Telemotive AG
a company of Magna

blue PiraT2 / 5E / Mini / Remote
Remote Control Monitor User Guide

Version 2.4.1 / 20.09.2016

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3 Overview

This user guide describes the feature of the license **Remote Control Monitor** for the data loggers

- blue PiraT2
- blue PiraT2 5E
- blue PiraT Mini
- Remote Control Touch
- blue PiraT Remote

of Telemotive AG.

With the **Remote Control Monitor** feature it is possible to display current values of selected signals immediately on the remote control unit. The Remote Control Monitor is a part of the trigger function. The function is called as a trigger, when a defined event will cause a certain, singular action.

This user guide describes the configuration and usage of this feature. The general configuration is described in the user guides of the used data logger as well as the Telemotive System Client, which is valid together.

The client software was only tested with Microsoft® Windows® 7.

This document refers to **firmware version 02.04.01** and the **Telemotive System Client** from **version 2.4.1.** Some features depending on model and feature license or may not be available in older versions.

Software updates and user guides for other, optional, licensed enhancements are available in the Telemotive ServiceCenter. *(Please find the address under Contact at the last page.)*

To ensure the most reliable operation of your system as possible, please make sure to use always current firmware and software versions.

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4 System requirements

Control Unit
A Windows based Laptop or PC is needed to configure the devices of Telemotive AG by **Telemotive System Client**. It also allows to save the recorded data and to use them offline later.

Telemotive System Client
The software client is used for configuring the data logger as well as downloading the recorded data or convert these into your needed file format. An firmware update can be performed by the **Telemotive System Client** too to ensure that your devices are always up to date.

blue PiraT2 / blue PiraT2 5E / blue PiraT Mini
The communication between bus systems and control units is monitored and relevant data can be recorded very precisely with the data logger of Telemotive AG. The collected data are stored to the logger and can be downloaded via Ethernet to a PC.

The **blue PiraT2** is our top-class all-in-one data logger. Seven models cover a wide range of interfaces.

Additionally, the **blue PiraT2 5E** offers improved power management and power backup, five integrated Ethernet ports and super-fast start-up behavior. The blue PiraT2 can be flexibly expanded via Telemotive System Link.

The **blue PiraT Mini** is smallest data logger in the world with an outstanding functional scope. It offers a wide range of interfaces, stable temperature behavior, very low energy consumption, four GBit Ethernet ports, and much more. Different blue PiraT Mini can be flexibly expanded to one cluster and therefore handled very easily by using Telemotive System Link.

Remote Control Touch (optional)
Operate your blue PiraT Mini or blue PiraT2 data loggers safely and comfortably from the driver's or passenger seat. Via Telemotive System Link our new remote control becomes part of your logger network. One remote control can handle all connected loggers.

blue PiraT Remote (optional)
While Remote Control Touch is just a control unit for handling unique devices or a TSL network, the blue PiraT Remote additional has logger functionality by offering internal storage and some interfaces.

License
For the additional feature **Remote Control Monitor** an installed license is required. Settings for licensed features can be performed with a valid license only.

If you need a license for your logger, please contact our sales department (please find the address under contact at the last page).

4.1 Further manuals

Beside this user guide we offer the main manuals for our client as well as for the different data logger generations in our ServiceCenter at https://sc.telemotive.de/bluepirat.

User manual for the Telemotive System Client
https://sc.telemotive.de/4/uploads/media/TelemotiveSystemClient_UserManual.pdf

User manual for blue PiraT2 / blue PiraT2 5E
https://www.telemotive.de/4/uploads/media/blue_PiraT2_UserManual.pdf

User manual for blue PiraT Mini
https://www.telemotive.de/4/uploads/media/blue_PiraT_Mini_UserManual.pdf

User manual for Remote Control Touch
https://sc.telemotive.de/4/uploads/media/RCTouch_UserGuide.pdf

User manual for blue PiraT Remote
https://sc.telemotive.de/4/uploads/media/blue_PiraT_Remote_UserGuide.pdf

For having an easy access if necessary, the most important manuals are linked in the client under the menu item **[Help]** and are reachable easily from there.

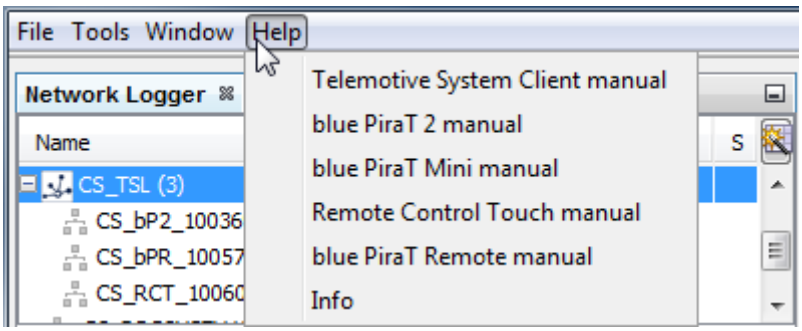

Figure 4.1: links to the manuals

Our licensed enhancements have own manuals which are stored in the ServiceCenter too. You will find a list of these enhancements in the user manuals in the chapter **Additional features by optional licenses**.

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5 Functionality

The devices Remote Control Voice and Remote Control have a four-line display, each with 20 characters.

The Remote Control Monitor function is able to handle up to 10 different Remote Control Monitor windows. A Remote Control Monitor window is activated by a trigger event. It displays the configured signals.

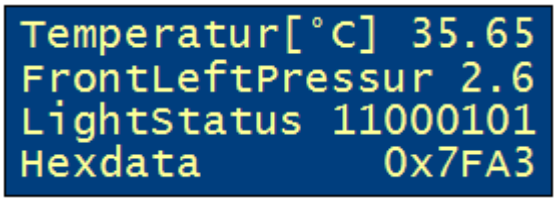

Figure 5.1: Example Remote Control Monitor window at RC/RCV

The window is closed by pushing the Cancel button **[✱]** or Status button. Thereby the Remote Control (Voice) display is switching to the previous screen.

The user can configure up to 20 different signals for each Remote Control Monitor window. One signal will be displayed in each line.

Since the Remote Control (Voice) display only contains four lines, it is possible to scroll the signal entries with the Arrow buttons of the device.

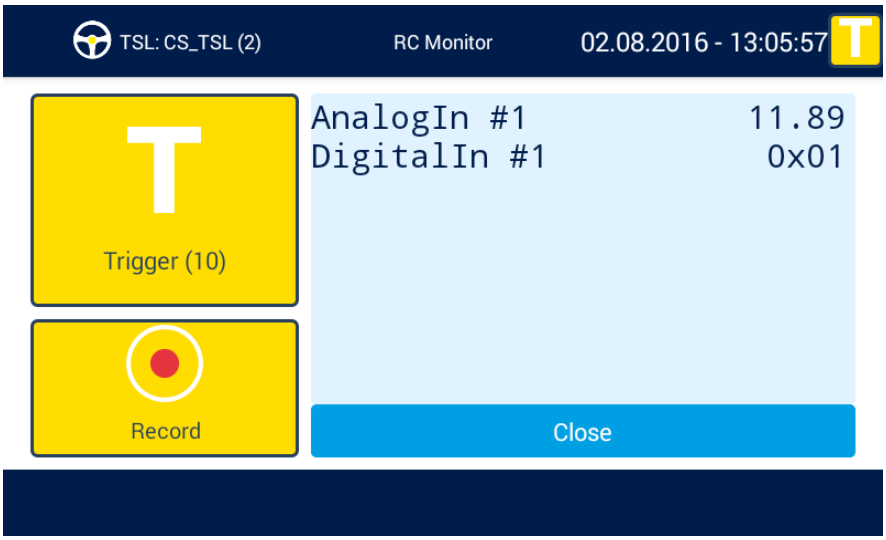

Figure 5.2: Example Remote Control Monitor window at RC Touch

The following interfaces are available for presentation:

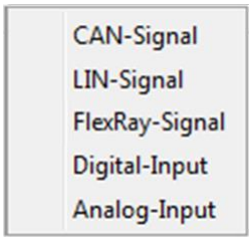

Figure 5.3: Displayable signals

For each signal, the following information is shown:

- Name of the signal
- Physical unit of the signal, if given (e.g., mph)
- Value of the signal

The name and the physical unit of the signal are displayed left-aligned, while the value of the signal is displayed right-aligned. If the 20 columns of the display are not sufficient to display all parameters, the value of the signal overwrites the physical unit and/or the name of the signal. The display automatically changes to floating point display if a signal value exceeds the maximum number of displayable characters.

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6 Wiring the Remote Control (Voice)

To use the Remote Control Monitor function, it is required to connect a Remote Control unit.

To connect the RC or RCV to the blue PiraT, blue PiraT2 (5E) or blue PiraT Mini a special universal cable set and a connection cable is necessary. The following figure shows the connection of the cables. The connection cable is plugged into the right side of the Remote Control (Voice).

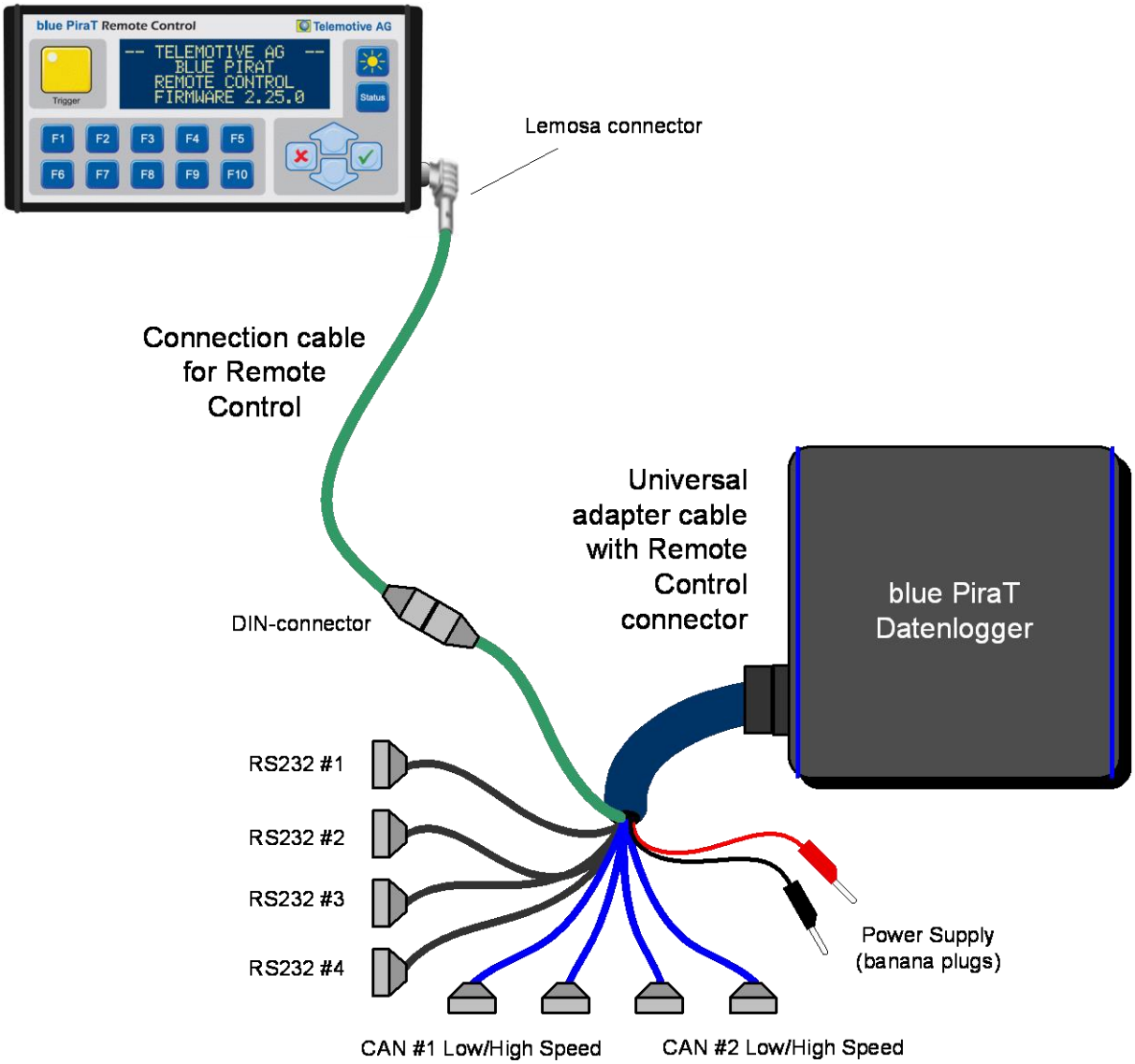

Figure 6.1: Wiring the Remote Control (Voice) with the data logger

Note:
By using a RC or RCV the power supply voltage must be limited to16 V

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7 Configuring

7.1 Trigger configuration

The Remote Control Monitor is defined via a trigger, i.e., a specified event (e.g., pressing a function key) causes a unique action (the display of the Remote Control Monitor).

Setting up two complex triggers is license free. With the additional license **Complex Triggers** you can set up to 50 complex triggers.

Is there just a license **Remote Control Monitor** installed on the data logger (without license **Complex Triggers**), you could use twelve triggers. It is possible to configure ten triggers with the action “Remote Control Monitor” und two with an arbitrary action.

Start the Telemotive System Client. In the Network Logger list click a logger that is not already connected. Click on the application **[Open configuration]** and expand the folder **[Trigger]** in the window to the right.

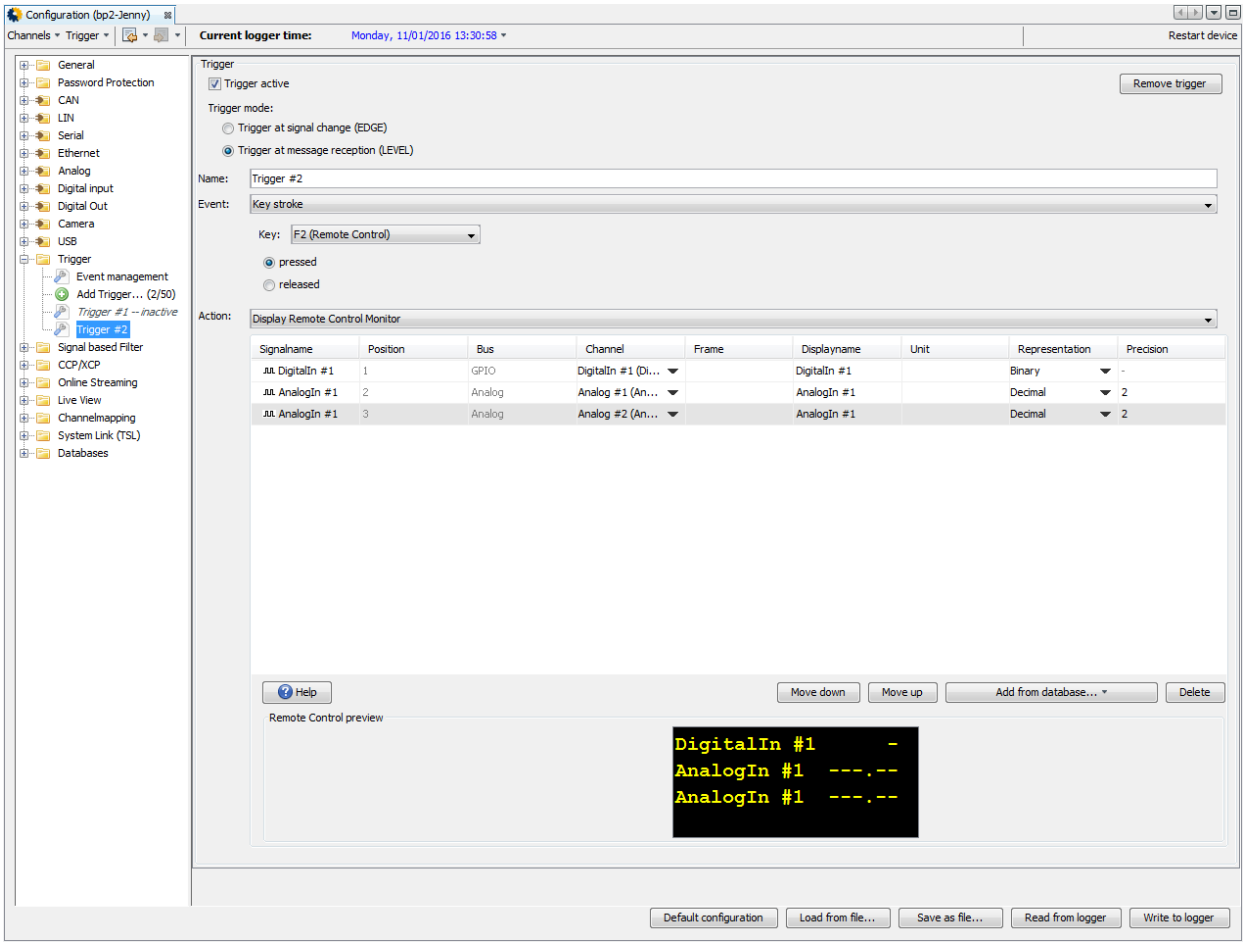

Figure 7.1: Example Trigger configuration

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By double-clicking the button **[Add Trigger… (…/50)]** a new trigger will be shown in the list (e.g., Trigger #1). The red symbol with exclamation mark reminds that the trigger is not configured yet or is not fully configured.

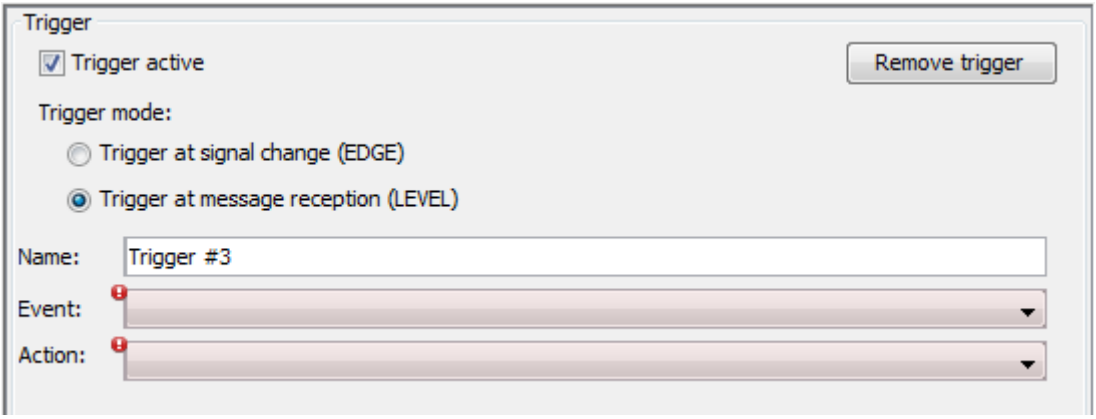

Figure 7.2: Configuration parameters

7.1.1 Status

Each trigger can be enabled or disabled by the right mouse button in the configuration tree, in the trigger overview and via the checkbox **Trigger active**.
If a trigger is inactive, its parameters are still kept in the configuration, but the data logger does not execute the trigger.

7.1.2 Remove trigger

The button **[Remove trigger]** deletes the marked trigger. It is also possible to remove via the right mouse button in the configuration tree or in the trigger overview.

7.1.3 Mode

Each trigger has two different modes of evaluating the trigger condition:

- Trigger at signal change (EDGE): The trigger occurs only if signal value changes and the event condition are “true”. This trigger condition mode is applicable for periodic signals (e.g., CAN signals), where only one trigger is required for the first time the event condition is true.
- Trigger at message reception (LEVEL): The trigger occurs every time a signal message was received and the event conditions are corresponding. This trigger mode is applicable if every reception of a message should cause a new trigger (Default trigger mode).

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7.1.4 Name

The name of the trigger can be changed by the user. The new trigger name is displayed in the configuration tree on the left hand side. The number of characters for the trigger name is limited to 100.

7.1.5 Event and action

The trigger function is defined by an event and a following action. Events and actions can be defined and changed by the user in any sequence.

7.1.5.1 Event “Key stroke”

Note:
Below the configuration of the Remote Control Monitor, which is triggered by pressing a function key, is described as an example.
Additional trigger events can be found in the **User manual for the Telemotive System Client in the section “Trigger (category)”**.

The event **[Key stroke]** is defined by clicking the **[Trigger]** button of the logger / the Remote Control or function keys **[F1]** to **[F10]**.

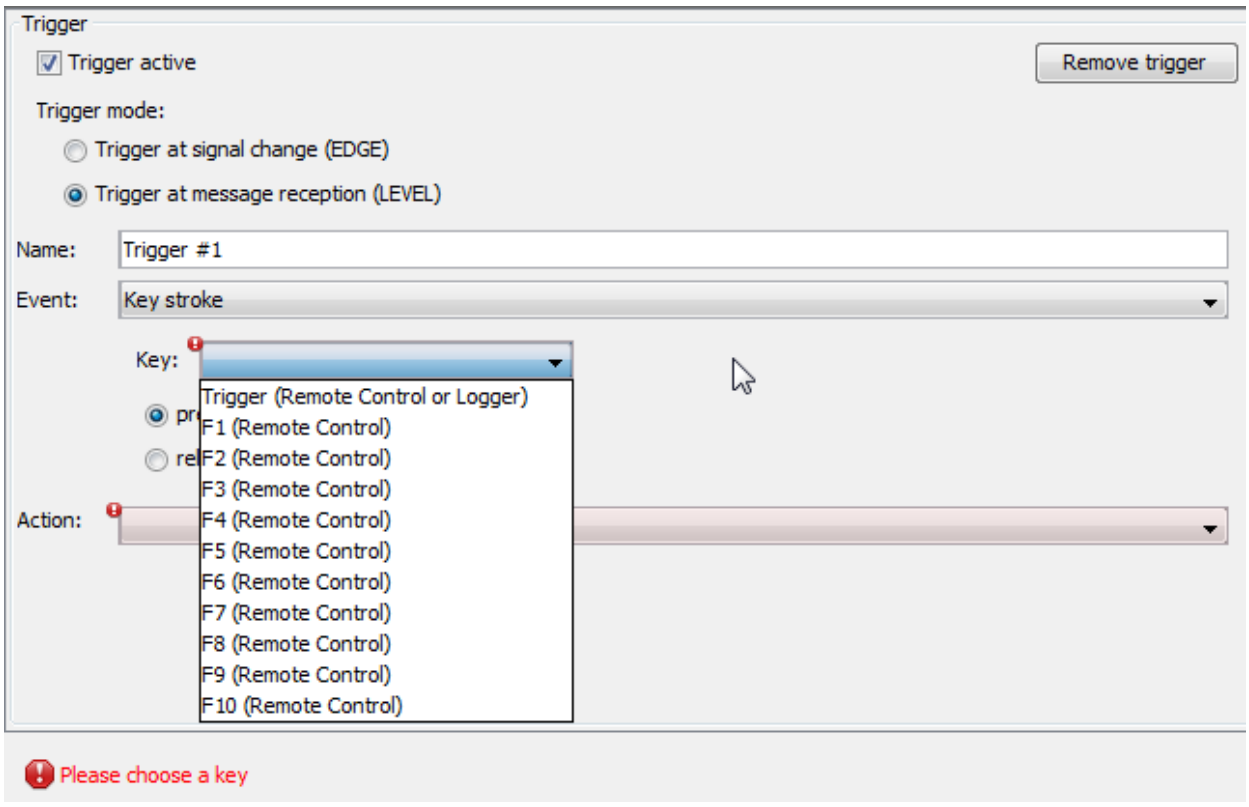

Figure 7.3: Selecting triggering key

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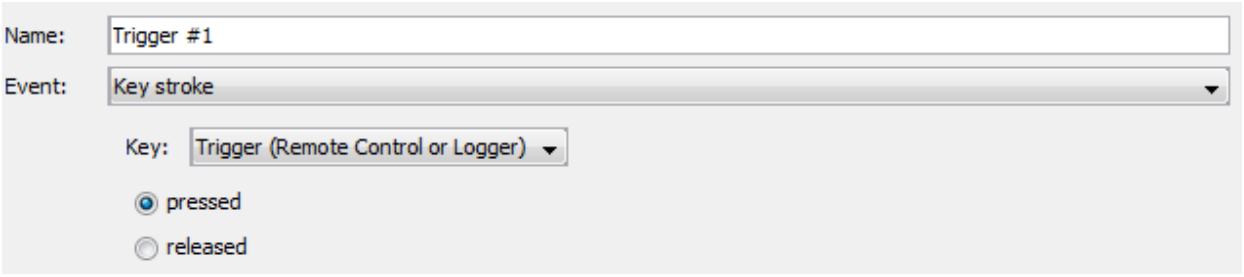

Figure 7.4: Selecting key status

The key status can be **pressed** or **released**. These parameters have to be selected by the user.

The associated action is executed, e.g., when you have selected **pressed**, by pressing the key.

A connected blue PiraT Remote Control (Voice) is required for using the function keys **[F1]** to **[F10]**.

7.1.5.2 Action "Display Remote Control Monitor"

After the configuration of the trigger event, the selection of the trigger action is required.

Selected signals can be displayed by the Remote Control with the trigger action **[Display Remote Control Monitor]**.

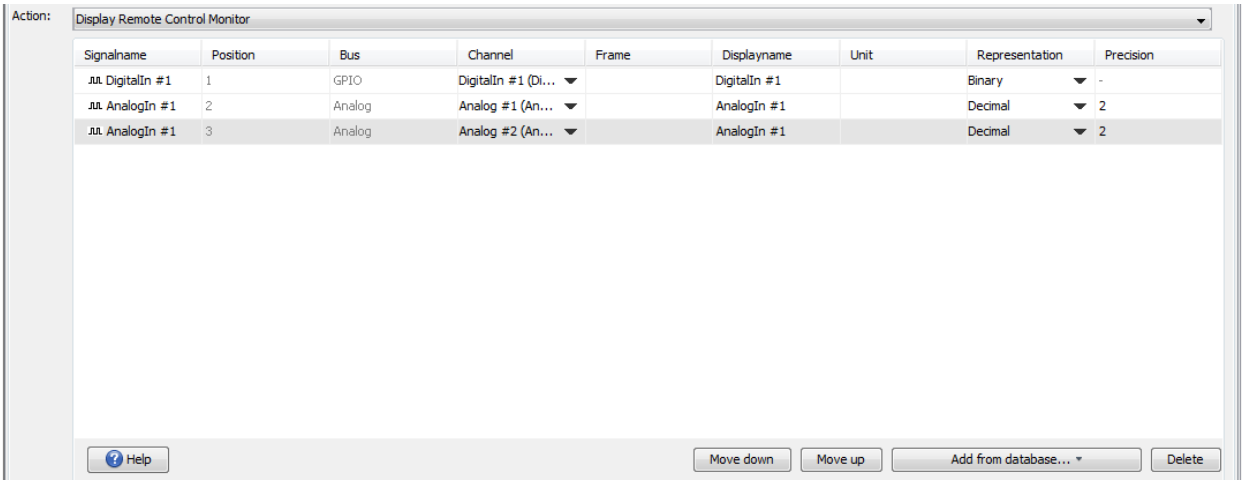

Figure 7.5: Action – Remote Control Monitor

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7.2 Signal list

7.2.1 Adding signal

Click the button **[Add from database…]**, to select the required signal to be displayed in the Remote Control Monitor from the shortcut menu. The signal appears with a new line in the signal list.

It is possible to configure up to 20 lines for per Remote Control Monitor window. Each new line is added to the end of the signal list.

If a signal is missing the assignment to the database, a respective notification message appears. Via a button you can directly switch to the configuration of the database.

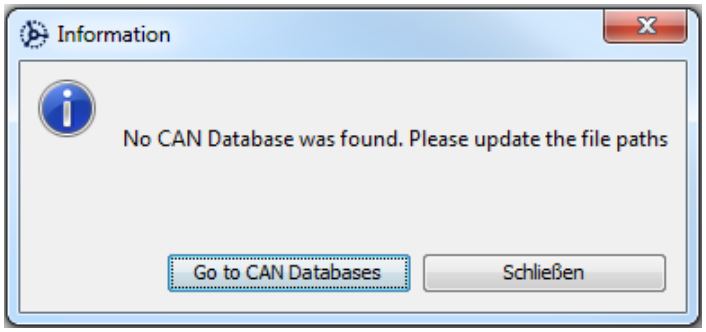

Figure 7.6: Notification message due to lack of database

The user can define the associated database for each channel and select the required signal.

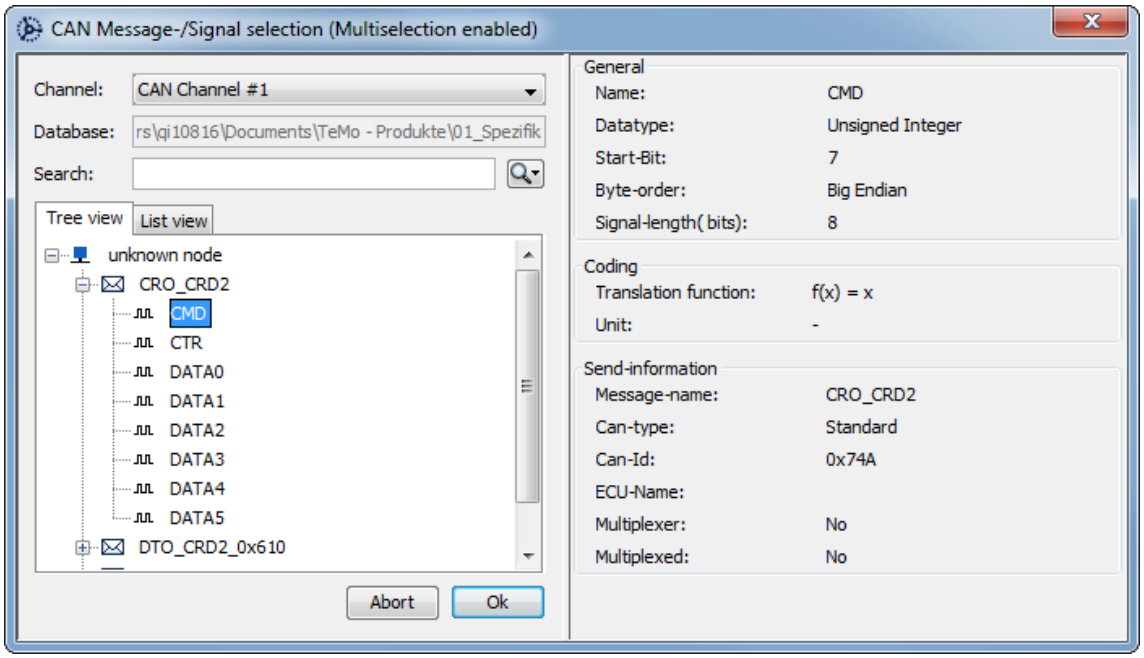

Figure 7.7: Selecting signal from database

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7.2.2 Arranging signals

The order of the signals in the display can be changed by the user with the buttons **[Move down]** and **[Move up]**. For that, the line to be moved has to be selected in the signal list. The corresponding button will be operated until the desired list position has been reached.

7.2.3 Deleting signal

The user can delete single signals from the signal list via the button **[Delete]** after selecting the signal to be deleted.

7.2.4 Setting signal parameters

All parameters of a selected signal are initially loaded from the database. They are partly displayed in the signal list. If included in the configuration, the following signal parameters are displayed in the Remote Control Monitor window:

- Name
- Unit
- Value

The display of some signal parameters can be modified within the signal list.

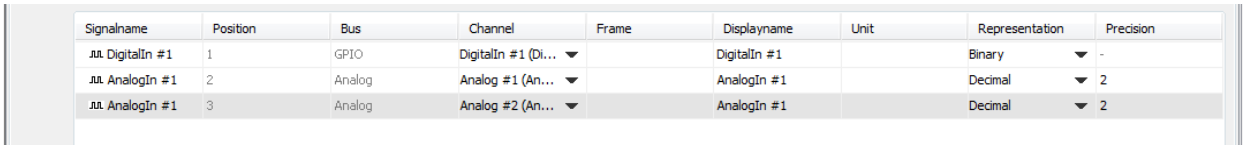

Figure 7.8: Signal list

7.2.4.1 Signalname

The user can edit the signal name in the column “Displayname”. The Remote Control Monitor uses the signal name loaded from the database as the default value.

7.2.4.2 Position

Here the current position of the signal is listed.

7.2.4.3 Bus (fixed)

Shown from which bus this signal comes from.

7.2.4.4 Channel

Under this point the needed channel can be set for a signal which is configured on several channels.

7.2.4.5 Frame (fixed)

Shows from which frame of the channel the signal comes.

7.2.4.6 Displayname

The shown name of the signal can be modified here.

7.2.4.7 Unit

The user can edit the signal unit in the column [Unit]. The Remote Control Monitor uses the signal unit loaded from the database as default value.

7.2.4.8 Value

In the column “Representation” the user can select one of the following three number formats in which the signal is interpreted.

Decimal:
The signal value is displayed as an integer value or as floating point value with up to 7 (max.) decimal places. If a signal value exceeds the maximum number of displayable characters (16), the display automatically changes to floating point display.

Hexadecimal:
The signal value is displayed as a hexadecimal raw value up to a signal bit length of 32 bit. For signal values that are longer than 32 bit, only the decimal format is available.

Binary:
The signal value is displayed as a binary raw value up to a signal bit length of 8 bit. For signal values that are longer than 8 bit, only the decimal or the hexadecimal format is available.

The Remote Control Monitor function automatically calculates the number of the required decimal places from the parameters bit length, value range, factor and offset and records this value into the column “Precision“ as the default.

7.2.4.9 Precision

In the column [Precision] the user can change the number of the decimal places in the range from 0 up to 7.

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7.3 Remote Control preview

The Remote Control preview allows checking how the current configuration will look like in the Remote Control display. This feature simplifies adjusting the parameters for a proper display within the 20 columns.

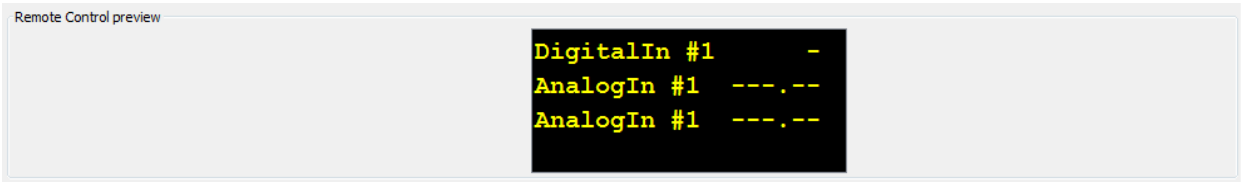

Figure 7.9: Remote Control preview

Since the actual values of the signals are not known at this point, default value lengths are used for the preview.

The display of the signal value has always a higher priority as the display of the signal name and the signal unit. The signal value will overwrite the signal name and the signal unit, if 20 characters for a line are not enough to display all parameters.

Exceeds a signal value the maximum displayable number of characters, it is automatically changed to the default display.

7.4 Change of database

Is there a change of the database during the configuration or before loading a configuration, the display of the signal parameters will be updated. So the signal parameters of the new database are being used.

The signals will be displayed as follows, if there is no matching between new database and selected signal or the database is completely deactivated. An additional hint is displayed in the footer line.

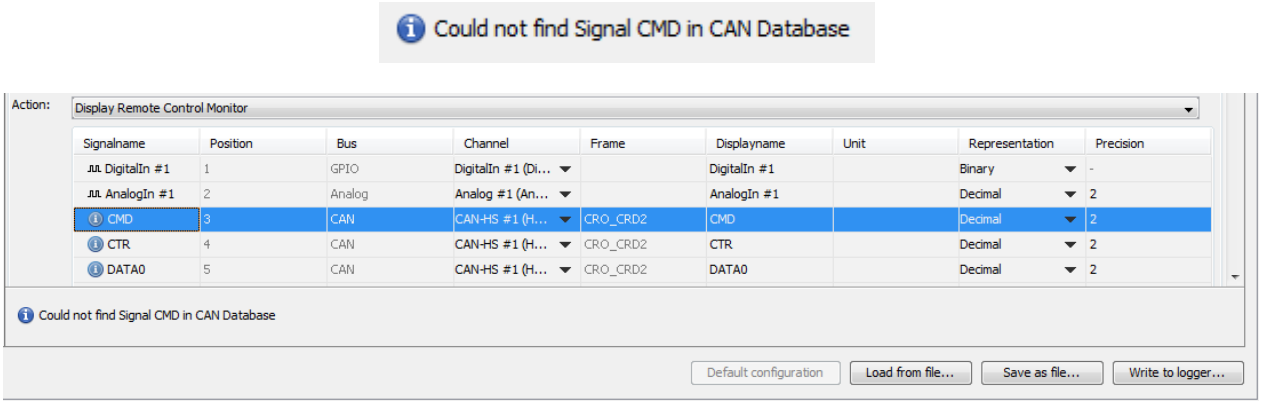

Figure 7.10: Change of CAN-database

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8 Trigger overview

To manage your trigger as fast as possible we included the trigger overview. You can reach the trigger overview by clicking the category **[Trigger]**.

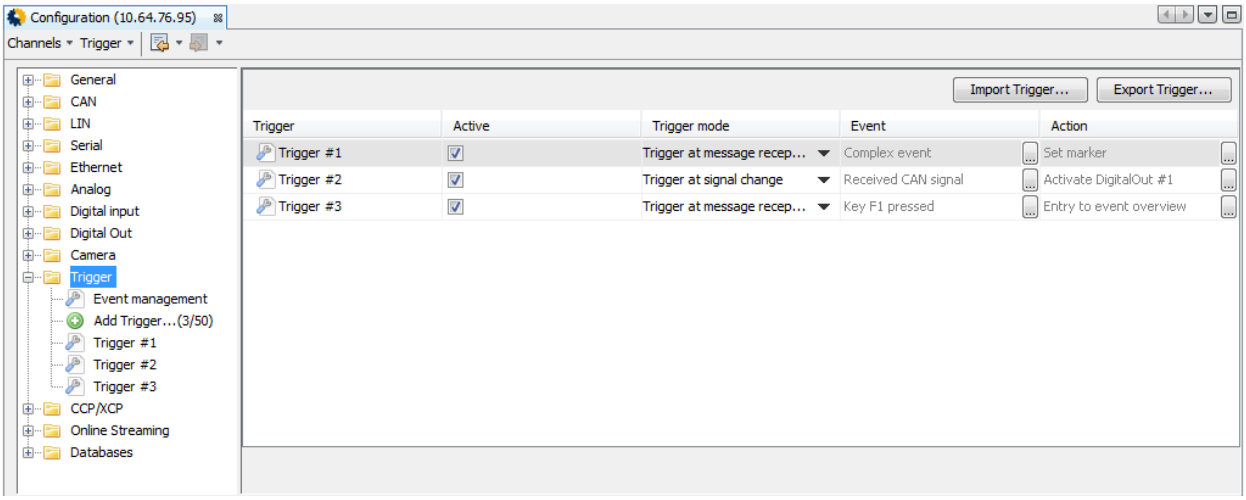

Figure 8.1: Configuration – Trigger: Trigger (overview)

The trigger overview contains the important information about the trigger settings.

To select every trigger press **[Strg]** und **[A]** simultaneously.

To select only multiple trigger you have two possibilities.

- Press **[Strg]** and hold it while marking single triggers. or
- Select a group of triggers one below the other by selecting the trigger on top resp. bottom of the group, pressing and holding Shift **[↑]** and finally selecting the trigger on bottom resp. top of the group.

For the selected triggers the following options are available:

- Import / export Trigger
- Duplicate Trigger
- Delete Trigger
- Activate / deactivate Trigger

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8.1 Im- or export trigger

The import and export function perform any tasks needed to process load and store external trigger to transfer created triggers to another blue PiraT2 / blue PiraT Mini logger or configuration.

The button bar on the right above the overview contains the following buttons.

Button	Effect
Import Trigger...	imports trigger by converting from external *.zip archive to the internal format
Export Trigger...	exports trigger by converting from the internal format to the external *.zip archive

Table 8.1: Buttons in the trigger overview

The rest of the logger configuration will stay untouched. Import trigger from offline configurations is working as well.

Note:
If you import a trigger with a trigger name (e.g., Trigger-001) that is already used from another trigger in the overview, you should delete or rename one of them. Otherwise you have no chance to filter the trigger in the traces.

8.2 Duplicate trigger

By the function **[Duplicate Trigger]** in the shortcut menu of each trigger you can make an exact duplicate of a trigger with the same properties like the source trigger.

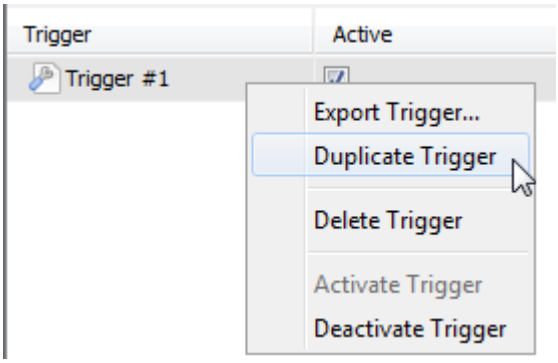

Figure 8.2: Duplicate trigger

To identify a duplicated trigger the name of the duplicated trigger will look like this:

Sample: *name of source trigger*_Copy*ID*

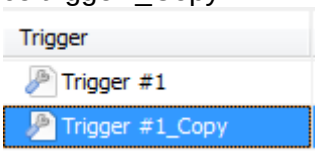

Figure 8.3: Duplicated trigger

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9 Appendix

9.1 Remote Control character set

The following characters from the windows-1254 character set table are displayed by the Remote Control Monitor:

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-	SP	!		#	$	%	&	'	(	)	*	+	,	-	.	/
3-	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4-	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5-	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6-	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7-	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	
8-																
9-																
A-		¡	¢	£		¥		§	¨		ª	«				¯
B-	°	±	²	³		µ	¶	·				»	¼	½		¿
C-				Ã	Ä	Å	Æ	Ç		É						Ï
D-		Ñ				Õ	Ö	×	Ø				Ü			ß
E-	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	Í	î	ï
F-		ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü			ÿ

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10 Abbreviations

Kürzel / abbreviation	Bedeutung / meaning
blue PiraT	**P**rocessing **I**nformation **R**ecording **A**nalyzing **T**ool
bP	**b**lue **P**iraT
bP2	**b**lue **P**iraT**2**
bP2 5E	**b**lue **P**iraT**2** 5E
bPMini	**b**lue **P**iraT Mini
RC Touch	**R**emote **C**ontrol **T**ouch
bP Remote	**b**lue **P**iraT **R**emote
A2L	**A**SAM MCD-**2** MC **L**anguage
AE	**A**utomotive **E**lectronics
ACK	**ACK**nowledged
CAN	**C**ontroller **A**rea **N**etwork
CCP	**C**AN **C**alibration **P**rotocol
CF	**C**ompact **F**lash
CRO	**C**ommand **R**eceive **O**bject
DAQ	**D**ata **A**cquisition
DTO	**D**ata **T**ransmission **O**bject
ECL	**E**lectrical **C**ontrol **L**ine
ECU	**E**lectronic **C**ontrol **U**nit
FIBEX	**FI**eld **B**us **Ex**change Format
FW	**F**irm**w**are
GMT	**G**reenwich **M**ean **T**ime
INCA	**IN**tegrated **C**alibration and **A**pplication Tool
LAN	**L**ocal **A**rea **N**etwork = Netzwerk
LIN	**L**ocal **I**nterconnect **N**etwork
MAC	**M**edia **A**ccess **C**ontrol
MCD	**M**easure **C**alibrate **D**iagnose
MDX	**M**eta **D**ata E**X**change Format
MEP	**M**OST **E**thernet **P**acket
MOST	**M**edia **O**riented **S**ystems **T**ransport (www.mostnet.de)
ODT	**O**bject **D**escriptor **T**able
ODX	**O**pen **D**ata E**X**change
OEM	**O**riginal **E**quipment **M**anufacturer

PHY	**PHY**sical Bus Connect
PW	**P**ass**w**ort
RX	**R**eceiver Data
SD	**S**ecure **D**igital
SFTP	**S**ecure **F**ile **T**ransfer **P**rotocol
SHA	**S**ecure **Ha**sh
SSL	**S**ecure **S**ockets **L**ayer
TCP/IP	**T**ransmission **C**ontrol **P**rotocol/**I**nternet **P**rotocol
TLS	**T**ransport **L**ayer **S**ecurity
TMP	**T**ele**m**otive **P**acketformat
TSL	**T**elemotive **S**ystem **L**ink
UDP	**U**ser **D**atagram **P**rotocol
USB	**U**niversal **S**erial **B**us
UTC	**U**niversal **T**ime, **C**oordinated
Wi-Fi	**Wi**reless **Fi**delity
WLAN	**W**ireless **L**ocal **A**rea **N**etwork
XCP	Universal Measurement and **C**alibration **P**rotocol

Table 10.1: Abbreviations

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