CAN/LIN Communication Simulator and Monitor

User's Manual April 30, 2015, Rel.1.21

For any inquiries about our services and products, please contact our technical support department at the following address.

P&A Technologies

P&A Technologies Inc.

E-Mail support@pa-tec.com

FAX 019-637-8331

http://pa-tec.com/

Thank you for purchasing ViCSiM.

By connecting the device to your PC with a USB cable, you can simulate and monitor CAN/LIN communication activities.

To make best use of this product, please read this manual carefully, and use it correctly.

Important Notices

ViCSiM is a high-precision electronic device. When using the product, please follow the instructions below.

Operating Precautions

Be aware of static electricity.

To avoid damage from static electricity, please do not leave the device on places where static electricity frequently occurs.

Do not give strong impacts.

Do not drop, or give strong impacts to the device.

Be aware of usage and storage environment.

Do not use or store the device in areas where it will be subjected to direct sunlight, extreme heat or cold.

Do not use or store the device in areas of high dust density or humidity.

Do not give excessive force to the device.

Do not give excessive force to the device body or the connected cables.

Product Features

ViCSiM is a device to simulate and monitor CAN/LIN communication on your PC.
ViCSiM interface (the device) is a small, lightweight, easy to carry device. Used with the application software, it can monitor CAN/LIN communication, acquire communication frames, simulate communication, and so on.

☐ When using only CAN, the device runs on USB bus power. (Requires no AC adapter. AC adapter is necessary when using LIN.)

☐ It can process CAN communication on 2 channels, and also monitor and simulate 2 channels of LIN communication. (In CAN communication, the device can transmit and receive frames continuously, and respond to single frames simultaneously.)

☐ The monitored communication frames can be saved into files. Also, you can process the saved communication frames and perform simulations.

☐ The application software has many features for confirming initial communications of newly developed CAN/LIN devices.

☐ The application software has the operability similar to a general integrated environment for software development. It can be used soon after the introduction, without being troubled.

Chapter1 Introduction

1-1 Components of ViCSiM

The ViCSiM package includes the following components.

ViCSiM interface (device body)

USB cable

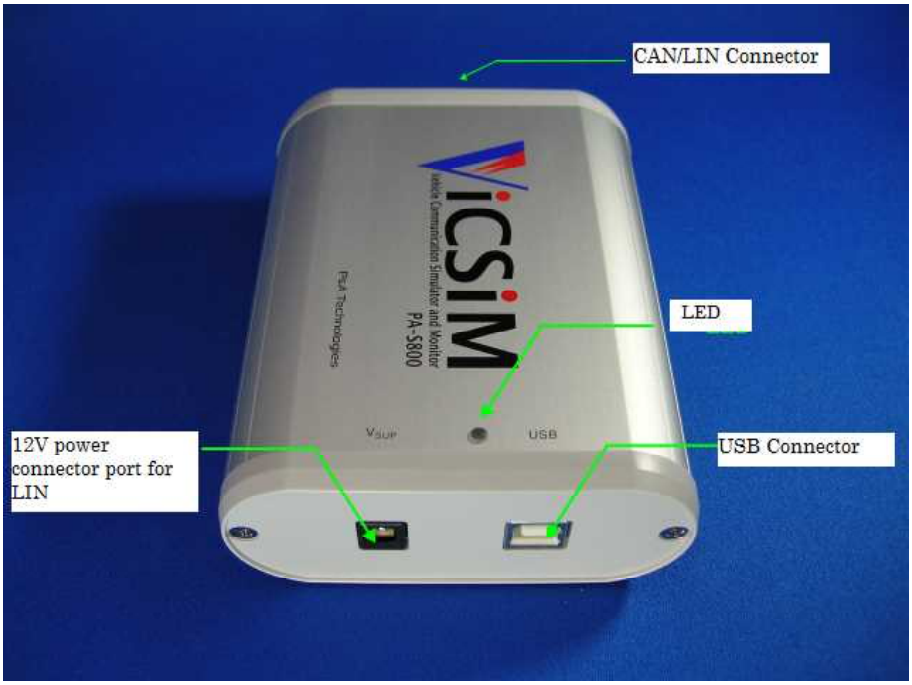
AC adaptor for LIN

15 pin D-Sub female connector (parts)

Support CD

Booklet for user registration and yearly software maintenance contract

1-2 Part Names and Functions



CAN/LIN Connector

Connector port for CAN/LIN communication line.

LED

LED for indicating operation modes.

Blinks while in normal operation. (See “7-1-4 LED” for blinking status.)

USB Connector

Connector port for the USB cable.

Use a dedicated cable to connect the device with PC.

12V power connector port for LIN

You need to supply 12V power to the device when using LIN.

For safty use, donot provide 12V power to other equipment (ex. ECU).

(See “7-1-3 Schematic of LIN” for details.)

1-3 Operation Environments

To use ViCSiM, the following environment is required.

PC

CPU·····Pentium compatible processor, 1.5GHz or faster

Memory ·····At least 256Mb

Hard disk ·····At least 256Mb of free space is required

CD-ROM compatible drive ·····Necessary when installing the software

USB port·····USB1.1 and/or USB2.0

Display

Use a display with screen resolution at least 1024 x 768 pixels.

OS

Use Windows XP, Vista or 7.

Windows 95, 98, Me, NT and 2000 are not supported.

Others

Keyboard, mouse, printer, and other input devices.

Chapter2 How to Install and Uninstall the Software

This chapter describes how to install and uninstall the software that comes with the package.

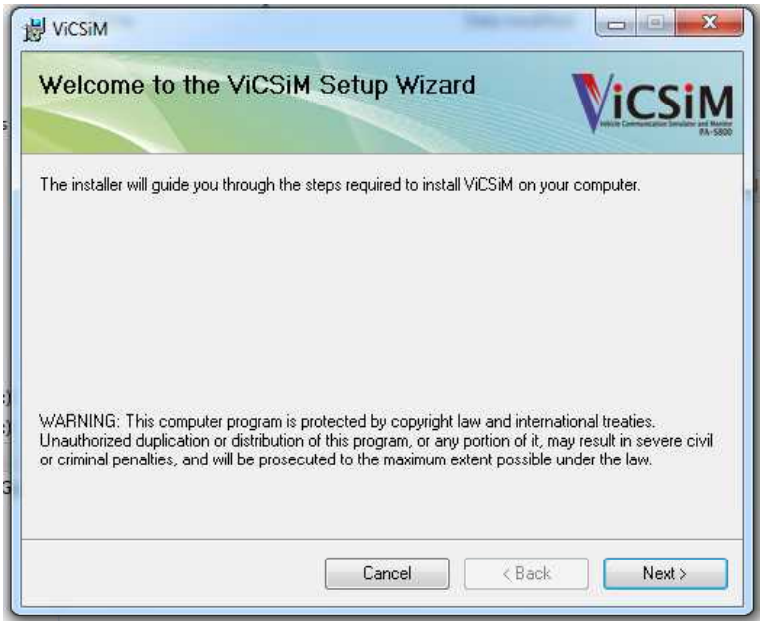
- Do not connect the ViCSiM device to the PC until installation of the application software is done.
- The application software supports Windows XP, Vista and 7. (It does not run on Windows 95, 98, ME or 2000.)
- When you are installing or uninstalling the application software, please make sure you are logged in to your PC with an account that has administrative permissions.
- If your PC does not have .NET Framework 3.5 installed, .NET Framework 3.5 installer will run automatically. You will need to connect to the internet. (Do not connect the device to the PC until the installation is done.)
- To install .NET Framework 3.5 on Windows 8, please see the following URL.
  http://msdn.microsoft.com/ja-jp/library/vstudio/hh506443.aspx

2-1 How to Install the Application Software

1. Insert the CD that comes with the package into the CD-ROM drive of your PC.

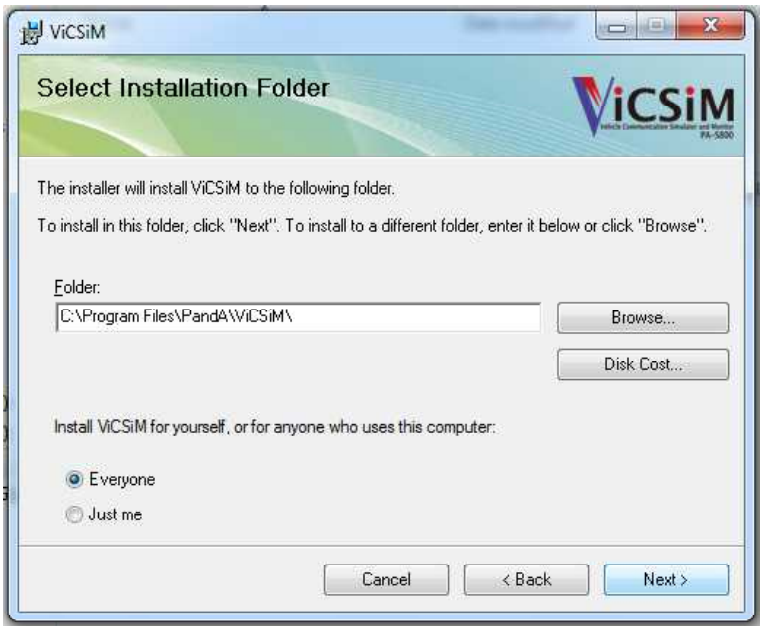
   The installation will start automatically, and the following screen will open.

   If the screen does not open, double click " setup.exe " icon in the CD-ROM.

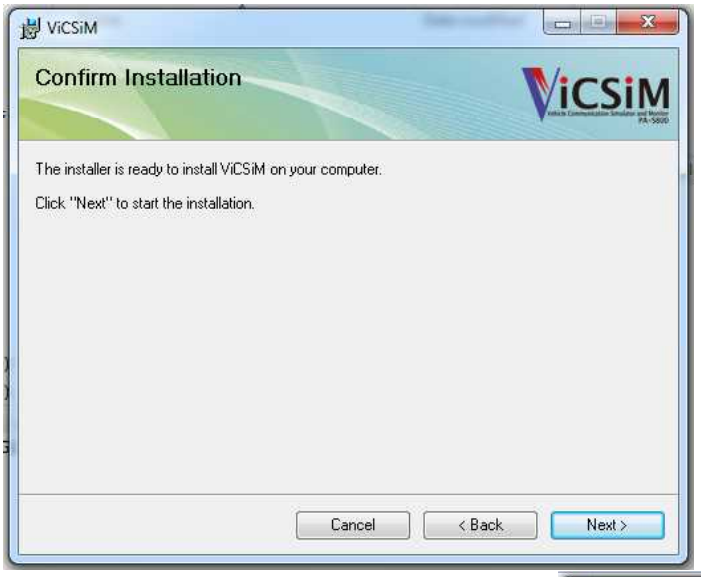


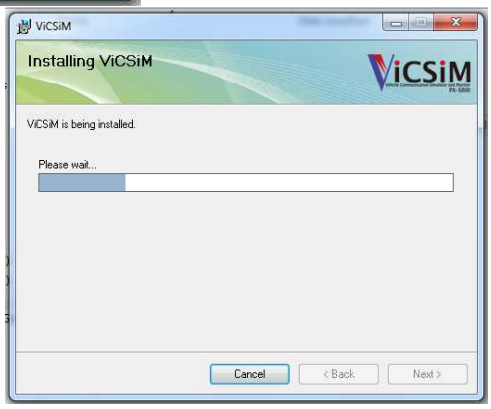
2 . Click " Next " button. The following screen will open

   To change the installation folder, click " Browse ".

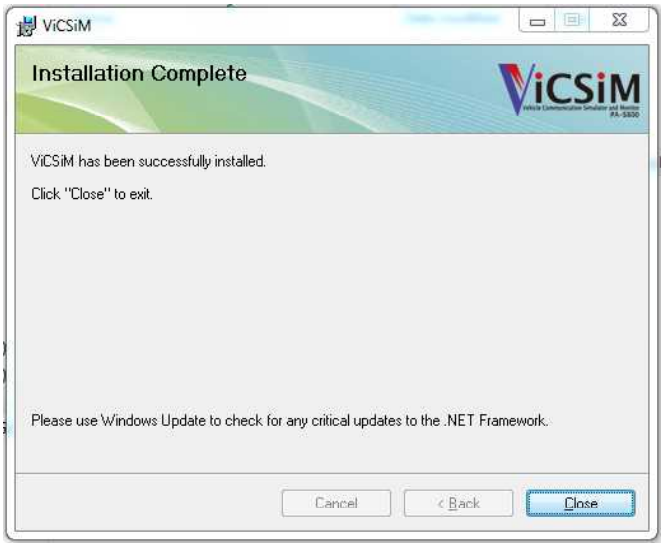


3 . The following screen will open. Click “ Next ” button to start the installation process.





4 . Confirm that the application software has been installed successfully.



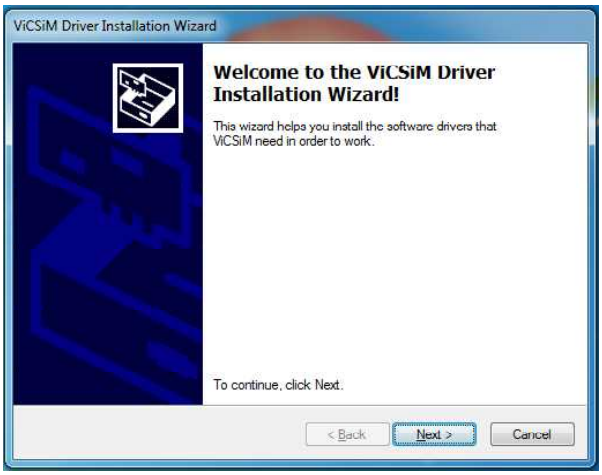
5. When the application software is installed successfully, "P&ATechnologies Inc" folder will be created inside Program folder in Start menu.
   Inside this folder, a shortcut to the ViCSiM application, and a shortcut to the ViCSiM Interface updater (the program for updating the firmware) will be created.
   Also, a shortcut to the ViCSiM application will be created on the desktop.

Now the installation of the application software is completed.
Next, the installation of the driver will start.

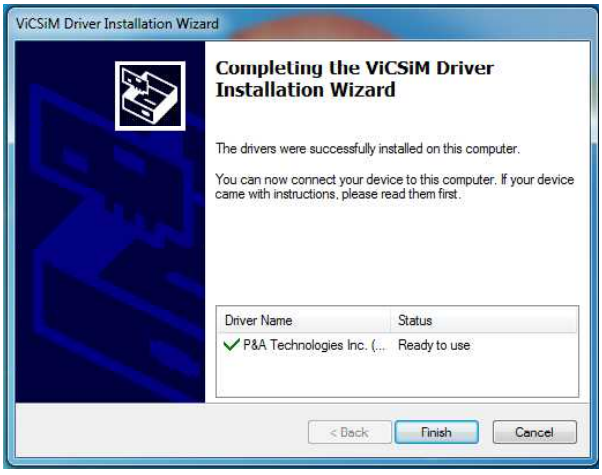
2-2 How to Install the Driver

- The driver supports Windows XP, Vista and 7. (It does not run on Windows 95, 98, ME or 2000.)
- When you are installing or uninstalling the driver, please make sure you are logged in to your PC with an account that has administrative permissions.

1. After the installation of the application driver, installation of the driver will start. Click "Next" to continue.



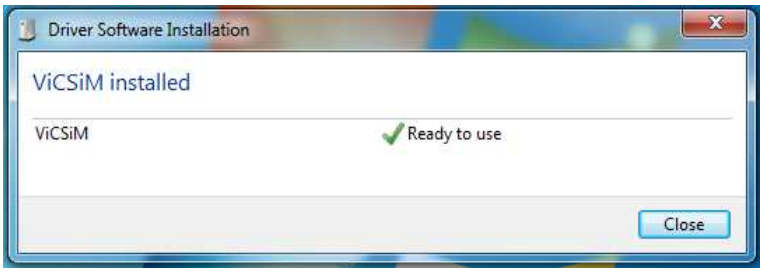
The following screen will appear, and the installation of the driver is completed.



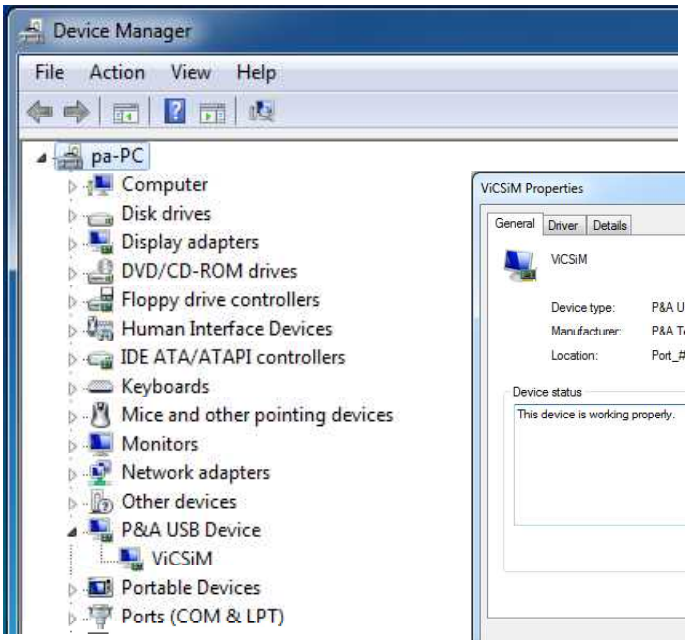
2. Next, connect the ViCSiM device to your PC with a USB cable. (If you are using Windows XP, you need to connect the device to the PC before installing the driver.)

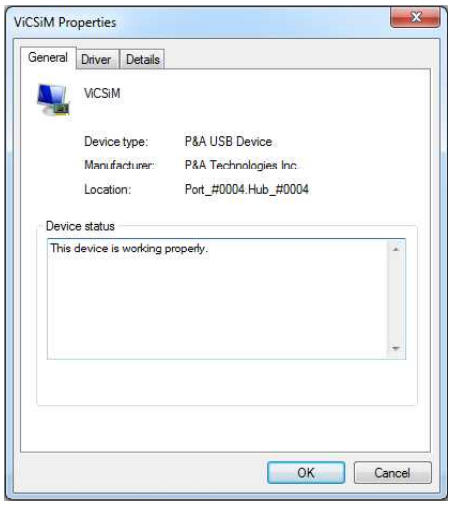
The following screen will open, and now ViCSiM is ready to use.

If the ViCSiM device is functioning normally, the status LED will start to blink. (See "7-1-4 LED" for blinking status.)



3. If the driver is successfully installed and the device is functioning normally, the following items will be shown on Device Manager.



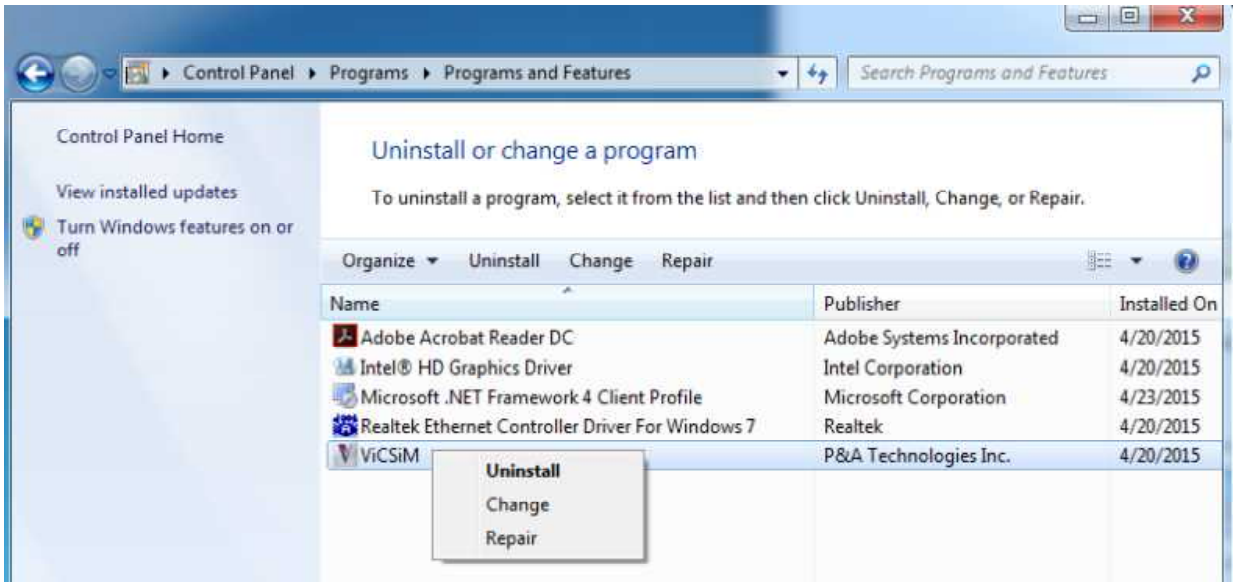


Now the installation of the driver is completed.

2-3 How to Uninstall the Application Software

1. Click [Start] - [Control Panel] and select “ Programs and Features ”.

2. Select “ ViCSiM ” and uninstall the application software.



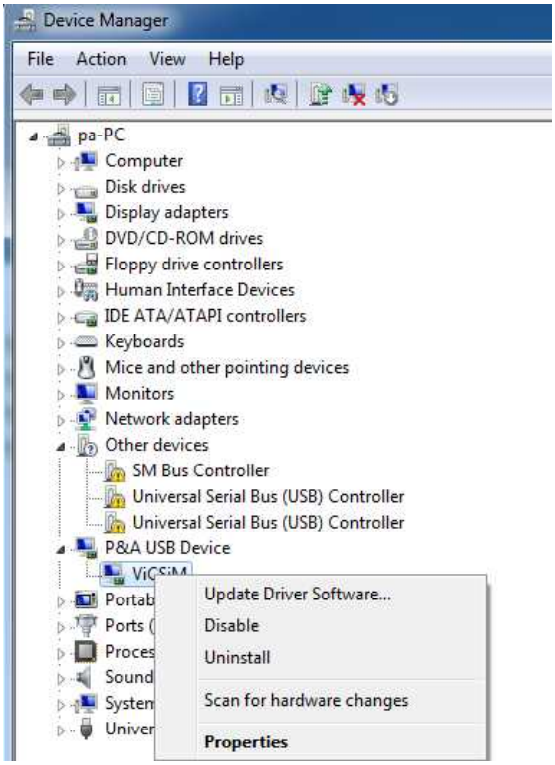
Now the uninstalling of the application software is completed.

Next, you will need to uninstall the driver.

2-4 How to Uninstall the Driver

1. Click [Start] - [Control Panel] and select [Device Manager].

2. Right click the item “ ViCSiM ”, and select “ Uninstall ” from the right button menu.



Now the uninstalling of the driver is completed.

Chapter3 How to Use the ViCSiM Application Software

3-1 Simulation Mode and Monitor Mode

There are two main modes in the ViCSiM application software: **Simulation Mode** and **Monitor Mode**.

In Simulation Mode, you can display the communication data which flow through CAN or LIN bus. Also, you can create your own communication data, or execute automatic response.

In Monitor Mode, you do not intervene in the communication data flow; you can only display the ongoing data.

Here is a hint for choosing which mode to use:

☐ If you want to intervene in the communication and execute the response commands and so on, use **Simulation Mode**.

This mode is useful when you want to check the communication response of a newly developed device, or measure the response time of commands

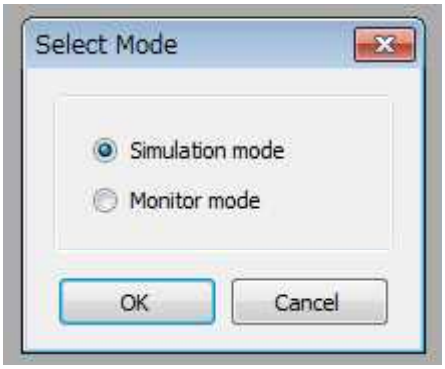
ACK response is always valid

☐ If you want to only monitor the communication state, use **Monitor Mode**.

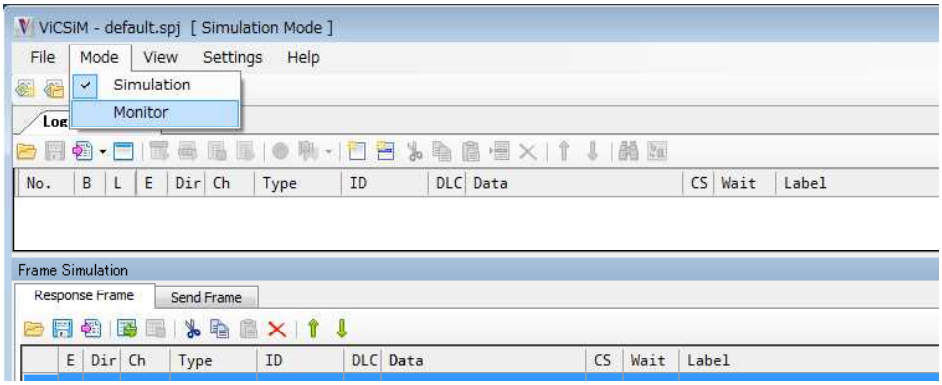
This mode is useful when you are monitoring the communication state of a device during operation.

You can select whether ACK response is enabled or disabled. (See "6-1-4 Settings Menu, 1.Device Settings" for details.)

Simulation Mode and Monitor Mode are selectable at the startup of the application software.



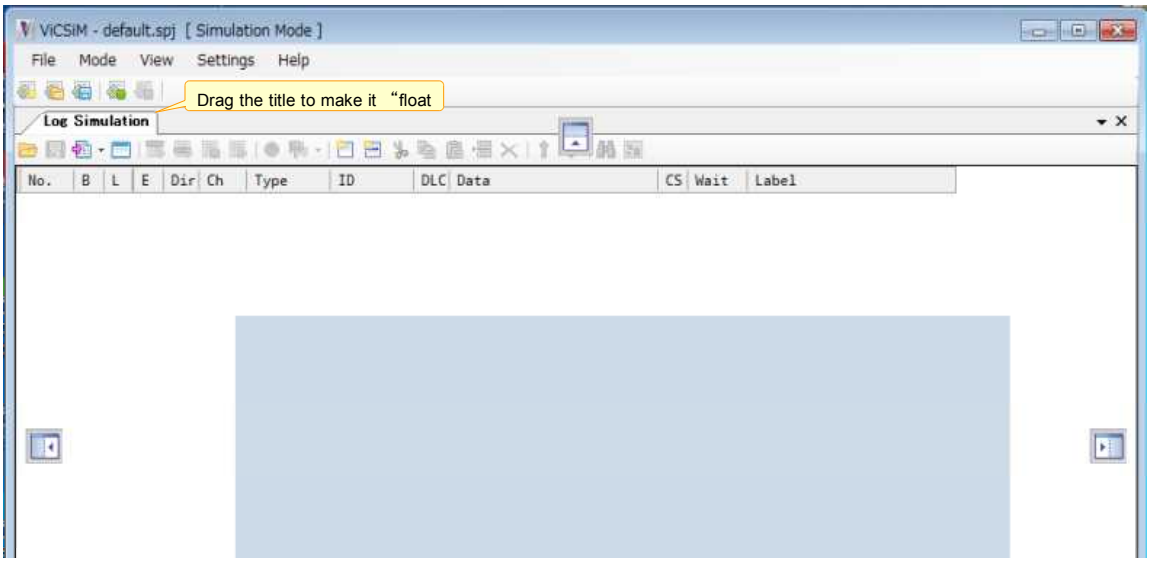
If you want to change the mode after the startup, select Mode menu.



The windows shown right after selecting the mode are docked to the frame.

You can freely arrange the layout by dragging them.

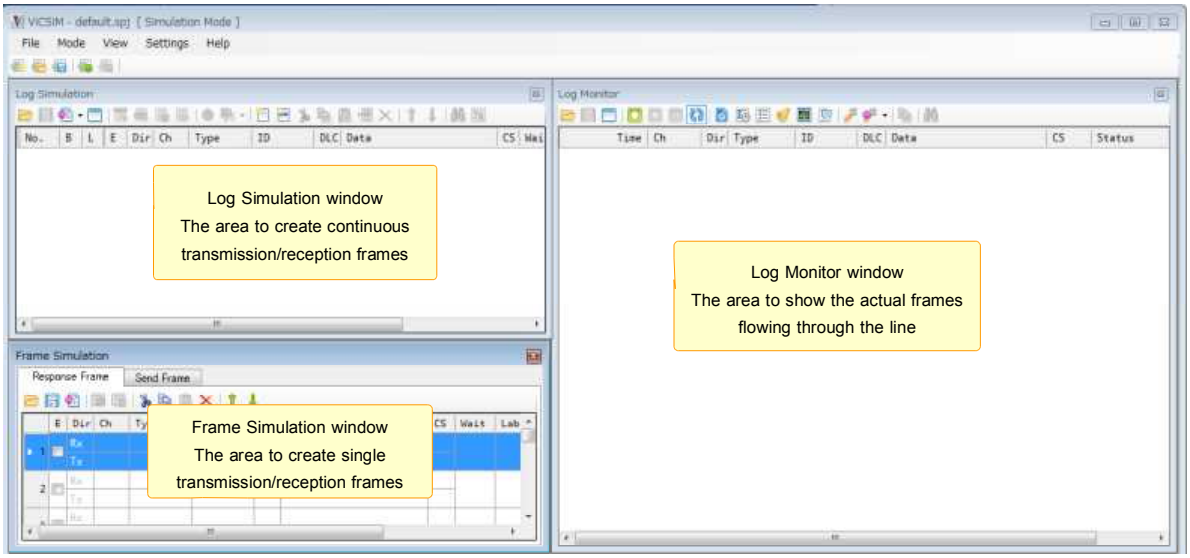
- The windows shown in this manual are “tiled”.



Chapter4 Simulation Mode

4-1 Functions of the Windows

In Simulation Mode, there are three types of windows.



Log Simulation

In this area, you can type in continuous transmission/reception executing sequence. This area is for writing source codes.

Frame Simulation (frame response, frame transmission)

In this area, you can type in single transmission/reception behaviors. This area is for writing source codes.

Log Monitor

In this area, the actual communication frames that flowed through the line are displayed. This area is for monitoring communication frames. (It is for display only, and data cannot be modified.)

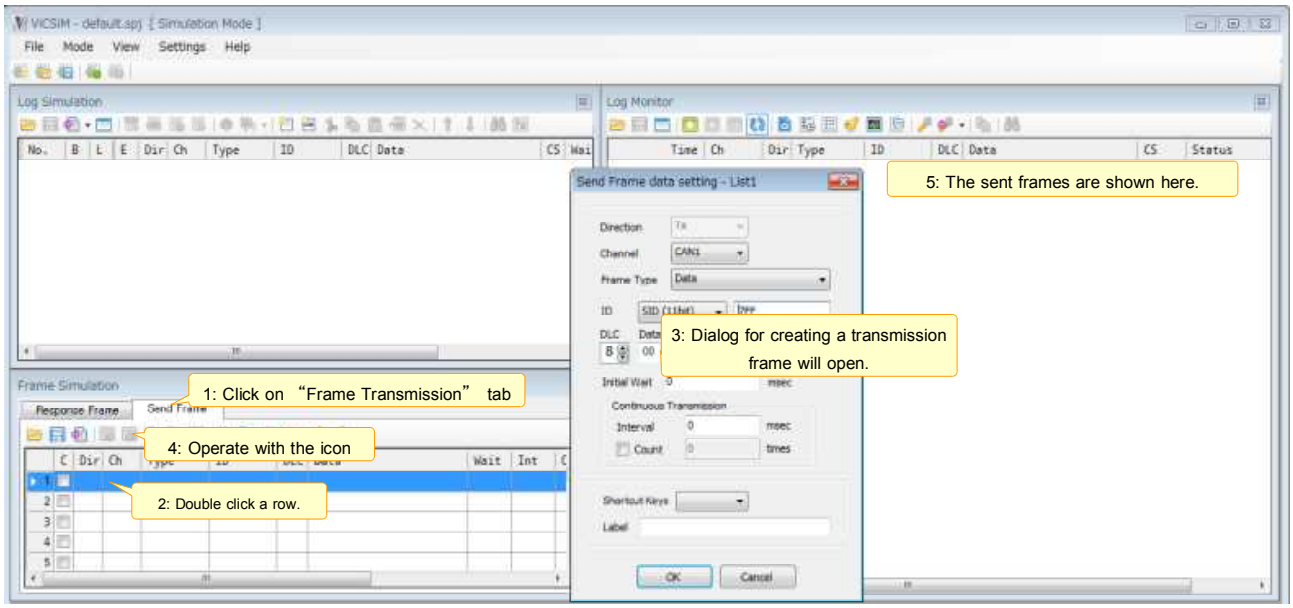
•Log Simulation and Frame Simulation can be executed **independently and simultaneously**. For example, you can execute single frame communications in Frame Simulation window, while executing continuous transmission and reception in Log simulation window.

4-2 Frame Simulation

In Frame Simulation area, you can type in single transmission and reception behaviors.
It has two functions: the frame transmission and the frame response.

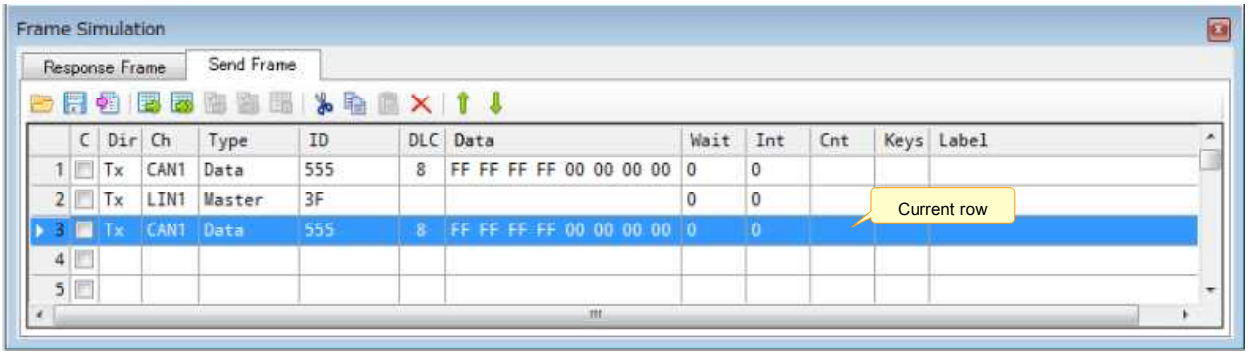
4-2-1 Frame Transmission

This is the function to transmit frames.
If you click on “Frame Transmission” tab and double click an appropriate row, the dialog for creating a frame will open.
In this dialog, you can specify the transmission channel, ID, Data and so on.



1. Items in Frame Transmission Area

Items set in Frame Transmission Dialog are shown.



C

The check specifies whether to transmit the frame. (Only the checked frames are sent.)

Dir

The direction of transmission/reception (Always Tx)

Ch

Channel

Type

Frame type

ID

ID

DLC

Data Length Code

Data

Data to be transmitted

Wait

Wait time before transmission

Int

Interval time between frames in continuous transmission

Cnt

The number of times of transmission in continuous transmission

Keys

Shortcut keys

Label

Label

2. Icons

There are following operation icons in the frame transmission.

Open File

Loads the frames saved into a file. (Extension: " sfd ")

Save File

Saves the created frames into a file. (Extension: " sfd ")

Import Log Data

Imports the frame information saved in Log Monitor. (See 4-3.)

Start Single Frame Transmission

Transmits the selected frame only once.

Start Continuous Frame Transmission

Transmits the selected frame for the number of times set in " 4. Frame Transmission Dialog "

Start Single Frame Transmission of Checked Frames

Transmits the checked frames only once.

Start Continuous Transmission of Checked Frames

Transmits the checked frames, for the number of times, and with interval of time between the frames, set in "4. Frame Transmission Dialog".

Stop Continuous Frame Transmission

Stops the continuous transmission.

Cut

Cuts the selected frames. (Multiple frames can be selected)

Copy

Copies the selected frames. (Multiple frames can be selected.)

Paste

Pastes the copied or the cut frames into the currently selected row.

All the data will be pasted as transmission frames (Tx).

Delete

Deletes the currently selected row.

Up

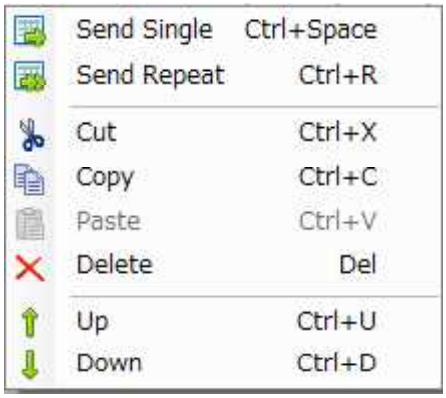
Moves the currently selected frame one row up.

Down

Moves the currently selected frame one row down.

3 . Right Button Menu

These right button menu items are available in the frame transmission area. (See " 2.Icons " for details.)



4. Frame Transmission Dialog

In frame transmission dialog, the following settings can be made.

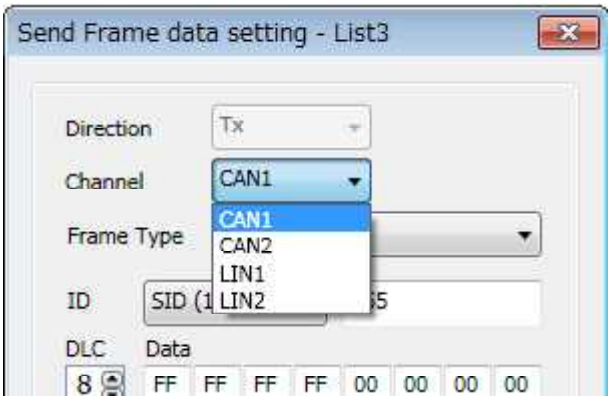
- Some setting items are different between CAN and LIN.

Direction (Common between CAN and LIN)

Always “Tx”.

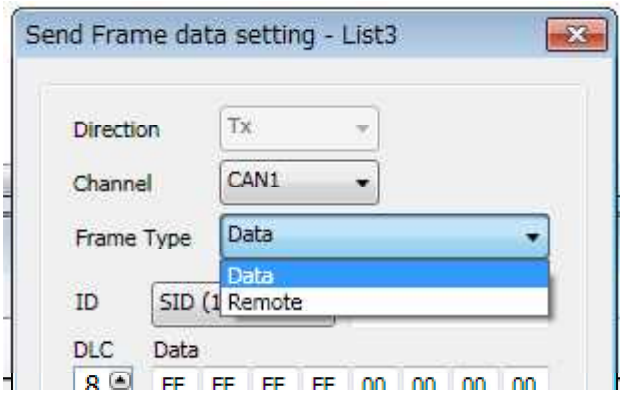
Channel (Common between CAN and LIN)

Select an item from CAN 1, 2, LIN 1 and 2.



Frame Type（CAN）

Select Data or Remote.

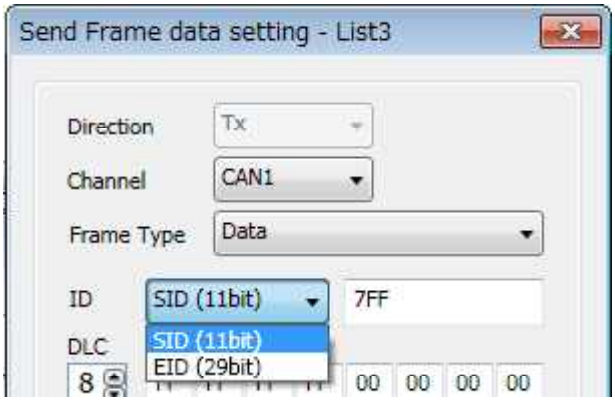


Frame Type（LIN）

Always “ Master ”.

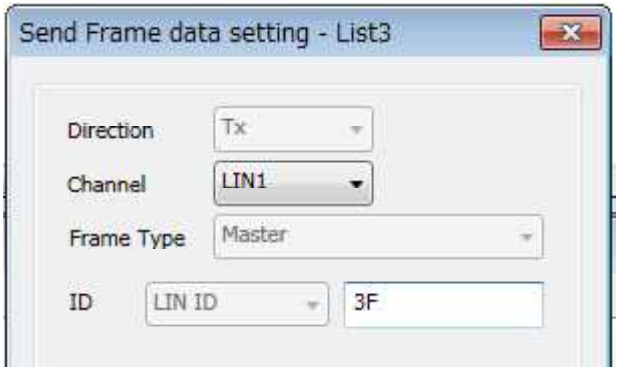
ID（CAN）

Select the number of bits in an ID, and enter the value.



ID（LIN）

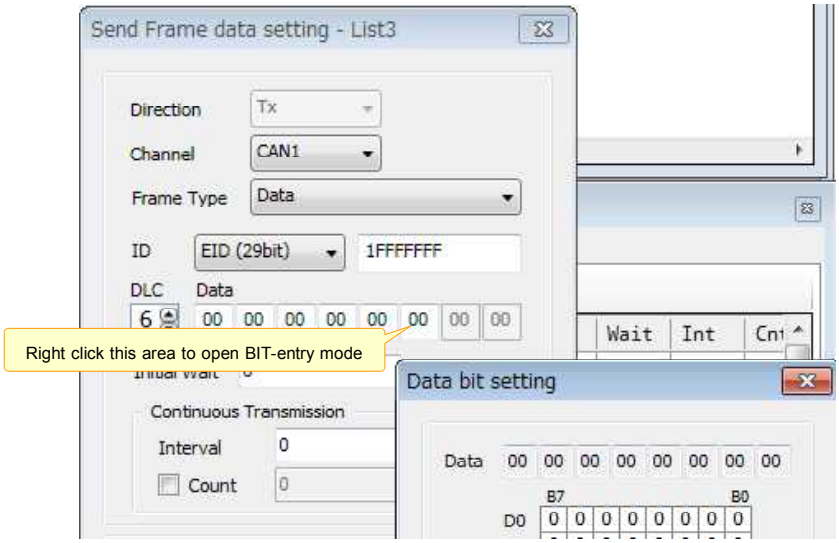
Enter an ID value.



DLC and DATA (CAN)

Specify the byte count of Data Length Code, and the value of Data. (In the picture below, the byte count is set to 6.)

If you right click the input area while entering Data, the BIT-entry mode dialog will open.



Initial Wait (Common between CAN and LIN)

Specify the initial wait time (in milliseconds) for both single and continuous frames.

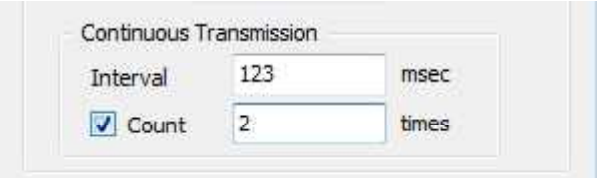
When you send a single frame, it will be sent to the bus after waiting for the initial wait time entered here.

When you are sending the frames continuously, the first frame will be sent after waiting for the initial wait time, then following frames are sent at the interval time. (In the picture below, the first frame will be sent after waiting for 500msec.)

Continuous Transmission (Common between CAN and LIN)

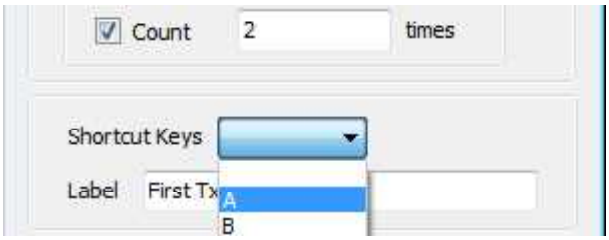
Specify the interval time between the frames in milliseconds, and the number of times to send continuous frames (In the picture below, the first frame will be sent after waiting for 500msec, then the next two frames are sent at the interval of 123msec.)

This setting is ignored on single frame transmission.



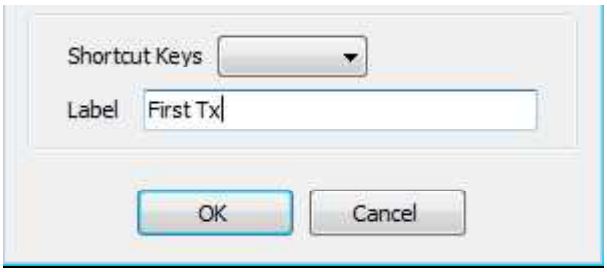
Shortcut Keys (Common between CAN and LIN)

A shortcut key can be applied to the frame, if necessary.



Label (Common between CAN and LIN)

A label can be applied to the frame, if necessary.



4-2-2 Frame Response

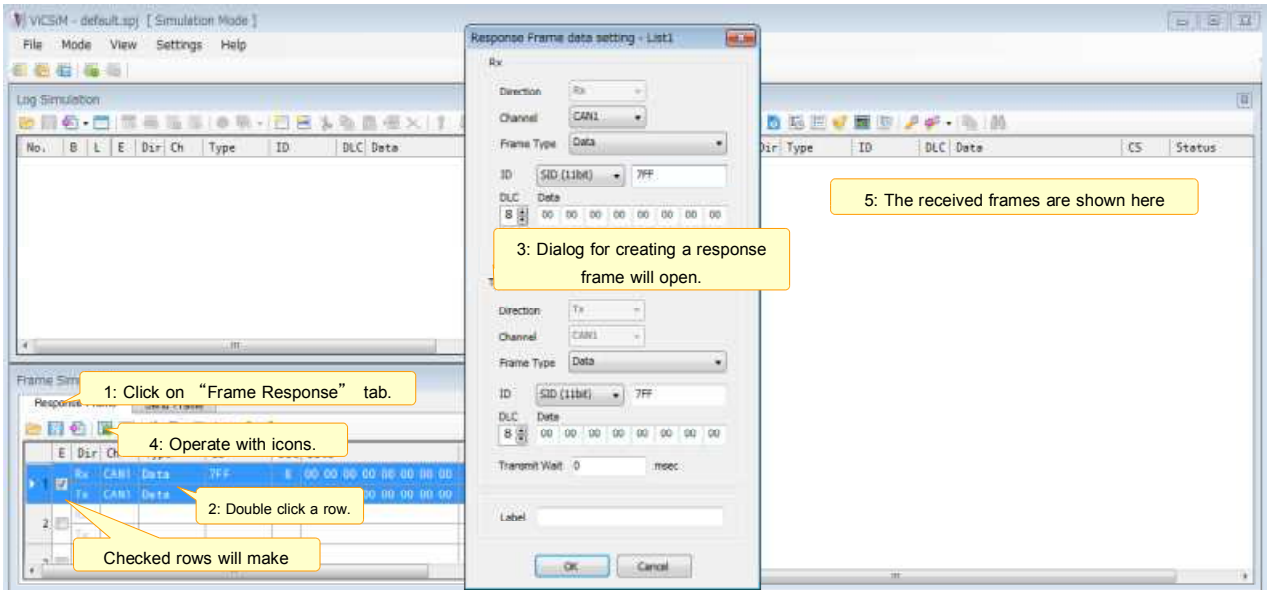
In frame response function, Reception (Rx) and Transmission (Tx) always work in pair.

Rx receives the frame with specified condition, then …

Tx sends the frame prepared in advance

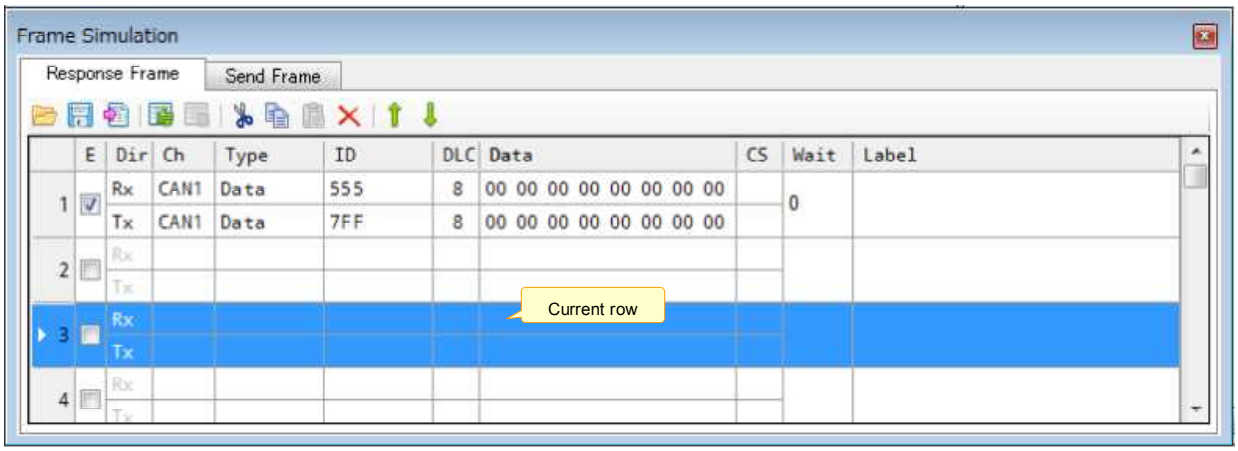
If you click on “Frame Response” tab, and double click an appropriate row, the dialog for creating a response frame will open.

In this dialog, you can specify the receiving conditions and the frame to send.



1. Items in Frame Response Area

Items set in the frame response dialog are shown.



E

Enable (Checked lines will respond.)

Dir

Direction of transmission/reception

Ch

Channel

Type

Frame type

ID

ID

DLC

Data Length Code

Data

Transmission/reception data

CS

Checksum (LIN only)

Wait

Wait time before sending the response frame (CAN only))

Label

Label

2. Icons

There are following operation icons in frame response.

Open File

Loads the frames saved into a file. (Extension: " sfd ")

Save File

Saves the created frames into a file. (Extension: " sfd ")

Import Log Data

Imports the frame information saved in Log Monitor. (See 4-3.)

Start Frame Response

Starts responding to the checked row

Stop Frame Response

Stops the response procedure.

Cut

Cuts the selected frames (Multiple frames can be selected.)

Copy

Copies the selected frames. (Multiple frames can be selected.)

Paste

Pastes the copied or the cut frames into the currently selected row.

Delete

Deletes the currently selected row.

Up

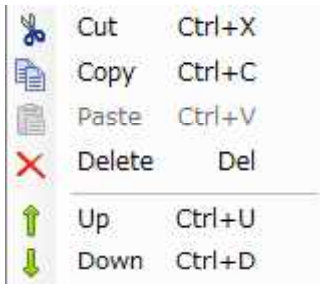
Moves the currently selected frame one row up.

Down

Moves the currently selected frame one row down.

3. Right Button Menu

These right button menu items are available in Frame Response area.（See “2.icons”for details.）



4. Frame Response Dialog

In Frame Response dialog, you can specify the receiving condition frame and the frame to send.

- LIN does not have transmission frames. In Frame Response, it will always work as Slave. (After receiving the header of the specified ID, the response set in DLC and Data will be sent.)
- Some setting items are different between CAN and LIN.

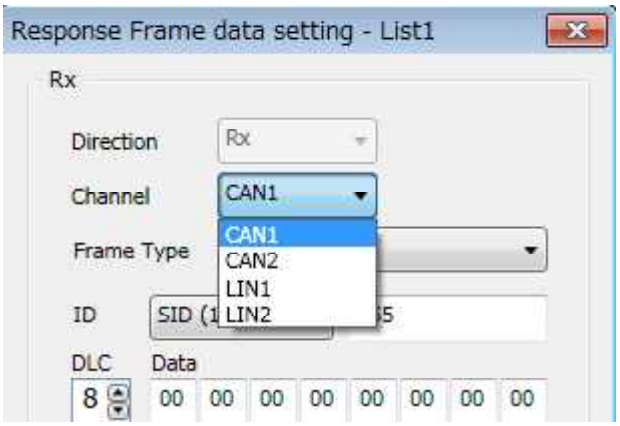
4.1. Settings for Receiving Condition Frames

Direction (Common between CAN and LIN)

Always " Rx ".

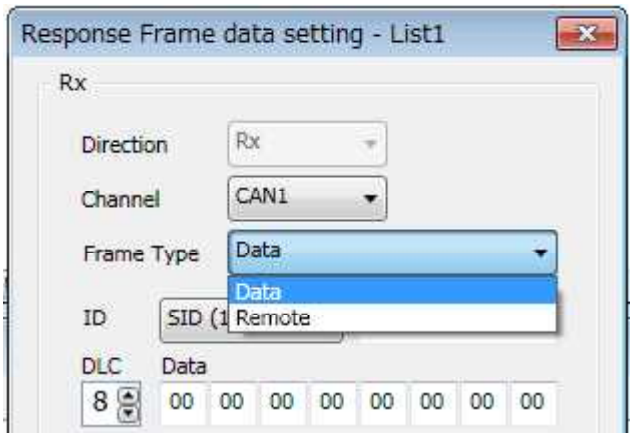
Channel (Common between CAN and LIN)

Select an item from CAN 1, 2, LIN 1 and 2.



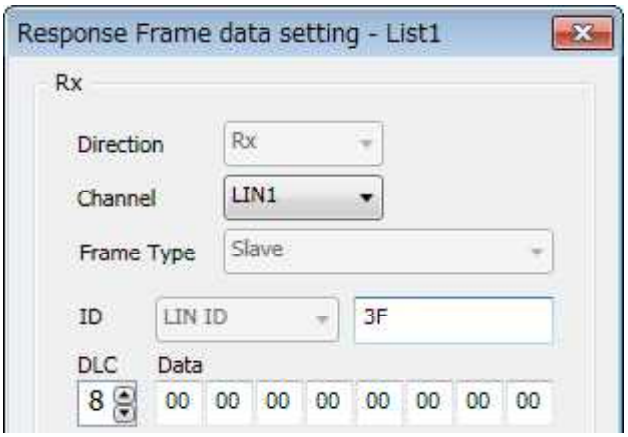
Frame Type (CAN)

Select Data or Remote.



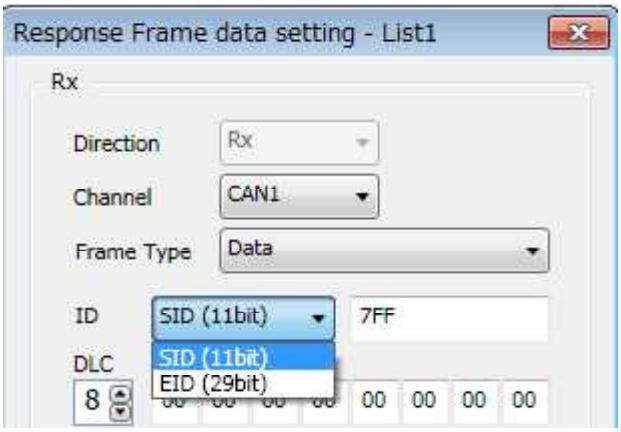
Frame Type（LIN）

Always “ Slave ”.



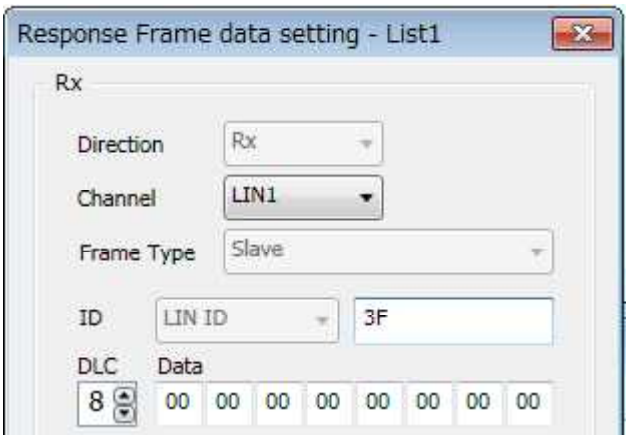
ID（CAN）

Select the number of bits in an ID, and enter the value.



ID（LIN）

Enter an ID value.



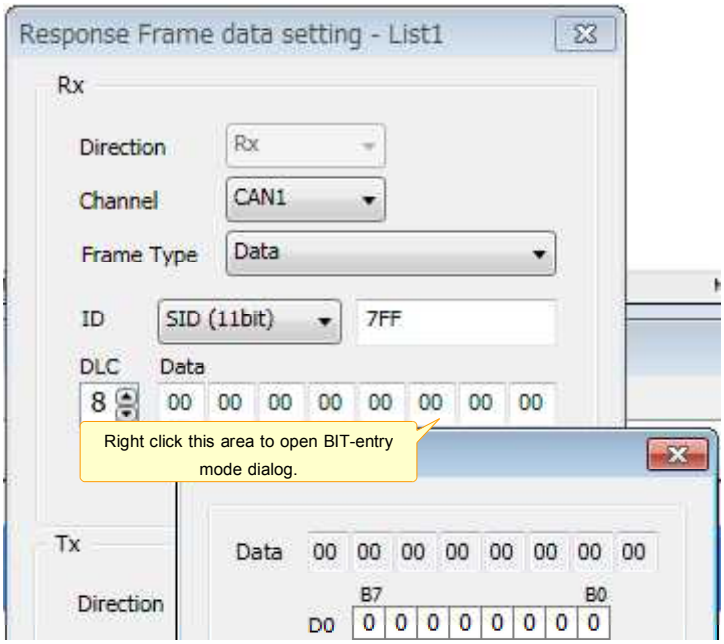
DLC and Data (Common between CAN and LIN)

Specify the byte count of Data Length Code, and the value of Data.

If you enter " XX " from the keyboard, you can set a specific data byte as " don ' t care ".

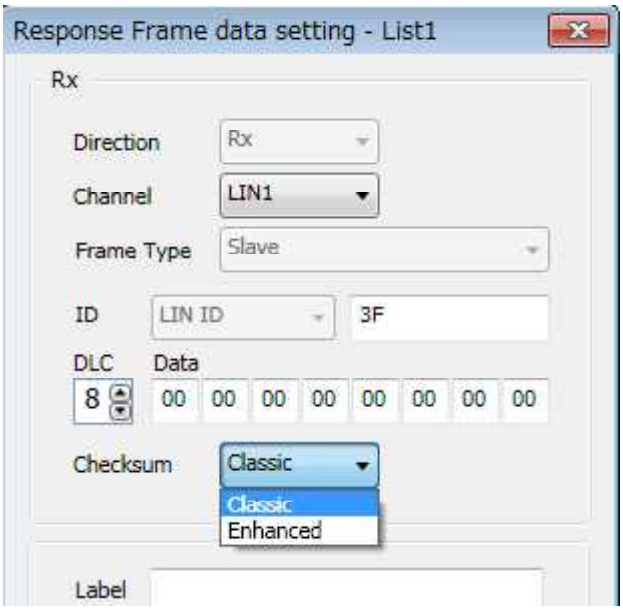
If you right click the input area while entering Data, the BIT-entry mode dialog will open.

(If you enter "*", you can set a specific data bit as " don ' t care ".)



Checksum (LIN)

Select the type of checksum. (Classic or Enhanced)



4. 2. Settings for Frame Transmission

Direction（CAN）

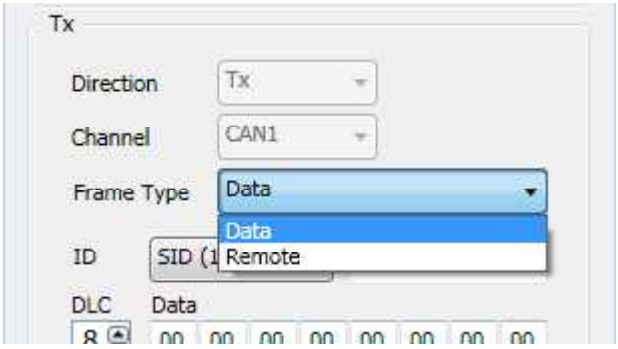
Always “Tx”.

Channel（CAN）

The channel specified at “4.1. Settings for Receiving Condition Frames” is set in here.

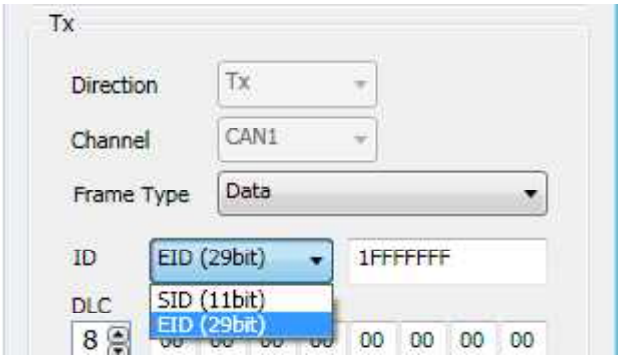
Frame Type（CAN）

Choose Data or Remote.



ID（CAN）

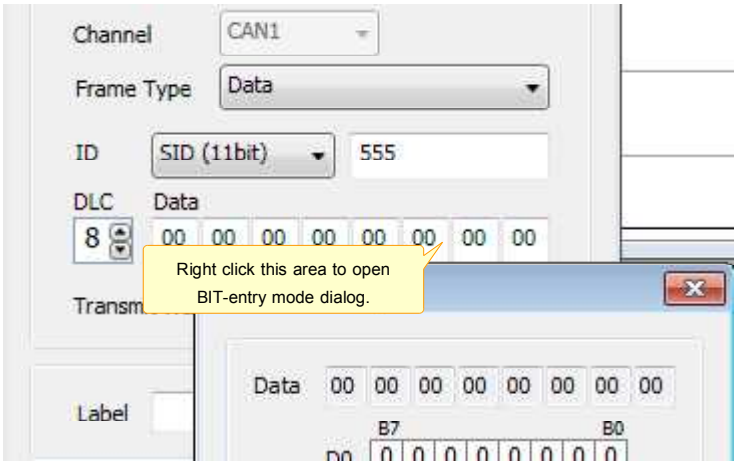
Select the number of bits in an ID, and enter the value.



DLC and Data（CAN）

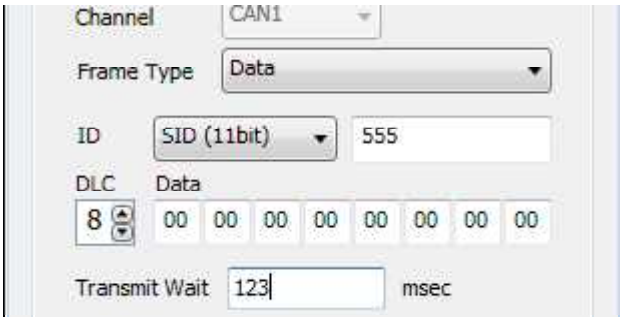
Specify the byte count of Data Length Code, and the value of Data.

If you right click the input area while entering Data, the BIT-entry mode dialog will open.



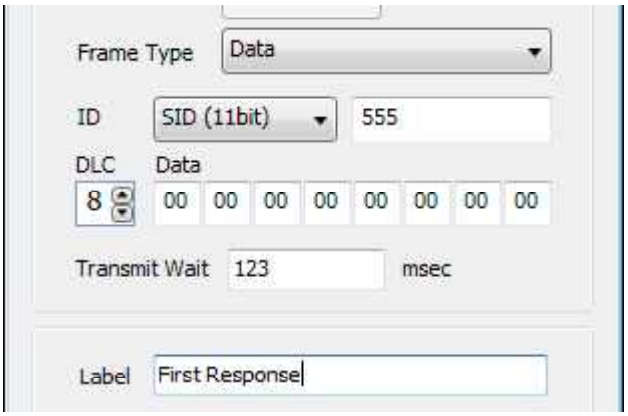
Transmit Wait（CAN）

Specify the period of time in milliseconds, from when the receiving condition is fulfilled till when the data is sent.（In the picture below, the wait time is 123msec.）



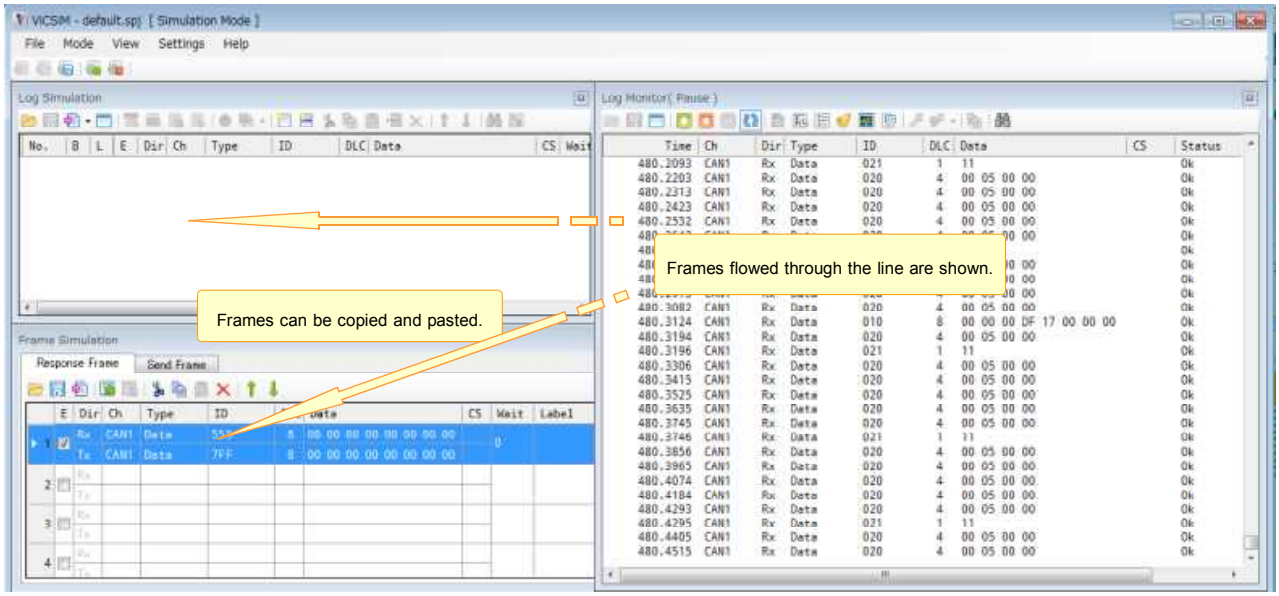
Label（Common between CAN and LIN）

A label can be applied to the frame, if necessary.



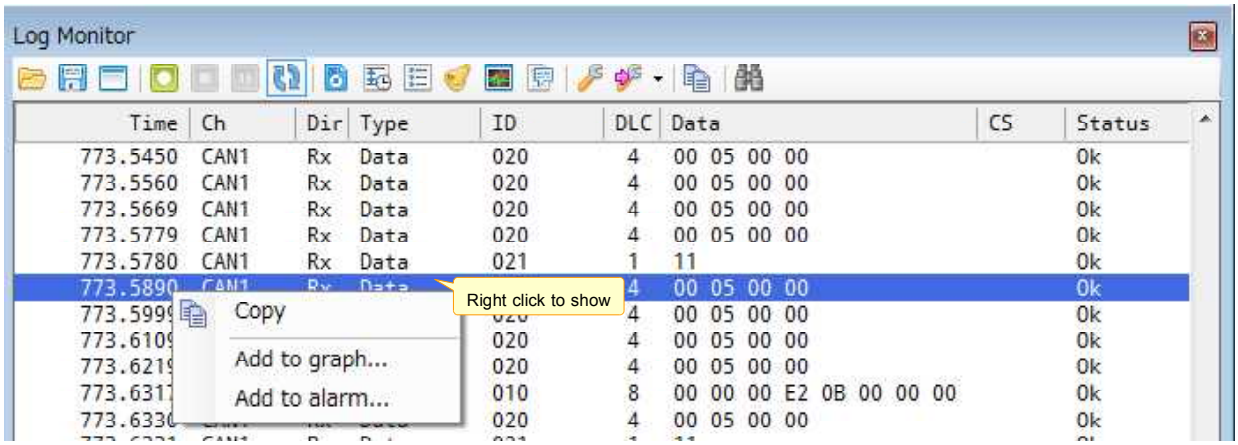
4-3 Log Monitor

In Log Monitor area, communication frames that actually flowed through the line are shown. The displayed frames can be saved into a file, read from the file, copied and pasted.
Also, there is the logger function, which enables logging for a long period of time. At the start of monitoring, a log file is created automatically, and the data is automatically saved into this file while monitoring. (See “ 4-3-7 Logger Function ”.)



4-3-1 Items in Log Monitor Area

The logged frames are shown here.



Time

The time that the frame was logged, or the time difference between frames (Set in " Log Monitor Settings ")

Ch

The channel of the logged frame.

Dir

Direction of communication.

Type

Frame type.

ID

Frame ID

DLC

Byte count of Data Length Code.

Data

Frame data.

CS

In LIN, checksum is shown.

Status

The status of the frame is shown.

1. Icons

Log Monitor has following operation icons.

Open File

Loads the frames saved into a file. (Extensions: “log”, “csv”)

Save Log

Saves the logged frames into a file. (Extensions: “log”, “csv”)

Clear Log

Clears the log.

Start Monitor

Starts monitoring.

Stop Monitor

Stops monitoring.

Pause Monitor

Pauses monitoring.

Auto Save Log File

Switches Logger Function ON or OFF. (See “4-3-7 Logger Function”.)

If Logger Function is ON, the received data will be saved into a file automatically when the logging starts.

Switch Time Display

Switches the display mode of time.

Shows the elapsed time since starting Log Monitor, or the time difference between frames (Δ T).

See “4-3-2 Log Monitor Settings” for details.

Fixed to ID

Switches the display mode of Log Monitor.

If you enable this item, frames are not scrolled, and each ID is displayed in a fixed row. (Scrolling will stop.)

See “4-3-2 Log Monitor Settings” for details.

Switch Alarm Operation

Switches the alarm operation mode.

See “4-3-6 Alarms” for details.

Switch Graph Display

Switches the display mode of the graph.

See “4-3-5 Graph Display” for details.

Switch Status Display

Switches the mode of status display.

See “4-3-4 Status Display” for details.

Log Monitor Settings

Makes settings for Log Monitor.

See “4-3-2 Log Monitor Settings” for details.

Import/Export Log Monitor Settings

Imports or Exports the setting state of Log Monitor.

Copy

Copies the selected frames. (Multiple frames can be selected.)

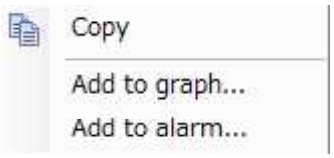
Search

Searches through the logged frames.

See “4-3-3 Search” for details.

2 . Right Button Menu

The following right button menu items are available in Log Monitor area.



Copy

Copies the selected frames. (Multiple frames can be selected.)

Add to Graph Display

See “4-3-5 Graph Display” for details.

Add to Alarms

See “4-3-6 Alarms” for details.

4-3-2 Log Monitor Settings

In Log Monitor Settings, you can make settings for the logger function, the log function, the graph display, the alarms, and other operation options.

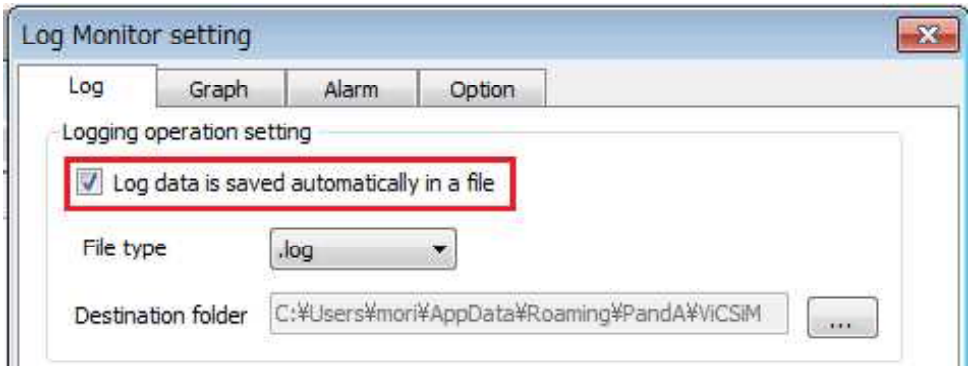
1. Log Tab

In Log tab, you can set the logging behavior, display mode and display colors.

1. 1. Settings for Logging Behavior

Auto-save the log data to a file at start of monitoring

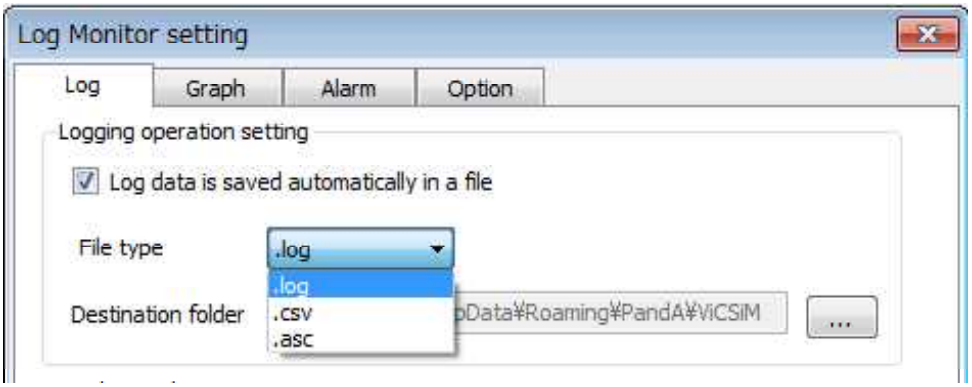
Check this item to use the logger function. (See "4-3-7 Logger Function" for details.)



File type

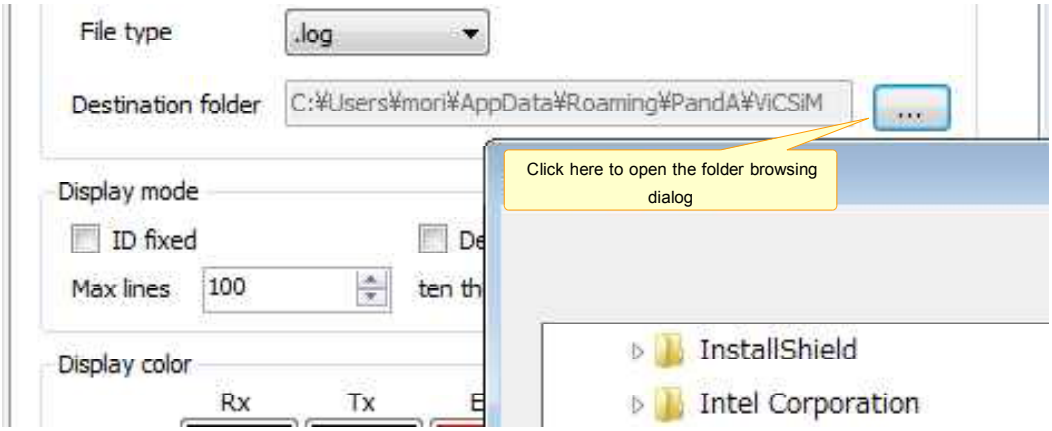
Select the file type.

If you select ".log", the items will be separated with spaces. If you select ".csv", the items will be separated with commas.



Destination

Specify the destination where you want to save the files.



1. 2. Display Mode Settings

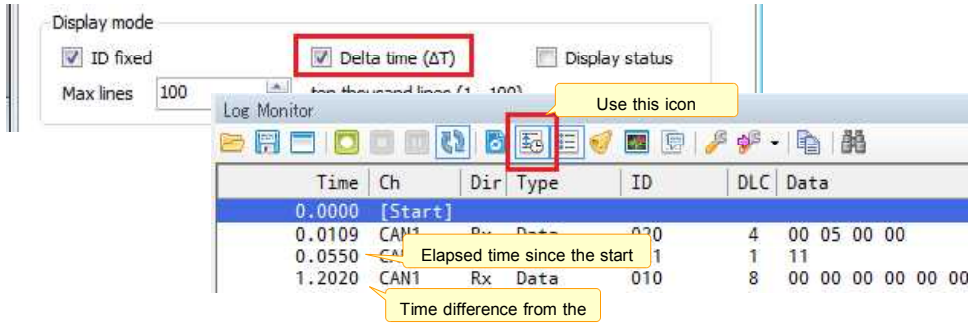
Fixed to ID

If you enable this item, frames are not scrolled, and each ID is displayed in a fixed row. (Scrolling will stop.)

Time difference（Δ T）

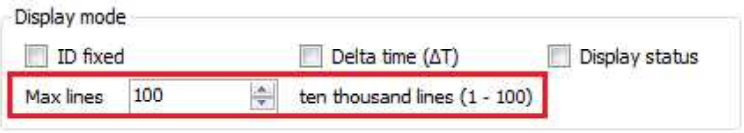
Switches the display mode of time.

Shows the elapsed time since starting Log Monitor, or the time difference between frames (Δ T).



Max rows

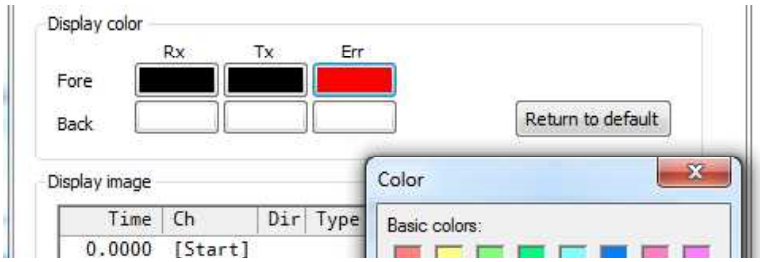
Specify the maximum number of rows to log.



1. 3. Color Display Settings

Foreground and Background

Specify the foreground and the background colors of Rx frames, Tx frames and error frames.

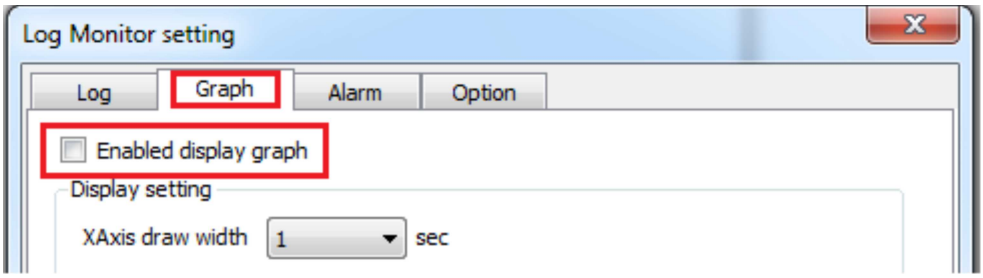


2. Graph Tab

In Graph tab, you can enable or disable the graph display, and also make settings for X-axis display width. (See also "4-3-5 Graph Display".)

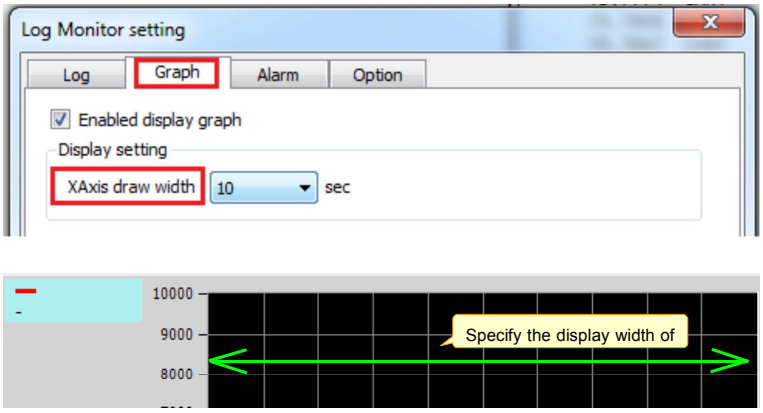
Enable graph display

Check this item to enable the graph display.



X-axis display width

Specify the display width of the X-axis of the graph.

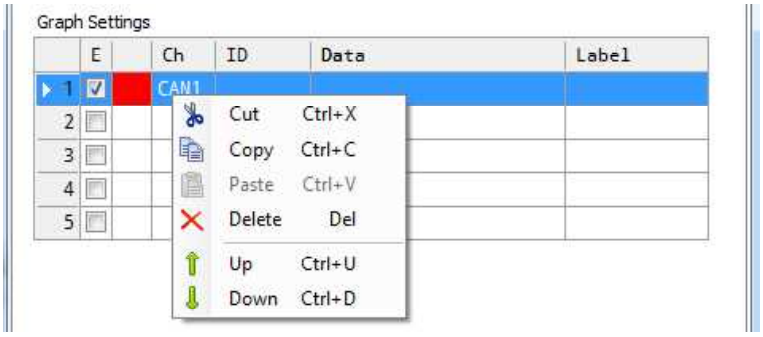


Graph settings

Specify the Data to show on the graph display.

Double click a row to display the setting dialog. (See "4-3-5 Graph Display" for details.)

With the right button menu, you can copy, paste and delete the graph settings.



3. Alarms Tab

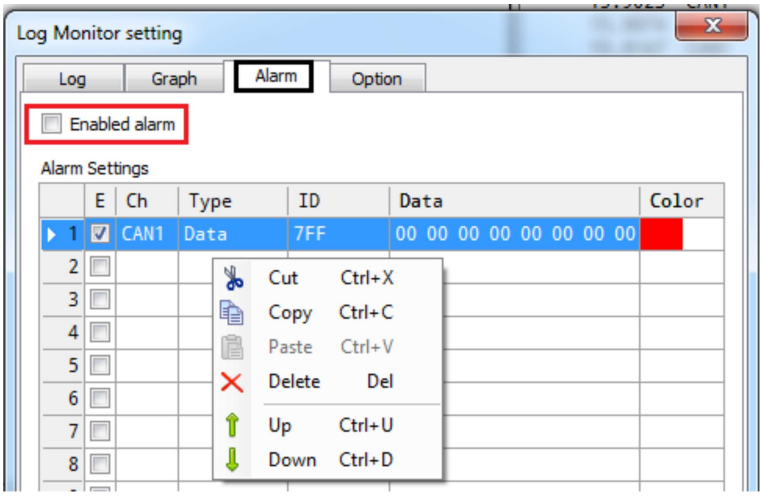
In Alarms tab, you can enable or disable the alarms, and also make settings for alarm conditions. (See "4-3-6 Alarms" for details.)

Enable alarms

Check this item to enable the entire alarm operation.

To enable or disable the individual alarm, check or uncheck each alarm which is previously set.If you double click an alarm setting row, the alarm setting dialog will open. (To make advanced settings for alarms, see "4-3-6 Alarms".)

With the right button menu, you can copy, paste and delete the alarm settings.

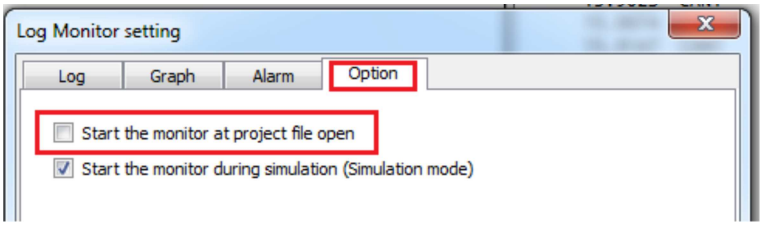


4． Options Tab

In Options tab, you can enable or disable the alarms. (See also "4-4 Log Simulation" and "6-2 Projects".)

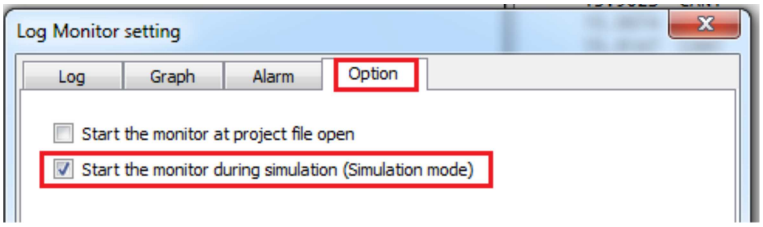
Start monitoring on opening the project file

If you check this item, Log Monitor will start automatically when you open the project file.



Start monitoring on simulation execution

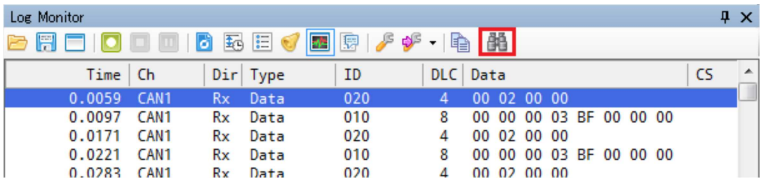
If you check this item, Log Monitor will start automatically when executing the log simulation operation.



4-3-3 Log Monitor Search

This is the function to search through logged frames.

If you click this icon, the dialog for searching will open.



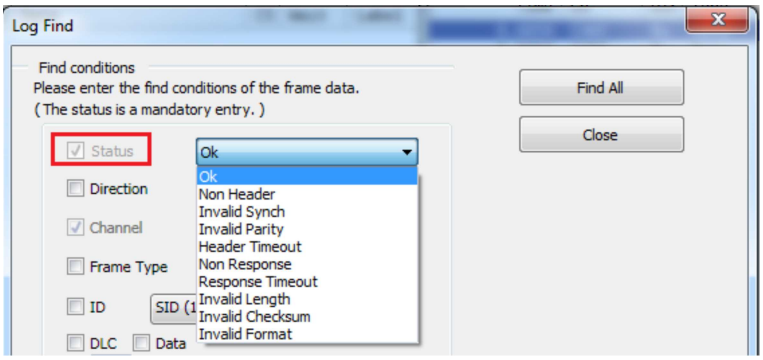
1. Search Dialog

In Search dialog, you can set conditions for searching frames.

- Some setting items are different between CAN and LIN.

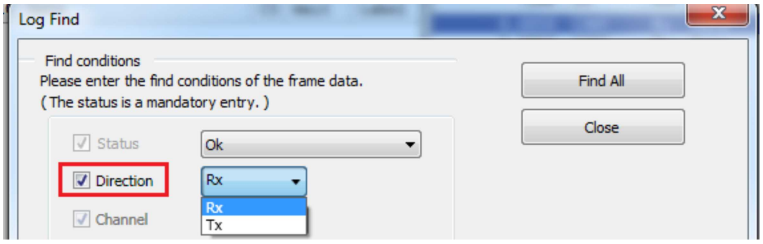
Status (Common between CAN and LIN)

Select the status condition.



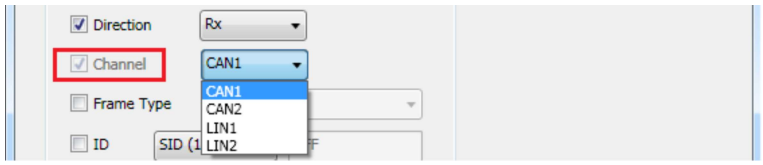
Direction (Common between CAN and LIN)

Select the direction of communication.



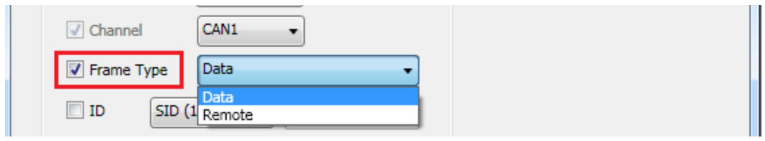
Channel (Common between CAN and LIN)

Select an item from CAN 1, 2, LIN 1 and 2.



Frame Type（CAN）

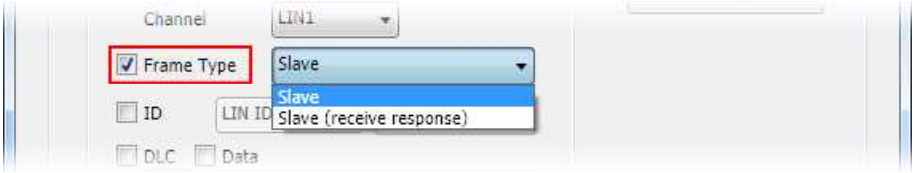
Select Data or Remote.



Frame Type（LIN）

If Direction is Rx, select Slave or Slave (receive response).

If Direction is Tx, select Master or Master (send response).



ID（CAN）

Select the number of bits in an ID, and enter the value.

ID（LIN）

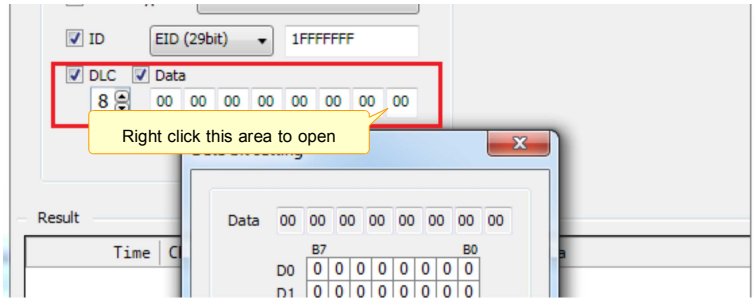
Enter an ID value.

DLC and Data（Common between CAN and LIN）

Specify the byte count of Data Length Code, and the value of Data.

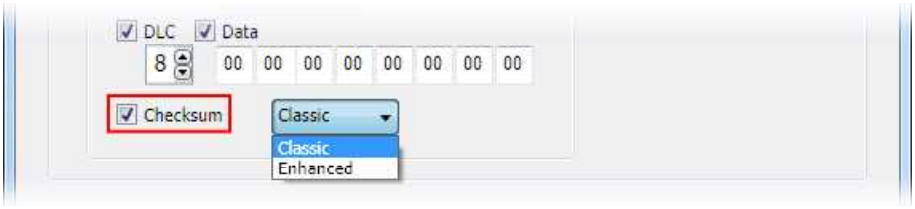
If you enter “ XX ” from the keyboard, you can set a specific data byte as “ don ’ t care ”.

If you right click the input area while entering Data, the BIT-entry mode dialog will open. (If you enter “*”, you can set a specific data bit as “ don ’ t care ”.)



Checksum（LIN）

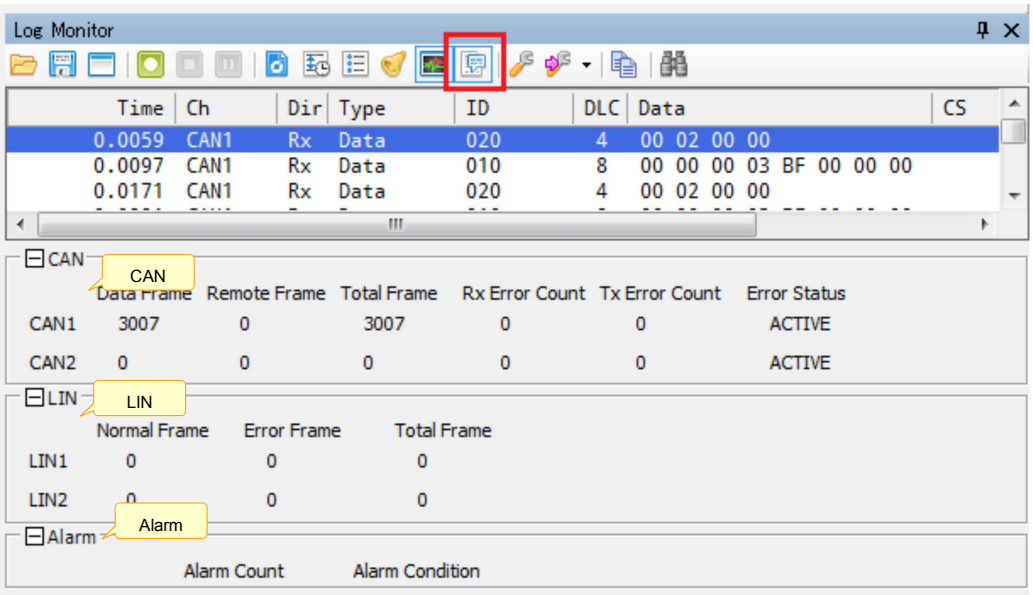
Select the type of checksum. (Classic or Enhanced)



4-3-4 Status Display

1. Displaying the Status

You can display the alarm status of CAN and LIN in the lower area of Log Monitor.



In CAN1/2, the following frames are shown.

Data Frame

Remote Frame

Total Frame

Rx Error Count

Tx Error Count

Error Status

In LIN1/2, the following frames are shown.

Normal Frame

Error Frame

Total Frame

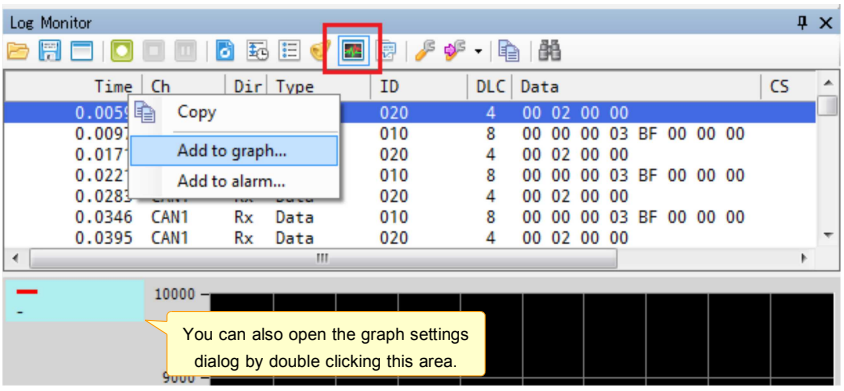
In Alarm, the following frames are shown.

Alarm Count

Alarm Condition

4-3-5 Graph Display

You can display the frame data information as a graph in the bottom area of Log Monitor. (See also " 4-3-2 Log Monitor Settings, 2. Graph Tab ".)

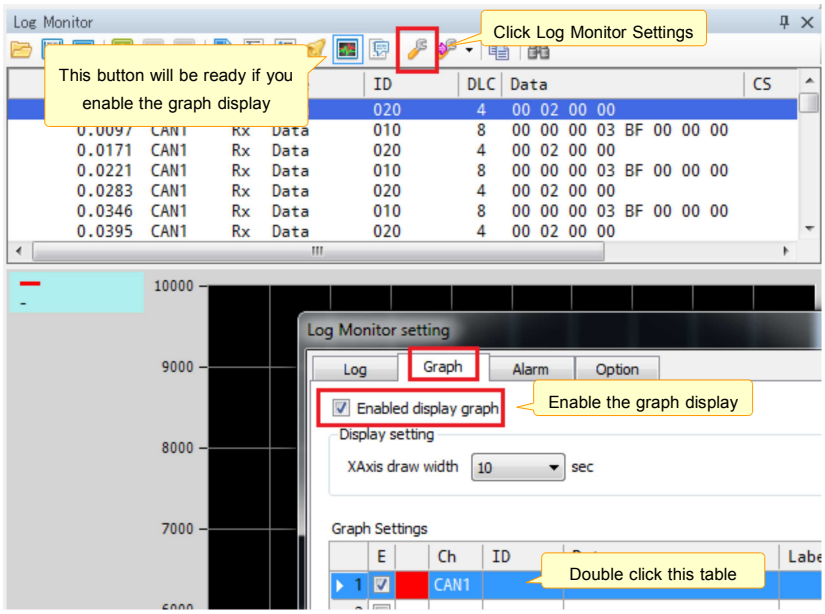


1. How to Display the Graph

To use the graph display, first, you will need to enable this function. (If you enable this function, you will be able to turn ON and OFF the graph display with the icon.)

Click the Log Monitor Settings icon, and enable the function in Graph tab.

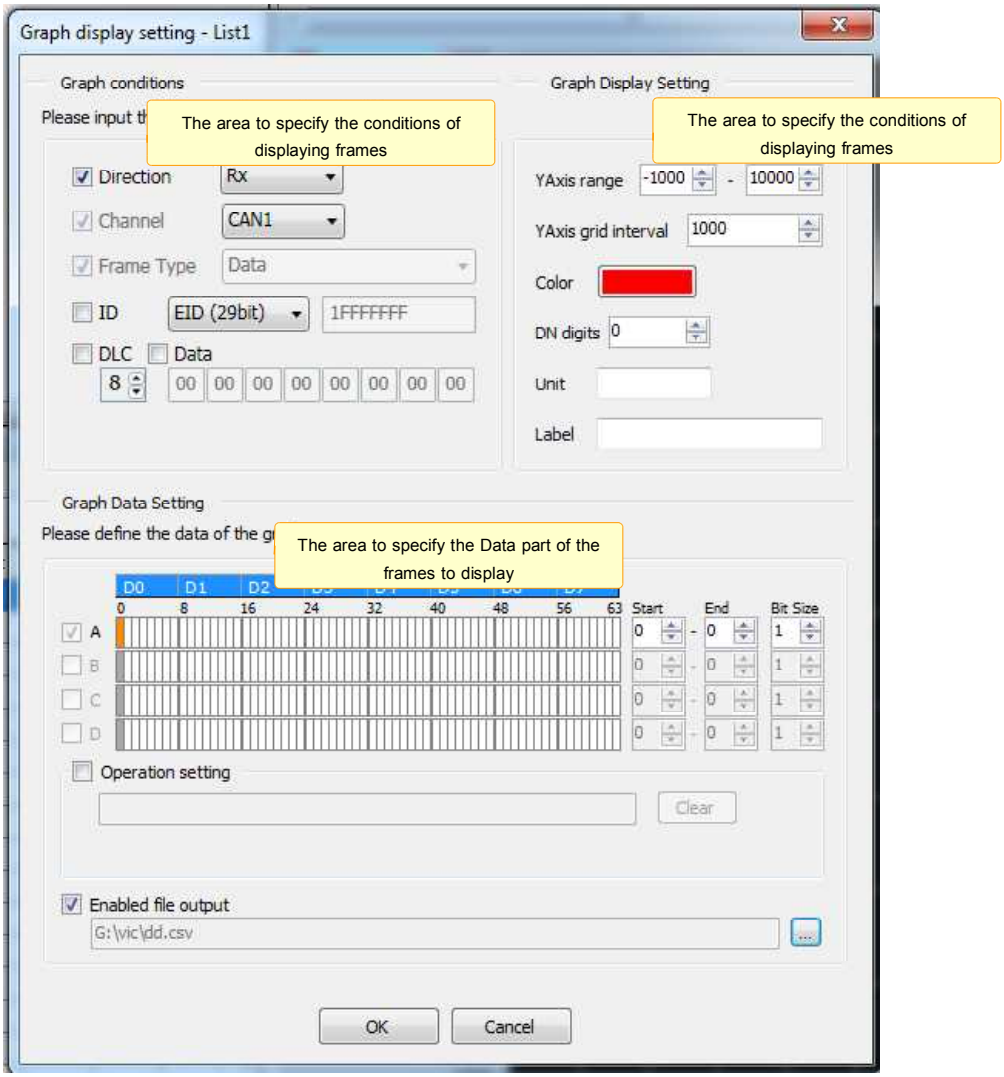
Next, double click the graph settings area to open the graph settings dialog. (You can also open this dialog from the right button menu, as shown in the picture above.)



2. Graph Settings Dialog

In this dialog, the settings are categorized into three groups.

- Some setting items are different between CAN and LIN.

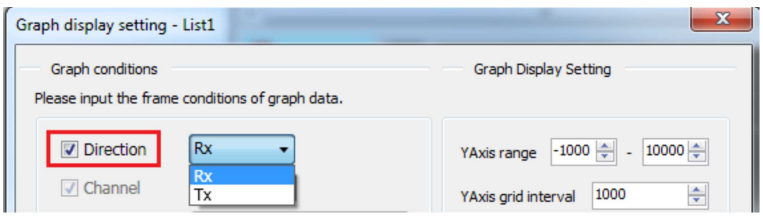


2. 1. The Area to Specify the Frame Conditions

In this area, you can specify the conditions of the frames to display on the graph.

Direction (Common between CAN and LIN)

Select the direction of communication.



Channel (Common between CAN and LIN)

Select an item from CAN 1, 2, LIN 1 and 2.

Frame Type（CAN）

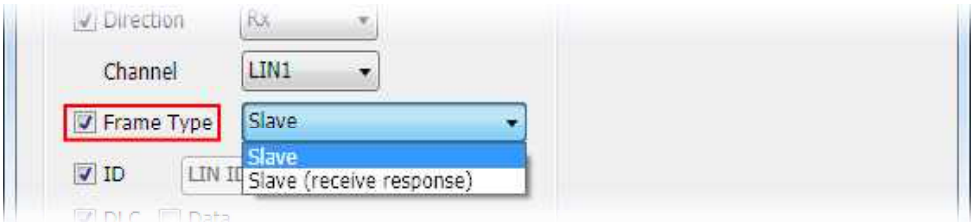
Always“Data”.

Frame Type（LIN）

To specify the frame type, check the checkbox. (If you want to ignore the frame type, do not check this item.)

If Direction is Rx, select Slave or Slave (receive response).

If Direction is Tx, select Master or Master (send response).



ID（CAN）

Select the number of bits in an ID, and enter the value. (If you want to ignore the ID, do not check this item.)

ID（LIN）

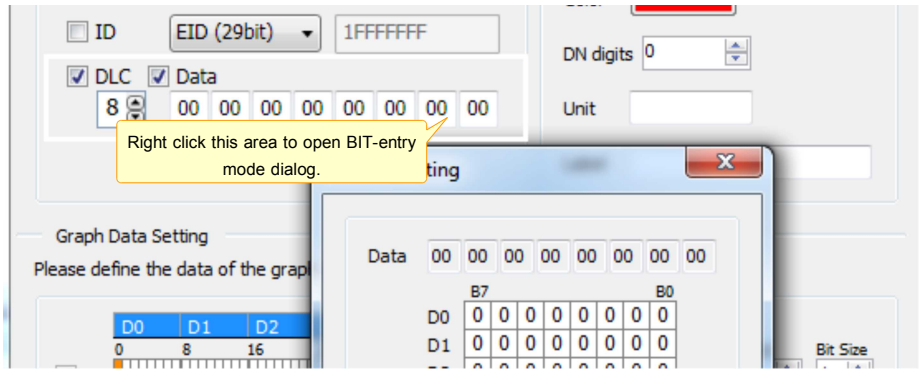
Enter the ID value. (If you want to ignore the ID, do not check this item.)

DLC and Data (Common between CAN and LIN)

If you want to specify the Data Length Code, check the checkbox and enter the DLC value. (If you want to ignore the DLC, do not check this item.)

If you enter " XX " from the keyboard, you can set a specific data byte as " don ' t care ".

If you right click the input area while entering Data, the BIT-entry mode dialog will open. (If you enter "*", you can set a specific data bit as " don ' t care ".)



Checksum（LIN）

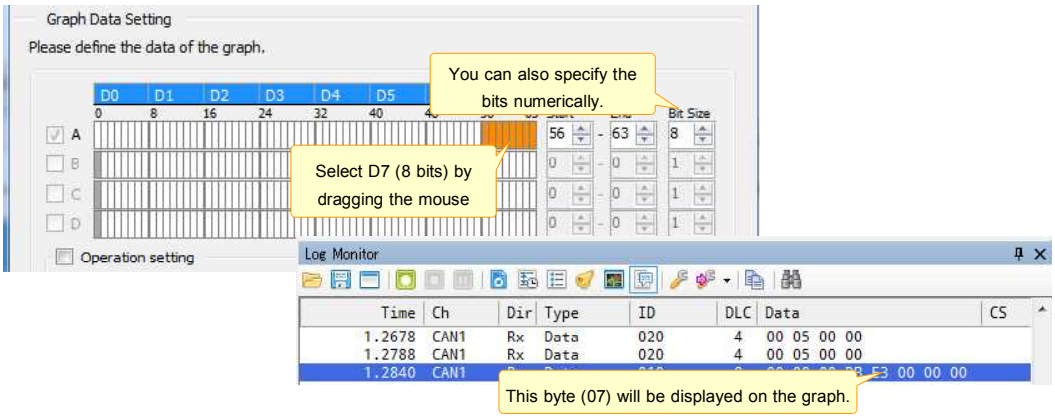
Select the type of checksum. (Classic or Enhanced)

If you want to ignore checksum, do not check this item.

2. 2. The Area to Specify Data

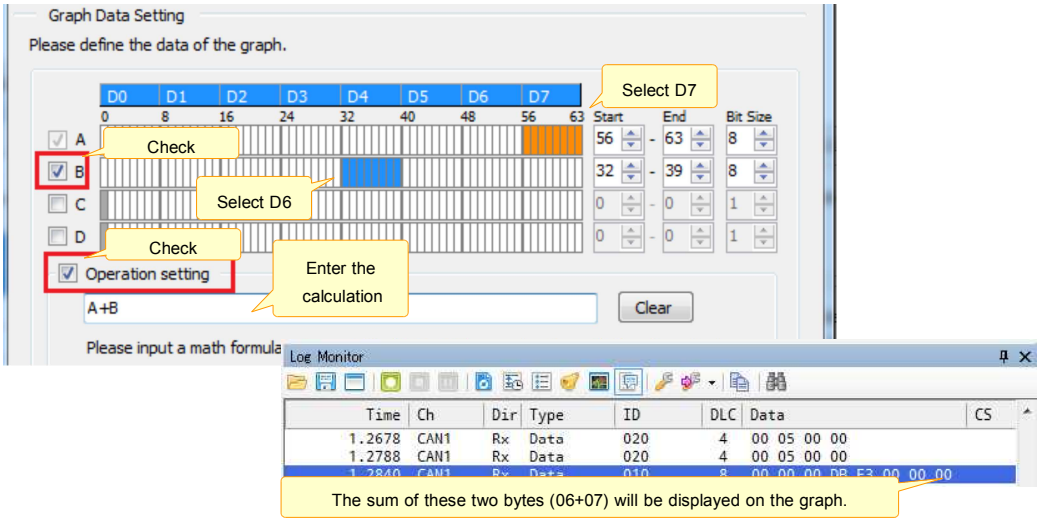
In this area, you can specify which part of the Data in the frame should be displayed on the graph

In the example below, “D7 (8 bits width) of the Data in the Frame” will be displayed on the graph.



In the example below, “The sum of D7 and D6 of the Data in the Frame” will be displayed on the graph.

In Arithmetic operation, you can specify the variables of A to D in the Data, constants, + (plus), - (minus), * (multiplication), / (division) signs.



File Output

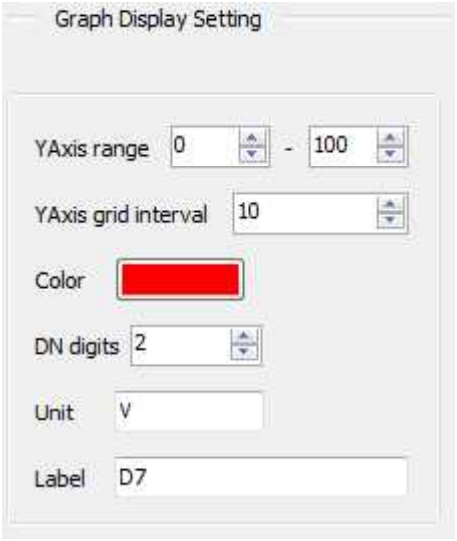
Check this item to save the graph-displaying data to a file.

The file will be saved in CSV format. (Time and Data will be saved into a file.)

2. 3. The Area to Specify Display Color, Range of the Graph, and Name (Label) of the Graph

Label (Common between CAN and LIN)

A label can be applied to the graph, if necessary.

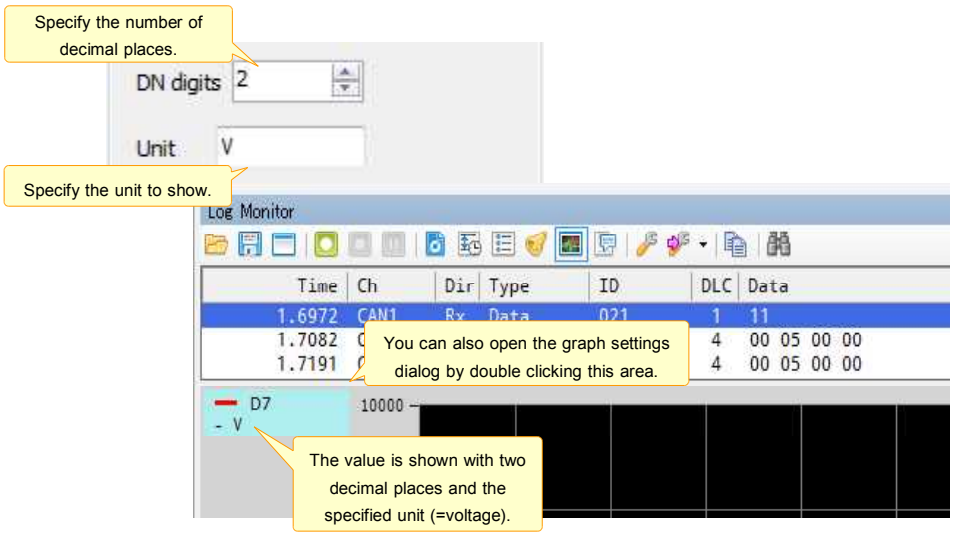


Color (Common between CAN and LIN)

Specify the color of the graph line.

Unit and Number of decimals

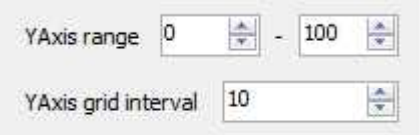
Specify the unit and the number of decimals of the value, which will be displayed on the caption area, on the left side of the graph.



Unit and Number of decimals

Specify the range of Y (vertical) axis, and the spacing of the grids.

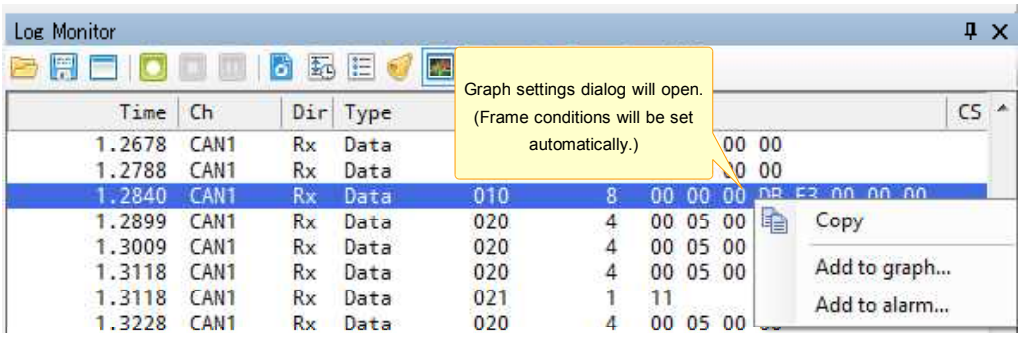
The designated range is from -10000 to 10000, and the spacing is 0 to 10000.

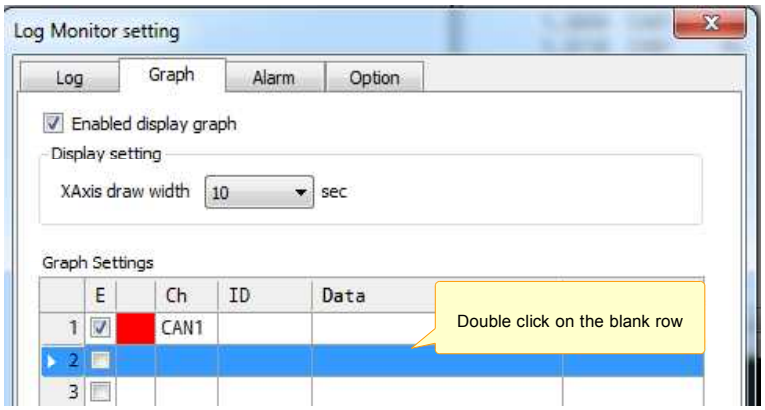


3. Displaying Multiple Graphs

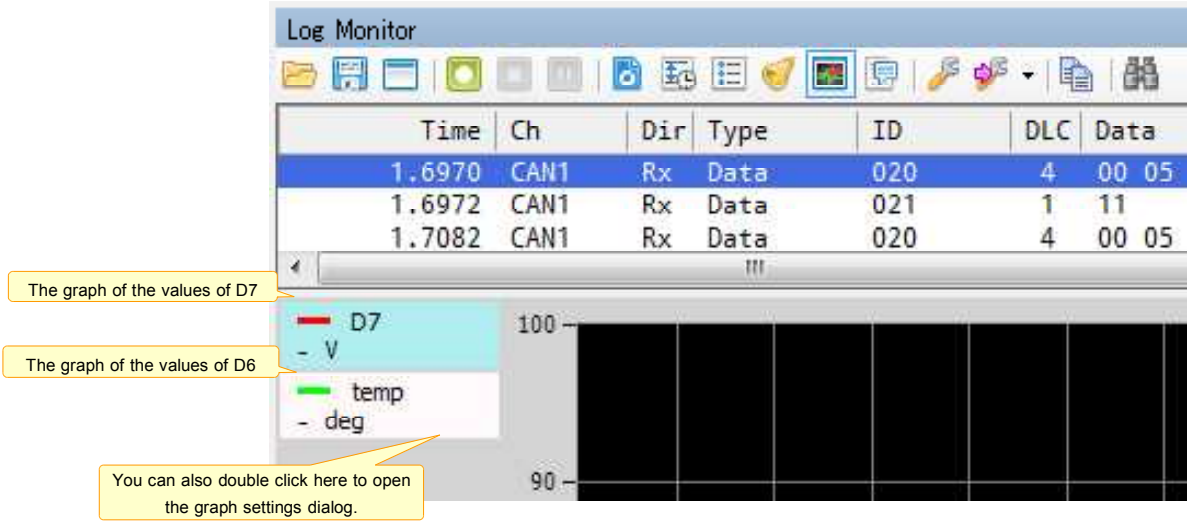
If you want to display multiple graphs, you can specify them in Log Monitor settings.

Or, in Log Monitor area, right click on the frame you wish to display. In this case, frame conditions in the graph data settings dialog will be set automatically.





The graphs will be displayed as the picture below.

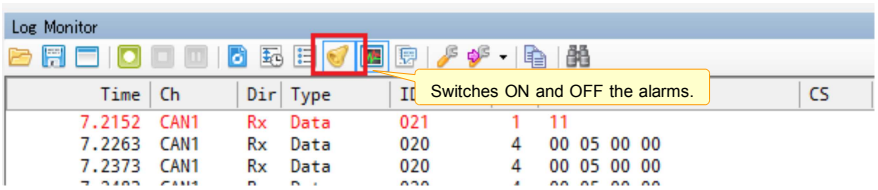


4-3-6 Alarms

You can show alarms on the screen by specifying alarm conditions on the logging frames. (See also “4-3-2 Log Monitor Settings, 3. Alarms Tab”.)

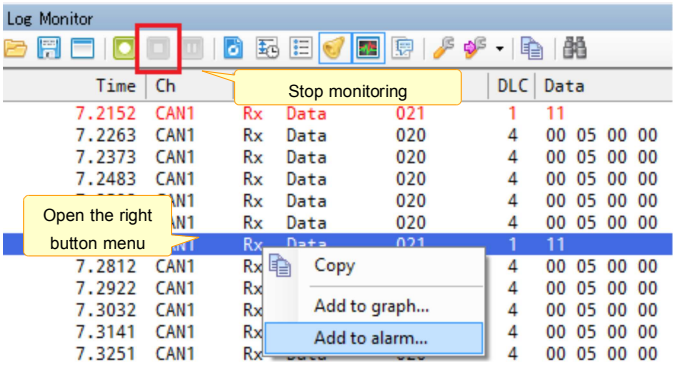
1. Switching the Alarm Operation

You can enable or disable the specified alarm operations.



2. Add to Alarms

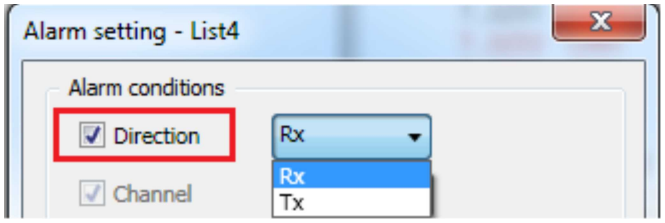
Choose a frame to set the alarms, and select “Add to alarms” from the right button menu. (Please execute this operation after stopping the monitor.)



3. Alarm Settings Dialog

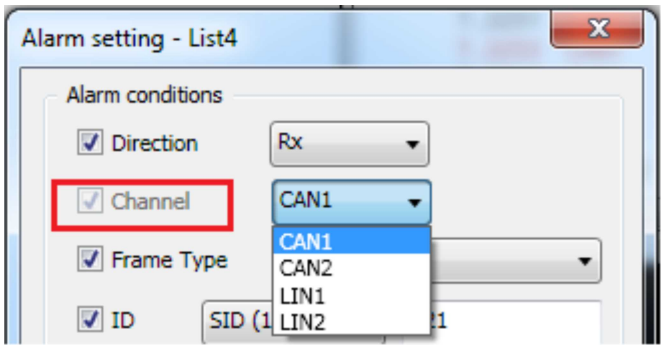
Direction (Common between CAN and LIN)

To specify the direction of communication, check the checkbox, and select “Tx” or “Rx”. (If you want to ignore the direction, do not check this item.)



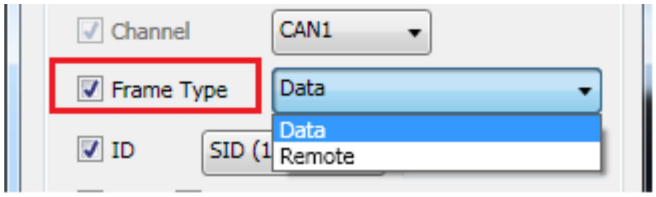
Channel (Common between CAN and LIN)

Select an item from CAN 1, 2, LIN 1 and 2.



Frame Type（CAN）

To specify the frame type, check the checkbox. (If you want to ignore the frame type, do not check this item.)

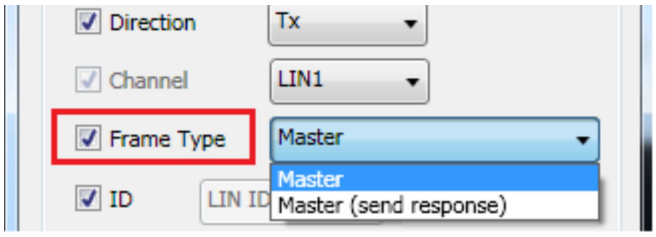


Frame Type（LIN）

To specify the frame type, check the checkbox. (If you want to ignore the frame type, do not check this item.)

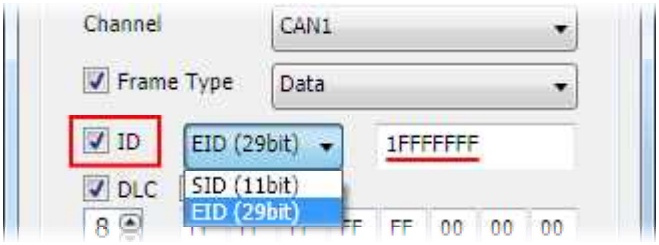
If Direction is Rx, select Slave or Slave (receive response).

If Direction is Tx, select Master or Master (send response).



ID（CAN）

To specify the ID, check the checkbox, select the number of bits in an ID, and enter the value. (If you want to ignore the ID, do not check this item.)



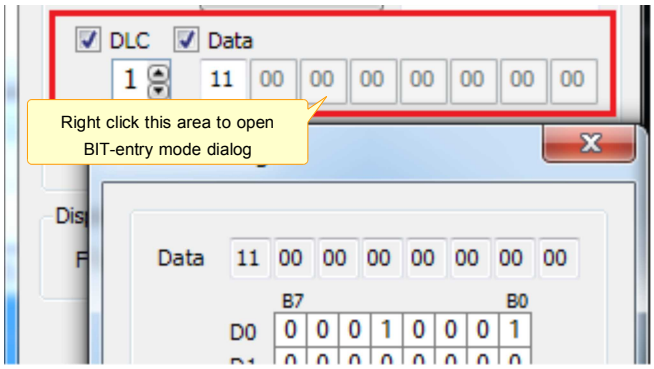
ID（LIN）

To specify the ID, check the checkbox, and enter the ID value. (If you want to ignore the ID, do not check this item.)

DLC and Data (Common between CAN and LIN)

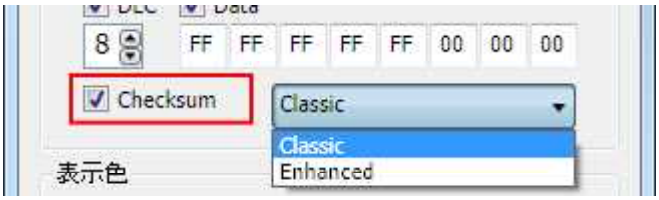
If you want to specify the Data Length Code, check the checkbox and enter the DLC value. (If you want to ignore the DLC, do not check this item.)

If you right click the input area while entering Data, the BIT-entry mode dialog will open.



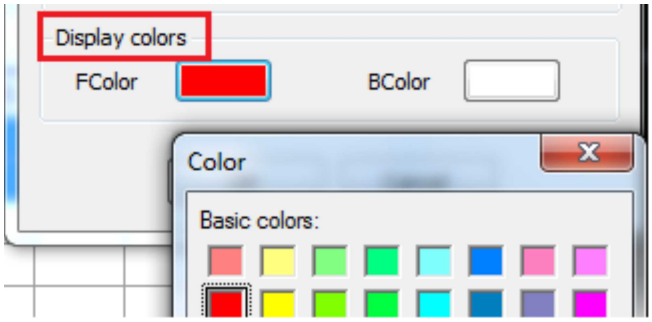
Checksum（LIN）

To specify checksum, check the checkbox, and select Classic or Enhanced.（If you want to ignore checksum, do not check this item.）



Display Color（Common between CAN and LIN）

Specify the display color at alarm occurrence.



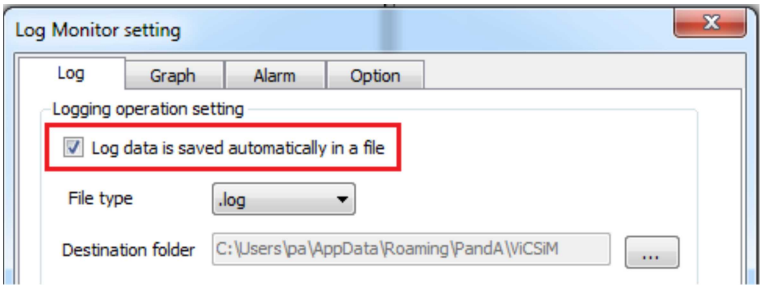
4．Cancelling the Alarm（Delete）

Please see“4-3-2 Log Monitor Settings,3． Alarms Tab”for details.

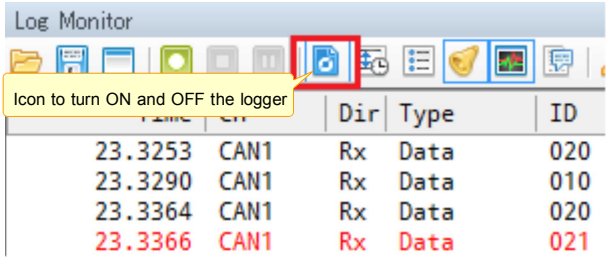
4-3-7 Logger Function

The logger function enables long-term logging. It creates a log file at the start of a monitoring, and data is automatically stored in this file while the monitoring is going on.
While the logger function is active, all the received data is stored into this file endlessly.

- To use the logger function, please enable the logging operation in the log monitor settings dialog in advance. (See4-3-2)
- The file name consists of the date and time of the start of monitoring, and the serial number. The format will be "yyyymmddhhmmss_XXXX". If the maximum number of rows is reached on the display of Log Monitor, the file will be divided automatically, and the serial number is appended at the position of "XXXX" (0001, 0002, 0003...).
- The size of the files may become larger than expected. Please watch the remaining capacity of the storage.



You can use the icon to turn ON and OFF the logger function.



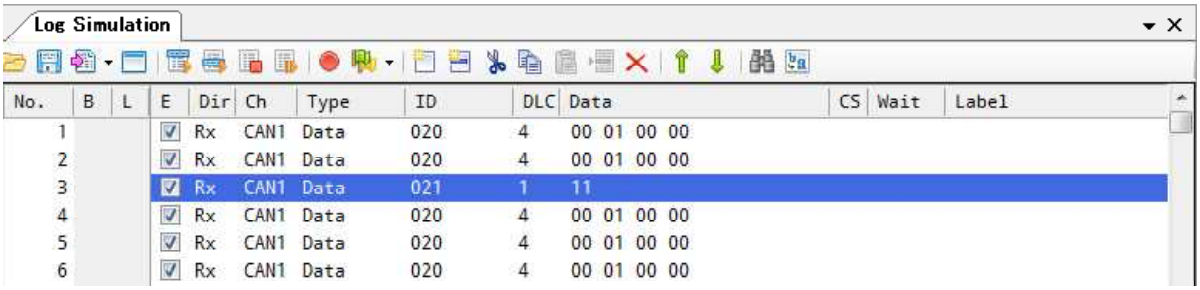
4-4 Log Simulation

Log Simulation is the function to execute transmission and reception of frames sequentially. You can execute it with starting and ending lines specified, set breakpoints, or execute repeatedly, just like a source-level debugger.

- Log Simulation and Frame Simulation can be executed **independently and simultaneously**. For example, you can execute single frame communications in Frame Simulation window, while executing transmission and reception in the Log Simulation window.

4-4-1 Items in Log Simulation Area

Items setted by Log Simulation dialog will will be displayed.



No.

The row numbers of simulation data.

B

The setting status of the breakpoints.

You can set and cancel the breakpoints by clicking this column.

L

The setting status of the loop points.

You can set and cancel the loop points by clicking this column.

E

Enable

Enables or disables the corresponding row. (Only the checked rows are simulated.)

Dir

The direction of transmission/reception.

Ch

Channel

Type

Frame type

ID

ID

DLC

Data Length Code

Data

Transmission/reception data

CS

Checksum (LIN only)

Wait

Wait time before sending the Tx frame

Label

Label

1. Icons

There are following operation icons in Log Simulation.

Open File

Loads the log simulation file previously saved. (Extension: " lsd ")

Save File

Saves the log simulation file. (Extension: " lsd ")

Import/Export Log Data

Imports the frame information exported from Log Monitor (see4-3).

Or, exports the created simulation data in other formats. (Extensions: " log ", " csv ")

Clear All Simulation Data

Clears the simulation data.

Start From the Top Row

Starts the simulation from the top row. (See " 4-4-3 Executing the Simulation " for details.)

Execute From the Current Row

Executes the simulation from the currently selected row. (See 4-4-3 Executing the Simulation " for details.)

Stop Execution

Stops the simulation. (See " 4-4-3 Executing the Simulation " for details.)

Step Execution

Starts stepping execution. (See " 4-4-3 Executing the Simulation " for details.)

Set/Clear Breakpoint

Sets or clears a breakpoint on the current row. (See " 4-4-3 Executing the Simulation " for details.)

Set/Clear Loop Points/Set Loop Count

Sets or clears a loop point on the current row. (See "4-4-3 Executing the Simulation" for details.)

You can also open the loop count setting dialog from the drop down list.

New

Adds a new simulation data below the current row. (Opens a dialog.)

Insert

Adds a new simulation data above the current tow. (Opens a dialog.)

Cut

Cuts the selected simulation data. (Multiple data can be selected.)

Copy

Copies the selected simulation data (Multiple data can be selected.)

Paste

Pastes the copied or cut simulation data to the current row.

Insert Copied Data

Pastes the copied or cut simulation data to the row above the current row.

Delete

Deletes the simulation data of the current row.

Up

Moves the data of the current row one row up.

Down

Moves the data of the current row one row down.

Replace

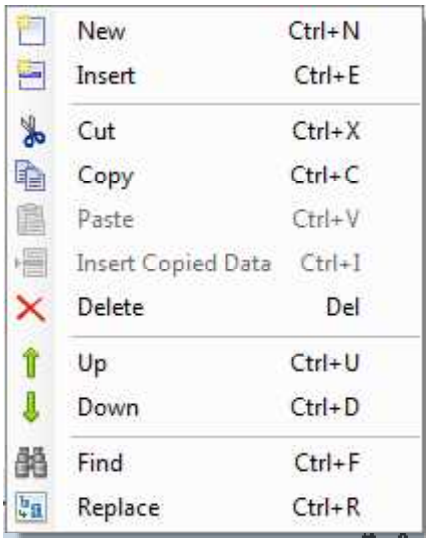
Replaces the contents of the simulation data with the specified data. (Opens a dialog.)

Search

Searches through the simulation data. (Opens a dialog.)

2． Right Button Menu

These right button menu items are available in Simulation Data area.（See “1.Icons” for details.）

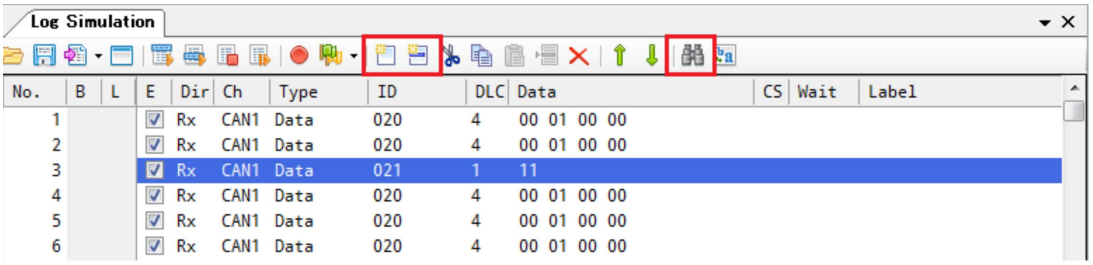


4-4-2 Creating Log Simulation Data

You can use a special dialog to create, search and replace the simulation data.

If you click New (or Insert) icon, a dialog for creating data will open.

If you click Replace icon, a dialog for replacing data will open.



1. Log Simulation Data Settings Dialog

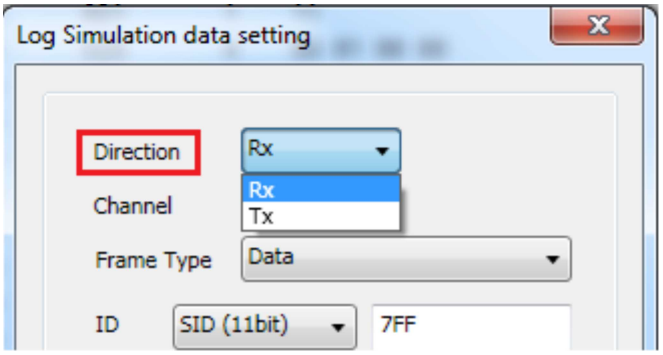
In the log simulation data settings dialog, you can make settings for simulation data.

- Some setting items are different between CAN and LIN.

Direction (Common between CAN and LIN)

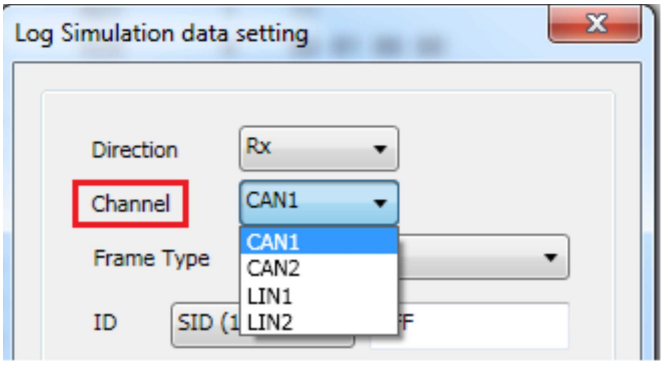
Select the direction of communication.

- In LIN communication, Direction will be the direction of the header. If you are sending the header as Master, select Tx. If you are receiving the header as Slave, select Rx.



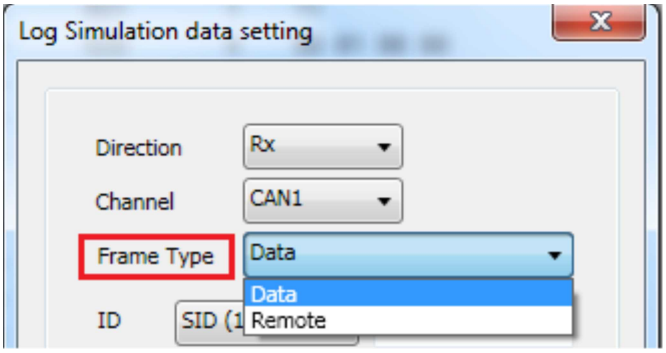
Channel (Common between CAN and LIN)

Select an item from CAN 1, 2, LIN 1 and 2.



Frame Type（CAN）

Select Data or Remote.



Frame Type（LIN）

If Direction is Rx, select Slave or Slave (receive response).

If Direction is Tx, select Master or Master (send response).

- Master

  ViCSiM sends the Header as Master, and waits for the Response from Slaves.

- Master(send response)

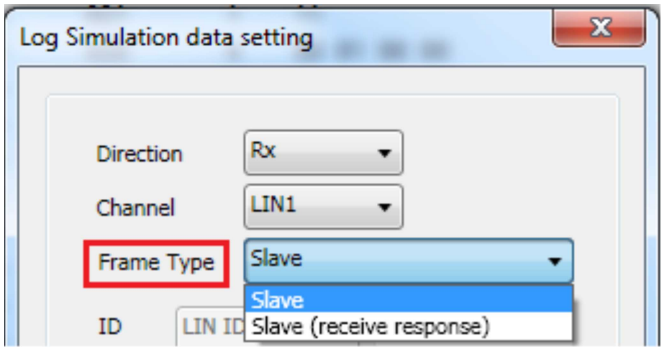
  ViCSiM sends the Header as Master, and also sends the Response to other Slaves.

- Slave

  ViCSiM waits to receive the specified Header as Slave, and sends the Response after receiving the Header.

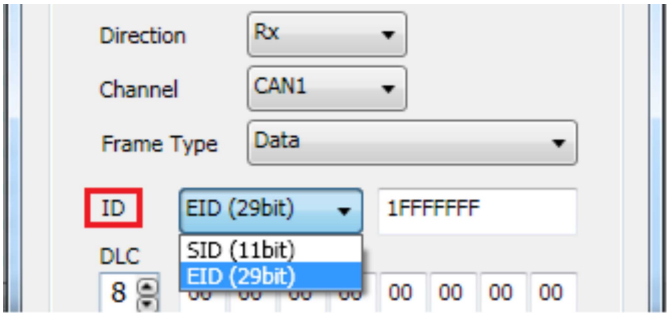
- Slave(receive response)

  ViCSiM waits to receive the specified Header as Slave, and also waits for the Response from other Slaves.



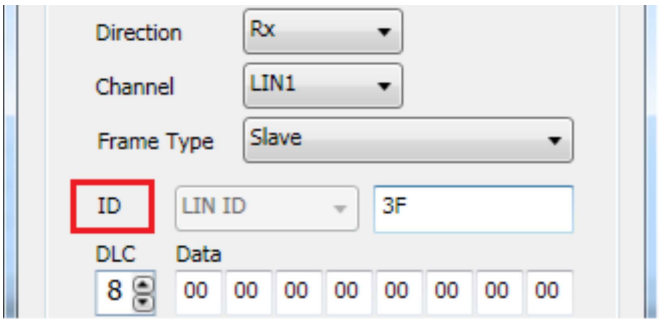
ID（CAN）

Select the number of bits in an ID, and enter the value.



ID（LIN）

Enter an ID value.

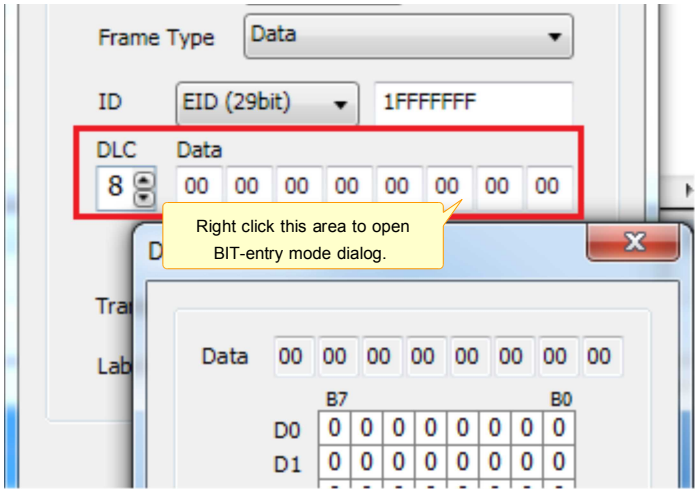


DLC and Data (Common between CAN and LIN)

Specify the byte count of Data Length Code, and the value of Data.

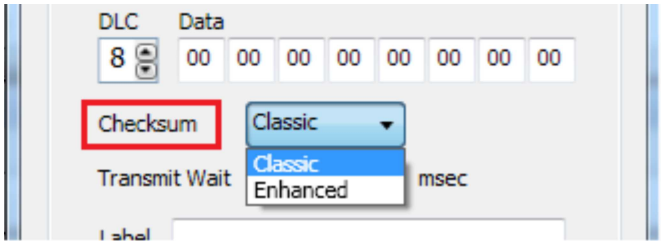
If Direction is Rx, you can set a specific data byte as "don't care" by entering "XX" from the keyboard. However, in LIN communication, you can only set "don't care" in the Data part if the Frame Type is Master or Slave (receive response).

If you right click the input area while entering Data, the BIT-entry mode dialog will open. (If you enter "*", you can set a specific data bit as "don't care".)



Checksum (LIN)

Select the type of checksum. (Classic or Enhanced)

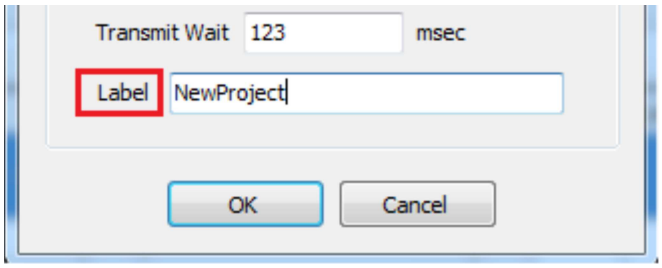


Transmit Wait (Common between CAN and LIN)

If Direction is Tx, you can specify the wait time before sending the data in milliseconds. (In the picture below, the wait time is 123msec.)

Label (Common between CAN and LIN)

A label can be applied to the data, if necessary



4-4-3 Executing the Simulation

Simulation is executed row by row.

Use the icons to execute the simulation.

This section will describe how to use the execution operation icons.

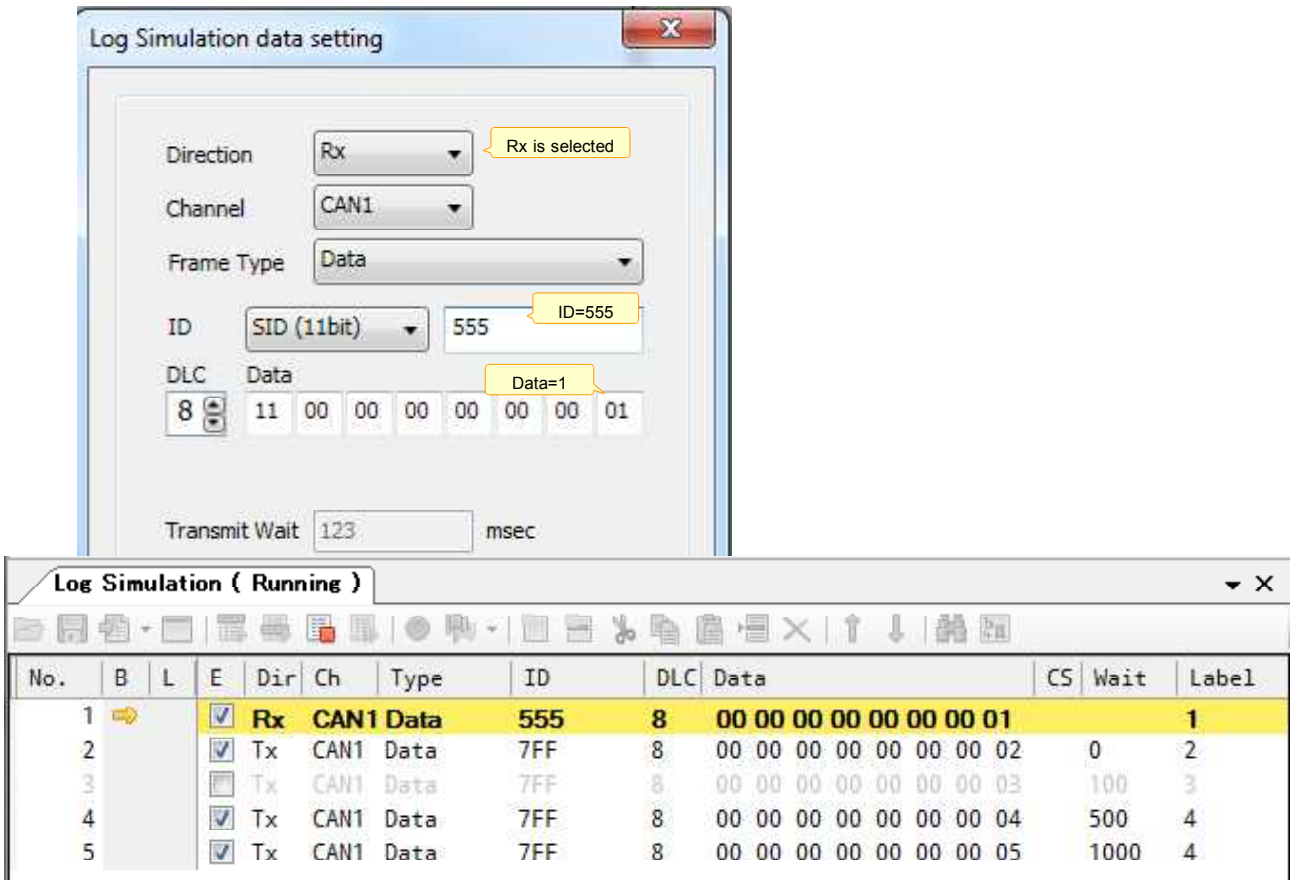
1. Start from the Top Row

Starts the simulation from the top row.

The simulation data should already be set in the dialog shown below in advance.

This picture shows the example of the top row.

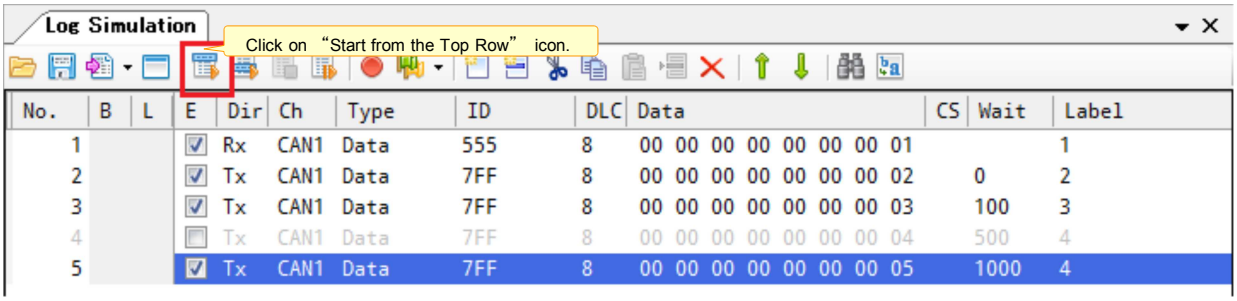
The set parameters are “ Rx, ID=555, DATA=1 ”.



The settings in the second row are “ Tx, ID=7FF, Data=01, Wait=0, Label=2nd row ”.

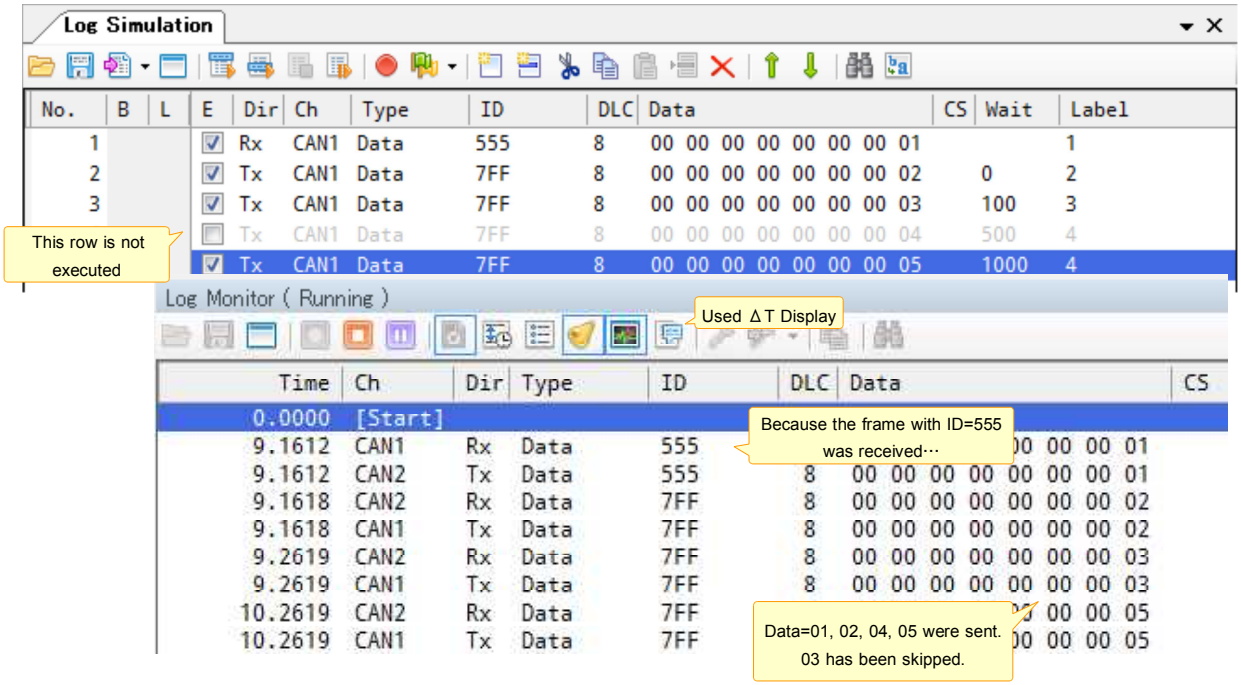
As for the rows after the second row, please see the picture below.

1)If you click “ Start from the Top Row ” icon, No.1 (the top row) will be inverted to yellow, and waits for the frame of “ ID=555, Data=1 ”.



2)Received the target frame, therefore sent the rows below the top row (Tx).

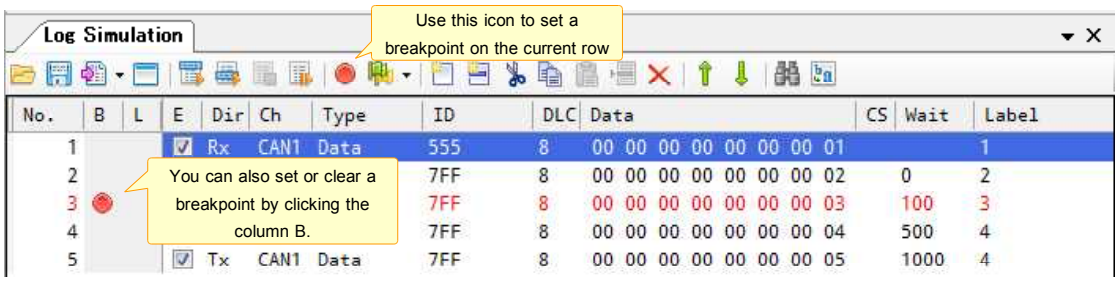
Since No.3 (the third row) is unchecked (see column E), this row was not executed. The rest of the frames were sent (this can be checked in Log Monitor).



2 . Breakpoints

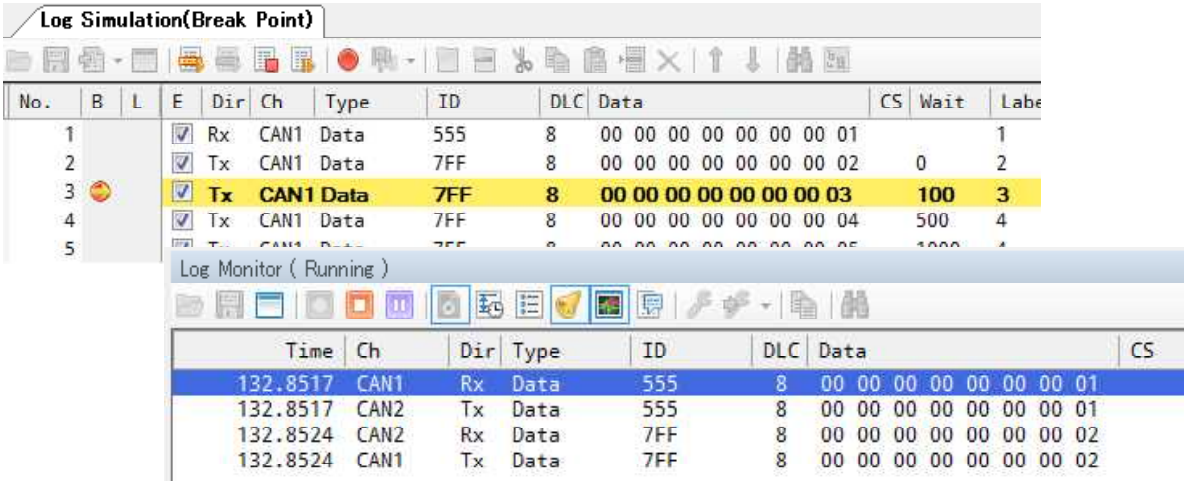
Breakpoints can be set on the rows.

1)Set a breakpoint on the row where you want to stop the simulation.



2)Click on Start from the Top Row icon to execute the simulation

In the example below, the simulation is breaking (stopping), after the frame with ID=555 was received and the frame No.2 was sent.



3. Loop Points

If you want to repeat the execution of certain rows, use the loop points.

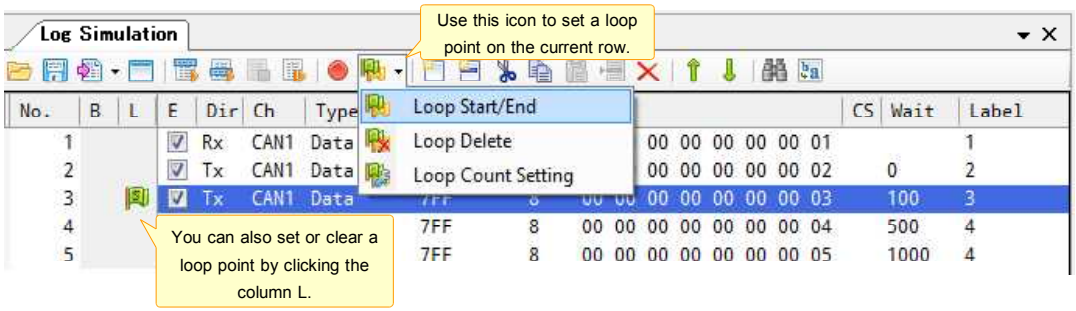
To execute a loop, you need to specify the following three points.

a) The start row of the loop

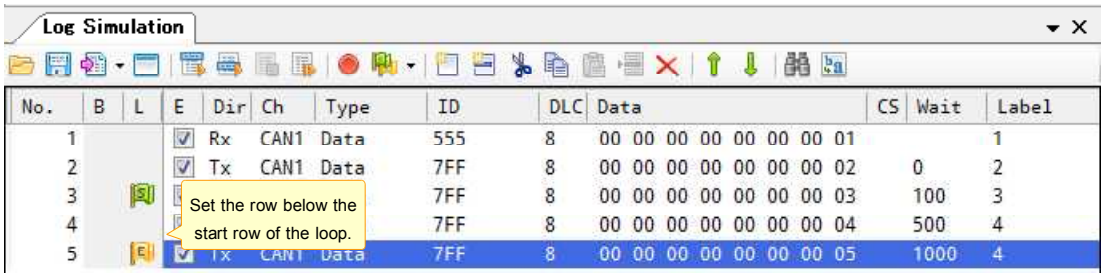
b) The end row of the loop

c) The loop count

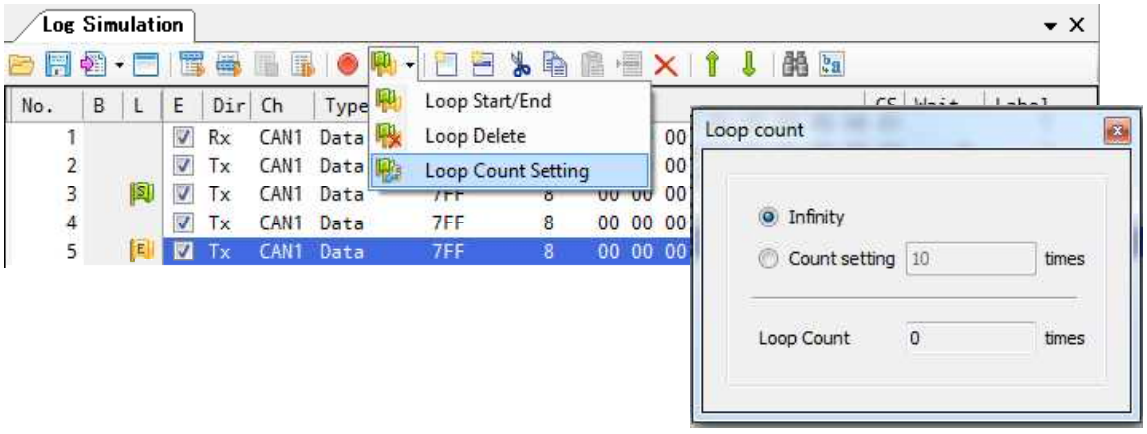
1)Set the start row of the loop.



2) Set the row to repeat the loop.



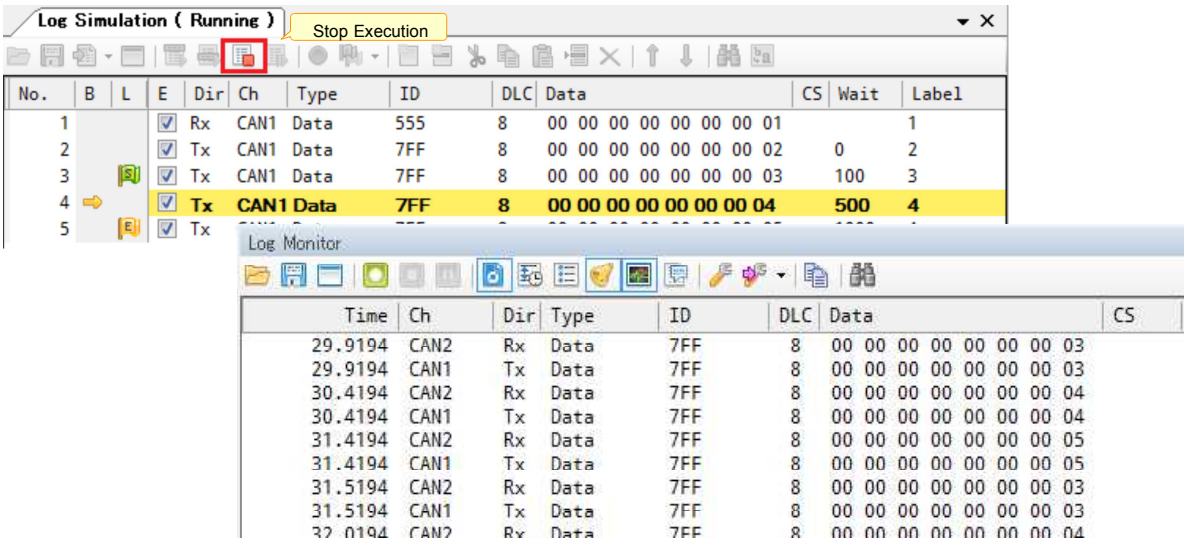
3)Set the loop count, if needed. (By default, the count is infinity.)



4)Click Start from the Top Row icon to execute the simulation.

If the frame with ID=555 is received, the frames from No.3 to No.5 are sent repeatedly.

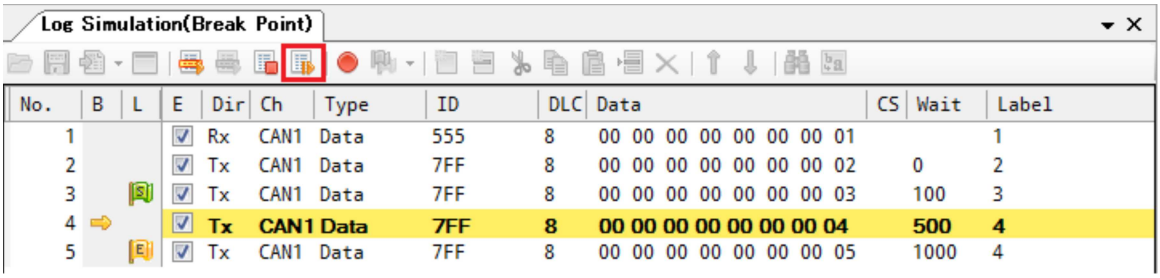
To stop the loop execution, click Stop Execution icon.



4. Other Operations

4. 1. Step Execution

If you click this icon, the simulation will be executed one row at a time.



No.	B	L	E	Dir	Ch	Type	ID	DLC	Data	CS	Wait	Label
1			☑	Rx	CAN1	Data	555	8	00 00 00 00 00 00 00 01			1
2			☑	Tx	CAN1	Data	7FF	8	00 00 00 00 00 00 00 02		0	2
3		S	☑	Tx	CAN1	Data	7FF	8	00 00 00 00 00 00 00 03		100	3
4	➪		☑	**Tx**	**CAN1**	**Data**	**7FF**	**8**	**00 00 00 00 00 00 00 04**		**500**	**4**
5		E	☑	Tx	CAN1	Data	7FF	8	00 00 00 00 00 00 00 05		1000	4

4. 2. Continue

If the execution is paused by a breakpoint, this operation will continue the execution.

4. 3. Execute from the Current Row

Executes the simulation from the current row.

4. 4. Stop Execution

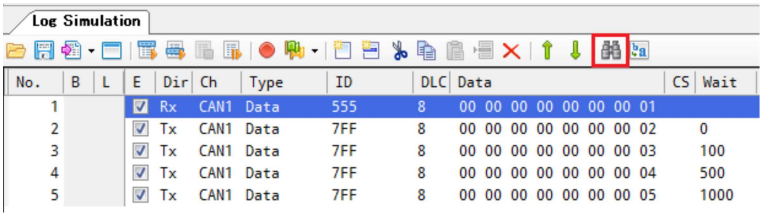
Force stops the execution.

For example, it stops the loop execution.

4-4-4 Search Function in Log Simulation

This function enables searching of log simulation data.

Click this icon to open the dialog for searching. (Stop the simulation before operating this function.)



1. Search Dialog

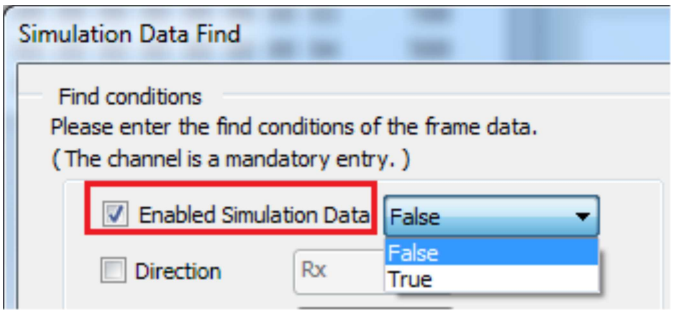
In the search dialog, set the conditions for searching the simulation data, and click Search button.

- You can use checkboxes to enable or disable searching options.
- Some setting items are different between CAN and LIN.
- For details about the setting items, see "4-4-1 Items in Log Simulation Area".

Enable Simulation Data (Common between CAN and LIN)

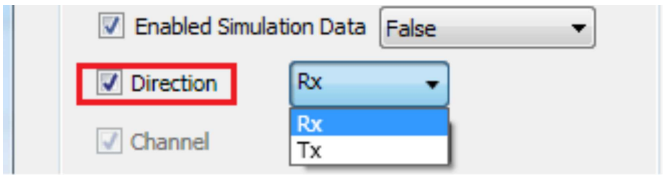
Specify the search condition of the E column (simulation target).

To search for only the data with the column E checked, select "True"; to search only for the data unchecked, select "False".



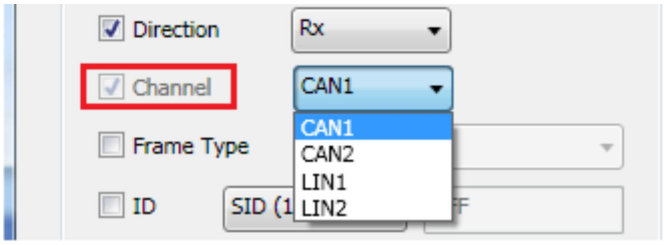
Direction (Common between CAN and LIN)

Select the direction of communication.



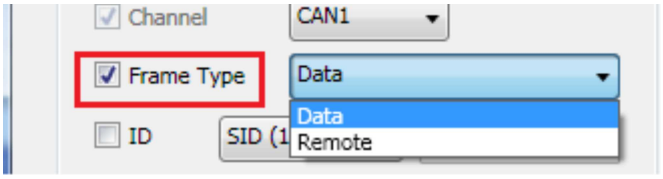
Channel (Common between CAN and LIN)

Select an item from CAN 1, 2, LIN 1 and 2.



Frame Type（CAN）

Select Data or Remote.



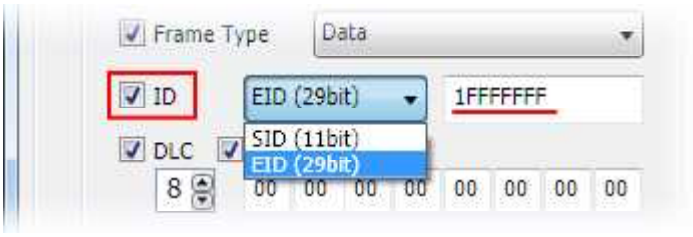
Frame Type（LIN）

If Direction is Rx, select Slave or Slave (receive response).

If Direction is Tx, select Master or Master (send response).

ID（CAN）

Select the number of bits in an ID, and enter the value.



ID（LIN）

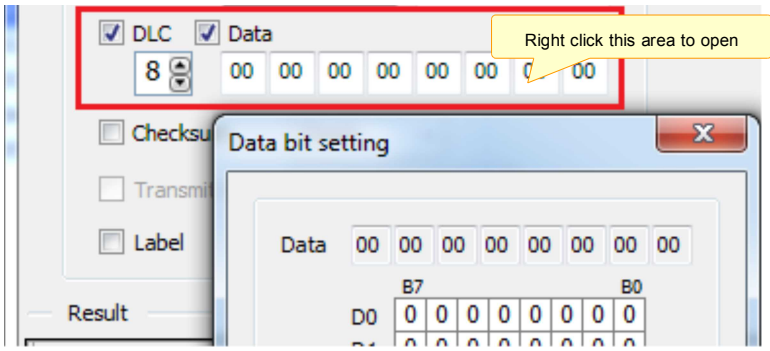
Enter an ID value.

DLC and Data (Common between CAN and LIN)

Specify the byte count of Data Length Code, and the value of Data.

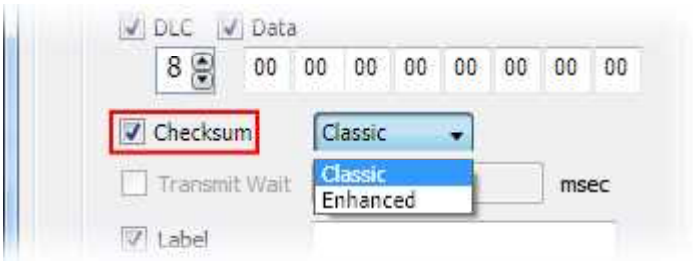
You can set a specific data byte as “don’t’ care” by entering “XX” from the keyboard.

If you right click the input area while entering Data, the BIT-entry mode dialog will open. (If you enter “*”, you can set a specific data bit as “don’t care”.)



Checksum（LIN）

Select the type of checksum. (Classic or Enhanced)

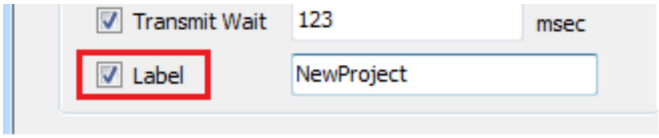


Transmit Wait (Common between CAN and LIN)

If Direction is Tx, you can specify the wait time before sending the data in milliseconds. (In the picture below, the wait time is 123msec.)

Label (Common between CAN and LIN)

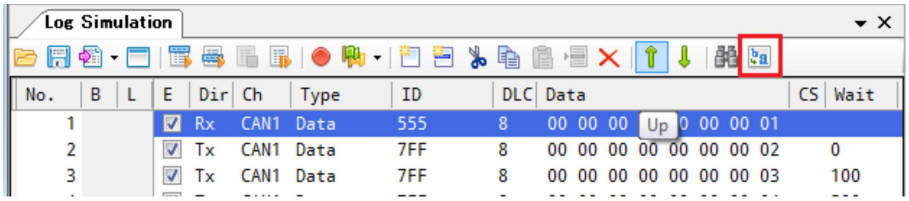
Specify the label to search for.



4-4-5 Replace Function in Log Simulation

This function searches and replaces the log simulation data.

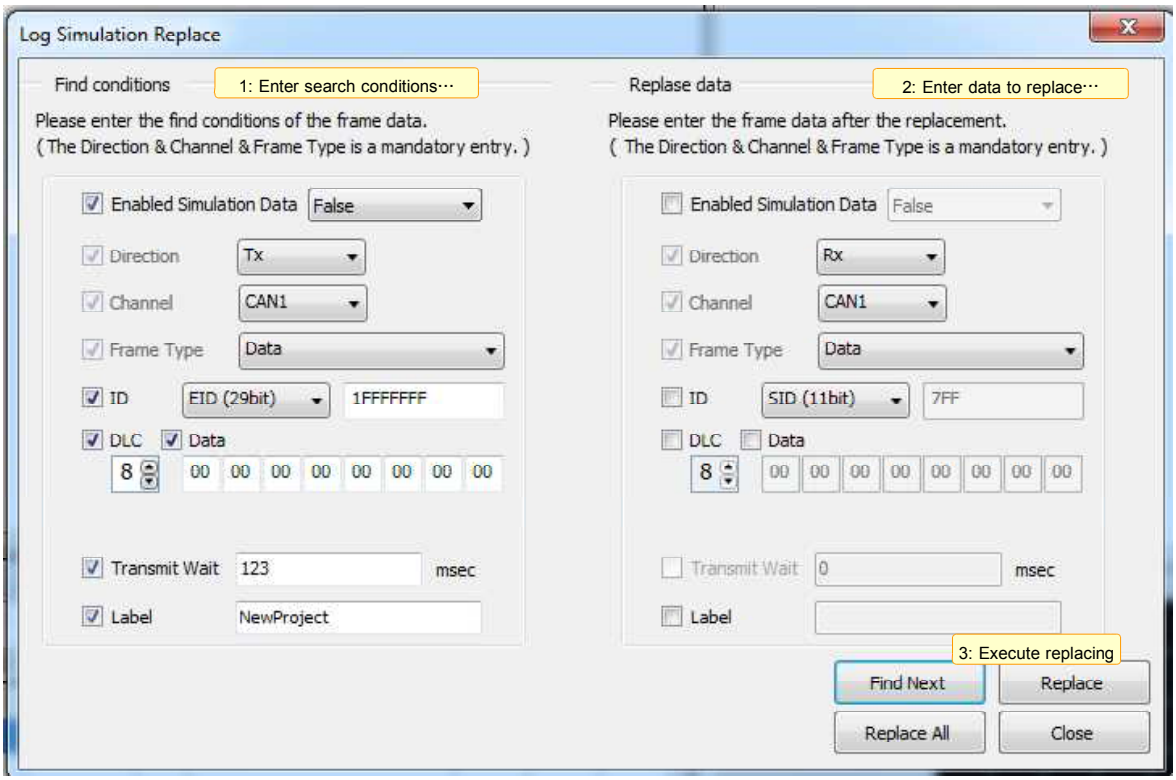
Click this icon to open the dialog for replacing. (Stop the simulation before operating this function.)



1. Replace Dialog

In the replace dialog, set the conditions for searching the simulation data, specify the replace data, and click one of the execution buttons.

- You can use checkboxes to enable or disable searching options. (Required items are always checked.)
- Some setting items are different between CAN and LIN.
- For details about the setting items, see " 4-4-1 Items in Log Simulation Area ".

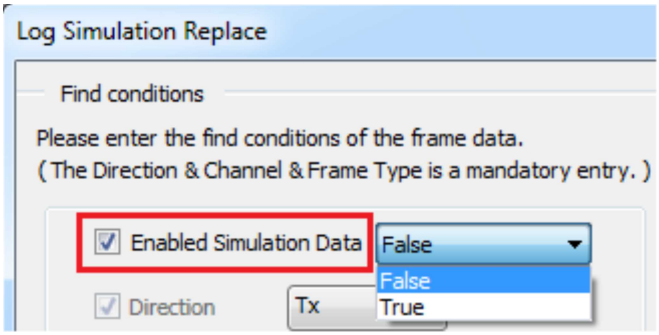


1. 1. Entering Search Conditions

Enabled Simulation Data (Common between CAN and LIN)

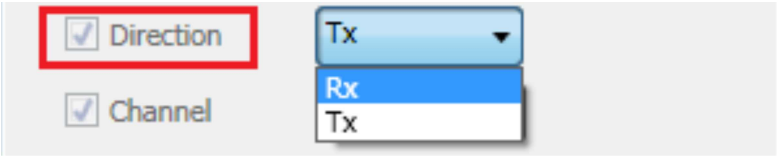
Specify the search condition of the E column (simulation target).

To search for only the data with the column E checked, select "True"; to search only for the data unchecked, select "False".



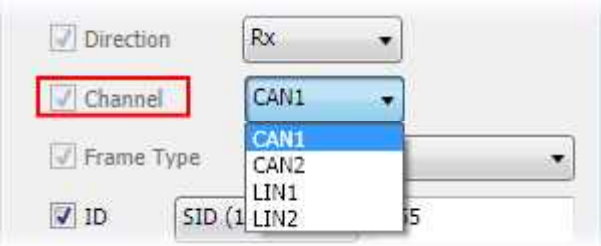
Direction (Common between CAN and LIN)

Select the direction of communication.



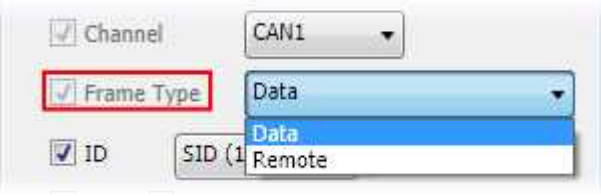
Channel (Common between CAN and LIN)

Select an item from CAN 1, 2, LIN 1 and 2.



Frame Type (CAN)

Select Data or Remote.



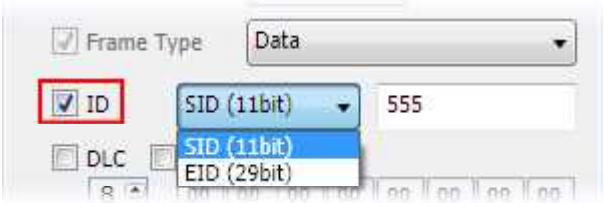
Frame Type（LIN）

If Direction is Rx, select Slave or Slave (receive response).

If Direction is Tx, select Master or Master (send response).

ID（CAN）

Select the number of bits in an ID, and enter the value.



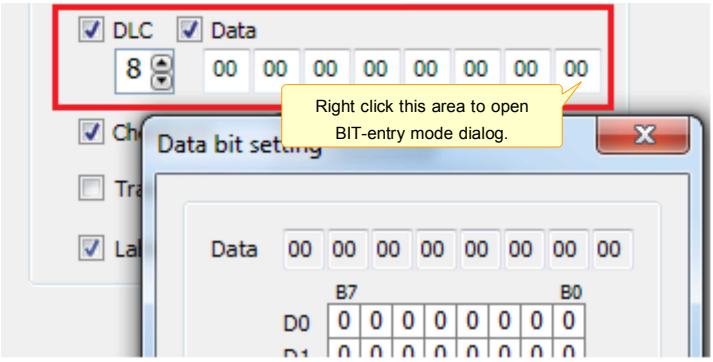
ID（LIN）

Enter an ID value.

DLC and Data (Common between CAN and LIN)

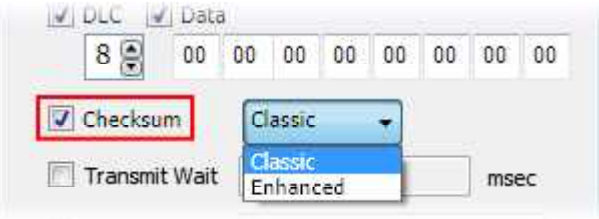
Specify the byte count of Data Length Code, and the value of Data.

If you right click the input area while entering Data, the BIT-entry mode dialog will open. (If you enter "*", you can set a specific data bit as " don ' t care ".)



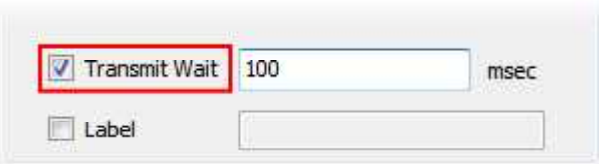
Checksum（LIN）

Select the type of checksum. (Classic or Enhanced)



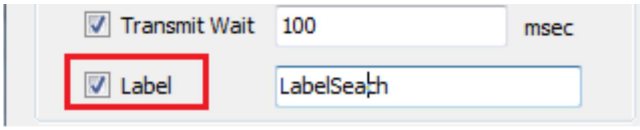
Transmit Wait (Common between CAN and LIN)

Specify the wait time before sending the data. (This item can be set only if Direction is Tx.)



Label (Common between CAN and LIN)

Specify the label.



1. 2. Entering the Replace Data

See “1.1.Search Conditions” for details.

1. 3. Execution Buttons

[Find Next (F)] Searches and moves the current row.

[Replace (R)] Executes the replace.

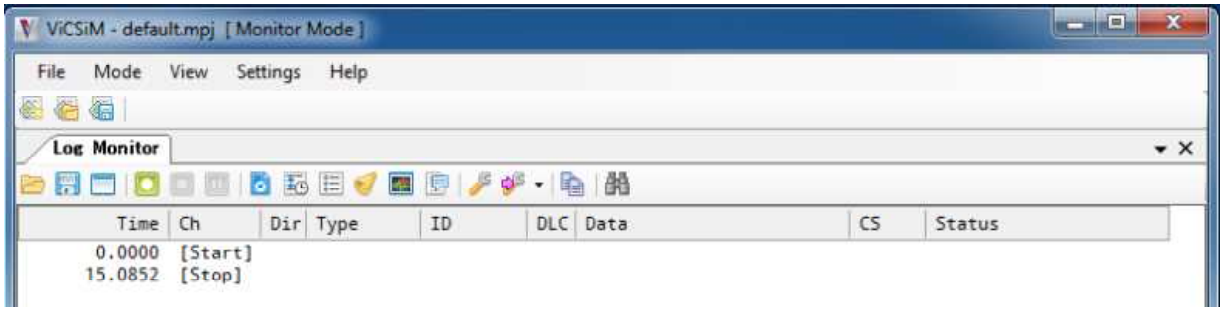
[Replace All (A)] Replaces all the data which match the search condition.

[Close (C)] Closes the replace dialog.

Chapter5 Monitor Mode

In Monitor Mode, logged frames are displayed using the whole window area.（For displayed items and operations, see “4-3 Log Monitor”.）

- Because this mode is for monitoring only, all of the frames are shown as Rx frames.
- You can choose to enable or disable ACK response.（See “6-1-4 Settings Menu, 1. Device Settings” for details.）

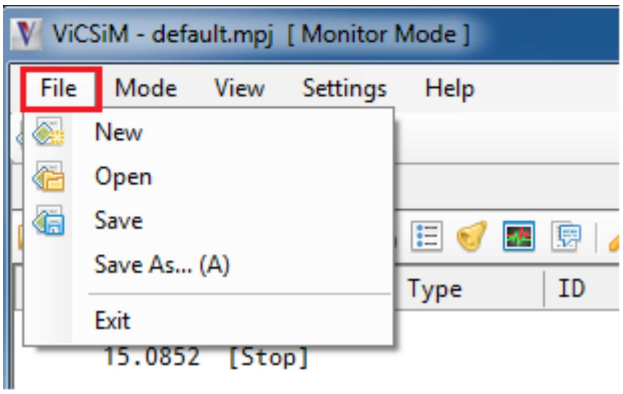


Chapter6 Menus and Projects

6-1 Menus

This section describes the menus available in the ViCSiM application software.

6-1-1 File Menu



1 . New Project

Creates a new project. (For details about projects, see " 6-2 Projects ".)

2 . Open Project

Opens a project previously saved.

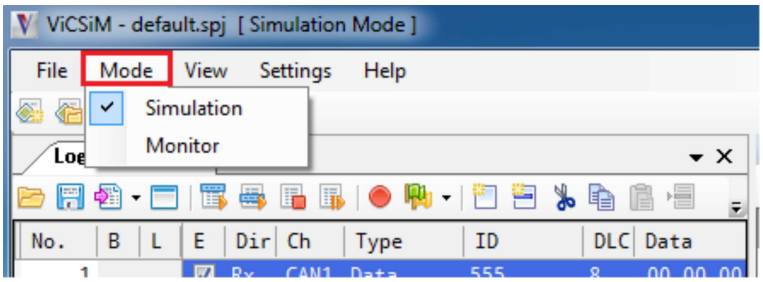
3 . Save Project

Saves the current project.

4 . Save Project As

Saves the current project in a different name.

6-1-2 Mode Menu



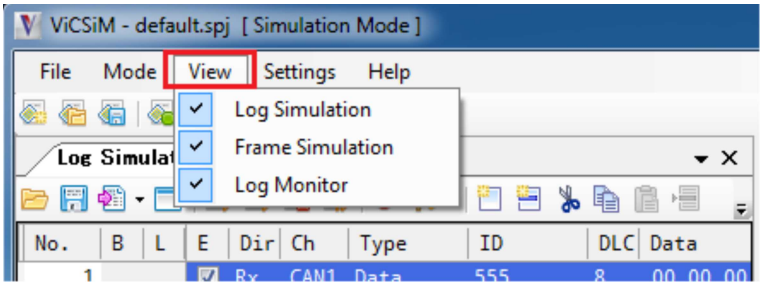
1 . Simulation

Runs the application in Simulation Mode. (See " Chapter 4 Simulation Mode " for details.)

2 . Monitor

Runs the application in Monitor Mode. (See " Chapter5 Monitor Mode " and " 4-3 Log Monitor " for details.)

6-1-3 View Menu



1 . Log Simulation

Opens Log Simulation area. (See " 4-4 Log Simulation " for details.)

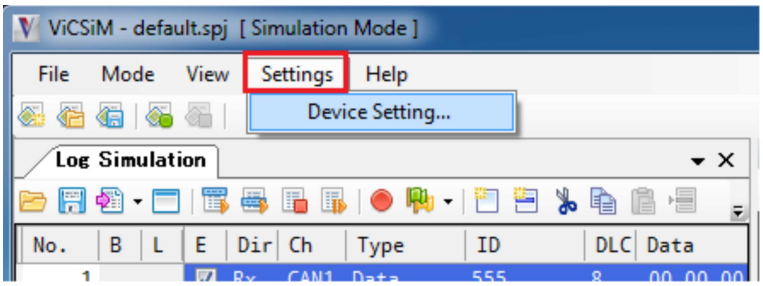
2 . Frame Simulation

Opens Frame Simulation area. (See " 4-2 Frame Simulation " for details.)

3 . Log Monitor

Opens Log Monitor area. (See " 4-3 Log Monitor " for details.)

6-1-4 Settings Menu



1. Device Settings

Use this menu item to make settings for the ViCSiM device.

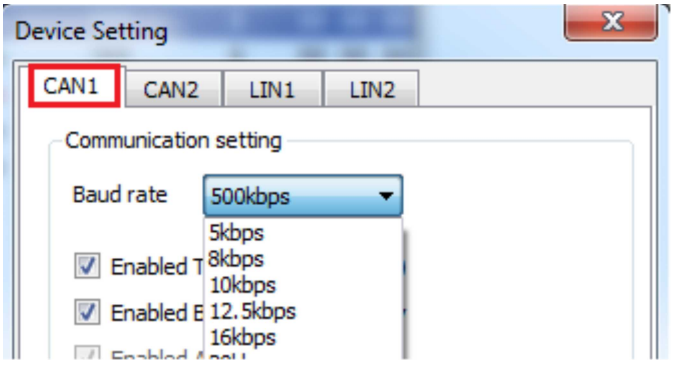
- Settings need to be made for each channel of CAN and LIN.

1. 1. Device Settings Dialog (CAN Tab)

Baud rate

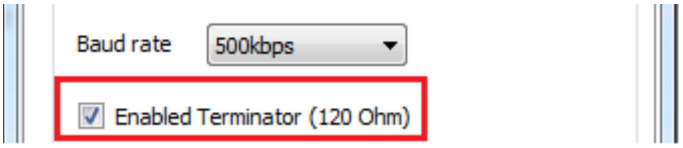
Set the communication baud rate of the channel.

Select an item from 5K to 1M BPS.



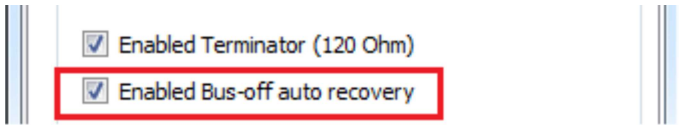
Termination resistor

Enables or disables the termination resistor.



Automatic recovery from bus-off

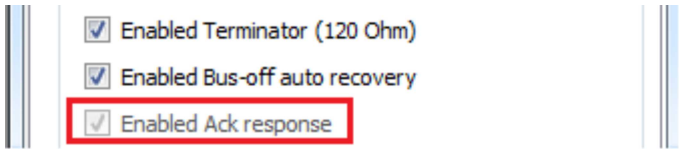
Enables or disables the automatic recovery from bus-off.



ACK response

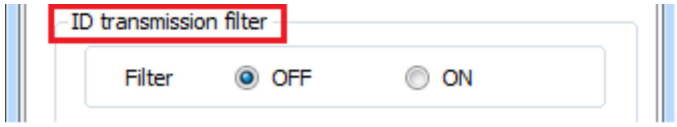
Enables or disables ACK response.

This item is always enabled in Simulation Mode. (Only switchable in Monitor Mode.)



ID-passing filter

Enables (turns ON) or disables (turns OFF) the ID-passing filter.

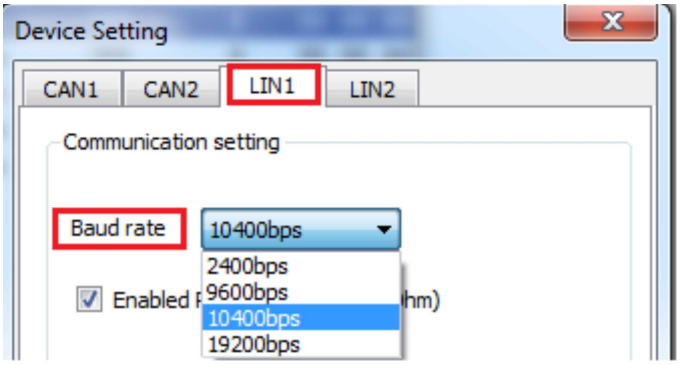


1. 2. Device Settings Dialog (LIN Tab)

Baud rate

Set the communication baud rate of the channel.

Select an item from 240 to 19200 BPS.

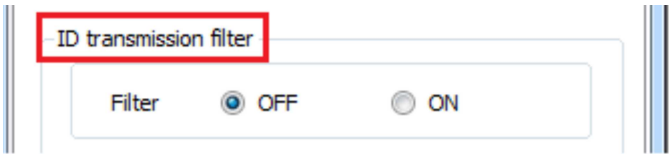


Pull-up resistor

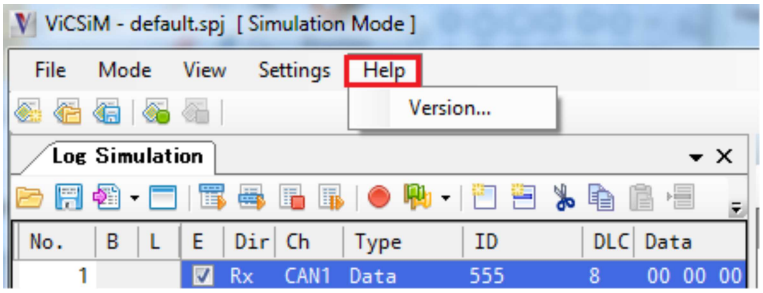
Enables or disables the pull-up resistor.

ID-passing filter

Enables (turns ON) or disables (turns OFF) the ID-passing filter.



6-1-5 Help Menu



1. Version Information

Shows the versions of ViCSiM software and firmware.

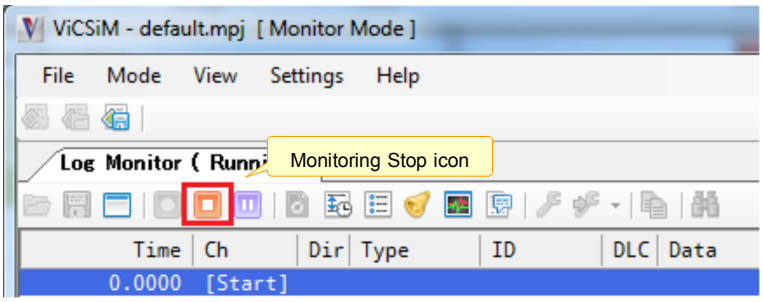
6-2 Projects

6-2-1 About ViCSiM Projects

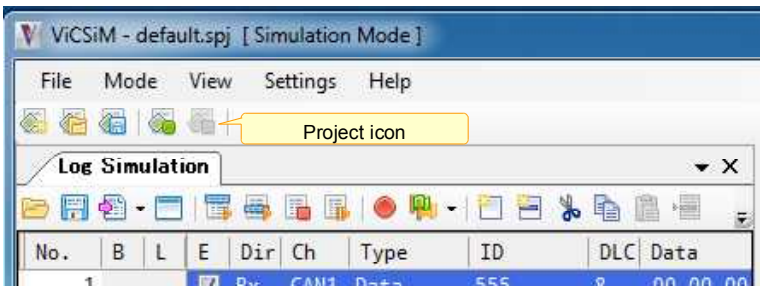
ViCSiM has three window areas (Log Simulation, Log Monitor and Frame Simulation), and each area has functions to save and read data and codes. Additionally, ViCSiM has the project files, to save and load the entire operation status of the application.

With projects, you can save and load the information of the window areas altogether.
Information of each window area can be saved and loaded apart from the project.

- You cannot load a project file while executing Log Monitor function (saving of the project is possible). **Stop Log Monitor to load a project file.**



Use the icon to access project files. (You can also use the File menu to access the files.)



Chapter7 Specifications

7-1 Hardware Specifications

7-1-1 Pin Assignment of the Connector (CAN/LIN Connector)

Pin Number	Signal	Description
1	VB	Power Input for LIN (+12V) *1
2	VB	Power Input for LIN (+12V) *1
3	(NC)	Unused *2
4	IN1	External Input 1 (5V TTL)
5	LIN2	LIN2
6	(NC)	Unused *2
7	CAN2 H	ch2 CANH
8	CAN1 H	ch1 CANH
9	GND	GND
10	GND	GND
11	IN2	External Input 2 (5V TTL)
12	(Reserve)	Unused (Reserved) *2
13	LIN1	LIN1
14	CAN2 L	ch2 CANL
15	CAN1 L	ch1 CANL

*1 Power input for LIN (+12V).

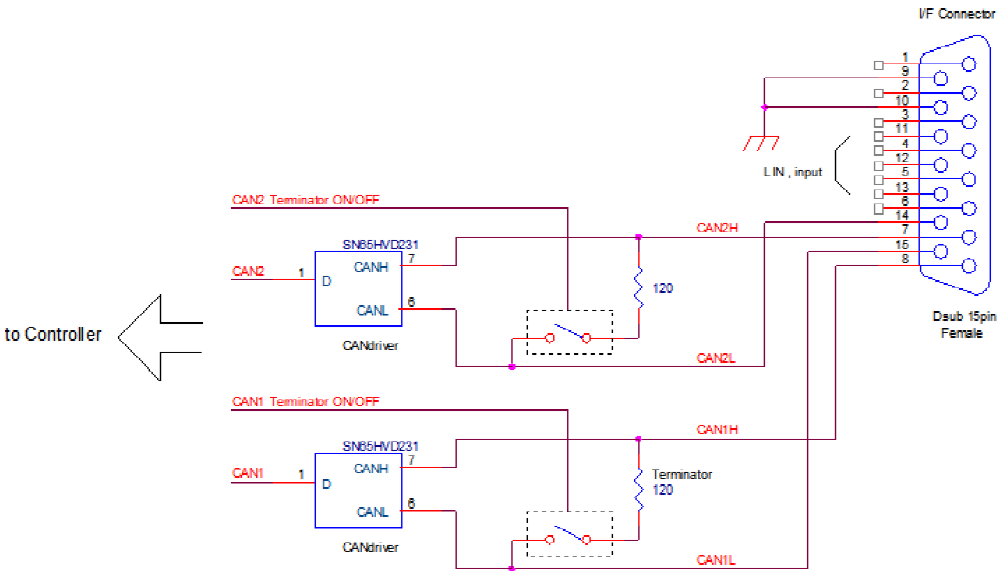
For safety, the device cannot supply (output) power to EUC or other connection destination of LIN communication.

*2 "(N.C)" and "(Reserve)" pins are unused, or reserved for the future use. **DO NOT CONNECT ANYTHING TO THESE PINS.**

Socket: Dsub15pin female connector (JAE DALC-J15SAF-20L6E, fixing metal #4-40)

Plug : Dsub15pin male connector, fixing screw #4-40

7-1-2 Schematic of CAN



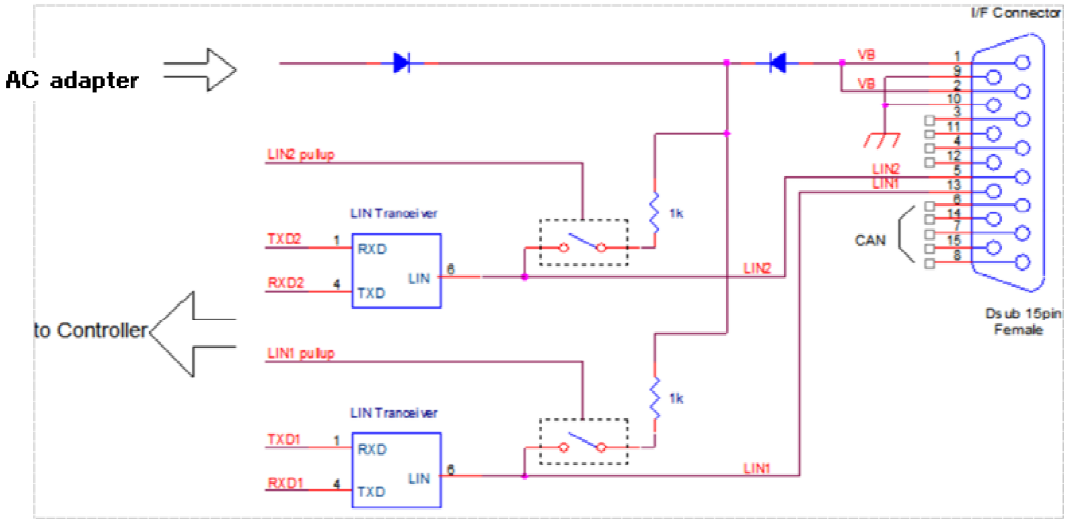
7-1-3 Schematic of LIN

When using LIN, please **use the provided AC adapter (DC12V)**.

It will be the power supply for LIN. (See the pictures in "1. Introduction" also.)

If you want to use the device without the AC adapter, supply +12V (100mmA max) from the VB ports (1st and 2nd pin) of the CAN/LIN connector.

Please note that you cannot supply power from this connector to the connection destination of LIN communication.



* LIN communication will not work if power supply from the AC adapter or the connector is unavailable.

7-1-4 LED

The device shows the operation status with blinking and lighting of the blue LED.

Blinking (1 second interval) ··· In normal operation

Blinking (irregularly) ··· USB communication is in progress (LED blinks corresponding to the data transmission/reception through USB)

On->Off ··· Updating the program (On) -> Update completed (Off)

7-1-5 Specifications

(1) Communications

USB	ch	1ch
	Connector	TypeB
	Interface Standard	USB 2.0 High-Speed
CAN	Connector	Dsub15pin
	ch	2ch
	Interface Standard	ISO 11898 2.0B High-speed CAN (up to 1 Mbit/s)
	Mounted Device	TI SN65HVD231
	Terminator	Available, can be switched ON and OFF
LIN	Connector	Dsub15pin
	ch	2ch
	Interface Standard	LIN specification 2.2
	Mounted Device	NXP TLE6258-2
	Bit rates	20kbps max
	Pullup	Available, can be switched ON and OFF
	Power Supply for LIN (VB)	Connector “Vsup” : Provided AC Adapter (DC12V) Connector “CAN/LIN” External Input (DC12V (8V to 18V), 100mA max) * For the information about how to provide power for LIN, see “7-1-3 Schematic of LIN”

(2) Power Supply

Power Supply	Power	Vbus（+5V DC） 490mA max
	Power for LIN	DC12V 100mA max Provide DC12V (8V to 18V) from the "Vsup" connector of the provided AC adapter, or from the "CAN/LIN" connector.

(3) Environment

Operating Temperature	0 ° C to 50 ° C (No dew condensation)
Storage Temperature	-20 ° C to 50 ° C (No dew condensation)

(4) Dimensions

External Dimensions	120 (w) x 95 (d) x 40 (h) mm (Without cables and projections)
Weight	245g (Main body only)

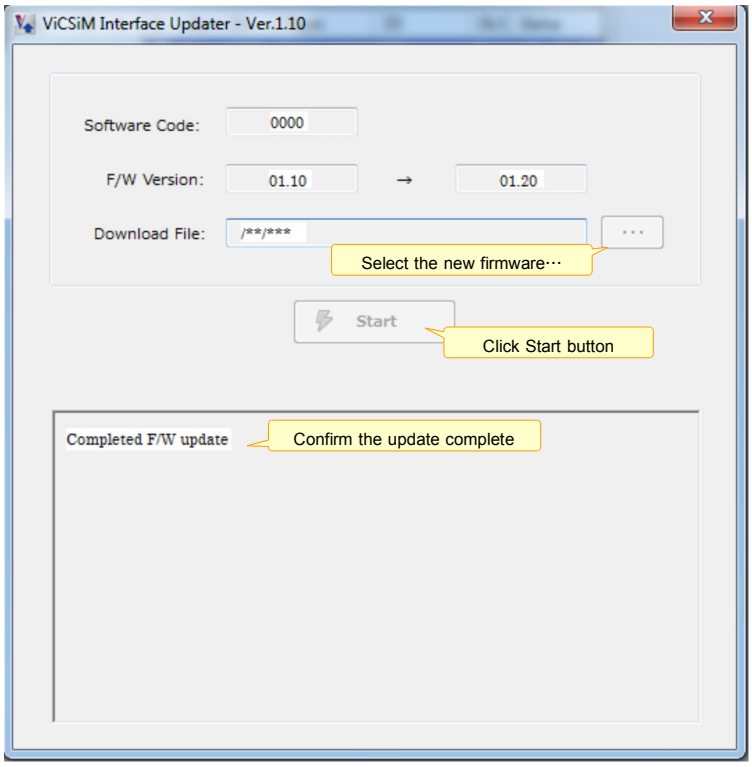
7-2 Updating the Firmware

This section describes how to update the firmware of the ViCSiM device.

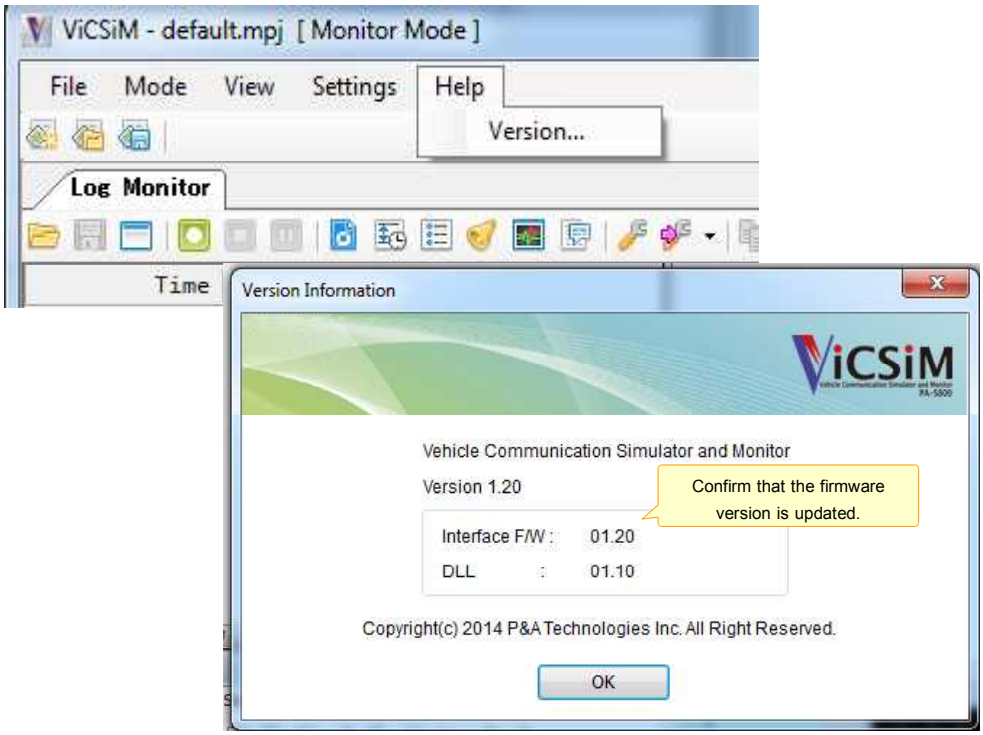
•Before the update operation, please exit the ViCSiM application software.

1. Start “ ViCSiM Interface Updater ”. (Select Start menu > All Programs -> P&A Technologies Inc > ViCSiM > ViCSiM Interface Updater to start the updater.)

2. Select the newer version of the firmware (extension “*.mot ”), and click Start button. (The firmware file is in “ FW ” folder of the support CD.)



3. Start the ViCSiM application software, select Version Information from Help menu, and confirm that the firmware has been updated.



7-3 Maintenance of the Product

◆ For maintenance and repair of the hardware products, we, P&A Technologies, ask you to kindly send the products to us; we will maintenance or repair the products, and send them back to you.

◆ If the products are used under the conditions described in the warranty, and any failure occurs during the warranty period, the products will be repaired at no charge. Please note that repairing fee will be charged for the products repairable but with expired warranty period, or if the products have been damaged by the use out of the warranty conditions.

◆ For the repair and maintenance request, please pack the products as secure as (or more secure than) the original package, with the warranty card. Write "Precision Instruments - Handle With Care" on the package, and send it to us. Before sending the package, please contact our reception staff so that the package will not be lost. We cannot be responsible for any accidents during the transportation of the package. Please use a safe transportation method.

◆ The above subjects are applied to the products used in Japan. For the maintenance and technical services when using our products outside of Japan, please contact us.

7-4 Product Inquiries

If you have following inquiries about this product , please contact your dealer or P&A Technologies.

- The product has initial defects or missing items
- Product repair
- Supplies and related products
- Consultation about developing custom products using this product

Technical Support

For technical support, please contact us by Fax, mail or E-mail. Please describe issues specifically.

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CAN/LIN Communication Simulator and Monitor ViCSiM User's Manual

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