tables is captured.

Motorola

MSB: 9

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	7	6	5	4	3	2	1	0
Byte 1	15	14	13	12	11	10	9	8
Byte 2	23	22	21	20	19	18	17	16
Byte 3	31	30	29	28	27	26	25	24

Intel

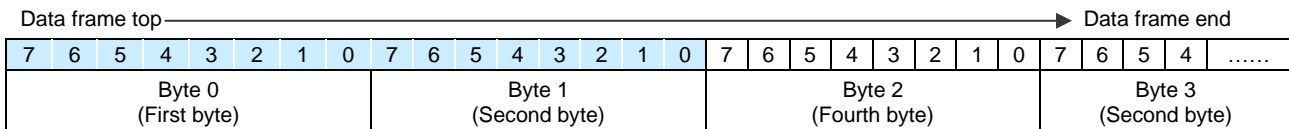
MSB: 25

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	7	6	5	4	3	2	1	0
Byte 1	15	14	13	12	11	10	9	8
Byte 2	23	22	21	20	19	18	17	16
Byte 3	31	30	29	28	27	26	25	24

For the following 16 bit data, when the value of byte 0 is FF and the value of byte 1 is 00, the 16 bit data is as follows.

Motorola: FF00 (Data start position: 8)

Intel: 00FF (Data start position: 0)



10.5 Error and Warning Messages

This section describes troubleshooting for when error and warning messages are displayed.

10.5.1 Error message list

No.	Message	Troubleshooting
100	Connection cannot be established.	Check that the PC and Logger are properly connected and the IP address and port No. are correct.
200	Data cannot be sent. The unit configuration is not the same for the Logger and PC.	Check that the unit configuration is the same for the PC application and Logger.
201	Data cannot be sent. There is an error in the unit in the measured value output mode.	Dissolve the error in the unit in the measured value output mode.
202	Sending has failed.	Check that the PC and Logger are properly connected.
206	COM port error	Check that the PC and Logger are properly connected.
211	Receiving has failed.	Check that the PC and Logger are properly connected.
212	The Logger version needs to be updated.	Check that the Logger has been updated to the latest version.
301	Invalid file	Select the DBC file. The file may be corrupted.
302	The application cannot be found.	Uninstall CAN Editor and then install it again.
303	No more channels can be added.	Delete existing channels to add a new channel.
305	The definition cannot be imported. There are settings with the factor value being 0.	Specify a definition with the factor that is not 0.
500	A DBC file cannot be created due to an error.	Dissolve the error in the unit in the measured value output mode.
601	CAN Editor is already running.	CAN Editor cannot be started if it is already running.
701	There is no access right to the specified location.	Specify an accessible location.
702	The specified file location is invalid.	Set the file save and load locations correctly.
703	The file cannot be loaded. The file format is not supported.	Check that the Logger and CAN Editor have been updated to the latest version. The file may be corrupted.
704	File access has failed.	If the specified file is opened on another application, close the file. Check that the file is not write-protected.

No.	Message	Troubleshooting
705	The available storage capacity is low.	Delete unnecessary files or use new media.
706	File processing has failed.	Check that the storage media of the saving destination is not damaged or the file is not corrupted.
707	An unexpected error occurred. The settings may be corrupt.	The settings may be corrupt. Perform an initialization, and then reconfigure the settings.

10.5.2 Warning message list

No.	Message	Troubleshooting
101	The port number is invalid.	The effective range is as follows. LAN: 1020 to 65535 USB: 1 to 999
102	No Logger is selected.	Select the Logger to be connected and then click [Register] .
203	Sending may have failed.	Resend.
208	When the Logger is busy during measurement, file processing, or monitoring, the settings data cannot be transmitted.	Send the settings when the Logger is not busy.
209	The recording interval, save format, and measurement ON count need to be optimized.	Lower the recording interval, change the save format, and reduce the measurement number of channels.
210	The registration information of the CAN Unit is incorrect.	Five or more CAN Units may be connected or there may be an error in the unit. Check the Logger configuration.
304	It is enabled when the selection target is 1.	Set the number of selection targets to 1
501	A DBC file is not created when the number of output channels is 0.	Set at least one channel in the output status when creating a DBC file.
600	Another unit is set in the measured value output mode. Only one CAN Unit be set in the measured value output mode.	Change the mode of the unit from the measured value output mode to the receive mode.
608	There are items with an invalid value.	Modify the items with a red background.

10.6 Setting the Logger on the PC

10.6.1 LAN connection (HTTP server function)

With the HTTP server function of the LR8450 or LR8450-01, the Logger can be set remotely.

Setting procedure using the HTTP server function (for LR8450)

Logger and HTTP server function

- (1) Set the LAN communication according to “9.3 Configuring and Establishing a LAN Connection” in Logger Instruction Manual.
- (2) Connect the Logger according to “9.5 Performing Remote Operation Using the HTTP Server” in Logger Instruction Manual.
- (3) Connect the Logger in the control mode. (Do not communicate with CAN Editor using the Logger at this time.)
- (4) Set the Logger remotely.
- (5) After setting the Logger remotely, exit the remote operation and end the HTTP server function.

10.6.2 LAN/USB connection (Logger Utility)

Set the Logger on the PC according to the Logger Utility Instruction Manual provided with the Logger.

10.7 No Communication with the Logger

10.7.1 When a USB connection is used

Check “2.4 Connecting the Logger and PC Using a USB Cable” in this instruction manual.

10.7.2 When a LAN connection is used

See the Logger instruction manual and check the communication settings for the Logger and PC.
For LR8450: See “9.3 Configuring and Establishing a LAN Connection” in Instruction Manual.

10.8 Open Source Software

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