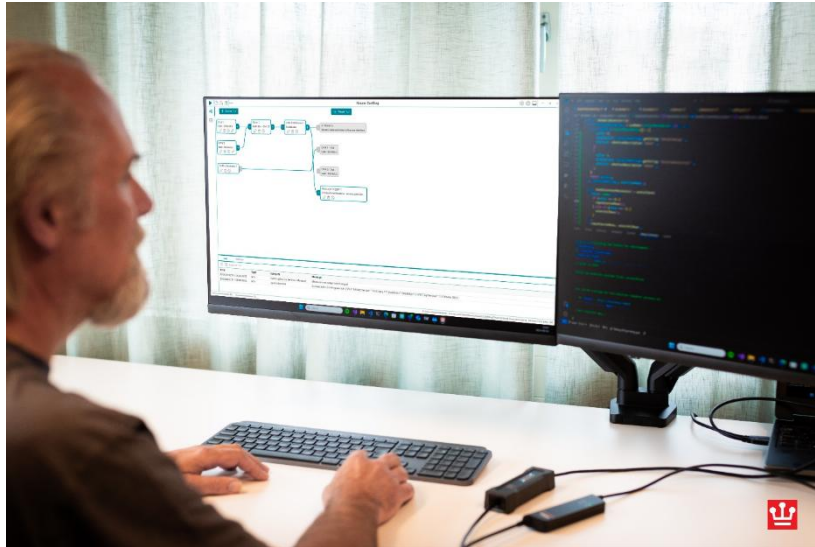




# Kvaser CanKing User Guide



Kvaser CanKing - A free of charge, general-purpose CAN bus analyzer. Works with all Kvaser CAN interfaces as well as the Kvaser virtual CAN bus.

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<https://www.kvaser.com>

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# 1 Installation – Kvaser CanKing Distributions

Before you can use Kvaser CanKing, you must download and install the Kvaser Drivers. Kvaser CanKing can be downloaded from our homepage: Here you can find all Kvaser downloadable software and drivers.

<https://kvaser.com/download/>

Instructions for how to install the Kvaser drivers are included in the respective software and not covered by this guide.

## 1.1 Kvaser CanKing, Windows x64

Distributed as a Windows installer, an .exe file.

Prerequisites:

- Kvaser Drivers for Windows

## 1.2 Kvaser CanKing, Linux for Intel x64

Distributed as a Debian package, a .deb file.

Prerequisites:

- Kvaser Drivers for Linux
- Kvaser SDK for Linux

CanKing does not work with SocketCAN, you must use the Kvaser Drivers.

## 1.3 Kvaser CanKing, Linux for ARM 64

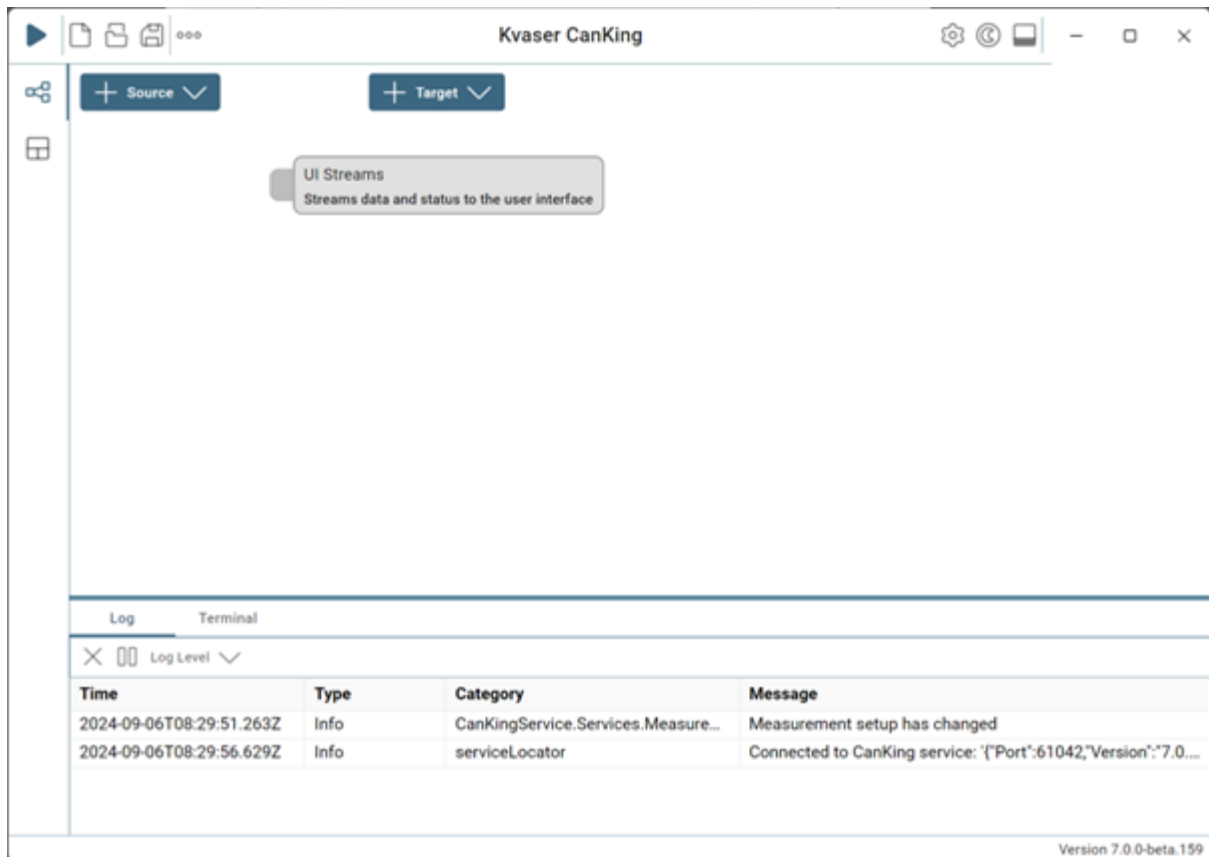
Distributed as a Debian package, a .deb file.

Prerequisites:

- Kvaser Drivers for Linux
- Kvaser SDK for Linux

CanKing does not work with SocketCAN, you must use the Kvaser Drivers.

## 2 CanKing Layout

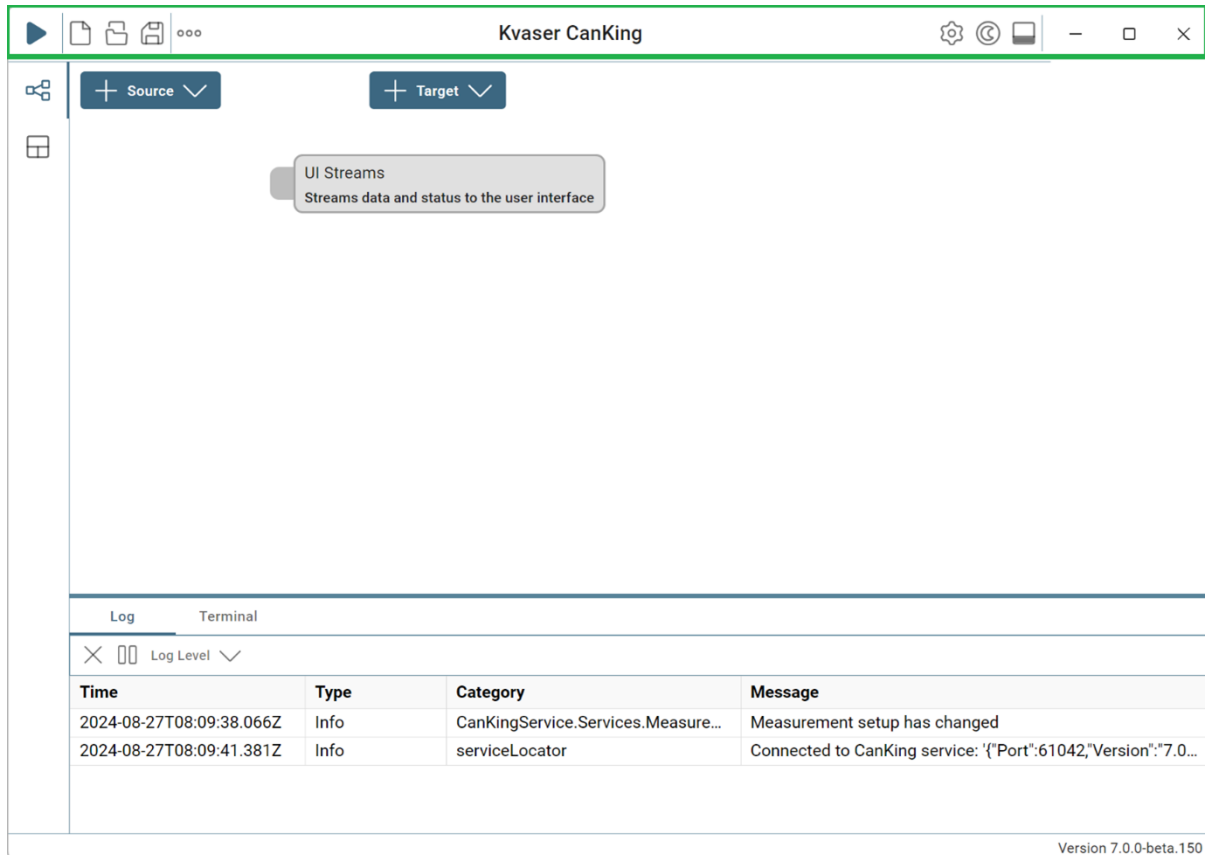


When starting CanKing (without opening a project file), you will see the default layout.

There are four major areas:

- Control area
- Setup area
- Measurement area
- Log and Terminal area

## 3 CanKing Control Area



### 3.1.1 Start / Stop measurement

A measurement can be started by clicking on the start button at the top-left corner of the main window, or by selecting 'More->Measurement->Start' from the main menu, or by pressing 'F9'.

A measurement can be stopped by clicking on the stop button at the top-left corner of the main window, or by selecting 'More->Measurement->Stop' from the main menu, or by pressing 'F12'.

When a measurement is started then:

- All enabled CAN Channels try to connect to their hardware interfaces.
- All enabled Traffic Generators start sending data.
- All enabled CAN Message Loggers with start triggers set to Start Measurement begin logging.

When a measurement is stopped then:

- All connected CAN Channels disconnect from their hardware interfaces.
- All started Traffic Generators stops sending data.
- All started CAN Message Loggers stops logging.

### 3.1.2 New Project

A new CanKing project can be created by clicking on the 'New' button in the main window's title bar, or by selecting 'More->File->New' from the main menu, or by pressing 'Ctrl + N'.

### 3.1.3 Open Project

A CanKing project can be opened by clicking on the 'Open' button in the main window's title bar, or by selecting 'More->File->Open' from the main menu, or by pressing 'Ctrl + O'.

### 3.1.4 Save Project

The current CanKing project can be saved by clicking on the 'Save' button in the main window's title bar, or by selecting 'More->File->Save' from the main menu, or by pressing 'Ctrl + S'.

### 3.1.5 More...

**Save As** The current CanKing project can be saved to new file by selecting 'More->File->Save As' from the main menu, or by pressing 'Ctrl + Shift + S'.

**Zoom In** The user interface can be zoomed in by selecting 'More->View->Zoom In' from the main menu, or by pressing 'Ctrl + +'.

**Zoom Out** The user interface can be zoomed out by selecting 'More->View->Zoom Out' from the main menu, or by pressing 'Ctrl + -'.

**Reset Zoom** The user interface's zoom factor can be reset by selecting 'More->View->Reset Zoom' from the main menu, or by pressing 'Ctrl + 0'.

**Toggle Full Screen** The main window can enter Full Screen mode selecting 'More->View->Toggle Full Screen Mode' from the main menu, or by pressing 'F11'.  
The main window can leave Full Screen mode selecting 'More->View->Toggle Full Screen Mode' from the main menu, or by pressing 'F11', or by clicking on the 'Exit Full Screen' button in the top-right corner of the main window.

### 3.1.6 Settings

The Edit Settings dialog can be opened by selecting 'More->Settings', or by clicking on the 'Settings' button in the main window's title bar, or by pressing 'Ctrl + ,'.

The following fields exist in the Edit Settings dialog:

**Theme** A select box to select the user interface theme. Possible themes are 'Light Mode' and 'Dark Mode'.

**Language** A select box to select the language to be used in the user interface.

Numeric Base	A select box to select the default numeric base for message identifiers and message data. Possible values are 'Hexadecimal' and 'Decimal'.
Closing Action	A select box to select what action to perform when the application is closing. Possible values are 'Prompt for action', 'Stop measurement and clear setup' and 'Keep any measurement running'.

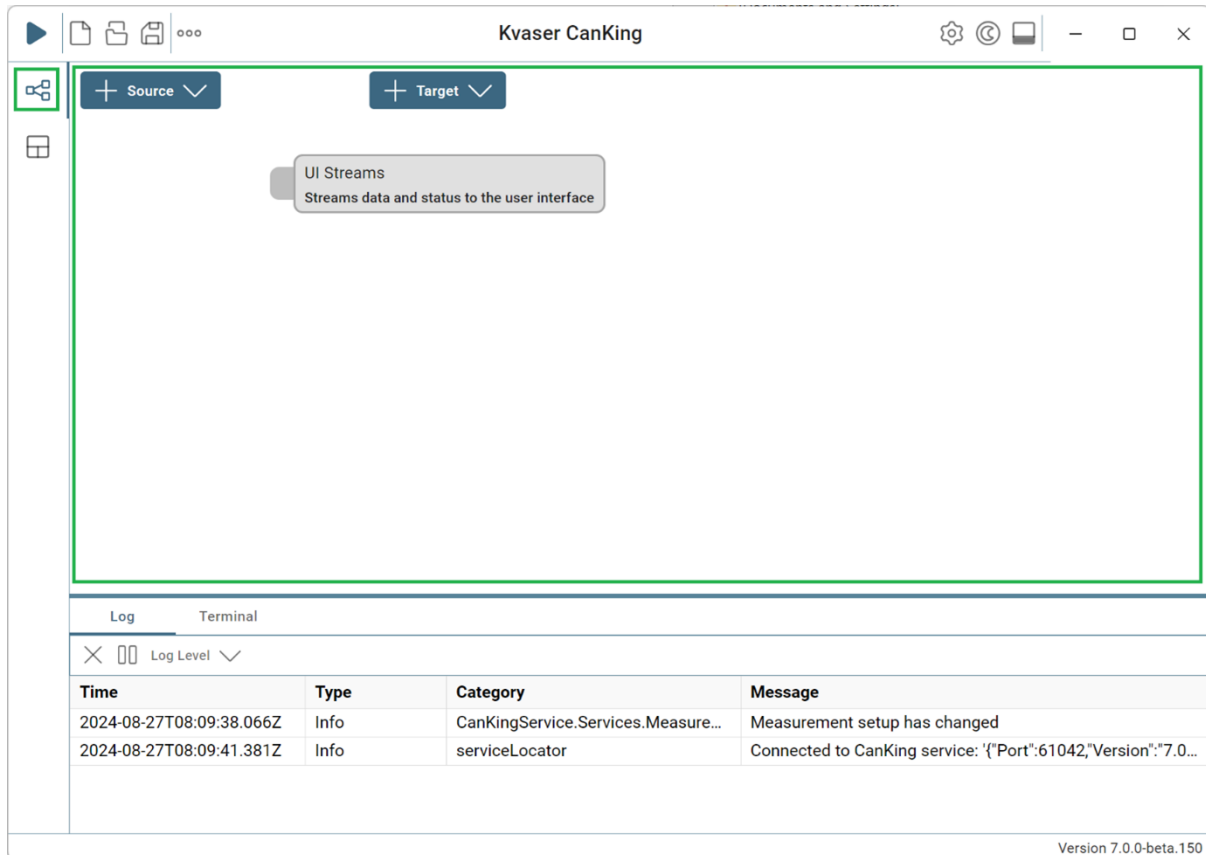
### 3.1.7 Dark mode/Light mode

Possible themes are 'Light Mode' and 'Dark Mode'

### 3.1.8 Toggle tools panel

The 'Toggle tools panel' button either shows or hides the lower tools panel where you find the Log and Terminal views.

## 4 CanKing Measurement Area



### 4.1 Open Measurement Setup

The Measurement Setup view is opened by clicking on the 'Measurement Setup' button in the navigation bar.

### 4.2 Source – Add a new data source

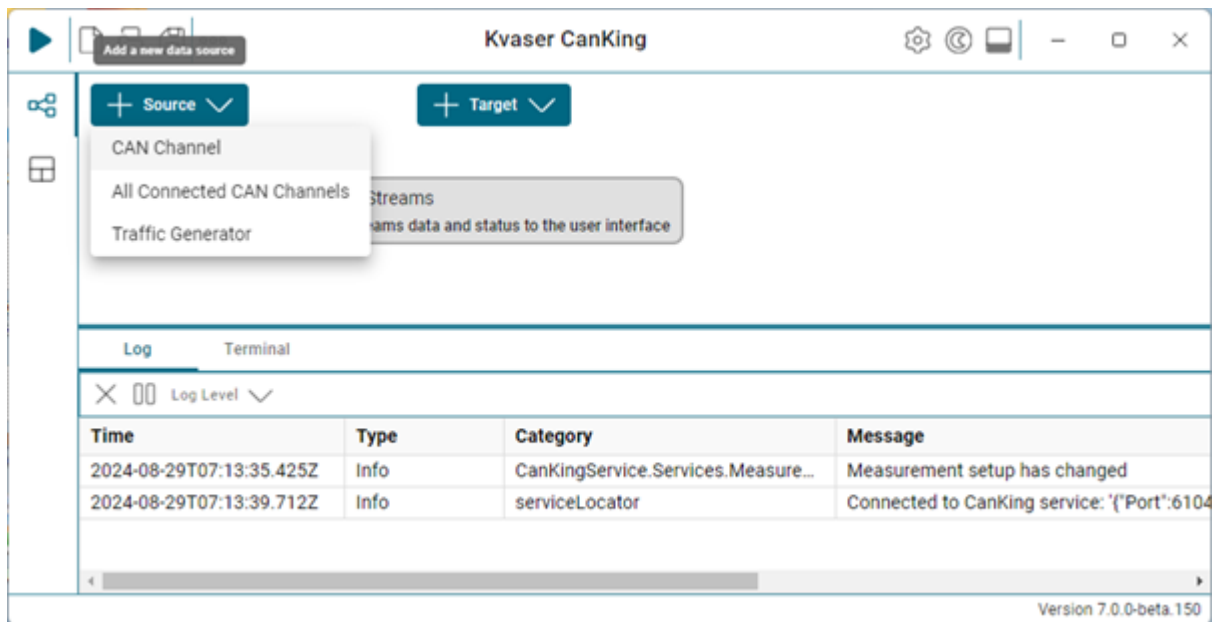
Available data sources are:

**CAN Channel**                      A new CAN Channel node can be added by clicking on the '+ Source' button and selecting 'CAN Channel'.

**All Connected CAN Channels**                      All CAN channels that are connected to the computer can be added at the same time by clicking on the '+ Source' button and selecting 'All Connected CAN Channels'.

**Traffic Generator**                      A new Traffic Generator node can be added by clicking on the '+ Source' button and selecting 'Traffic Generator'.

## 4.3 CAN Channel



### 4.3.1 Add CAN Channel

Adding a CAN channel can be done by clicking on Source and selecting CAN Channel.

### 4.3.2 Remove CAN Channel

The CAN Channel node can be removed from the measurement setup by right-clicking on the CAN Channel node and selecting 'Remove' from the context menu or by clicking on the 'Remove' button inside the node.

### 4.3.3 Disable/Enable CAN Channel

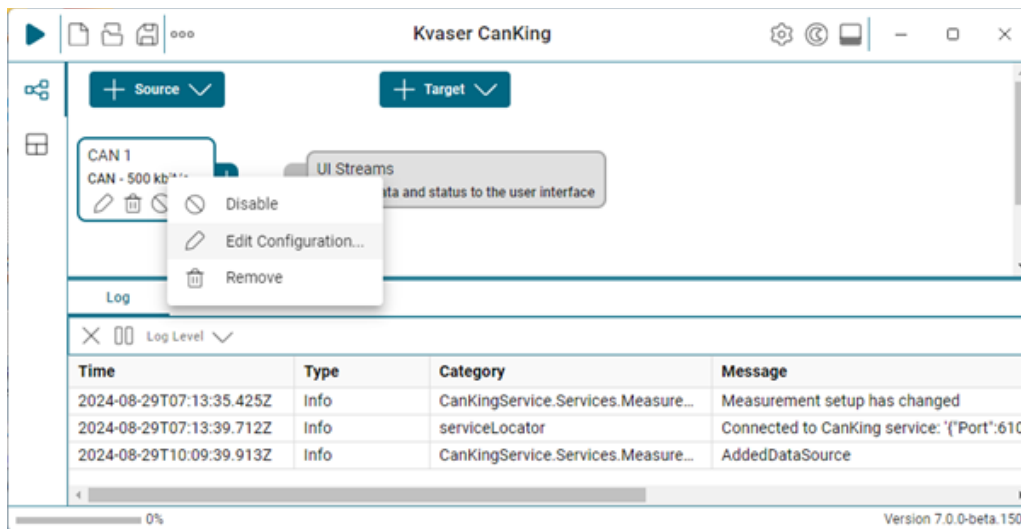
The CAN Channel node can be disabled/enabled by right-clicking on the CAN Channel node and selecting 'Disable'/'Enable' from the context menu or by clicking on the 'Disable/Enable' toggle button inside the node.

### 4.3.4 Set Bus On/Off for CAN Channel

The CAN Channel can be set to 'Bus On' or 'Bus Off' by clicking on the 'Bus On/Off' toggle button inside the node.



### 4.3.5 Edit CAN Channel



The Edit CAN Channel Configuration dialog can be opened by right-clicking on the CAN Channel node and selecting 'Edit Configuration...' from the context menu or by clicking on the 'Edit' button inside the node.

### 4.3.6 CAN Channel Configuration

**CAN Channel**
✕

---

Name \*  
CAN 1

Interface \*      S/N  
0 - Kvaser PCIecan 2xHS v2 - test home 1      15117       Locked to S/N      Rescan

CAN Mode \*      Access Mode \*  
CAN      Init Access       Silent Mode

Bus Speed \*      SJW \*  
500 kbit/s, 75%      4      Bit Timing

Bit timing: TSeg1=11, TSeg2=4

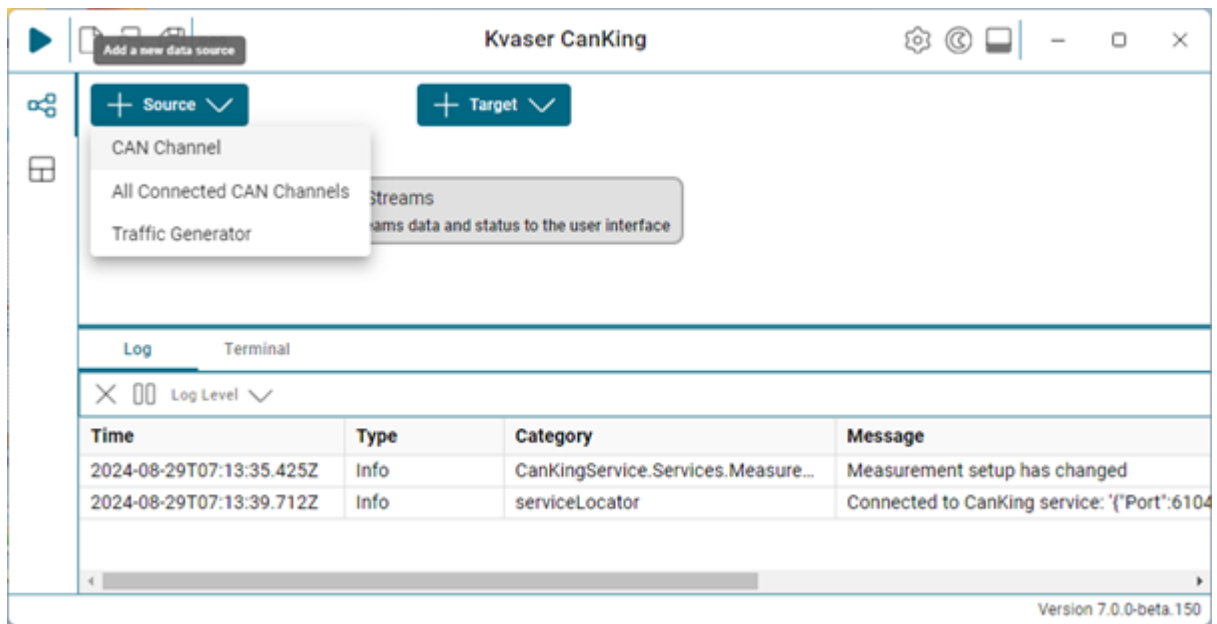
Create
Cancel

The following fields and functions exist in the Edit CAN Channel Configuration dialog:

- |           |  |
|-----------|--|
| Name      | A name that will be used in CanKing to reference this node.                |
| Interface | A select box to point out which hardware interface and channel to be used. |

S/N	A read-only field displaying the serial number of the selected hardware interface.
Locked to S/N	A check box that locks the CAN Channel to the interface with the specified serial number instead of locking to the CANlib channel number. Selecting this option will guarantee that the CAN Channel always uses the same hardware interface.
Rescan	A button that triggers a rescan of the computer for added hardware interfaces.
CAN Mode	<p>A select box to select CAN mode. Possible values are 'CAN', 'CAN FD' and 'CAN FD NONISO'.</p> <p>When 'CAN Mode' is set to 'CAN FD' or 'CAN FD NONISO' then the 'Bus Speed' will be replaced with 'Bus Speed Arbitration Phase' and a 'Bus Speed Data Phase' will be added.</p>
Access Mode	<p>A select box to select access mode to be used when initializing the interface. Possible values are 'Init Access', 'No Init Access' and 'Exclusive Access'.</p> <p>'Init Access' will try to initialize the interface by setting the selected bus speed. If any other application is connected to the same interface with init access, then this will fail.</p> <p>'No Init Access' will prevent CanKing from setting the interface's bus speed.</p> <p>'Exclusive Access' will make sure that only CanKing is connected to the interface.</p>
Silent Mode	A check box that makes the interface act in silent mode. This setting is disabled if the interface doesn't support silent mode.
Bus Speed	A select box with a predefined list of bus speeds.
SJW	A select box with possible SJW values for the selected bus speed.
Bit Timing	<p>A button that opens a table with all possible bit timing combinations for the selected bit rate.</p> <p>This table can be used to select bit timings that aren't listed in the 'Bus Speed' select box.</p>

## 4.4 Traffic Generator



### 4.4.1 Adding Traffic Generator

Adding a Traffic Generator can be done by clicking on Source and selecting Traffic Generator.

The Edit Traffic Generator Configuration dialog can be opened by right-clicking on the Traffic Generator node and selecting 'Edit Configuration...' from the context menu or by clicking on the 'Edit' button inside the node.

### 4.4.2 Remove Traffic Generator

The Traffic Generator node can be removed from the measurement setup by right-clicking on the Traffic Generator node and selecting 'Remove' from the context menu or by clicking on the 'Remove' button inside the node.

### 4.4.3 Disable/Enable Traffic Generator

The Traffic Generator node can be disabled/enabled by right-clicking on the Traffic Generator node and selecting 'Disable'/'Enable' from the context menu or by clicking on the 'Disable/Enable' toggle button inside the node.

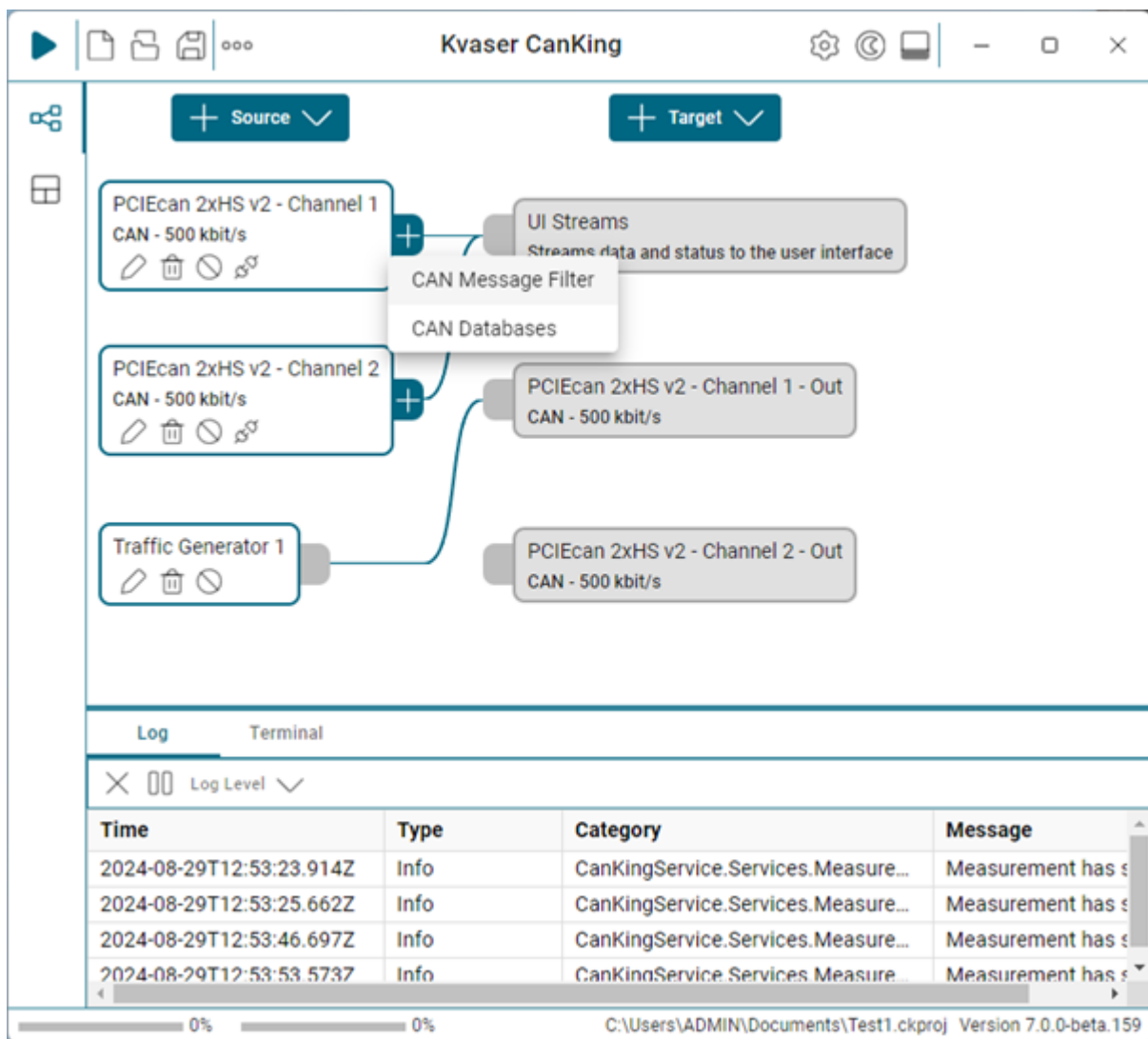
### 4.4.4 Traffic Generator Configuration

The following fields and functions exist in the Edit Traffic Generator Configuration dialog:

Field	Description
Name	A name that will be used in CanKing to reference this node.
Channel	A select box to select which CAN Channel to send out CAN messages on.
CAN Identifier	A set of fields to control the CAN identifier(s) to be used in the CAN messages.
Constant Identifier	The same identifier is used for every message.
Random Identifier	Identifier to use is picked by taking a random identifier from a specified range.

Scan identifier	Identifier to use is picked from a specified range.
Frame Definition	A set of fields to control what kind of CAN frame to send out and what data it should contain.
Frame type	Possible frame types are: <ul style="list-style-type: none"><li>• CAN</li><li>• CAN FD</li><li>• ERRORFRAME.</li></ul>
	For a classic CAN frame it's possible to select <ul style="list-style-type: none"><li>• Remote Request Frame</li><li>• Single Shot</li></ul>
	For a CAN FD frame it's possible to select: <ul style="list-style-type: none"><li>• BRS - bit rate switch</li><li>• Single Shot</li></ul>
Frame data	Defined by selecting message data length and by editing the message raw data by entering the value of each byte. Both the message data length and the message raw data can be randomized.
Transmission Interval	A set of fields to control the transmission interval.
Constant interval	The same interval is used between each transmission.
Random interval	Interval to use is picked by taking a random interval from a specified range.
Scan interval	Interval to use is picked from a specified range.
Number of Messages	Specifies a fixed number of messages to be sent out or an unlimited number of messages.
Burst Size	A set of fields to control the burst size, i.e. the number of messages to be sent out at every sample point.
Constant burst size	The same number of messages are sent out at every sample point.
Random burst size	Burst size to use is picked by taking a random value from a specified range.

## 4.5 Data Processors



Available data processors are:

- CAN Message Filter
- CAN Databases

### 4.5.1 Re-organize data processor nodes

Data processors can be re-organized in the measurement setup by changing the connections between the nodes. This can be done either by drag & drop or by editing the configuration of a receiving node and changing its sources list.

### 4.5.2 Data Processors - CAN Message Filter

#### 4.5.2.1 Add CAN Message Filter

A new CAN Message Filter node can be added by clicking on a '+' button on any of the nodes in the measurement setup and selecting 'CAN Message Filter'. The new CAN Message Filter node will be connected to the node that was clicked on.

#### 4.5.2.2 Remove CAN Message Filter

The CAN Message Filter node can be removed from the measurement setup by right-clicking on the CAN Message Filter node and selecting 'Remove' from the context menu or by clicking on the 'Remove' button inside the node.

#### 4.5.2.3 Disable/Enable CAN Message Filter

The CAN Message Filter node can be disabled/enabled by right-clicking on the CAN Message Filter node and selecting 'Disable'/'Enable' from the context menu or by clicking on the 'Disable/Enable' toggle button inside the node.

### 4.5.3 CAN Message Filter Features

The Edit CAN Message Filter Configuration dialog can be opened by right-clicking on the CAN Message Filter node and selecting 'Edit Configuration...' from the context menu or by clicking on the 'Edit' button inside the node.

The following fields and functions exist in the Edit CAN Message Filter dialog:

Name	A name that will be used in CanKing to reference this node.
Filter Type	A radio button group with one button for 'Pass Filter' and one button for 'Block Filter'
Std CAN Identifiers	A text field to list with standard (11-bit) CAN identifiers that should be filtered out. The identifiers can be listed individually as a comma separated list or in ranges, for example the string 1,2,3,6-10 will filter out identifiers 1, 2, 3 and 6 to 10.
Ext CAN Identifiers	A text field to list which extended (29-bit) CAN identifiers that should be filtered out. The identifiers can be listed individually as a comma separated list or in ranges, for example the string 1,2,3,6-10 will filter out identifiers 1, 2, 3 and 6 to 10.
Sources	A check box list with all measurement setup nodes that can be connected as sources to this node.

## 4.5.4 Data Processors - CAN Databases

### 4.5.4.1.1 Add CAN Databases

A new CAN Databases node can be added by clicking on a '+' button on any of the nodes in the measurement setup and selecting 'CAN Databases'. The new CAN Databases node will be connected to the node that was clicked on.

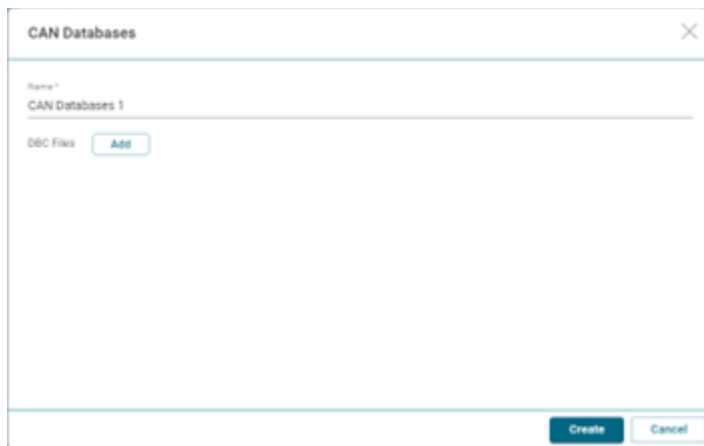
### 4.5.4.2 Remove CAN Databases

The CAN Databases node can be removed from the measurement setup by right-clicking on the CAN Databases node and selecting 'Remove' from the context menu or by clicking on the 'Remove' button inside the node.

### 4.5.4.3 Disable/Enable CAN Databases

The CAN Databases node can be disabled/enabled by right-clicking on the CAN Databases node and selecting 'Disable'/'Enable' from the context menu or by clicking on the 'Disable/Enable' toggle button inside the node.

## 4.5.5 CAN Databases Features



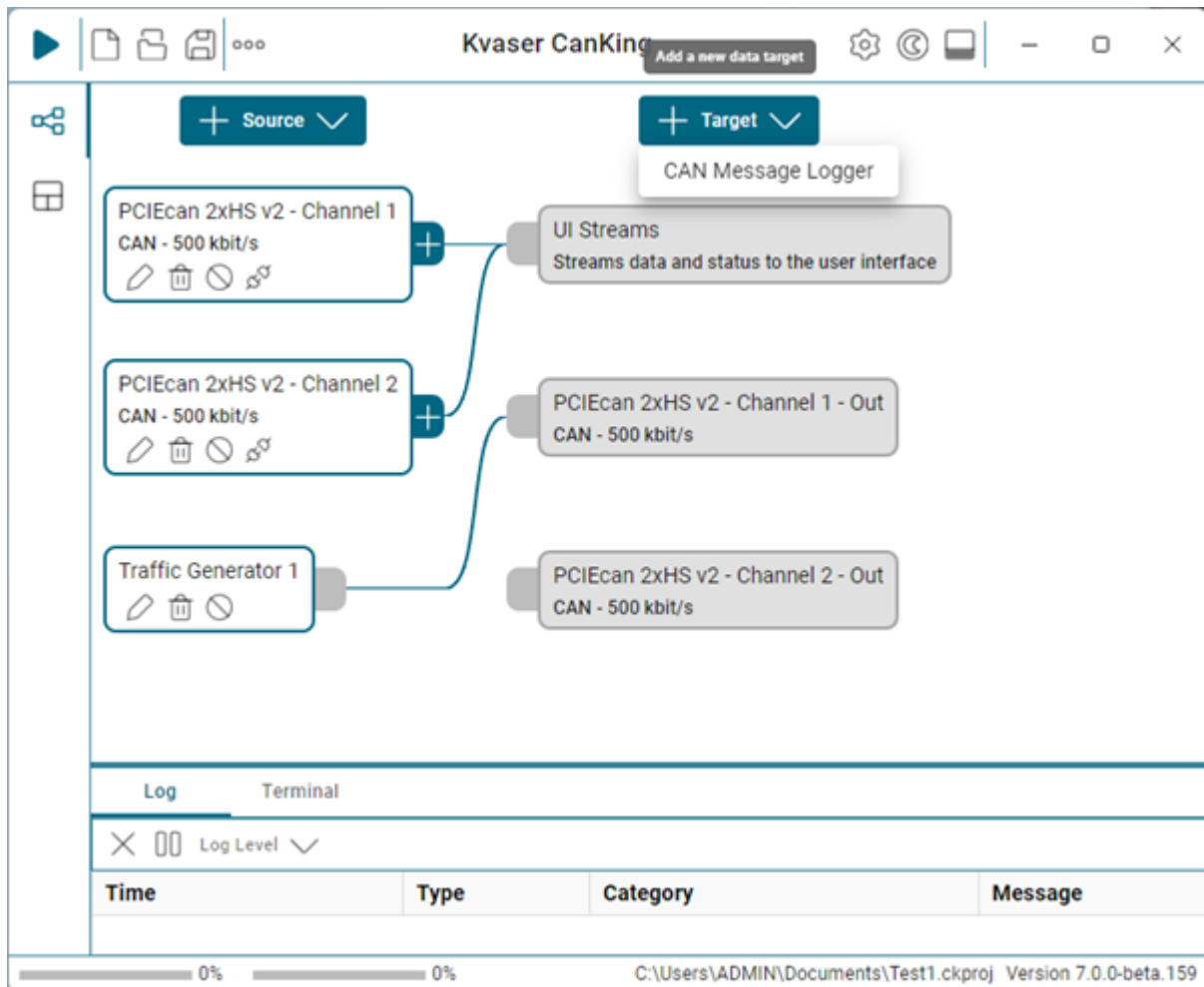
The Edit CAN Databases Configuration dialog can be opened by right-clicking on the CAN Databases node and selecting 'Edit Configuration...' from the context menu or by clicking on the 'Edit' button inside the node.

The following fields and functions exist in the Edit CAN Databases dialog:

Field	Description
Name	A name that will be used in CanKing to reference this node.
DBC Files	An 'Add' button to browse and add database files and a list of selected files.
Sources	A check box list with all measurement setup nodes that can be connected as sources to this node.



## 4.6 Data Targets



Available data targets are:

- UI Streams
A read-only node that cannot be added or removed. It is always present and represents a data stream to the user interface in CanKing.
- CAN Output Channel
A read-only node that cannot be added or removed. It represents the output buffer of the 'CAN Channel' data source node. Every 'CAN Channel' data source node that isn't configured to be in silent mode will have a corresponding 'CAN Output Channel'.
- CAN Message Logger
A Logger node that can be added to one or more data streams.

### 4.6.1 CAN Message Logger

#### 4.6.1.1.1 Add CAN Message Logger

A new CAN Message Logger node can be added by clicking on the '+ Target' button and selecting 'CAN Message Logger'.

#### 4.6.1.1.2 Remove CAN Message Logger

The CAN Message Logger node can be removed from the measurement setup by right-clicking on the CAN Message Logger node and selecting 'Remove' from the context menu or by clicking on the 'Remove' button inside the node.

#### 4.6.1.2 Disable/Enable CAN Message Logger

The CAN Message Logger node can be disabled/enabled by right-clicking on the CAN Message Logger node and selecting 'Disable'/'Enable' from the context menu or by clicking on the 'Disable/Enable' toggle button inside the node.

#### 4.6.1.3 CAN Message Logger Configuration

The screenshot shows the 'CAN Message Logger' configuration dialog box. It has a title bar with a close button (X) in the top right corner. The main content area is divided into several sections:

- Name\*:** A text input field containing 'Message Logger 1'.
- File Format\*:** A dropdown menu.
- File Name\*:** A text input field with a 'Browse...' button to its right.
- Options:** Three radio buttons: 'Append next available index to file name' (selected), 'Append timestamp to file name', and 'Overwrite any existing file'.
- START TRIGGER:** A section header with an expand/collapse arrow. It contains:
  - 'Trigger on Start Measurement' (selected radio button).
  - 'Trigger on timer' with a text input field and 'ms' unit.
  - 'Trigger on message' with a text input field, a checkbox for 'Use extended (29-bit) identifier', and a 'Select Message' button.
  - 'Trigger on signal value' with a text input field, a checkbox for 'Use extended (29-bit) identifier', and a 'Select Signal' button.
  - A comparison operator dropdown menu set to '='.
- STOP TRIGGER:** A section header with an expand/collapse arrow. It contains:
  - 'Trigger on Stop' (selected radio button) with a 'Collapse Stop Trigger' button next to it.
  - 'Trigger on timer' with a text input field and 'ms' unit.
  - 'Trigger on message' with a text input field, a checkbox for 'Use extended (29-bit) identifier', and a 'Select Message' button.
  - 'Trigger on signal value' with a text input field, a checkbox for 'Use extended (29-bit) identifier', and a 'Select Signal' button.
  - A comparison operator dropdown menu set to '='.

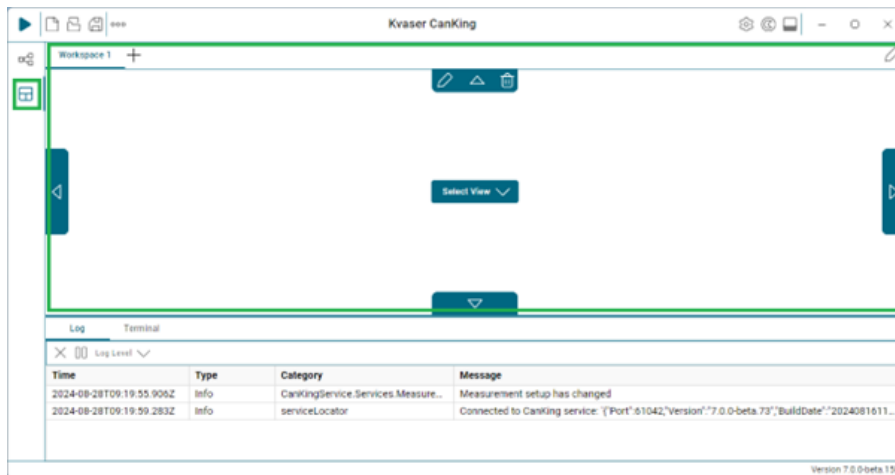
At the bottom right of the dialog, there are two buttons: 'Create' and 'Cancel'.

The Edit CAN Message Logger Configuration dialog can be opened by right-clicking on the CAN Message Logger node and selecting 'Edit Configuration...' from the context menu or by clicking on the 'Edit' button inside the node.

The following fields and functions exist in the Edit CAN Message Logger dialog:

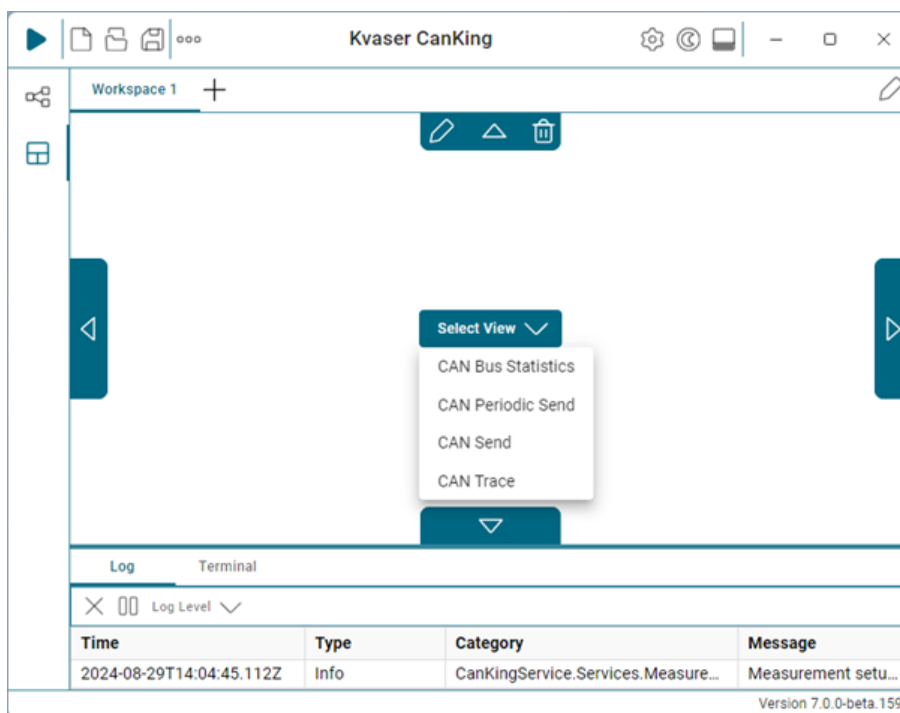
Name	A name that will be used in CanKing to reference this node.
File Format	A select box to select what file format the log file should use.
File Name	A text field and a 'Browse...' button to enter full path to the log file to be created.
File Name Action	A radio button group to decide what should happen if a file already exists with the specified file name. Possible options are: <ul style="list-style-type: none"><li>• Append next available index to the file name.</li><li>• Append timestamp to the file name.</li><li>• Overwrite any existing file.</li></ul>
Start Trigger	A radio button group to decide what detected event should start the logger. Possible triggers are: <ul style="list-style-type: none"><li>• Start Measurement: The logger starts when a new measurement is started.</li><li>• Timer: The logger starts at a specified time after the measurement was started.</li><li>• Message: The logger starts when a message with a specified CAN identifier has been received.</li><li>• Signal Value: The logger starts when a signal value expression has been fulfilled.</li></ul>
Stop Trigger	A radio button group to decide what detected event should stop the logger. Possible triggers are: <ul style="list-style-type: none"><li>• Stop Measurement: The logger stops when the measurement is stopped.</li><li>• Timer: The logger stops at a specified time after the logger was started.</li><li>• Message: The logger stops when a message with a specified CAN identifier has been received.</li><li>• Signal Value: The logger stops when a signal value expression has been fulfilled.</li></ul>
Sources	A check box list with all measurement setup nodes that can be connected as sources to this node.

## 5 Workspaces



### 5.1 Open Workspace Setup

The Workspace Setup view is opened by clicking on the Workspace Setup button in the navigation bar.



There are four Workspaces available:

- CAN Bus Statistics
- CAN Periodic Send
- CAN Send
- CAN Trace

## 5.2 Edit Workspace

The workspace can be set in 'Edit Mode' by selecting the 'Edit' toggle button in the top-right corner of the Workspaces view.

In edit mode it's possible to:

- Rename the workspace.
- Add/Remove panes inside the workspace.
- Change type of view displayed in the panes.

'Edit Mode' is closed by deselecting the 'Edit' toggle button in the top-right corner of the Workspaces view.

### 5.2.1 Add Workspace

A new workspace can be added by clicking on the '+' button displayed next to the right of the last workspace tab.

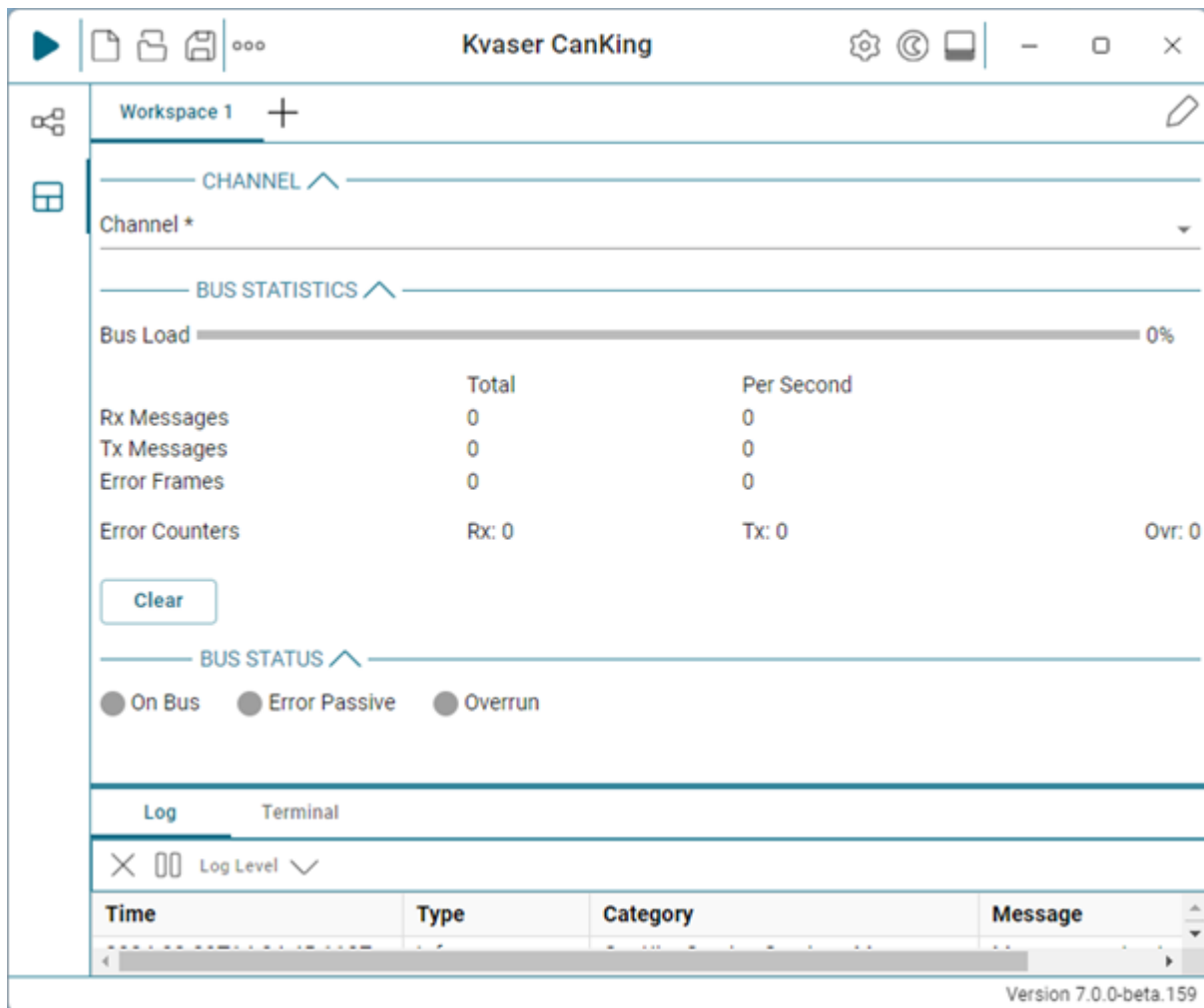
### 5.2.2 Remove Workspace

A workspace can be removed by hovering the mouse over the workspace name and clicking on the 'x' button that appears, or by pressing 'Ctrl + F4' to remove the currently selected workspace.

### 5.2.3 Rename Workspace

A workspace can be renamed by double-clicking on the workspace name.

## 5.3 CAN Bus Statistics Features



The CAN Channel to present statistics for is selected in a CAN Channel select box.

The following bus statistics are displayed:

- Bus load, the bus load in percentage.
- Rx Messages, number of received messages since the counter was cleared and the average number of received messages per second.
- Tx Messages, number of transmitted messages since the counter was cleared and the average number of transmitted messages per second.
- Error Frames, number of error frames since the counter was cleared and the average number of error frames per second.
- Error Counters, the Rx, Tx and Overrun error counters.

Bus statistics can be cleared by clicking on the 'Clear' button.

Bus status can be shown 'On Bus', 'Error Passive' and 'Overrun'.

## 5.4 CAN Periodic Send Features

The screenshot shows the Kvaser CanKing software interface. The main configuration area is titled 'CAN PERIODIC SEND'. It includes the following sections:

- CHANNEL**: A dropdown menu for selecting the CAN channel.
- CAN IDENTIFIER**: Radio buttons for 'Constant identifier' (set to 0), 'Random identifier', and 'Scan identifier' (From 0 To 7FF). A checkbox for 'Use extended (29-bit) identifier' is present.
- FRAME DEFINITION**: A dropdown menu for selecting the CAN frame type. Below it are checkboxes for 'Remote request frame', 'Use bit rate switch', 'Single Shot, try to send once, no retransmission', 'Random data length', and 'Random message data'. The 'Data Length' is set to 8.
- TRANSMISSION INTERVAL**: Radio buttons for 'Constant interval' (set to 50 ms) and 'Random interval' (From 50 ms To 500 ms).
- NUMBER OF MESSAGES**: A checkbox for 'Send out a fixed number of messages' (set to 0).
- BURST SIZE**: Radio buttons for 'Constant burst size' (set to 1) and 'Random burst size' (From 1 To 5).

A 'Start' button is located at the bottom left of the configuration area. Below the configuration is a 'Log' window with a 'Terminal' tab. The log shows a message: '2024-08-29T14:04:45.112Z Info CanKingService.Services.Measure... Measurement setup has changed'. The version number 'Version 7.0.0-beta.159' is visible in the bottom right corner.

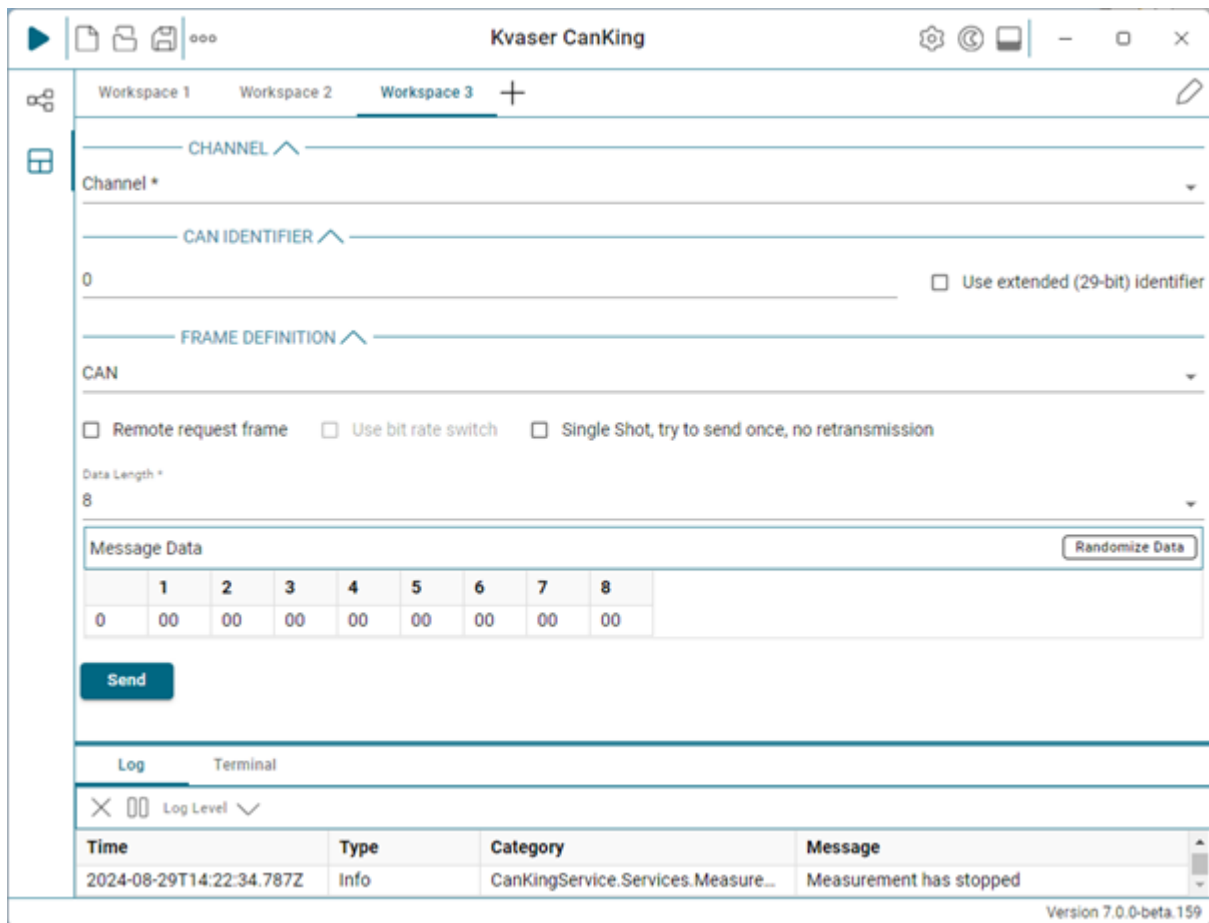
The following fields exist in the CAN Periodic Send view:

- Channel**: A select box to select which CAN Channel to send out CAN messages on.
- CAN Identifier**: A set of fields to control the CAN identifier(s) to be used in the CAN messages.

Constant Identifier	The same identifier is used by every message.
Random Identifier	Identifier to use is picked by taking a random identifier from a specified range.
Scan identifier	Identifier to use is picked from a specified range.
Frame Definition	A set of fields to control what kind of CAN frame to send out and what data it should contain.
Frame type is selected from a select box.	
	Possible frame types are:
	<ul style="list-style-type: none"><li>• CAN</li><li>• CAN FD</li><li>• ERRORFRAME</li></ul>
For a classic CAN frame it's possible to select:	
	<ul style="list-style-type: none"><li>• remote request frame</li><li>• Single shot</li></ul>
For a CAN FD frame it's possible to select:	
	<ul style="list-style-type: none"><li>• BRS - bit rate switch</li><li>• Single shot</li></ul>
Both classic CAN and CAN FD frames can be sent out as:	
Frame data	Is defined by selecting message data length and by editing the message raw data by entering the value of each byte. Both the message data length and the message raw data can be randomized.
Transmission Interval	A set of fields to control the transmission interval.
Constant interval	The same interval is used between each transmission.
Random interval	Interval to use is picked by taking a random interval from a specified range.
Scan interval	Interval to use is picked from a specified range.
Number of Messages	Specifies a fixed number of messages to be sent out or an unlimited number of messages.
Burst Size	A set of fields to control the burst size, i.e. the number of messages to be sent out at every sample point.
Constant burst size	The same number of messages are sent out at every sample point.
Random burst size	Burst size to use is picked by taking a random value from a specified range.
Start periodic sender	Click on the 'Start' button.
Stop periodic sender	Click on the 'Stop' button.



## 5.5 CAN Send Features



The following fields exist in the CAN Send view:

**Channel** A select box to select which CAN Channel to send out CAN messages on.

**CAN Identifier** A set of fields to control the CAN identifier to be used in the CAN message.

**Frame Definition** A set of fields to control what kind of CAN frame to send out and what data it should contain.

Frame type is selected from a select box.

Possible frame types are:

- CAN
- CAN FD
- ERRORFRAME

For a classic CAN frame it's possible to select:

- remote request frame
- Single shot

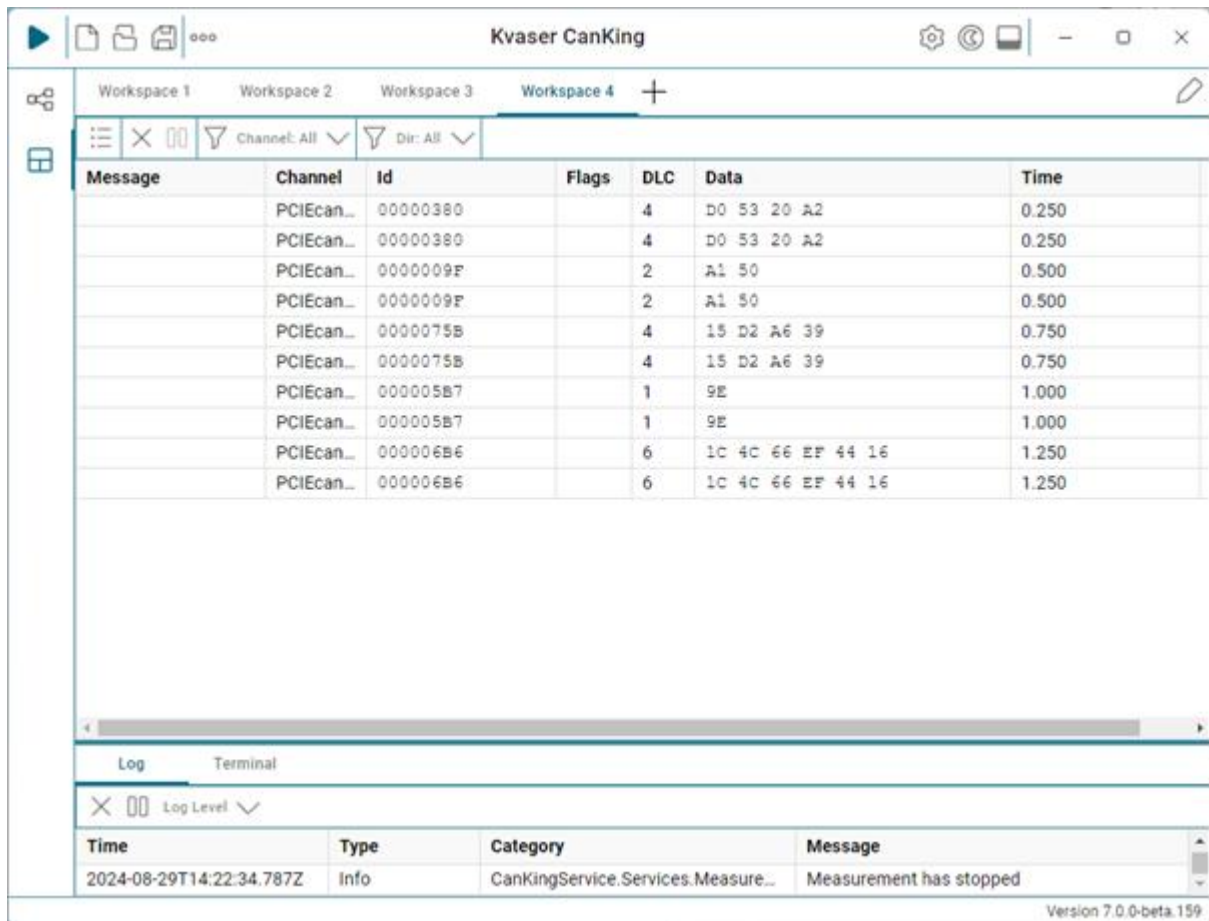
For a CAN FD frame it's possible to select:

- BRS - bit rate switch
- Single shot

Frame data Is defined by selecting message data length and by editing the message raw data by entering the value of each byte. The message raw data can be randomized by clicking on the 'Randomize Data' button.

The message is sent out on the selected CAN Channel by clicking on the 'Send' button.

## 5.6 CAN Trace Features



Message	Channel	Id	Flags	DLC	Data	Time
	PCIeCan...	00000380		4	D0 53 20 A2	0.250
	PCIeCan...	00000380		4	D0 53 20 A2	0.250
	PCIeCan...	0000009F		2	A1 50	0.500
	PCIeCan...	0000009F		2	A1 50	0.500
	PCIeCan...	0000075B		4	15 D2 A6 39	0.750
	PCIeCan...	0000075B		4	15 D2 A6 39	0.750
	PCIeCan...	000005B7		1	9E	1.000
	PCIeCan...	000005B7		1	9E	1.000
	PCIeCan...	000006B6		6	1C 4C 66 EF 44 16	1.250
	PCIeCan...	000006B6		6	1C 4C 66 EF 44 16	1.250

Time	Type	Category	Message
2024-08-29T14:22:34.787Z	Info	CanKingService.Services.Measure...	Measurement has stopped

**Fixed Position Mode** Chosen by selecting the 'Fixed Position' toggle button in the toolbar. In 'Fixed Position Mode' it is possible to expand each message row to display signal values. Signal values can only be displayed if a CAN Database's node has been added to the measurement setup.

**Scrolling Mode** Chosen by deselecting the 'Fixed Position' toggle button in the toolbar.

The trace can be:

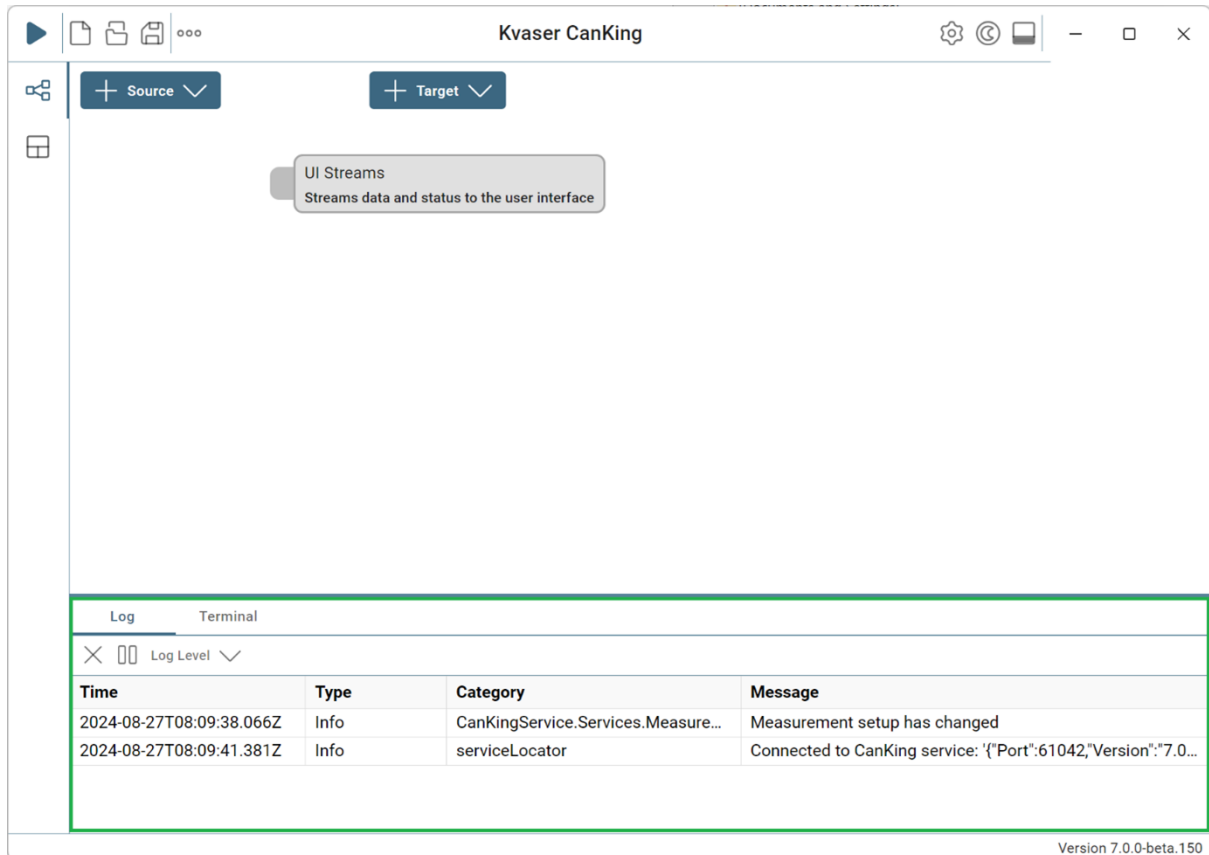
**Cleared** by clicking on the 'x' button in the toolbar.

**Paused** by clicking on the 'Pause' button in the toolbar.

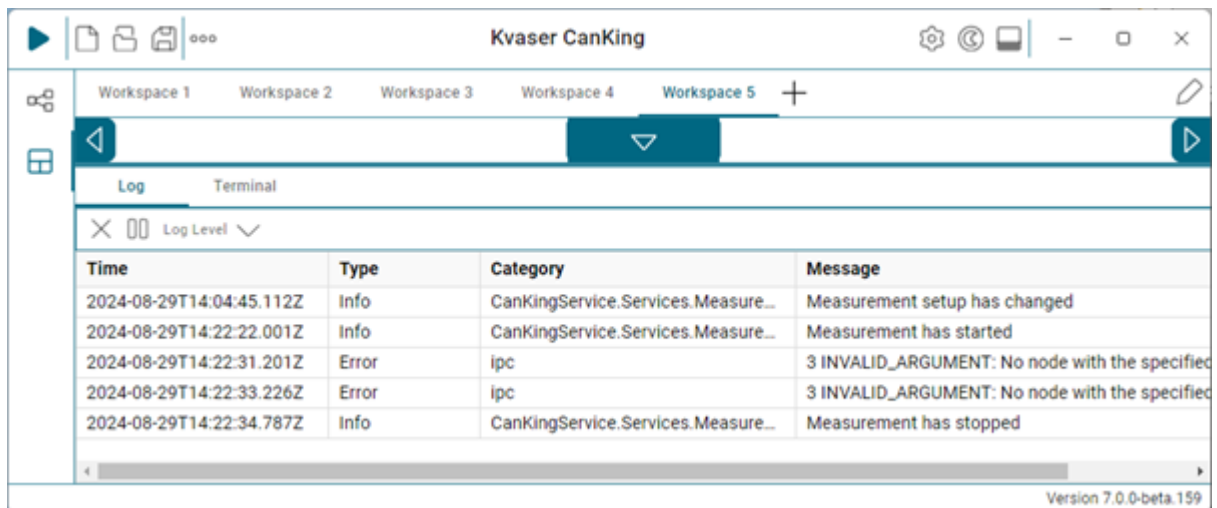
**Filtered** by channel name by selecting a channel name from the 'Channel Filter' select box in the toolbar.

**Filtered by direction** by selecting 'Tx' or 'Rx' from the 'Dir Filter' select box in the toolbar.

## 6 CanKing Tools Area



### 6.1 Log View Features



The Log view displays log messages from both the CanKing application and from the CanKing service.

The Log view can be:

Cleared By clicking on the 'x' button in the toolbar.

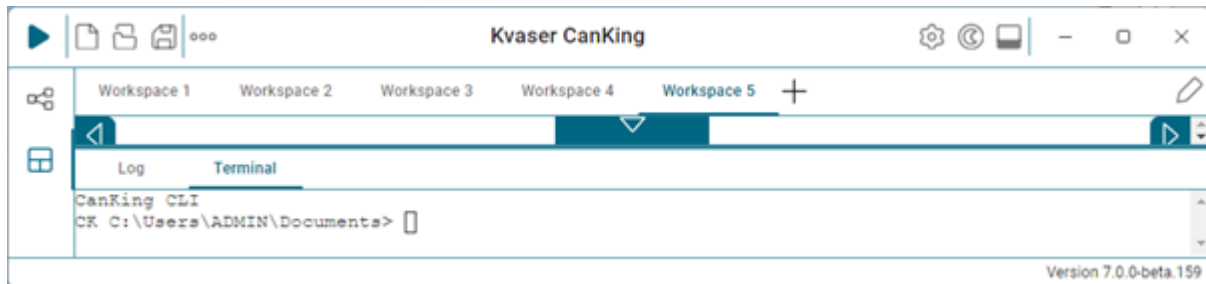
Paused By clicking on the 'Pause' button in the toolbar.

Set Log Level

Possible levels are:

- Trace
- Debug
- Info
- Warn
- Error
- Critical
- None

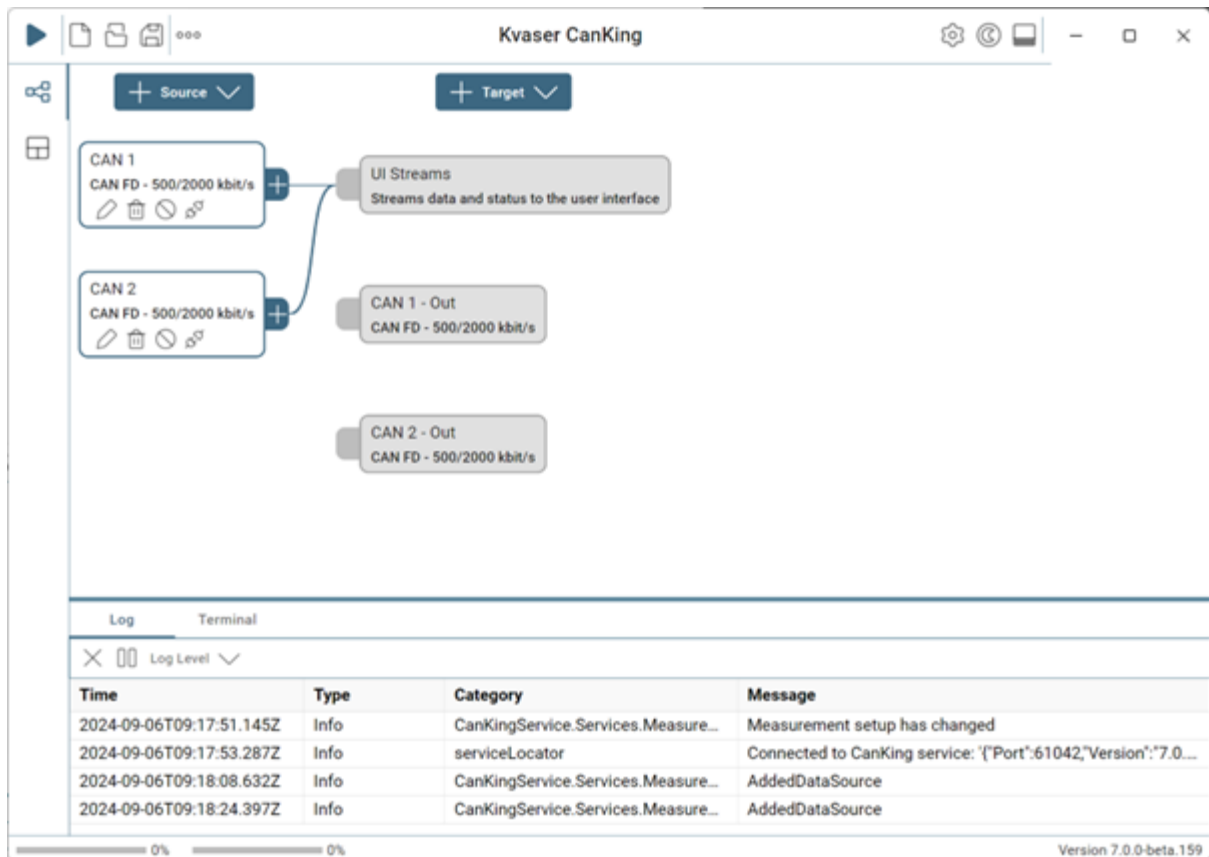
## 6.2 Terminal Features



The Terminal view can be used to control the CanKing service using the CanKing CLI application.

Enter 'ck --help' to display help for the CanKing CLI.

## 7 Status bar



### 7.1 Status bar, Traffic gauge

Shows bus load for each channel.

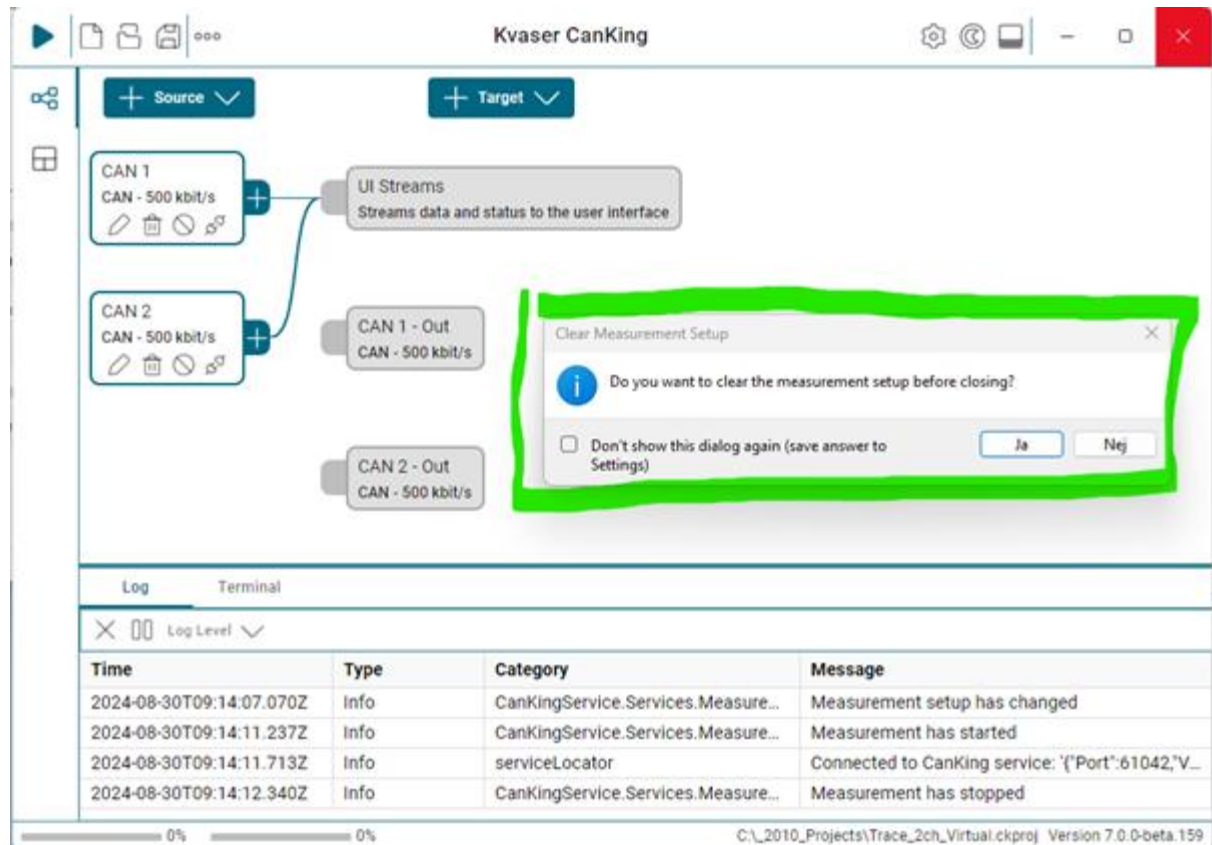
Yellow error passive

Red bus off'

### 7.2 Status bar, Project filename

In the Status Bar, you will find the CanKing version number, and also (if you have opened/saved) the Project Filename.

## 8 Closing CanKing



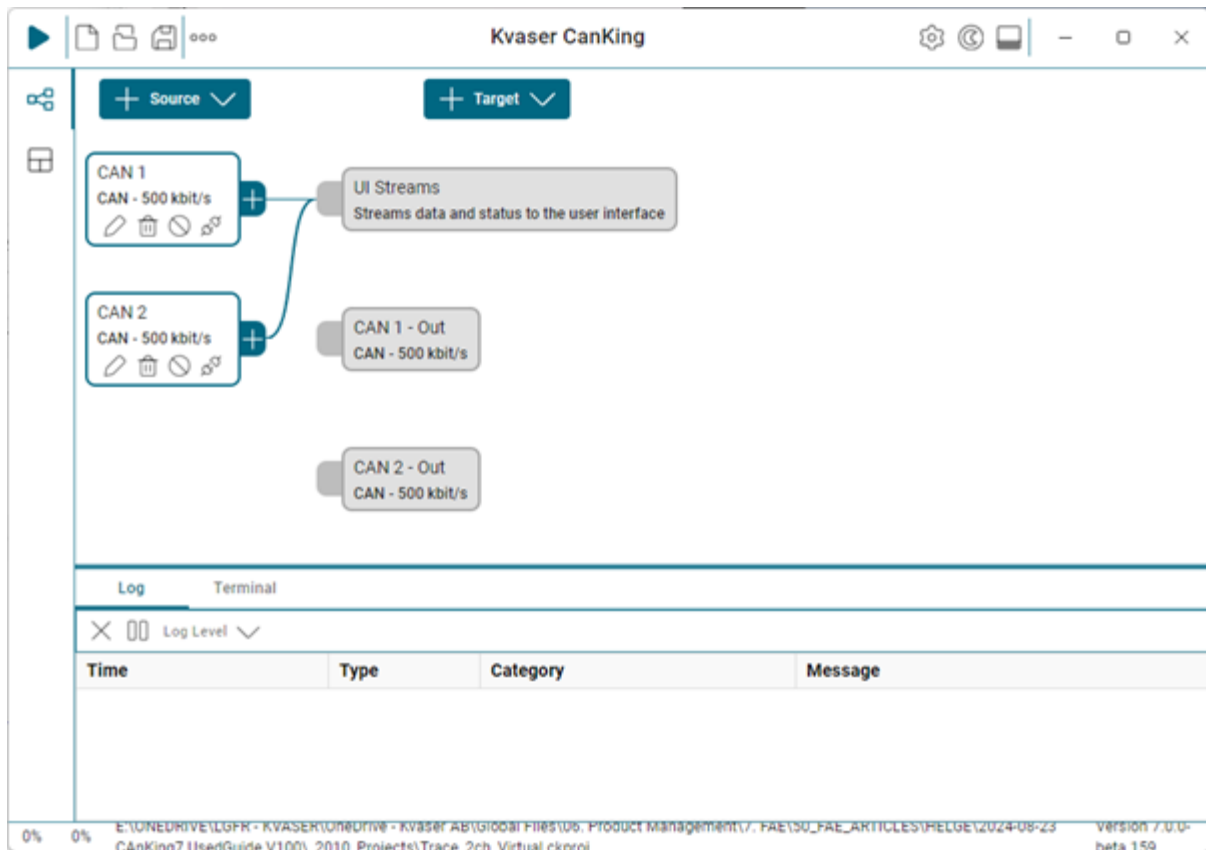
When the CanKing application is closed, the workspaces will close since they only exist in the application, but the measurement setup is actually a setup of what is executing in the CanKing service. So when the CanKing application closes, the user needs to then decide if he wants the measurement setup to be kept in the service or not.

A use case could be that you use CanKing application to configure a setup in the service, you start the measurement and then you close the application because you don't want to look at any data in real-time, but you want to keep the measurement going to create log files for you.

So clicking 'Yes' will stop any running measurement and clear the setup in the service and clicking 'No' will leave any setup and state as it is.

The checkbox will prevent this dialog from coming up every time. The selection will be saved to the user settings and can be configured in the Settings dialog.

## 9 Typical use case Project Trace\_2ch\_Virtual



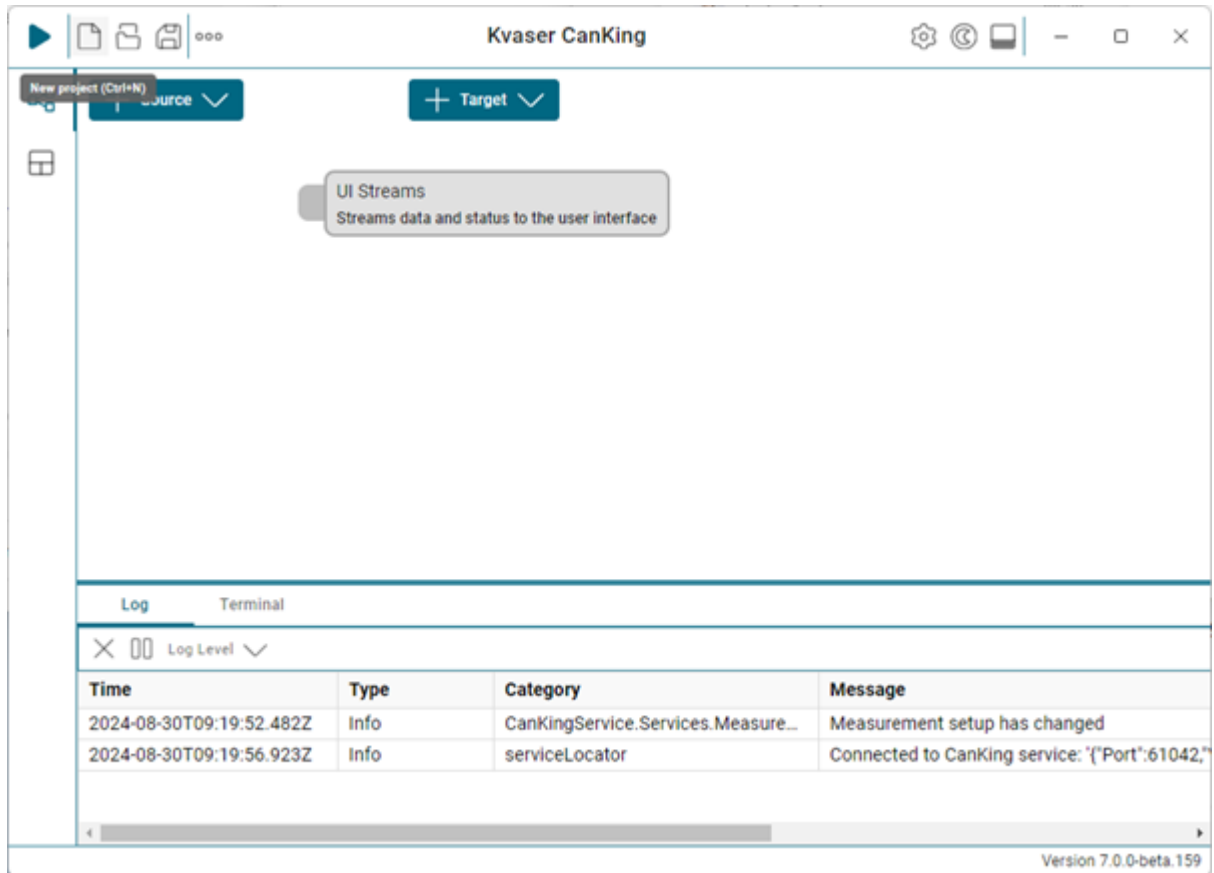
This sample project uses two Kvaser Virtual CAN interfaces.

Kvaser Virtual CAN interfaces are installed when installing the Kvaser Drivers.

By default (on Windows), there are two Virtual interfaces installed. It is possible to install more Virtual CAN interfaces.

The purpose of the Virtual Interface is that it should be possible to try Kvaser Software without having access to physical CAN interfaces.

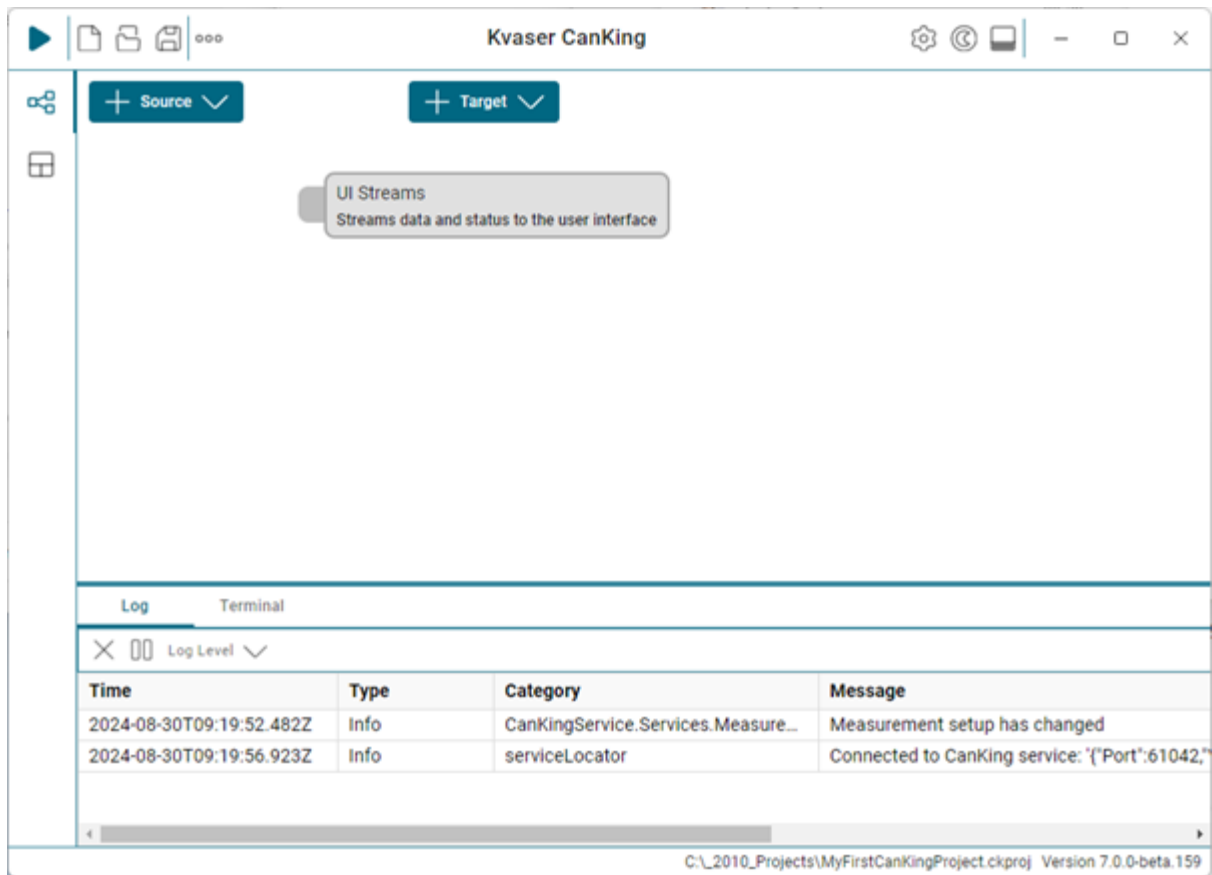
## 9.1 Step 1, Create new project




Start CanKing and press “New Project”

Save the project with “Save As” (•••/File/Save As), select a nice name for your project.

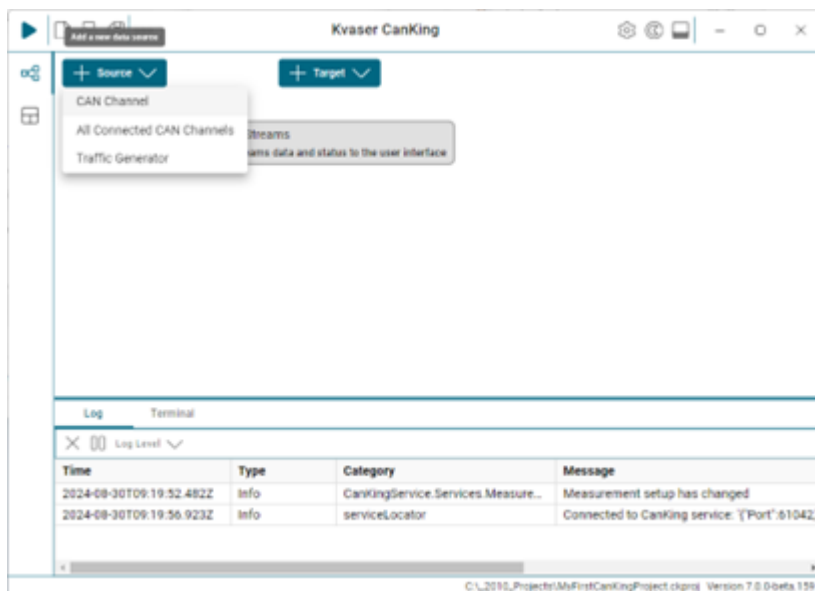




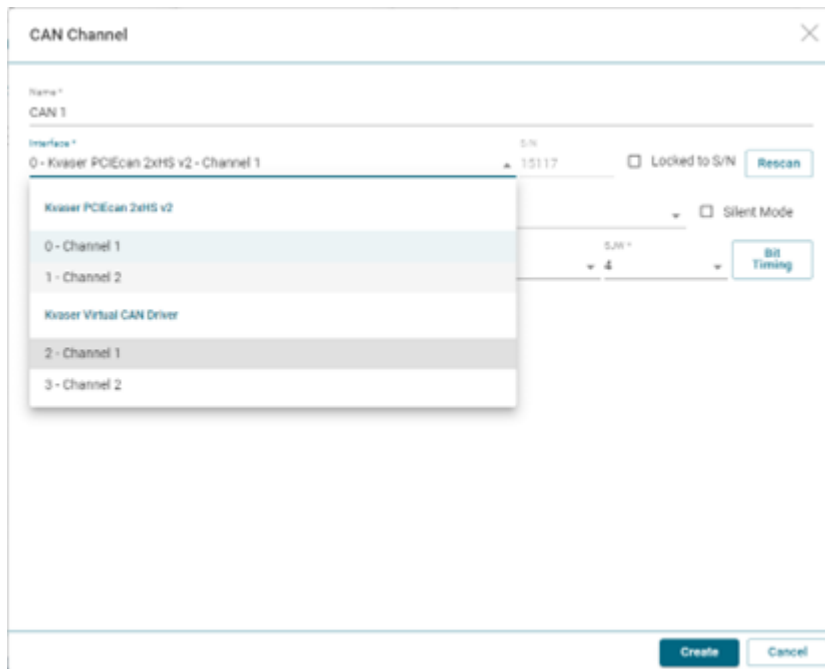
The filename shall now be visible in the lower-right status area.

Make sure that you are in the Measurement area, you can select it by clicking on the icon 

## 9.2 Step 2, Designing Measurement Setup



Press “Source”, and select “CAN Channel”



Press on the line “Interface”, and select the Kvaser Virtual Interface “2 – Channel 1”

Please note, the layout above depends on what type of Kvaser Interfaces you have installed and connected. Kvaser Virtual interfaces are normally always available and are always listed at the end.

Set the other parameters as you like, for the moment we will use default values.



Press “Create.”

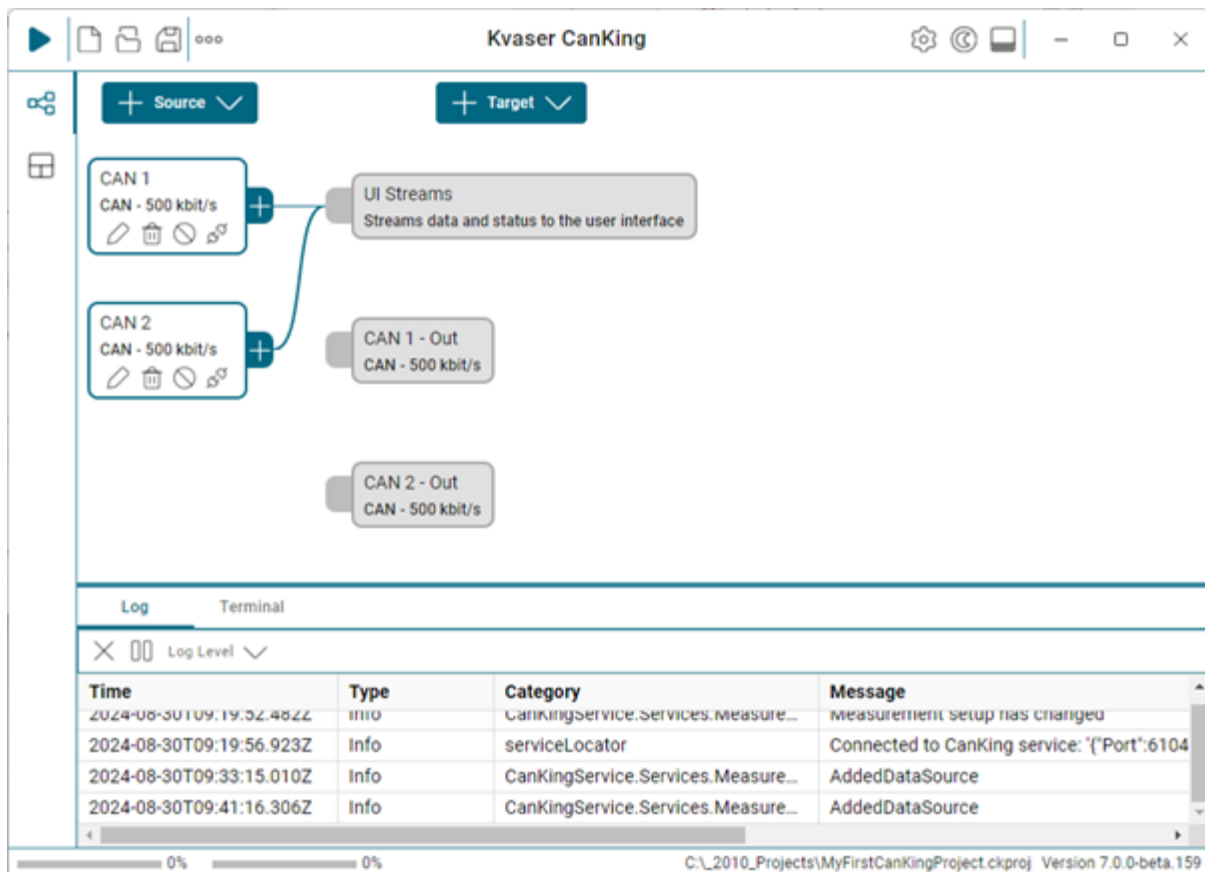


CanKing will now add CAN 1 to the Workspace layout.

It also added “CAN 1 – Out.” It represents the Output at CAN 1.

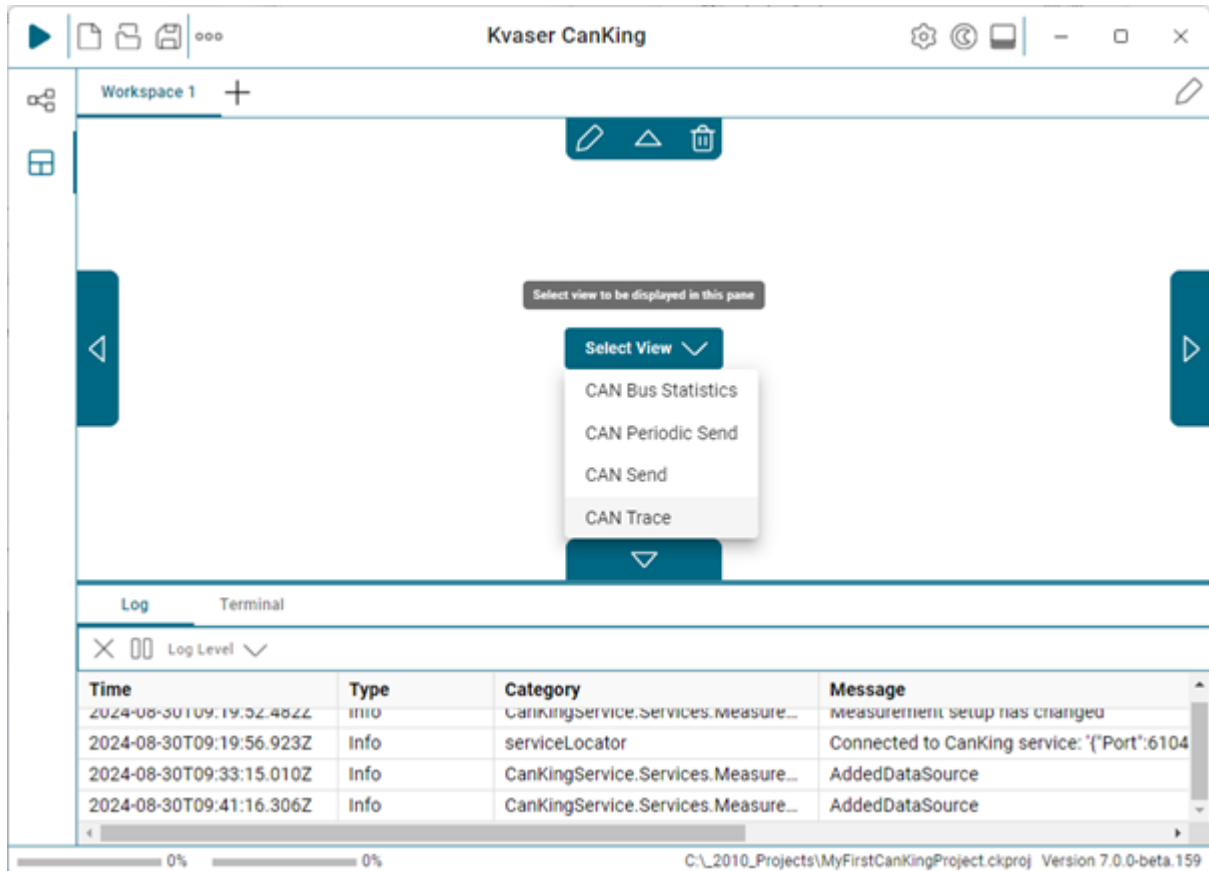
Repeat this step and add the second Virtual channel.


Please note, when adding the second channel, the first channel you added will not be available. It is only possible to add a specific channel once.



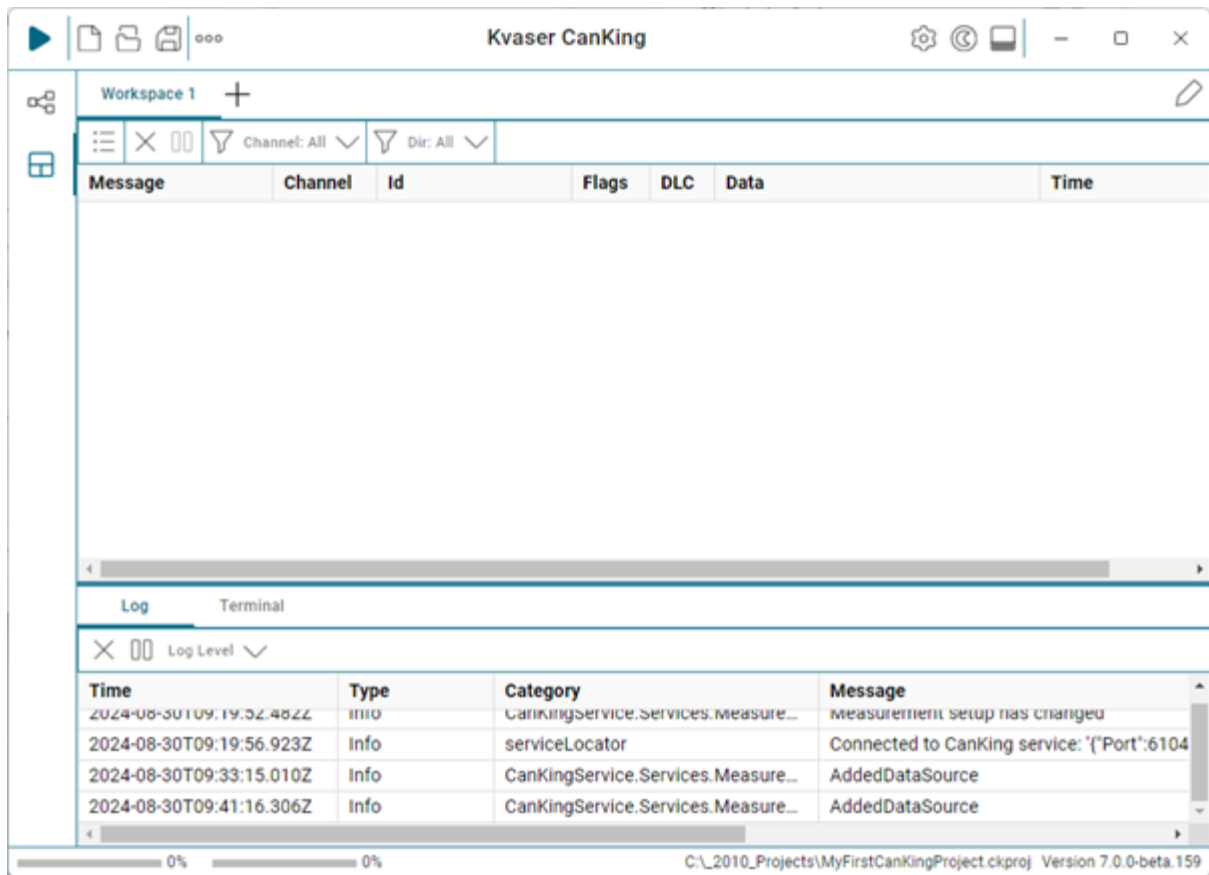
Layout when two channels have been added.

### 9.3 Step 3, Designing Workspace Setup



Switch to Workspace Setup, this is done by pressing the icon 

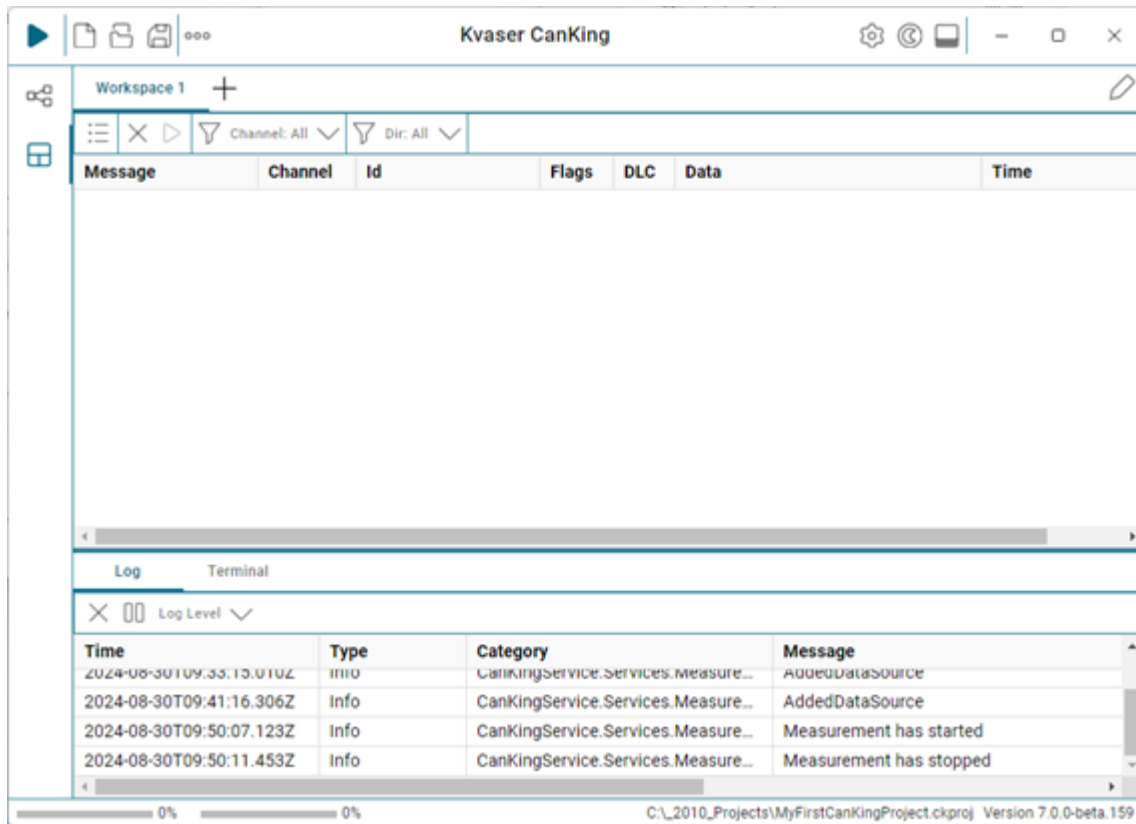
Press "Select View", and select "CAN Trace."



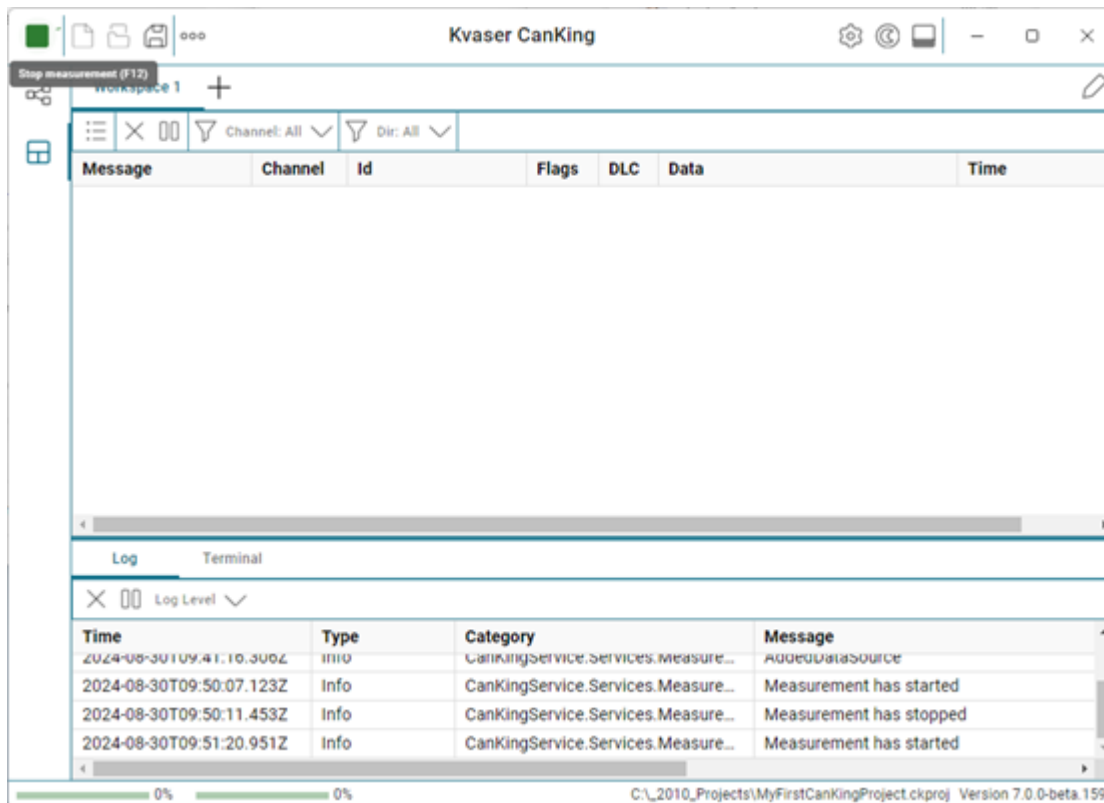
A trace window is now added to the Workspace.

It is possible to add multiple Workspaces, but for the moment we will use only this one.

## 9.4 Step 3 Start/Stop Measurement



By pressing the “Start Measurement” icon at the top left corner, the measurement phase will start.



The icon at the top left corner, will change to a “Stop Icon” and a circle will be animated around it. This indicated that CanKing has opened the interfaces and runs in Measurement Phase.

Most likely, nothing will be visible in the trace window, for the moment we do not have any traffic on the Virtual CAN bus.

If you have selected one of your Kvaser CAN interfaces, and it is connected to a CAN bus with traffic, then you can expect to see frames in the trace window.

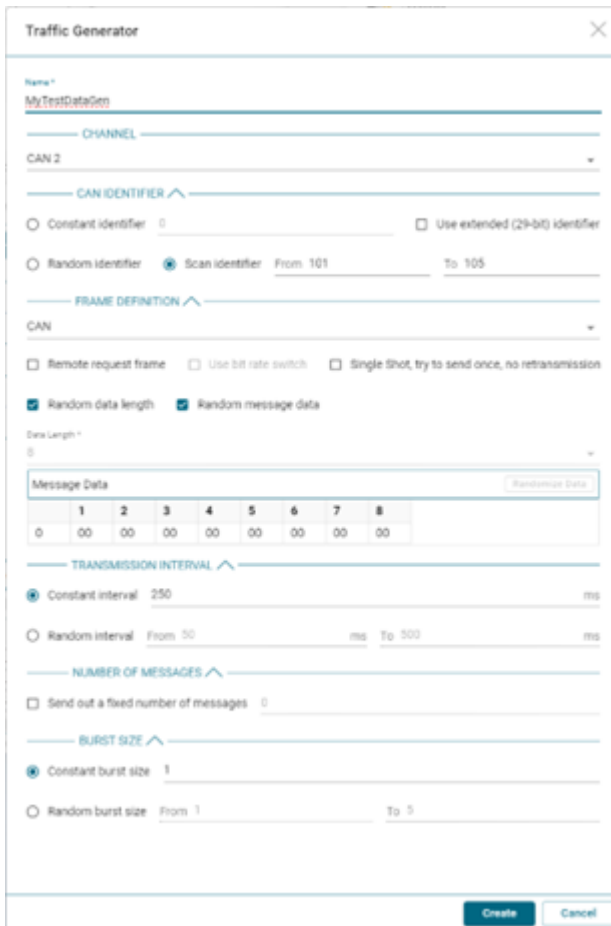
Stop the measurement! We must add a data source.

## 9.5 Step 4 Add a Traffic Generator

- Stop the measurement (if started)
- Switch to Measurement Setup



Press “Source”, and select “Traffic Generator”



Now you can configure your traffic generator.

I edited:

Name: MyTestDataGen

CHANNEL: CAN 2



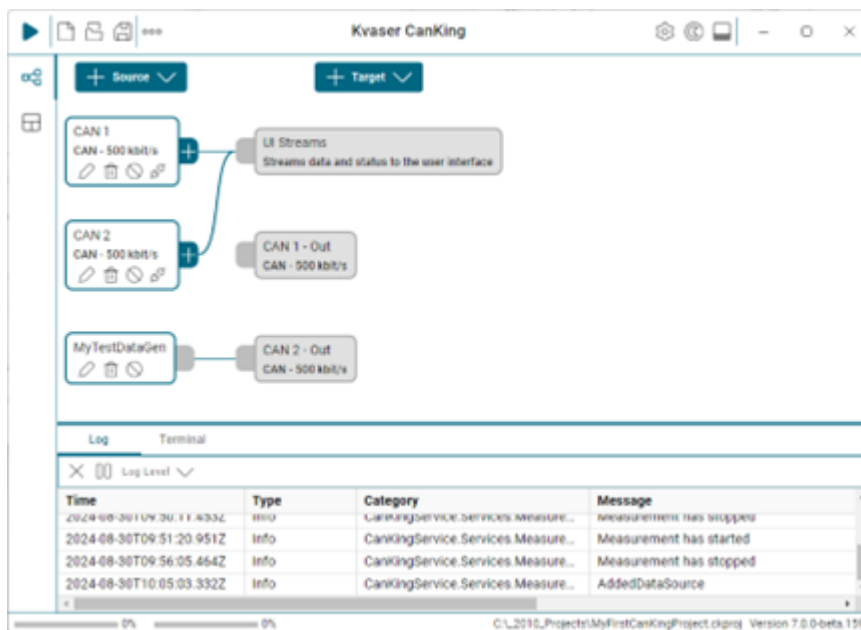
CAN IDENTIFIER: Selected “Scan Identifier” from 101 to 105

Random data length: True

Random message data: True

Transmission interval: 250ms

Press “Create”

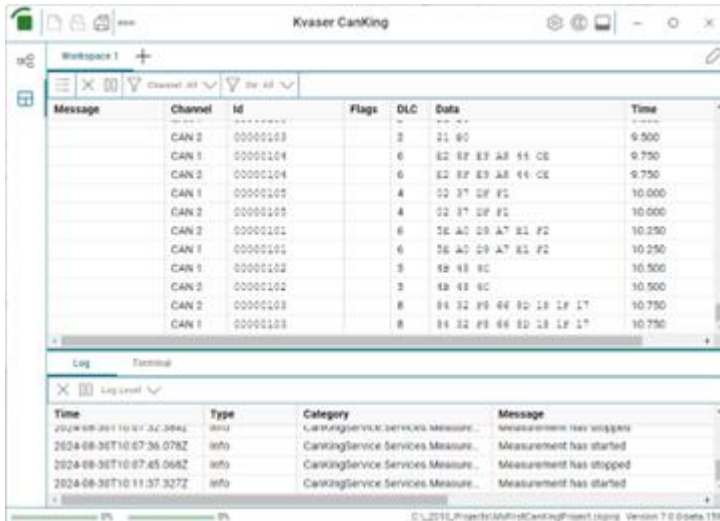


CanKing have now added the Traffic Generator: MyTestDataGen

It shows in the measurement setup, with a connection to the “CAN 2 – Out”

## 9.6 Step 5 – Explore Trace Window

- Switch to Workspace
- Start the measurement

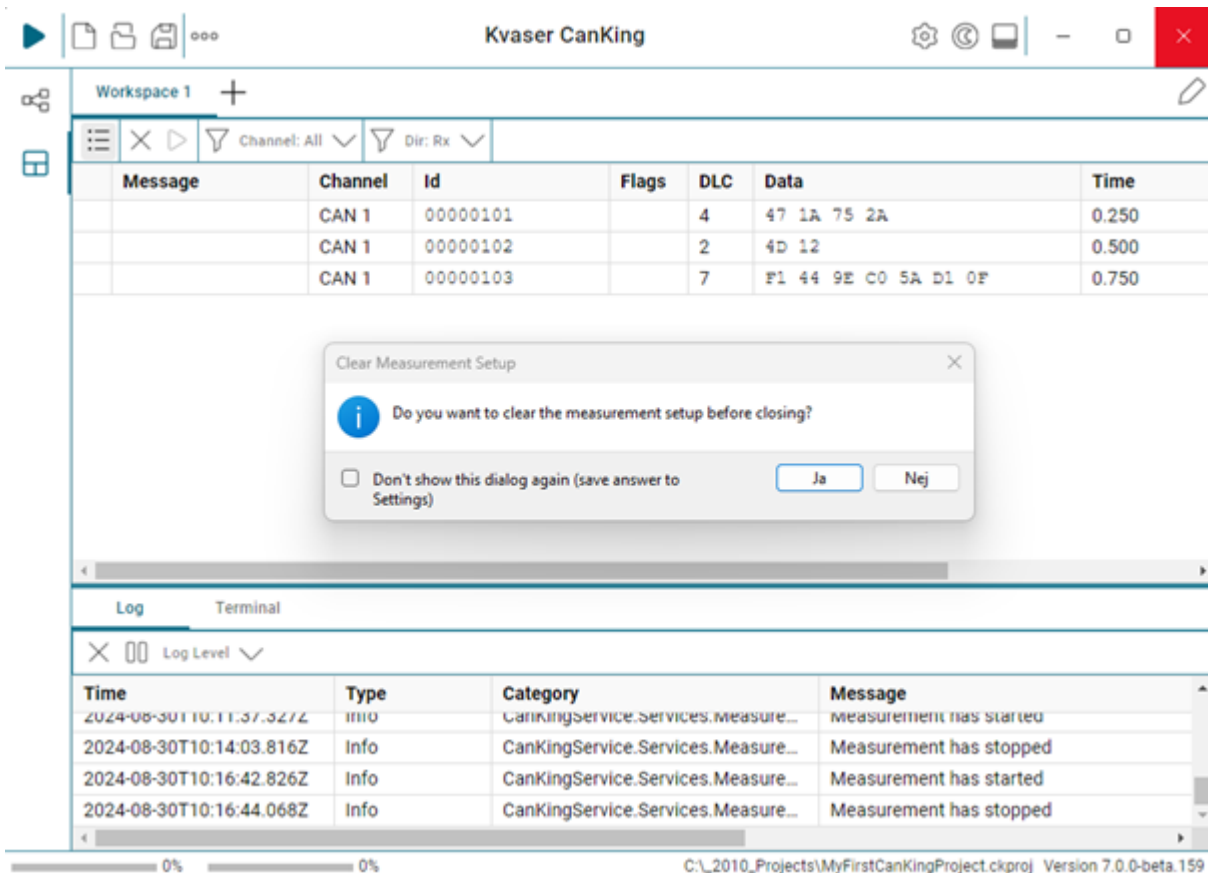


The “Trace Window” will now show the CAN bus data.

Please feel free to play around with the Trace controls.

## 9.7 Step 6 – Close CanKing

Important! Before closing CanKing, please remember to SAVE your project.



## 10 Quick Button Guide

F1

F2

F3

F4

F5

F6

F7

F8

F9                    Start Measurement

F10

F11                  Toggle Full Screen Mode

F12                  Stop Measurement

Ctrl +                Zoom In

Ctrl -                Zoom Out

Ctrl 0 (zero)        Zoom Reset

Ctrl N                New Project

Ctrl O                Open Project

Ctrl S                Save Project

Ctrl Shift S         Save Project As

Ctrl ,                Settings

## 11 Document Revision History

Version history for “User Guide CanKing7.DOCX”:

Revision	Date	Changes/Comments
1.00A	2024-09-10	Initial version