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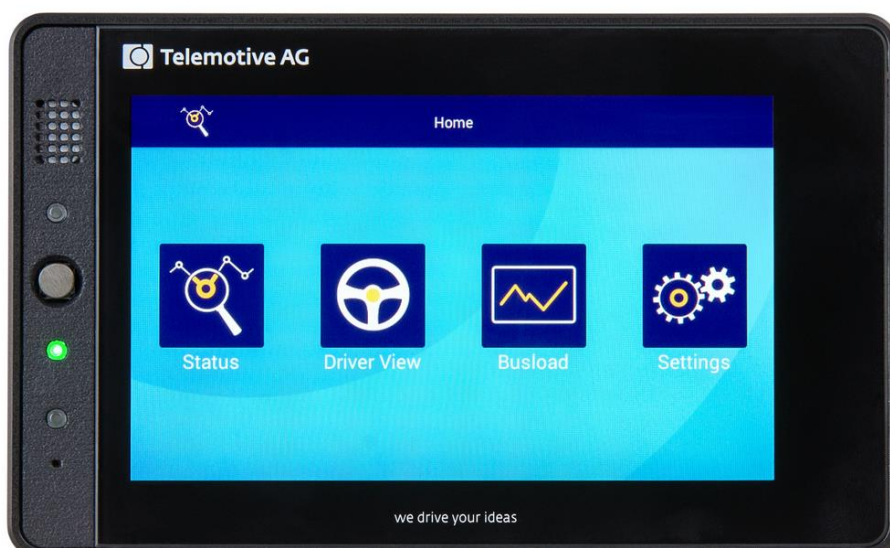
Remote Control Touch / blue PiraT Remote User Guide

Version 2.4.1 / 9/16/2016

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3   Overview

This user guide describes the administration of the

- Remote Control Touch
- blue PiraT Remote

of Telemotive AG.

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.

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
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
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 some additional features 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.

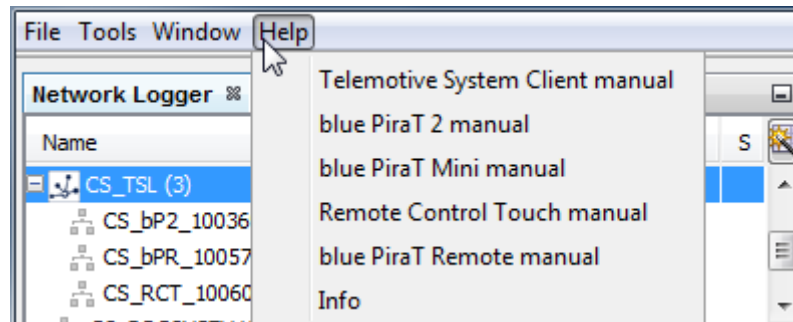**Figure 4.1: links to the manuals**

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**.

4.2 Additional features by optional licenses

Additional features can be activated by purchasing and installing licenses. Licenses can be ordered at our sales team. You find the user guides for these additional features in the Telemotive ServiceCenter. Currently the following licensed features are available.

Feature	Description
Complex Triggers	Certain events (e.g., conditions on CAN-signals) can be programmed to be a trigger for certain actions (e.g., display of a message on the Remote Control or send a CAN message). The standard configuration of the data logger contains 2 complex triggers. This license allows configuring up to 50 complex triggers.
Remote Control Monitor	display of configurable CAN, LIN, FlexRay, analog and digital signals at the Remote Control
Diagnostic Log and Trace	logging of Diagnostic Log and Trace (DLT) messages over Ethernet or serial (restricted) connections
Camera Link	video recording via video server or network cameras
WLAN	supporting wireless LAN (802.11, 802.11a, 802.11n), (802.11ac from FW 02.04.01)
GPS logging	tracking of GPS data
Measurements with CCP	CAN Calibration Protocol
Measurements with XCP	Universal Measurement and Calibration Protocol Currently the functionality for Ethernet (XCP on Ethernet) and the CAN-bus (XCP on CAN) are available.
MOST150 Streaming	logging MOST150 synchronous/isochronous data
Signal Based Filtering	The feature **Signal Based Filtering** provides the possibility to extract pre-configured signals directly from the recorded CAN, LIN, FlexRay, analog and digital messages with an adjustable sampling frequency. These filtered signals can be stored directly to the logger and extract automatically in a MDF, CSV or TMT file.
Telemotive Live View	showing CAN signals in a HTML-5 compatible browser on mobile devices like smartphones, tablets or laptops over Wi-Fi (licensed feature) or Ethernet The enhanced version has no limitation to mobile devices or signals which can be shown.
BroadR-Reach logging	recording of data over BroadR-Reach Ethernet. *(Note: Just available for blue PiraT Mini)*
MLBevo	The license **Connected-Gateway MLBevo** enables the recording of data of the ATOP control unit MLBevo via USB to the Telemotive data logger and convert these data with the Telemotive System Client. *(from FW 02.03.01)*
Telemotive Download Terminal	Telemotive Download Terminal allows an automatization of configured tasks for a defined group of devices. *(from FW 02.03.01)*
TPE	TPE = **Telemotive Performance Extension** Increasing the logging rate for Ethernet data up to 100Mbit/s *(from FW 02.04.01)*
Test automatisation	Interface for connecting to test automation tools. At the moment, the sending of CAN messages is supported. *(from FW 02.04.01)*

Table 4.1: Additional features by optional licenses

5 Remote Control Touch / blue PiraT Remote – hardware

This chapter describes the hardware of the **Remote Control Touch** and **blue PiraT Remote**. The position and function of all interfaces, the accessories and the installation of hard- and software are explained.

The **Remote Control Touch** is the remote control and external display device for the blue PiraT Mini and blue PiraT2 data loggers or a TSL network.

The Remote Control Touch allows you to:

- display bus load, status and memory of available interfaces,
- display date and time,
- trigger functionkeys,
- display set markers,
- adjust backlight and volume,
- set triggers,
- record and play voice notes.

The **blue PiraT Remote** has additional some interfaces and internal storage for logging data and can therefore be used as stand alone device.
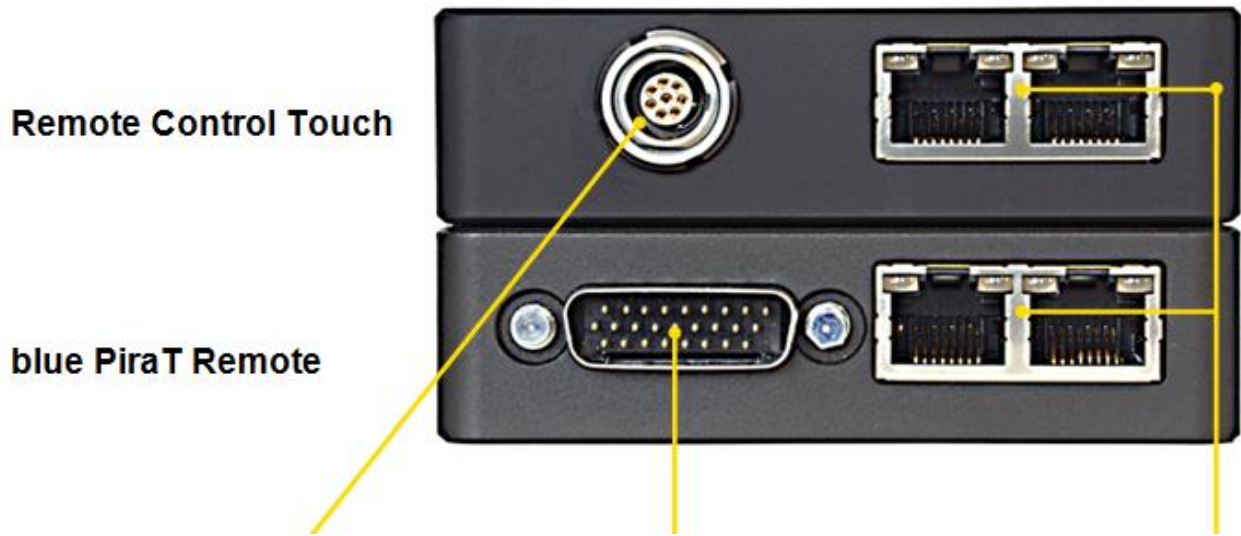
5.1 Position of connectors and operating elements

5.1.1 Top view
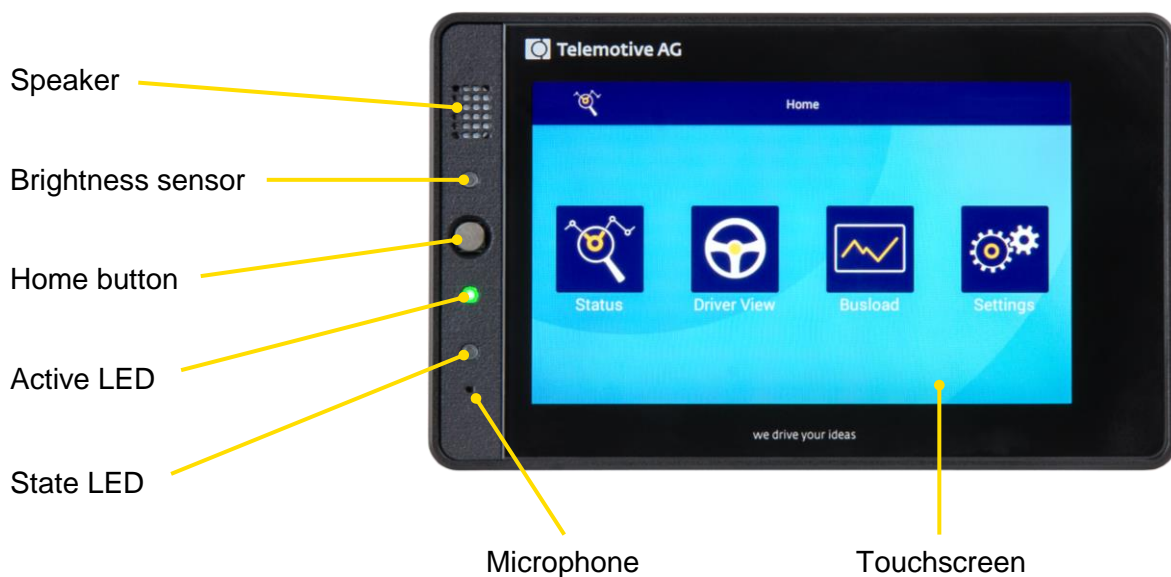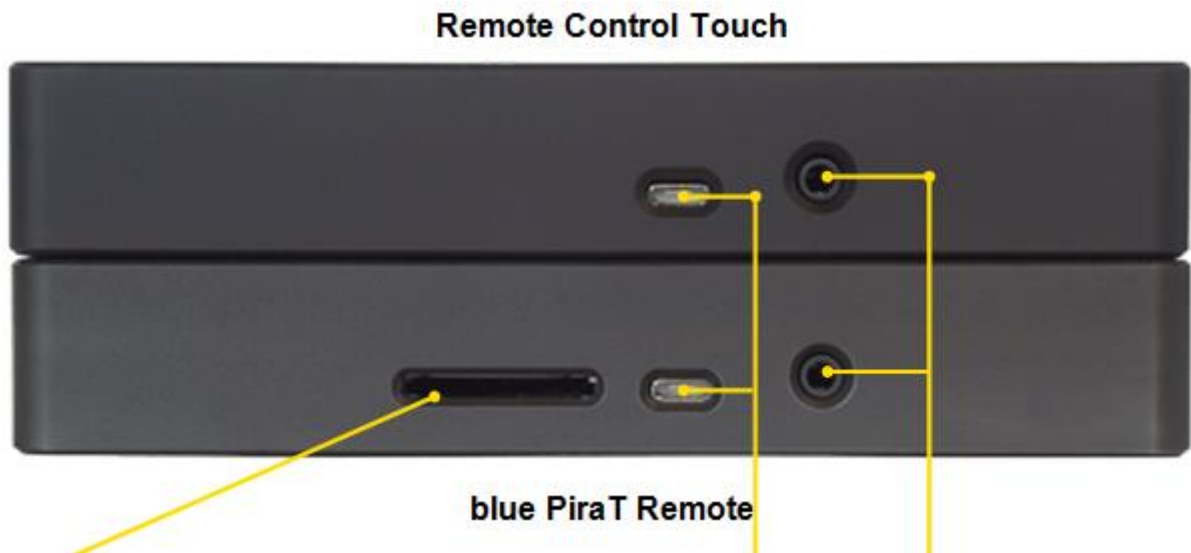

Figure 5.1: Top view with operating elements

5.1.2 Side view, from the right

| **1** 8-pol LEMO socket (RCT) | **2** 26 pol SUB-D (bPR) | **3** 2x Gbit Ethernet (RJ45) |

Figure 5.2: Side view, from the right with connectors

5.1.3 Rear side

| **4** SD card slot | **5** Micro-USB |

6 4-pol audio jack plug
stereo out/microphone (3.5 mm)
OMTP

Figure 5.3: Rear side view with connectors

5.2 Functionality of connectors and operating elements

The functionality of connectors and operating elements is impaired by certain conditions such as moisture, darkness, heat or cold, mechanical action, dirt or similar.

Observe therefore the points described in chapter 8 Maintenance provisions and safety regulations.

5.2.1 Ports

The ports are used to connecting the devices, for example with the power supply.

Port		Cable	Connection with …
No.	Designation		
1	8-pol LEMO socket (RCT only)	Power cable with LEMO connector to banana plug	Power source
2	26 pol SUB-D (bPR only)		Power source interfaces
3	2x Gbit Ethernet (RJ45)	Gbit Ethernet cable	Client computer or data logger
4	SD card slot (bPR only)		Logging data
5	Micro-USB 2.0	Micro-USB connecting cable	USB devices
6	4-pol audio jack plug stereo out/microphone (3.5 mm) OMTP (CTIA does NOT work!)	3.5" jack/audio cable	Microphone, speaker, headset, etc.

Table 5.1: Available connections

5.2.2 Brightness sensor

The brightness sensor helps adjust the screen's backlight depending on the ambient light. It serves only the automatic regulation and is permanently active, for switching the display if necessary.

5.2.2.1 Night mode

If the environment is too dark, the devices automatically switches into night mode. In this view, the surface is displayed in modified colors, so that the driver is not blinded. The night mode will be activated if you drive into a tunnel for example.

5.2.3 Home button

The Home button is used to:
- switching the device on or off,
- resetting the device to default settings and
- switching to the **[Home]** screen

5.2.4 Speaker

The speaker is used to play voice notes. Its volume is adjustable.

5.2.5 LEDs

Activity and operating state of the **Remote Control Touch** and **blue PiraT Remote** are indicated by the LEDs.

Activity / operating state	Behavior	
	Active LED	**State LED**
device goes to standby	green pulsing	not lighted
in error mode	green light	red light
in operation	green light	not lighted
powered off	not lighted	not lighted
press Home button	brief light-up	not lighted
record voice note	brief light-up	red pulsing, as long as recording
reset device	green light	red flashing, two times, then not lighted
set trigger	brief light-up	not lighted
switch off device	green pulsing	not lighted
switch on device	green flashing	not lighted
update firmware	green light	red light
wake up device	brief light-up	brief light-up

Table 5.2: LED behavior

5.2.6 Microphone

The microphone is used to record voice notes on triggers. The quality of the voice recording depends on the ambient environment .

5.2.7 Touchscreen

The screen is used to operate the devices. Only use the tip of the finger to operate it. The brightness is adjustable.

5.2.8 Micro-USB port

The Micro-USB port can be used in the host-mode.

It can be used for logging data to an external media (blue PiraT Remote only!) or for connecting a Wi-Fi module to the logger. Wi-Fi can be used to get access to the logger over the client or to use the feature **Telemotive Live View**.

USB storage (at blue PiraT Remote only):
The USB storage has to be formatted in the FAT32 file format. You could connect USB flash drives and external hard drive up to a maximal supply current of 500 mA. External power supplies must not be connected to the hard disk.

If the USB memory is pulled in the operational state, the following problems exists:

- The logger is in an undefined state and will not record any data.
  Only after rebooting the device behaves as expected.
- The data on the USB memory can then be unreadable when it is removed during a write operation.

If you turn off the blue PiraT Remote with the **[ON / Trigger]** button, you have 5 seconds to remove the medium before the logger can be reawakened.

Note:
Telemotive AG recommends the testing of every external storage before using it in a measurement. We suggest that especially USB devices with USB 3.0 are sometimes not recognized by the system.

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5.2.9 SD card slot (blue PiraT Remote only)

The **blue PiraT Remote** offers the possibility to store data parallel to a removable media as SD card or USB device. The configuration of this feature is described in the Telemotive System Client user guide.

The removable media must be formatted with FAT32 with a storage capacity of at least 4 GB. The following SD cards have been tested with the Telemotive data loggers and released for use:

Manufacturer	Description	Size	Type
SanDisk	Extreme PRO	64 GB	SDXC
Transcend	Ultimate Speed	16 GB	SDHC
Transcend	Ultimate Speed	32 GB	SDHC
Transcend	Ultimate Speed	64 GB	SDXC
Kingston	SDA3	16 GB	SDHC
Kingston	SD10VG2	32 GB	SDHC
Intenso	3431470	32 GB	SDHC
Intenso	3431490 Professional	64 GB	SDXC
Hama	Class 10 45 Mbps	16 GB	SDHC
Hama	Class 10 45 Mbps	64 GB	SDXC
Extrememory	Performance Class 6	16 GB	SDHC
Extrememory	HyPerformance Class 10	32 GB	SDHC
SanDisk	Extreme	32 GB	SDHC

Table 5.3: Compatible SD cards

If the removable media is detected by the logger, the red State LED starts flashing.

A write-protected SD memory card will be indicated by the permanent illumination of the red STATE LED.
In addition, the write protection will be highlighted in the network logger window of the Telemotive System Client with a red labelled exclamation mark and an entry in the bug report FC_MS_READ_ONLY" with a corresponding note.
Then shut down the bP Mini, unlock the SD card, reinsert it and reboot the device.

Attention:
Removing the SD card without prior shutdown may result in the loss of all recorded data.

If the SD card is pulled in the operational state, the following problems exists:

- The logger is in an undefined state and will not record any data.
  Only after rebooting the device behaves as expected.
- The data on the SD card can then be unreadable when the SD card is removed during a write operation.

If you turn off the blue PiraT Remote with the **[ON / Trigger]** button, you have 5 seconds to remove the disk before the logger can be reawakened.

Please find more hints for using the SD card in the manual of the Telemotive System Client.

5.3   Accessories

The **Remote Control Touch** is supplied with a power cable with LEMO connector to banana plug (length: ~ 1,5 m).

The **blue PiraT Remote** is connected by a 26-pol SUB-D connector to the device and has the cables for the available interfaces integrated in the cable set.

Additional accessories are available for purchase. The following accessories are compatible:

- mounting bracket
- various adapter cables

Please contact our sales department for more information about the accessories.

5.4   Installation

The **Remote Control Touch** and blue **PiraT Remote** require a connection to the power supply and one to the client computer.

In order to make full use of all functions of the Remote Control Touch, a connection to at least one blue PiraT data logger is required. This creates a **T**elemotive **S**ystem **L**ink (**TSL**).

Find more information about client and TSL in the **User manual for the Telemotive System Client**.

5.4.1 Cable connection

Note:
Connect the Remote Control Touch and blue PiraT Remote only with devices of Telemotive AG (blue PiraT2, blue PiraT Mini, Remote Control).

Note:
Make sure that the devices are switched off before disconnecting it from power supply.

5.4.1.1 Power supply for Remote Control Touch

The power connection of the Remote Control Touch is similar to that of the Remote Control Voice. They are NOT identical. We therefore recommend to use the device-specific cable.

A power cable with LEMO connector to banana plug is required for the connection of the Remote Control Touch to the power supply.
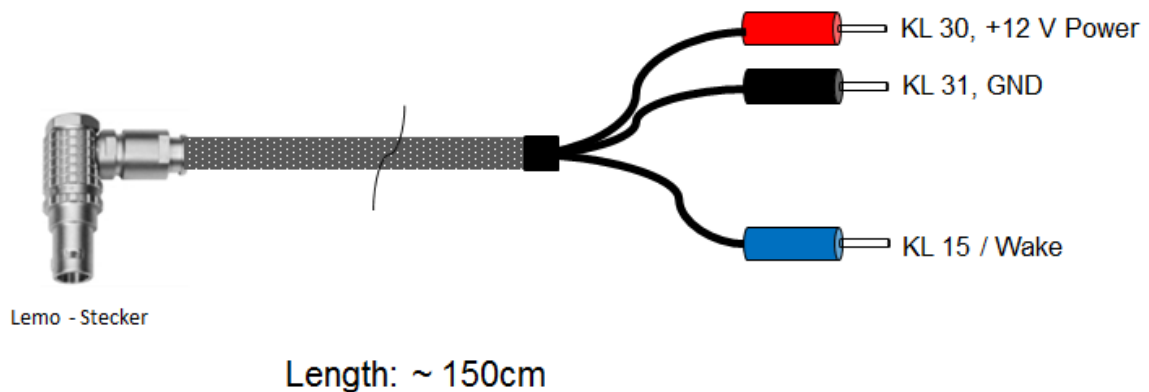
Figure 5.4: Power cable with LEMO connector to banana plug

Plug the LEMO connector into the Remote Control Touch and the banana plug into the power supply (**red/Vbat /+/Clamp 30** and **black/GND/-/Clamp 31**).

5.4.1.2 Power supply for blue PiraT Remote

A cable set with 26-pol SUB-D connector to banana plug is required for the connection of the **blue PiraT Remote** to the power supply.
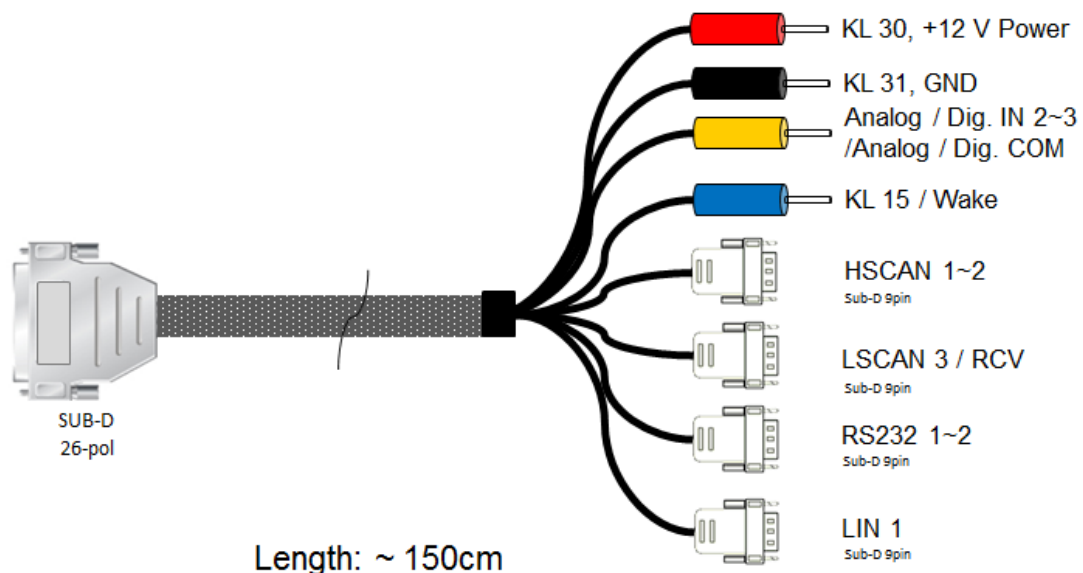
Figure 5.5: Power cable with 26-pol SUB-D connector to banana plug

Plug the 26-pol SUB-D connector into the **blue PiraT Remote** and the banana plug into the power supply (**red/Vbat /+/Clamp 30** and **black/GND/-/Clamp 31**).

5.4.1.3 In the network

The **Remote Control Touch / blue PiraT Remote** has two Ethernet ports. The loggers to be controlled are connected directly via Ethernet. These loggers must establish a TSL network with the Remote Control Touch / blue PiraT Remote in order to be recognized. The client computer can be connected to a free Ethernet port of the TSL chain.

Figure 5.6: TSL network with one bPMini, one RCT and one bP2 (e.g.)

5.4.2 Telemotive System Client

Note: When delivered, the Remote Control Touch / blue PiraT Remote is configured as a DHCP server.

Open your internet browser.
Enter the IP address of the Remote Control Touch / blue PiraT Remote in the address bar. (IP factory setting: **192.168.0.233**)

Press the **[Enter]** key.

- The computer connects to the device.
- The TSL Client Portal opens.
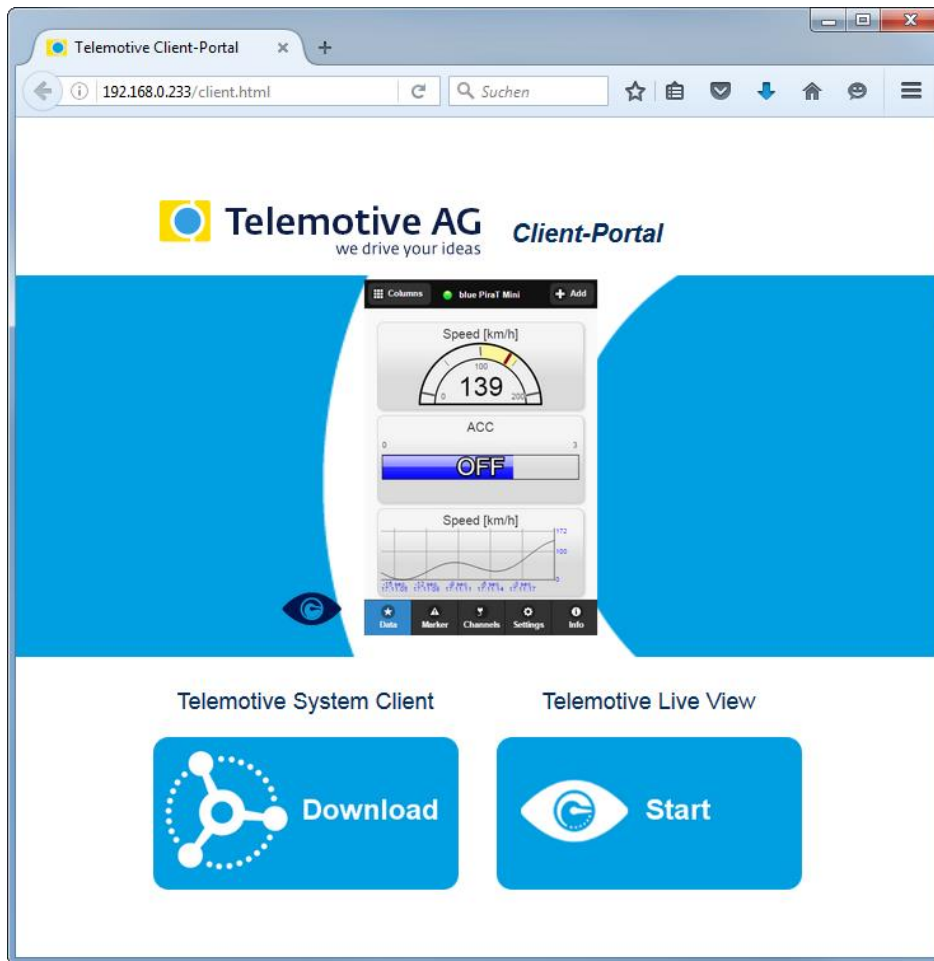
Figure 5.7: Telemotive Client Portal

Note:
Your network connection must be set to "Obtain IP address automatically".

Click **[Download]**, to download the **Telemotive System Client** directly from the device.

Follow these steps, depending on your browser:

Browser	Proceeding
Internet Explorer	Click **[Save]**, to locally save the file on your system. Click **[Accomplish]**.
Mozilla Firefox	Click **[Save file]**, to locally save the file on your system. Click the arrow on the right top of the browser menu and select the downloaded application in the appearing context menu.

In the dialog that opens select the desired software language from the dropdown menu. Click **[OK]**.

Follow the instructions in the next dialog and select an installation directory. Click **[Install]**.

- Telemotive System Client is installed.

- Shortcut to "Telemotive System Client" appears on the desktop and in the start menu.

Figure 5.8: Shortcut to Telemotive System Client

5.5   Connecting the RCTouch / bP Remote with a data logger

5.5.1 Configure the network settings

All Telemotive devices are configured as **DHCP-Server** by default. They both got the **IP address 192.168.0.233**. There are three different ways to connect these devices.

1. Set up the data logger as DHCP-Server and the RCTouch / bP Remote as DHCP-Client

2. Set up the data logger as DHCP-Client and the RCTouch / bP Remote as DHCP-Server

3. Set up both devices as DHCP-Client

You can read in the **Telemotive System Client manual (Network settings)** how to set up the network settings. You can find the manual in the Client under **[Help]**.

In our example we configured the **Remote Control Touch / blue PiraT Remote** as DHCP-Client and connected it with the data logger **(see chapter 5.4.1.2)**. In the next picture you can see the two devices in the client. The device with the IP address 192.168.0.233 is the data logger, because it is set up as D0HCP-Server. In the **Telemotive System Client manual (Name)** you can see how to give names for the devices. This might be helpful for better clarity.
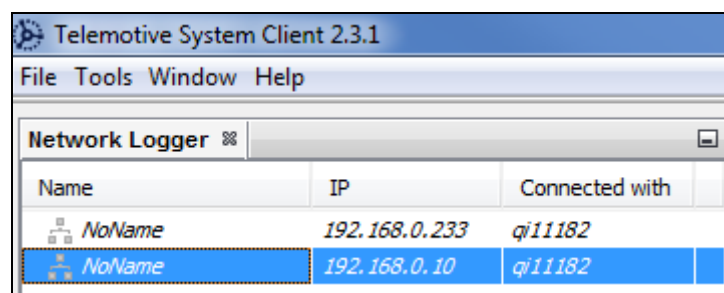
Figure 5.5.9: Viewing the devices in the client

5.5.2 Activating Telemotive System Link (TSL)

To use the RCT, you have to activate TSL at **both** devices. You can activate it by clicking **[TSL active]** like you can see in the following picture. In the **Telemotive System Client manual (Establishing and configuring a TSL network)** you can find more details about TSL.
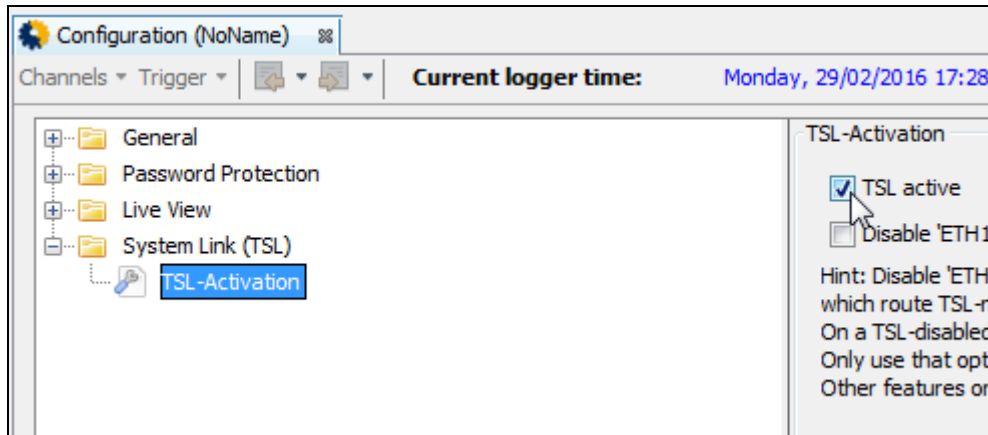
Figure 5.5.10: Activating TSL

If TSL is active at both devices, they are shown as TSL compound in the client. You can use the RCT with the data logger now.
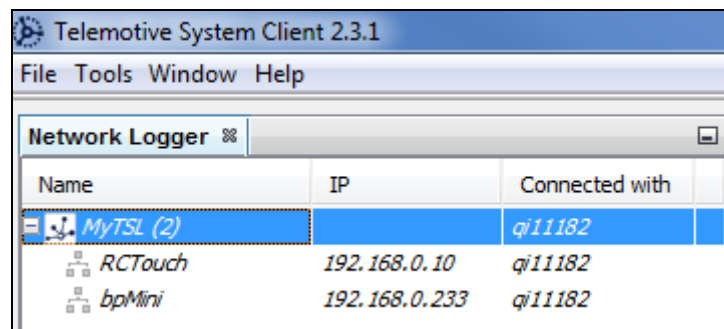
Figure 5.5.11: Representation of the TSL compound in the client

5.6   Resetting the network settings

Note:
Due to a wrong network setting it may be impossible to reach the data logger any more. In this case the network configuration can be resetted by a long press on the [ON / Trigger] button to default settings: => DHCP server with IP 192.168.0.233.

Switch off the device

Press the home button.

- Active-LED and State-LED are blinking once. Active-LED is blinking green.

Press and hold the home button for about 20 sec. until the state LED is blinking 2 times.

- State-LED is blinking 2 times
- Active-LED is lightning green.
- The network settings will be set back to default

Tipp on **[Accept]**.

- The warning popup disappears.
- Active-LED is blinking green.
- The display shows the launcher with a progress bar.
- A warning popup is shown.

Tipp on **[Accept]**.

- The warning popup disappears.

The Remote Control Touch / blue PiraT Remote is ready when:

- The view **[Overview]** is shown on the display and
- Active-LED is lightning green.

Afterwards the data logger can be reached again by using a direct connection with a PC/Laptop.

You'll find more information in the **Telemotive System Client** manual

6   Surface

This chapter describes the application setup and the layout of the individual views as well as the displays contained.

The **Remote Control Touch / blue PiraT Remote** software is very user-friendly thanks to its graphic surface and the clear outline.

Figure 6.1 shows the outline of the application in **<Home>** view and four applications. The application views contain minimum one tab. For the applications Driver View and Settings, the number and naming of the tabs is set.
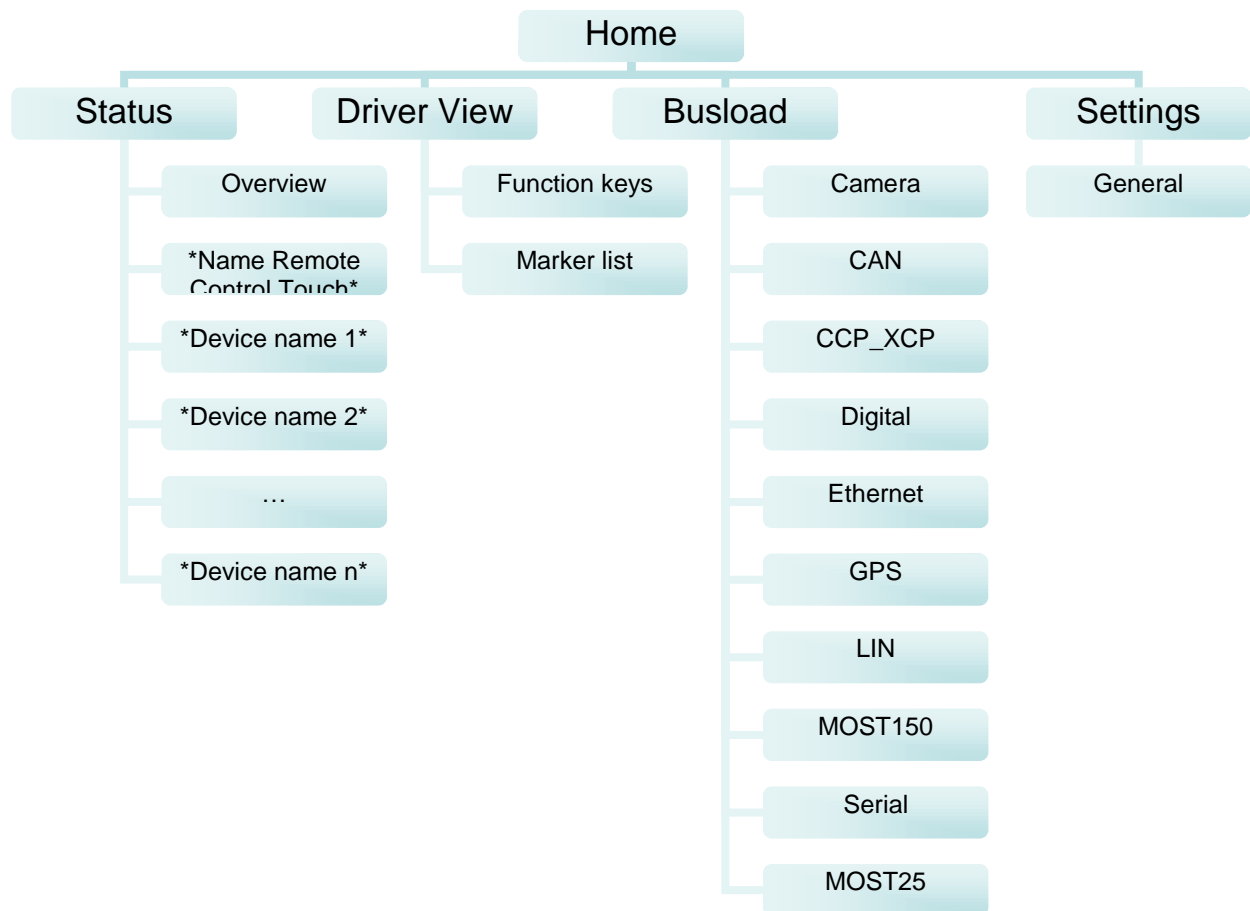
Figure 6.1: Application sitemap

Note: "n" stands for any number of devices

When an application is launched for the first time after switching on, the uppermost tab is shown. The next time you launch the application, the tab last opened is shown.

6.1 Layout of the views

All views consist of a window and a dark blue frame.
As the window contents vary depending on the view, they are described in more detail in the following sections of this chapter.
The dark blue frame contains in all views a header bar on top and, with the exception of the <Home> view, a tab bar at the bottom.

Figure 6.2: Components of the application views

6.1.1 Header bar

In each view the header bar contains:
- the designation of the current view and

- date and time of the device or the TSL network.

- a trigger button

In the <Home> view:

Is located to he left the Telemotive logo.

In the application views, the header bar contains on the left:

- the button ≡ respectively ← for the side menu,
- the icon of the current application (see section 6.2) and
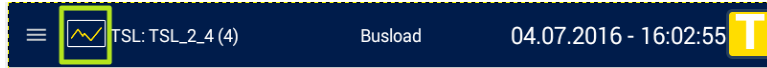
- the device name in standalone mode or
  "TSL: *name of the TSL* (*number of TSL members*)" in the TSL network.
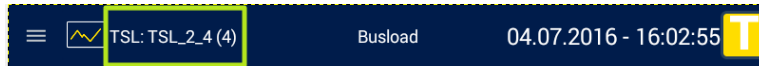
6.1.2 Side menu

Over the button ≡ on the left of the header bar you can access the other applications.
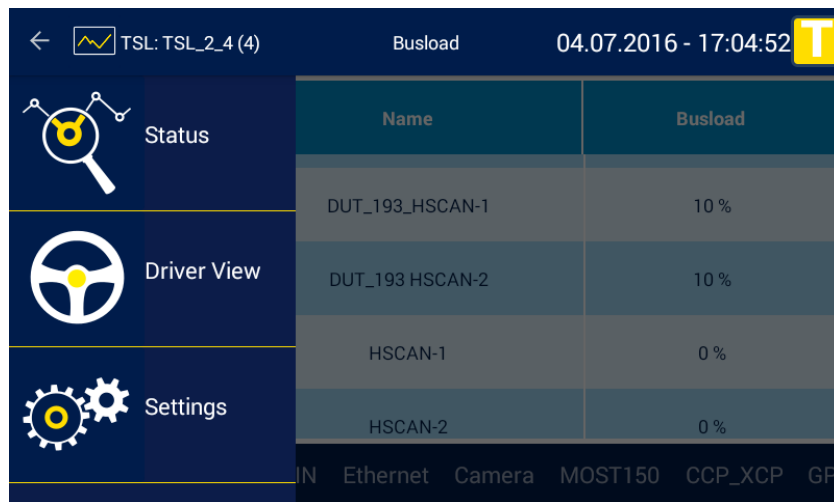
Figure 6.3: Unfolded page menu

- The side menu is closed by the following actions:
- Tap the arrow on the top left in the header bar
- Tap in the unfolded side menu
- Tap the area to the right of the unfolded side menu

6.1.3 Tab bar

In the application views, the tab bar contains minimum one tab. The tabs serve as shortcuts to the individual tab sheets. Inactive tabs contain the name of the tab sheet in blue letters, active tabs in white and bold. The active tab is further characterized by a narrow bright yellow margin above.

6.2 Applications

An icon has been set for each of the four applications to start them more easily. In the <Home> view and the side menu these icons serve as shortcuts to the applications and on the tab sheets they serve for orientation.

Icon	Name	Function
	Status	Display of information on the connected devices
	Driver View	Management of the functionkeys, markers and voice notes
	Busload	Display of all available buses and their channels
	Settings	Adjustment of backlight and volume

Table 6.1: Application overview
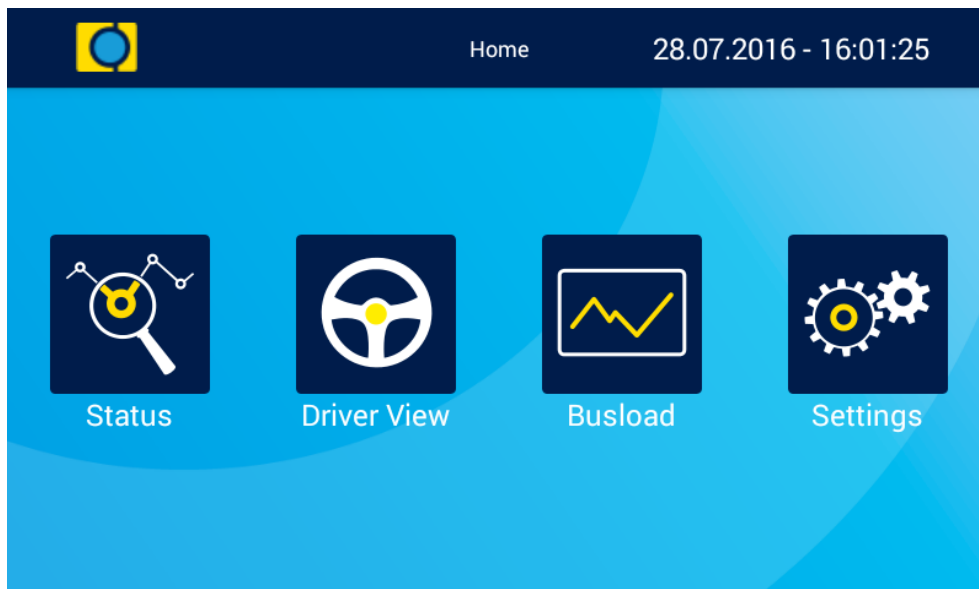
Figure 6.4: Home view

6.3   Tab sheets

In the applications Driver View ⊕ and Settings ⚙, the number and naming of the tab sheets is set.

The application Busload 〜 contains one combined tab sheet for each available interface of the connected loggers. The tab sheets are named after the respective bus interface.
If multiple loggers with active GPS / MOST25 / MOST150 are connected, each GPS resp. MOST interface is assigned a tab sheet.
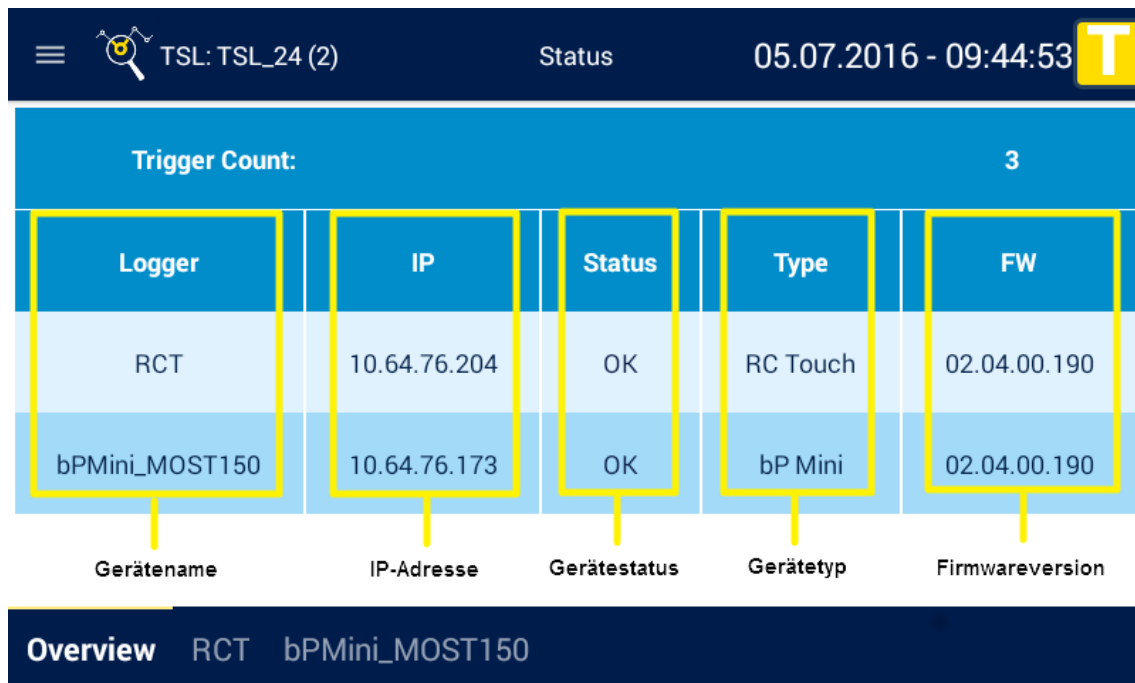
The application Status 🔍 contains minimum two tab sheets:

- the tab sheet **[Overview]** and
- the tab sheet of the Remote Control Touch / blue PiraT Remote with the name assigned in the Telemotive System Client.

If more devices in a TSL network are connected, each device is assigned a tab sheet named after it.

6.3.1 Status - Overview

The window of the tab sheet **[Overview]** contains, apart from the trigger counter at <Trigger Count>, a tabular overview of all connected devices with the following information:

Figure 6.5: Tab sheet "Overview"

6.3.2 Status - *Device name n*

Note: "n" stands for any number of devices

Each device listed on the tab sheet **[Overview]** can be viewed separately on the respectively named tab sheet.

The window of these tab sheets, with the exception of the Remote Control Touch window, contains the following displays:

1	Device name
2	Configuration name
3	IP address and subnet mask
4	DHCP mode
5	Terminal IP address and subnet mask
6	Storage capacity
7	Memory percentage filled
8	Memory percentage protected
9	Device status
10	Error count

Figure 6.6: Tab sheet "*Device name n*"

Note:
The Remote Control Touch has no internal memory. The memory percentage filled and protected are therefore not shown on its tab sheet.

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6.3.3 Driver View – Function keys

The window of the tab sheet **[Function keys]** contains two buttons on the left and ten func-
tionkeys on the right. The functionkeys can be assigned "complex triggers" (see **User manual
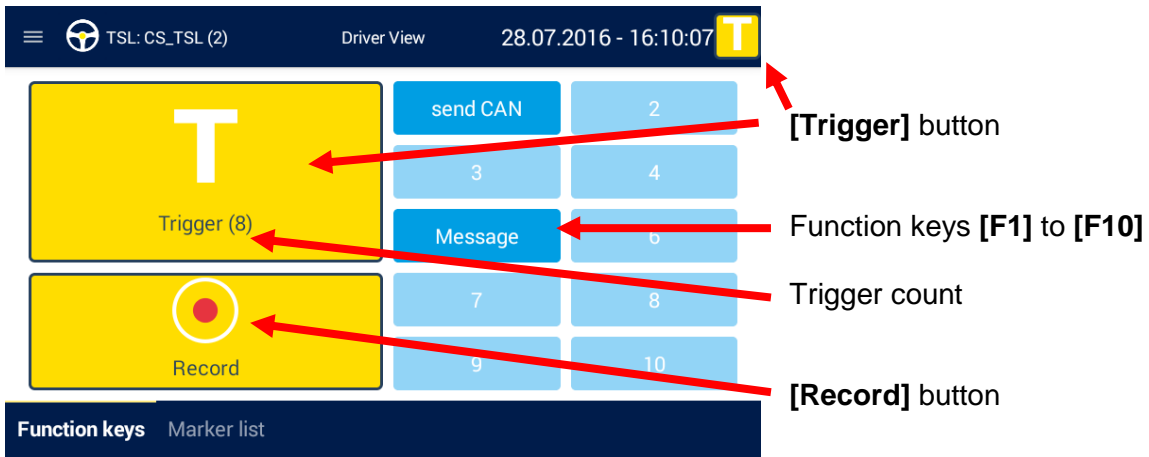for the Telemotive System Client**). The name of the complex trigger is shown as text on the
key.

[Trigger] button

Function keys **[F1]** to **[F10]**

Trigger count

[Record] button

Figure 6.7: Tab sheet "Function keys"

6.3.4 Driver View – Marker list

The window of the tab sheet **[Marker list]** contains two buttons on the left and a list of set
markers on the right. The markers are sorted by index and indicate date and time of the setting.
A trigger that was set using the **[Record]** button contains a voice note. This is indicated by the
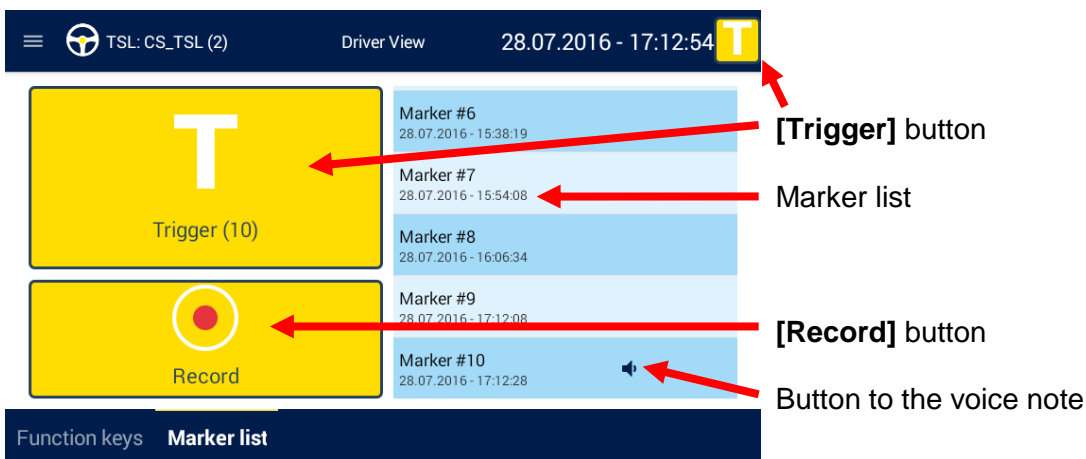🔊 button in the marker entry.

[Trigger] button

Marker list

[Record] button

Button to the voice note

Figure 6.8: Tab sheet "Marker list"

6.3.5 Busload - CAN/Serial/LIN/Ethernet/Camera/CCP_XCP

Each of these tab sheets contains a tabular overview of all channels of the respective bus with the following displays (here using the example of the tab sheet **[CAN]**):
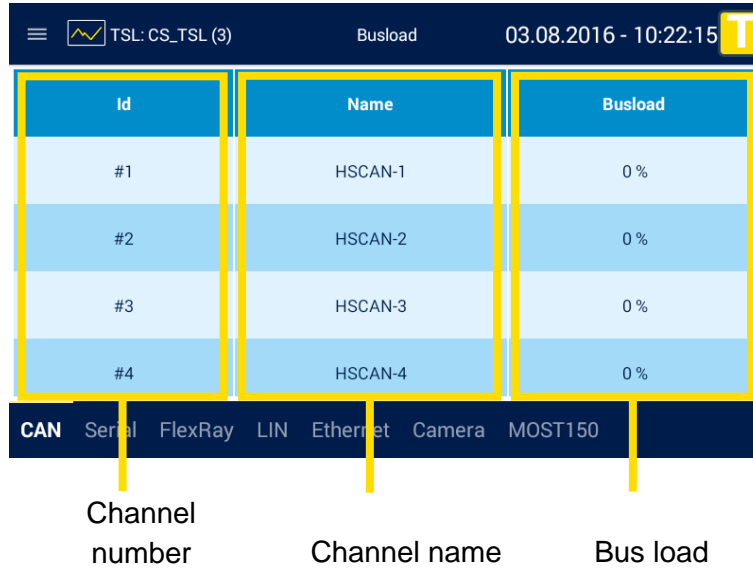

Figure 6.9: Tab sheet "CAN"

6.3.6 Busload - MOST150

Each connected logger that receives MOST150 messages generates its own tab sheet **[MOST150]** with the following displays:
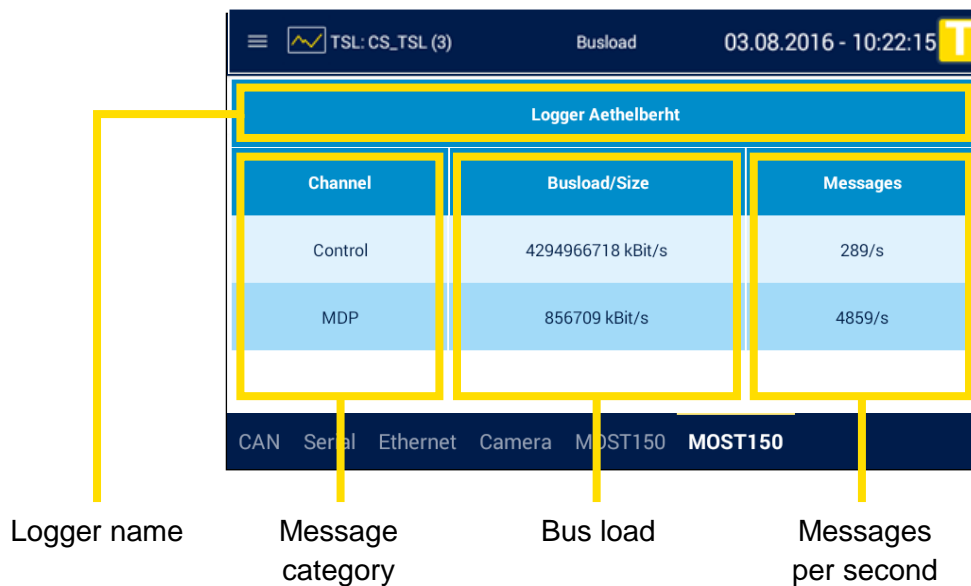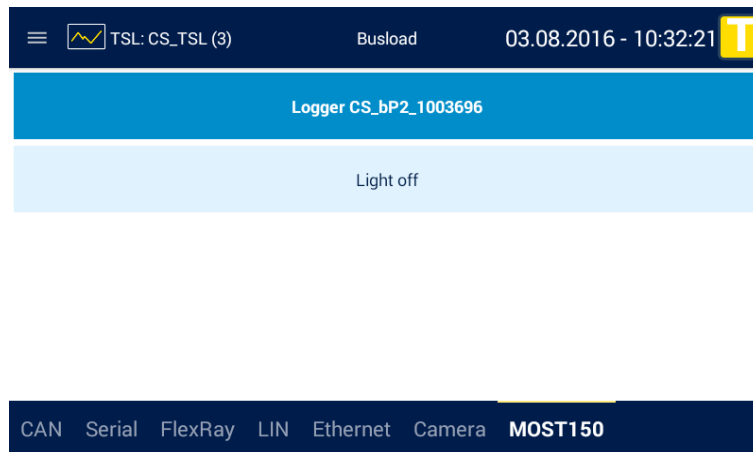

Figure 6.10: Tab sheet "MOST150"

If the window contains only the display of "Light off", the cable is incorrectly connected or no MOST data is sent and the bus is inactive.

Figure 6.11: Tab sheet "MOST150": Light off

In MOST150 the following categories of messages exist:

| Category	Meaning
Control	Control data; for the passing of control messages; transmits up to 384 data byte
MDP	MOST Data Packet; transmits up to 1524 data byte
MEP	MOST Ethernet Packet; for the passing of Ethernet messages; transmits up to 1506 data byte
Streaming Channel/Channels	Synchronous data range; transmits up to 372 data byte | Channel	Busload/Size	Messages
---	---	---
Number of streaming channels Streaming Channels	*Bus load in bytes* B	(remains empty)	 With only one streaming channel, the display under "Channel" is restricted to "Streaming Channel".

Table 6.2: Message categories

6.3.7 Busload - GPS

Each connected logger that receives GPS data generates its own tab sheet **[GPS]** with the following displays:
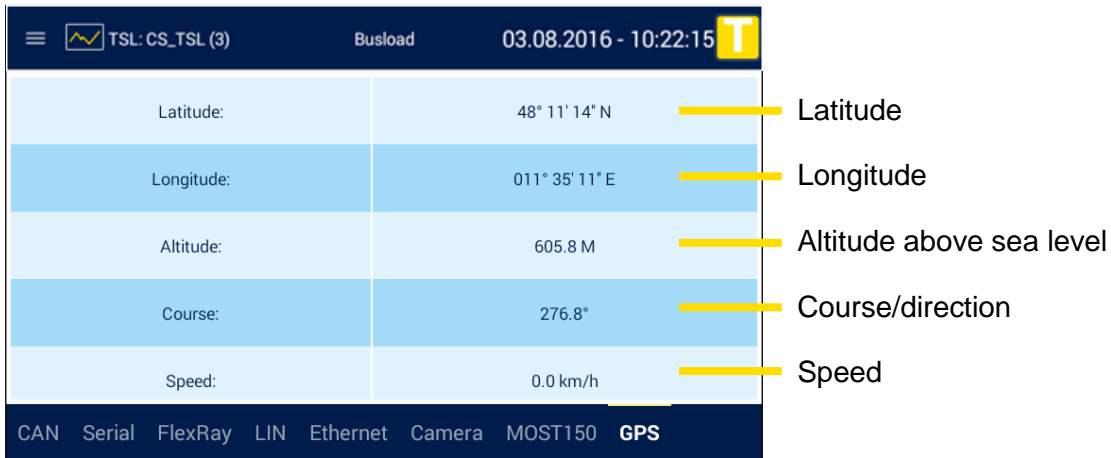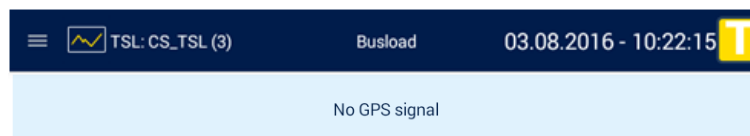

Figure 6.12: Tab sheet "GPS"
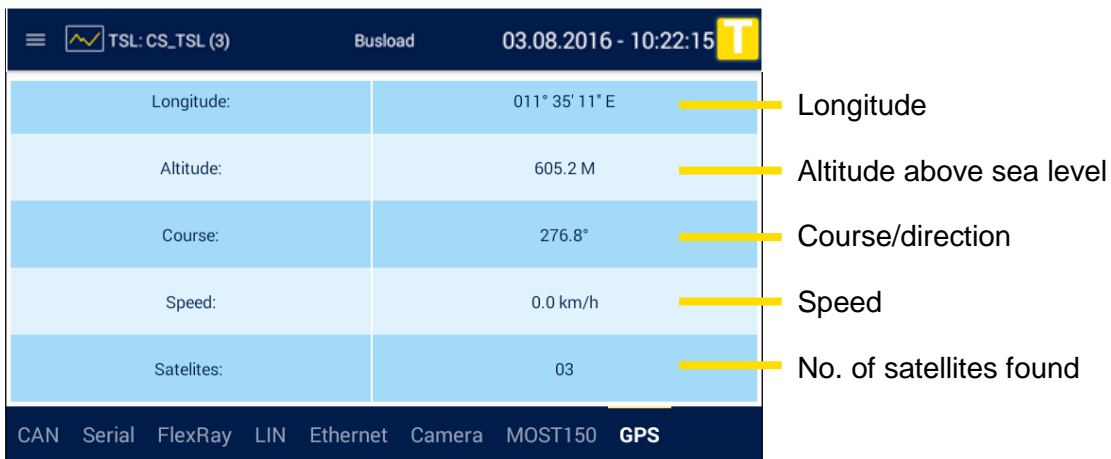
Figure 6.13: Tab sheet "GPS" – continuation

If the window contains only the display of "No GPS signal", this may be for at least one of the following reasons:
- The GPS connection is disabled.
- The GPS receiver is not connected.
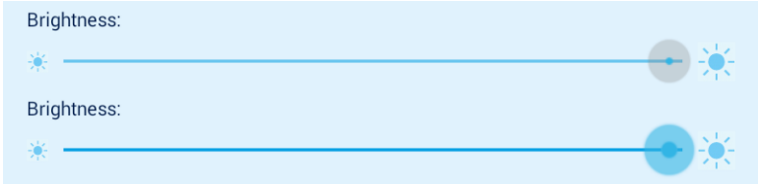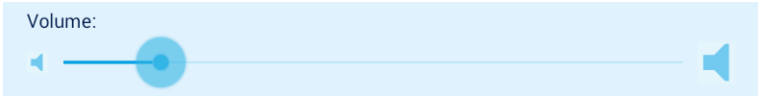- No satellite or too few satellites were found (minimum 3).

Figure 6.14: Tab sheet "GPS": No GPS signal

6.3.8 Settings - General

The window of the tab sheet **[General]** contains a total of five control elements:

1. Brightness scale with brightness slider

2. ON/OFF button

3. Volume scale with volume slider

4. and 5. Intern/Extern button

To adjust a button, tap on the button or in the gray boundary.
To adjust a slider, swipe it to or tap on the desired position on the brightness scale.

More information on the operation is provided in chapter 7.

Refer to the following table for the meaning of the individual control elements.

Operating element	Meaning
Brightness scale with brightness slider	Depending on the position of the slider on the scale, if the **[OFF]** button is visible, the backlight is: • dimmed (left) or • intensified (right).
[ON] button	Brightness is automatically adjusted. Brightness scale with brightness slider is inactive.
[OFF] button	Brightness is adjusted according to the position of the brightness slider on the brightness scale. Brightness scale with brightness slider is active.
Volume scale with volume slider	Depending on the position of the slider on the scale, the volume is: • decreased (left) or • increased (right).
[Intern] button	Remote Control Touch internal hardware is actuated. Acoustic signals are played back through the speaker and recorded through the microphone (see section 5.1.1).
[Extern] button	External hardware of the connected accessories is actuated.

Table 6.3: Operating elements of the tab sheet "General"

Note:
The quality of playback and recording acoustic signals depends on the actuated hardware.

6.4   Displays

The displays of the **Remote Control Touch / blue PiraT Remote** are similar to those of the data loggers. An overview to their meanings is provided in the following table. You can find the view that contains the display via the cross reference in the column "See".

Display	Meaning	See
Bus load	indicates the degree with which the bus is busy with data transfer	6.3.5 6.3.6
DHCP mode	can be configured under General → Network settings indicates whether the device functions as a server or a client or whether DHCP was disabled	6.3.2
Error count	indicates the number of active errors (can be viewed in the bug reporter) when the status is ERROR or WARNING	6.3.2
Device name	can be configured under General → Name provides orientation in the application and is part of the trace file's file name	6.1.1 6.3.1 6.3.2
Device status	see Table 6.5: Device status messages	6.3.1 6.3.2
Device type	see 6.3.1 Status - Overview	6.3.1
Memory percentage protected	can be configured under General → Buffer indicates the percentage of the memory capacity that is protected	6.3.2
IP address	indicates the IP address of the device	6.3.1 6.3.2
Channel name	can be configured under *Bus* → *Bus #...* → Name provides orientation in the application and is part of the trace file's file name	6.3.5
Channel number	serves as index for sorting the channel lists is obtained from the configuration in the Telemotive System Client	6.3.5
Configuration name	can be configured under General → Name indicates the name of the configuration on the device	6.3.2
Logger name	can be configured under General → Name helps mapping logger-specific tabs	6.3.6
Markerlist	contains the markers of the set triggers sorted by index Each marker is specified by the time (date and time) the trigger was set. The 🔊 button is used to play the voice note.	6.3.4
Message category	see Table 6.2: Message categories	6.3.6
Storage capacity	depends on the internal memory Since the Remote Control Touch does not have internal memory, the tab shows "0 GB".	6.3.2
Subnet mask	indicates the subnet mask of the connected device	6.3.2
Memory percentage filled	indicates the percentage of the memory capacity that is filled	6.3.2

Table 6.4: Displays overview

6.4.1 Device status

The device status may display the following messages:

Message	Form	Meaning	Data recording
ERROR	red flashing	device in error mode	jeopardized
FWUPDATE	dark blue flashing	logger firmware is updated	stopped
MEMORY	dark blue flashing	lack of memory capacity	jeopardized
OK	dark blue	normal operation	normal
RING	dark blue flashing	logger in ring buffer mode	normal
WARNING	dark blue flashing	jeopardized operation	normal

Table 6.5: Device status messages

More information on the device status in provided in the user guides of the data loggers, section Memory space and level.

6.4.1.1 Memory full

If the memory of a connected logger is full, this will displayed as a flashing [MEMORY in the Status / Overview

If the memory of a connected logger full, this will display a flashing [MEMORY] appears in the Status / Overview display.
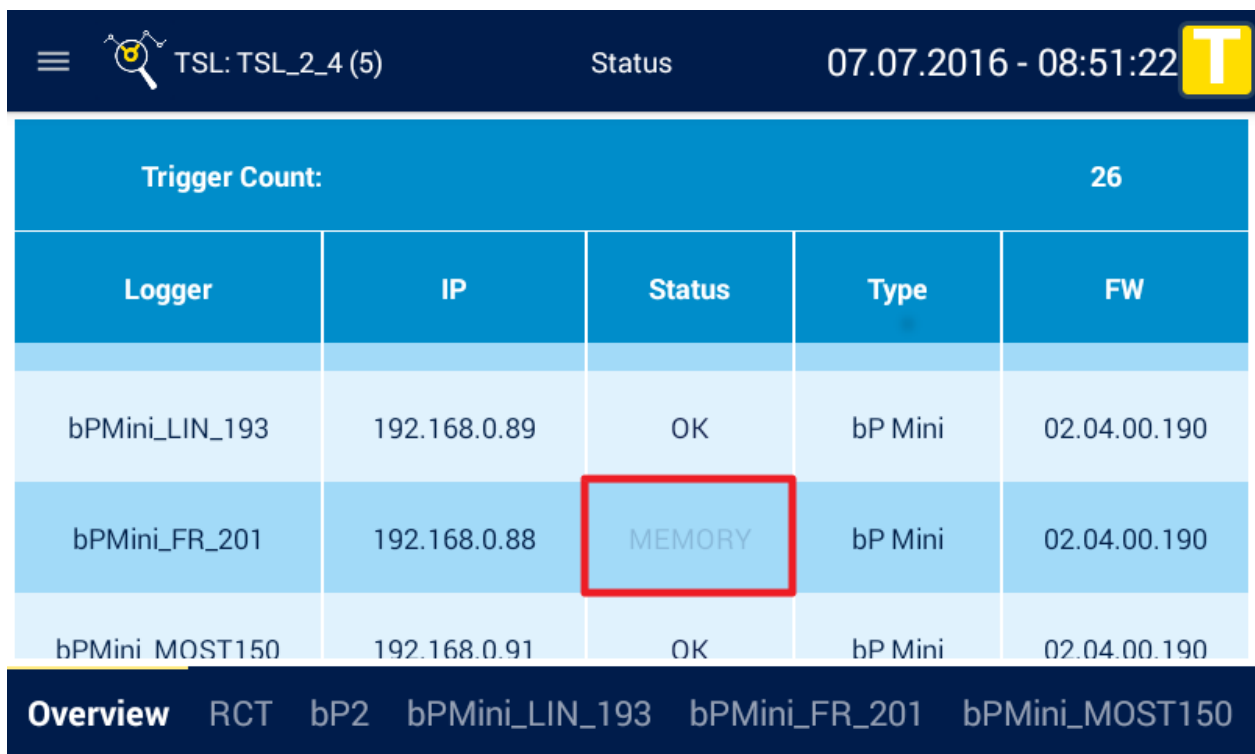
Figure 6.15: Memory full note in the Status / overview display

When you tap the bottom tab bar on the logger with the "Memory" status, the detailed view of the logger opens. In this view the two flashing cells [100% filled] and [Memory], serve as an indication for the full memory.

Figure 6.16: Memory full-status in the detail view

6.5 Other views

Other views include:
- views that appear due to the configuration of a connected logger,
- views that can only be closed via the Remote Control Touch and/or
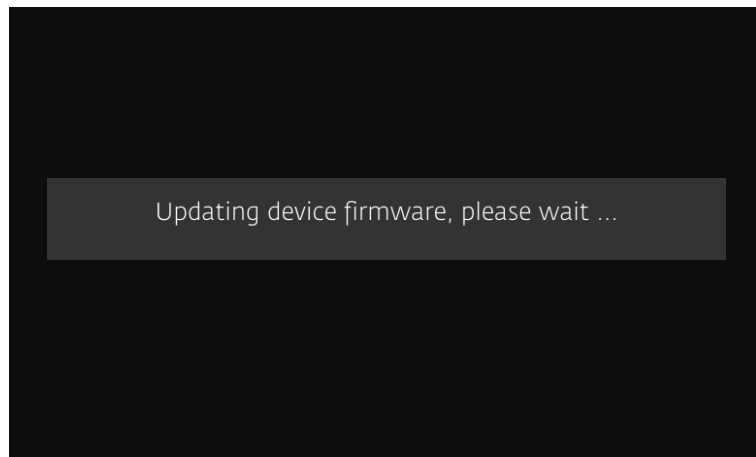- views that appear outside the application.

6.5.1 AlertDialog

Precondition	none
Timing	Internal communication has failed.
Options	close popup

To close the popup, tap on **[OK]**. Then repeat the last command.

6.5.2 FW-Update

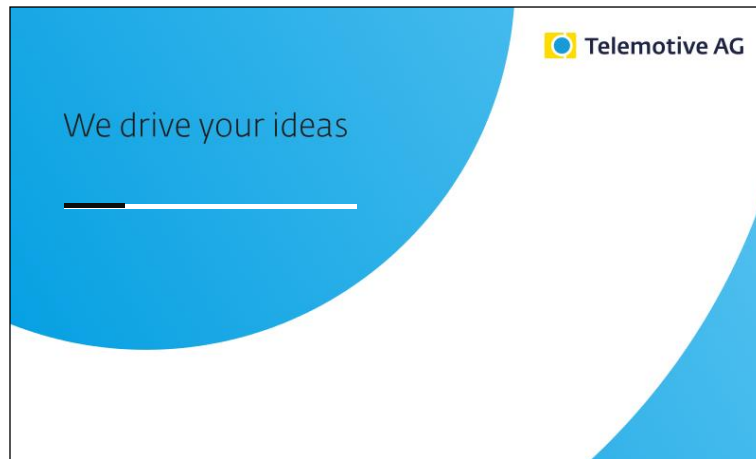| Precondition	none
Timing	Remote Control Touch / blue PiraT Remote firmware is updated.
Options	none

Updating device firmware, please wait …

Figure 6.17: FW-Update view
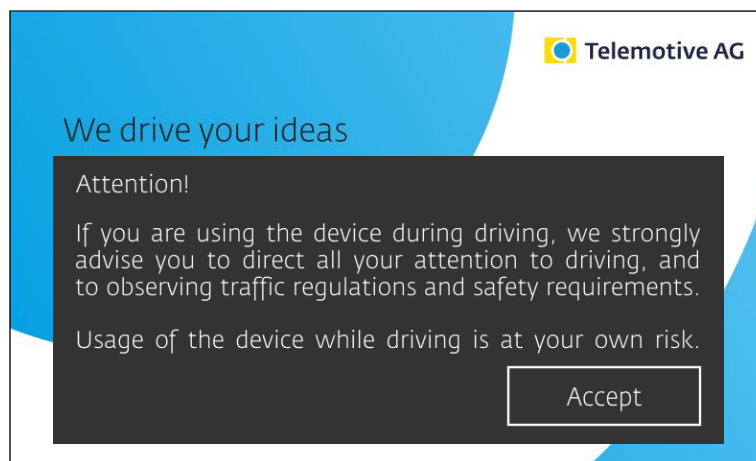
6.5.3 Launcher

Precondition	none
Timing	Remote Control Touch / blue PiraT Remote is switched on. (before the application)
Options	close popup

Figure 6.18: Launcher view

Within the view "Launcher" a safety message in a popup appears after a short time (see section 8.3).

To close the popup and use the application, tap on **[Accept]**.
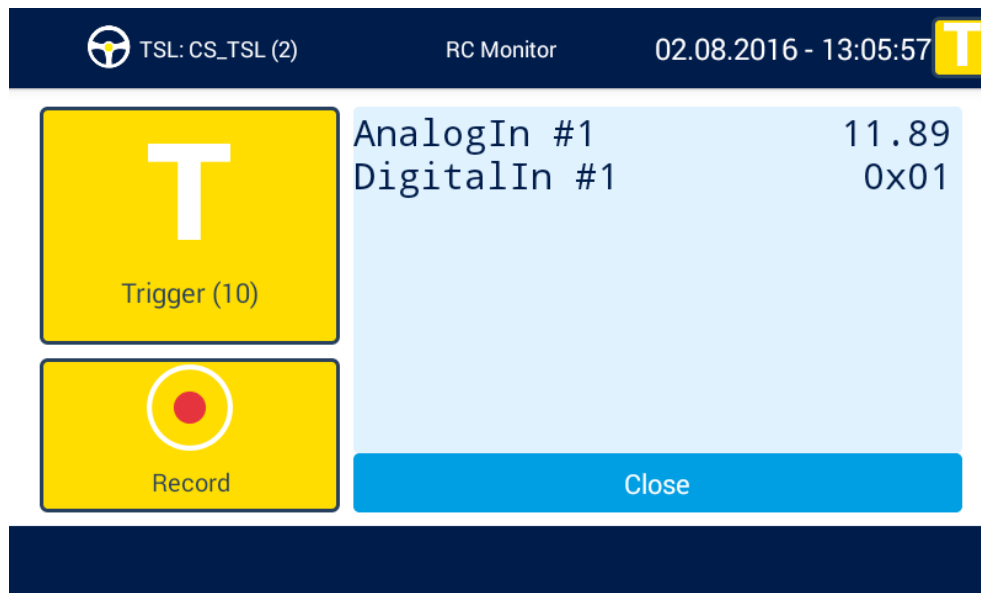

Figure 6.19: Popup in Launcher view

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6.5.4 RC Monitor

Precondition	Optional **Remote Control Monitor** license is installed. An application is open.
Timing	Complex trigger configured to the <Action> **[Display Remote Control Monitor]** is actuated. (see section **Fehler! Verweisquelle konnte nicht gefunden werden.**)
Options	set trigger, close view

The view is constantly updated and depends on the configuration in the Telemotive System Client.

More information on this feature is provided in the **Remote Control Monitor** user guide.

To close the view, press the Home button or tap on **[Close]**.

Figure 6.20: Window "RC Monitor"

6.5.5 RC Text

Precondition	An application is open.
Timing	Complex trigger configured to the <Action> **[Display notification on Remote Control]** is actuated. (see section **Fehler! Verweisquelle konnte nicht gefunden werden.**)
Options	set trigger, close view

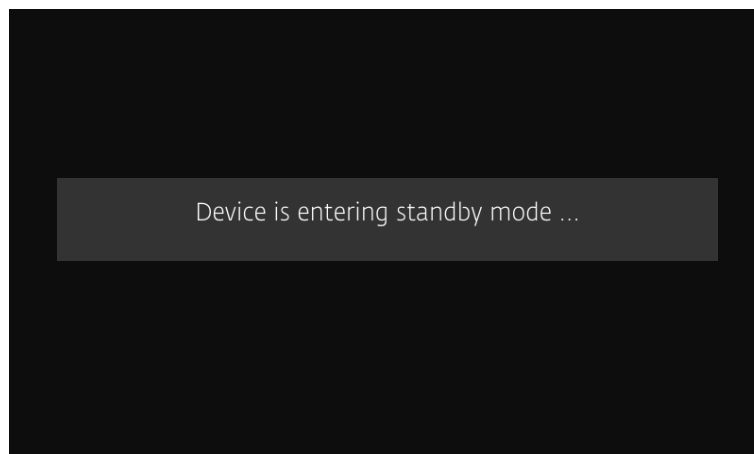The view is not updated and depends on the configuration in the Telemotive System Client.

To close the view, press the Home button or tap on **[Close]**.
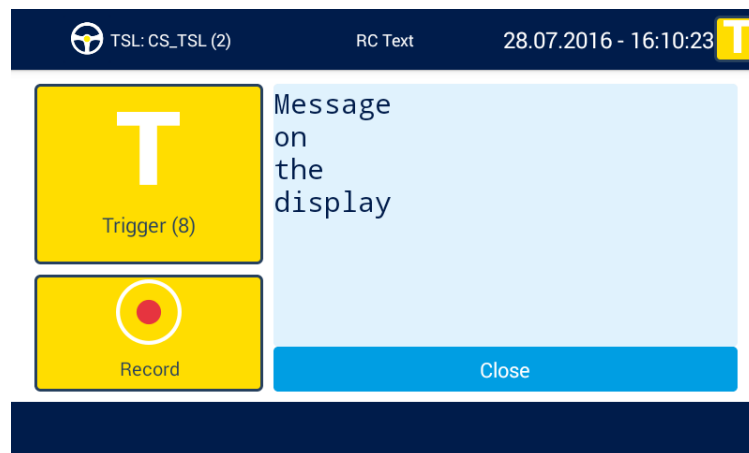
Figure 6.21: Window "RC Text"

6.5.6 Standby

Precondition	none
Timing	Remote Control Touch / blue PiraT Remote is switched off or not used for an extended period. (after the application)
Options	none

Figure 6.22: Standby view

To exit the standby mode, press the Home button or tap on the screen.

6.6 Restrictions of the RCT in standalone mode

The **blue PiraT Remote** can be configured by the Telemotive System Client like every other data logger of Telemotive. For **Remote Control Touch** the following restrictions are valid:

6.6.1 Remote Control Touch applications

In standalone mode the **Remote Control Touch** is not connected to any data logger. Some functions are therefore not available.
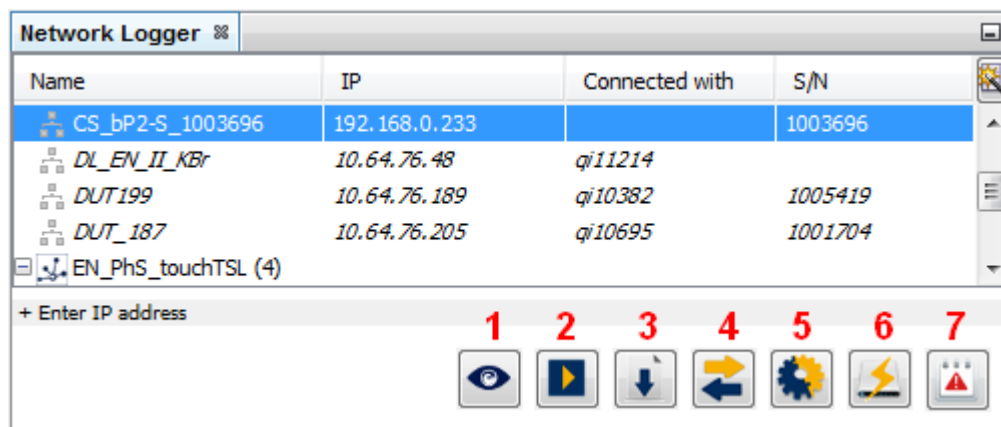
- The application ![icon] Status remains unaffected.

- The application ![icon] Busload is inactive.

- The application ![icon] Driver View is inactive.

- The application ![icon] Settings remains unaffected.

6.6.2 Telemotive System Client applications

The Telemotive System Client also provides less functionality for **Remote Control Touch** than for a data logger.

For a data logger all seven applications are available:

1. Live View
2. Online Monitor
3. Download data
4. Convert data

5. Open configuration
6. Update firmware
7. Open bug report

Figure 6.23: Available applications for a data logger

Find more information about the Telemotive System Client applications in the **User manual for the Telemotive System Client**.

In standalone mode only the following applications are available:

1. Live View
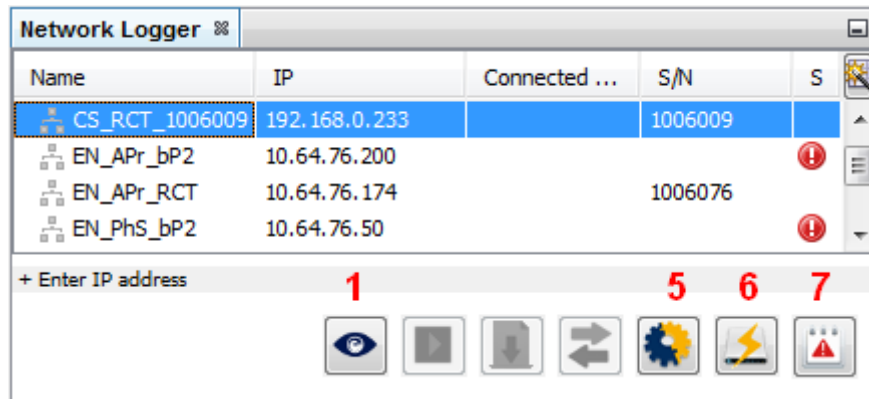5. Open configuration
6. Update firmware
7. Open bug report

Figure 6.24: Tab "Network Logger" in standalone mode

The applications **[Update firmware] (6)** and **[Open bug report] (7)** provide the same functional range in both modes. Find the applications descriptions in the **User manual for the Telemotive System Client**.

The application **[Open configuration] (5)** provides less categories in the configuration tree (e.g., **[General]**) and less sub-items (e.g., **[Name]**) than for a device integrated in the TSL network.
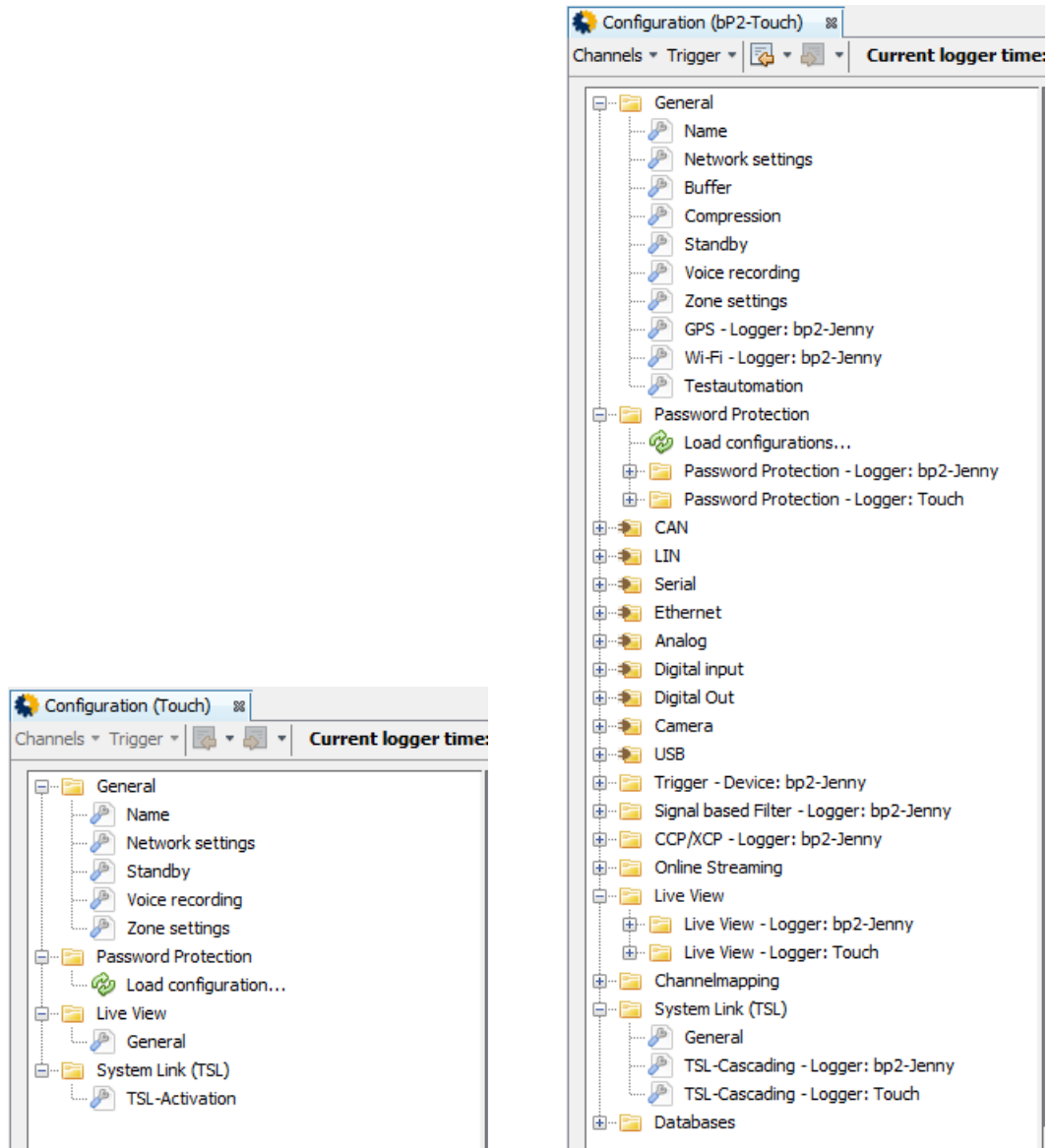
Figure 6.25: Configuration trees: Standalone mode (left) – TSL (right)

Find more information about components of the configuration tree in the **User manual for the Telemotive System Client**.

Index

7   Operation

Important:
Only use the tip of the finger to operate the Remote Control Touch / blue PiraT Remote.

This chapter describes instructions that are possible using the devices.

7.1   Switching the device off

Press and hold the Home button until the Active LED pulses green.
- Active LED pulses green.
- View "Standby" appears on the screen.

The Remote Control Touch is switched off when:
- the view "Standby" disappears and
- the Active LED goes out.

7.2   Switching the device on

Press the Home button.
- Active LED and State LED light up briefly. Active LED then flashes green.
- View "Launcher" with advancing progress bar appears on the screen.
- Popup with warning appears.

Tap on **[Accept]**.
- Popup with warning disappears.

The Remote Control Touch is switched on when:
- the tab sheet **[Overview]** appears and
- the Active LED lights green.

7.3   Scrolling through applications

If the application contains more than one tab sheet, you have the option to scroll.

Note:

In the application Driver View **, there is a risk of setting unwanted triggers when scrolling through. You should therefore use the tab bar to change the tab sheet.**

Swipe the tab sheet horizontally:
- to the left   The tab sheet adjacent to the right appears.
- to the right   The tab sheet adjacent to the left appears.

If there is no tab sheet adjacent to the left or right, this is indicated by a gray margin on the left respectively right edge of the screen.

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7.4   Changing application

To reach another application, you have two options:

1. Press the Home button …
   - Active LED lights up briefly.
   - <Home> view appears.
1. Open the side menu (see section 7.9) …

and tap on the icon of the desired application.

7.5   Actuating functionkey

Navigate to the tab sheet **[Functionkeys]** in the application Driver View .

Tap on the desired functionkey that was previously assigned with a "complex trigger", see section **Fehler! Verweisquelle konnte nicht gefunden werden.**.

- The device responds according to the <Action> that was set in the configuration for the <Event> **[Key Stroke]** using a functionkey as <Key>.

7.6   Adjusting backlight

Navigate to the tab sheet **[General]** in the application Settings .

7.6.1 Automatic adjustment

If you want the brightness of the screen to adjust automatically, tap on the gray **[OFF]** button under <Auto Brightness>.

- Brightness is automatically adjusted.
- The blue **[ON]** button is active.
- Brightness scale with brightness slider is inactive.

7.6.2 Manual adjustment

If you want to adjust the brightness of the screen manually, tap on the blue **[ON]** button under <Auto Brightness>.

- The gray **[OFF]** button is active.
- Brightness scale with brightness slider is active.

Swipe the brightness slider to the desired position or
tap on the desired position on the brightness scale.

- Brightness is set according to adjustment.
- A brief fade-in indicates the new brightness value set in percent.
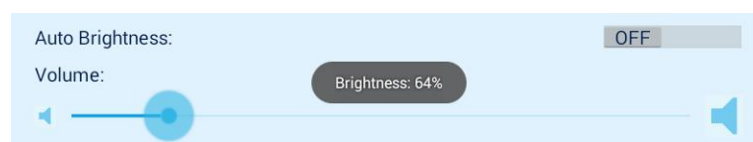
Figure 7.1: Fade-in after adjusting the brightness
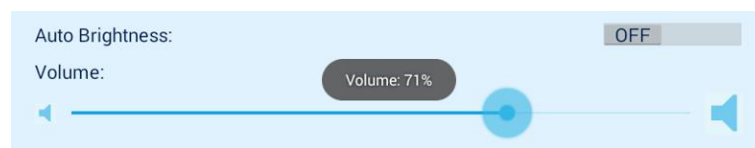
7.7 Adjusting volume

Note:
A tone is produced to simulate the newly set volume. If you set the volume to "Volume: 0%", the Remote Control Touch is mute. Its acoustic signals are switched off.

Navigate to the tab sheet **[General]** in the application Settings .

Swipe the volume slider to the desired position or
tap on the desired position on the volume scale.

- A change in volume is indicated by a tone and at the same time it simulates the newly set volume.
- A brief fade-in indicates the new volume value set in percent.

**Figure 7.2: Fade-in after adjusting the volume**

7.8 Changing tab sheet

To reach other tab sheets within an application, tap in the tab bar on the tab of the desired tab sheet.

- Selected tab sheet appears.

To reach tab sheets in other applications, switch to the application of the desired tab sheet first (see section 7.4) and continue to proceed as just described.

7.9 Opening and closing side menu
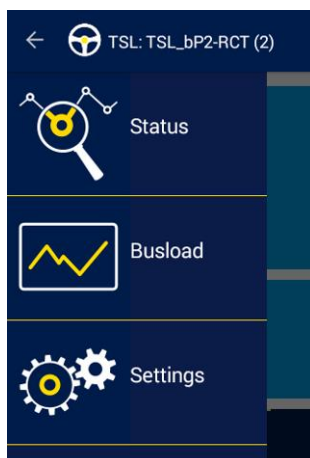
To open the side menu, you have two options:

1. Tap on the button.
2. Swipe from the left edge of the screen to the right.

To close the side menu, you have three options:
1. Tap in the window of the tab sheet.
2. Tap on the button.
3. Swipe from the right to the left edge of the screen.

Figure 7.3: Example side menu

7.10 Setting marker

There is a global trigger button for setting marker in all views of the Remote Control Touch in the top right corner. In the following example, you can see the Busload view.

Figure 7.4: Busload view with global trigger button

You can set a marker by tapping the yellow trigger button. After you have set a marker, you can see a small grey popup including the marker number, the date and the time of the marker.

Figure 7.5: Marker popup in the Busload view

7.10.1 Marker with voice note
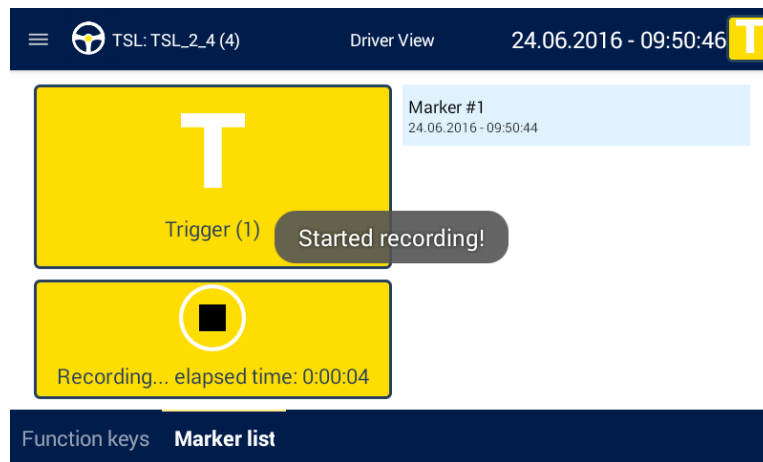
Navigate to a tab sheet in the application Driver View .

Note:
The quality of the recording and playback is dependent on the settings of <Speaker> and <Microphone> on the tab sheet [General] (see section 6.3.8).

Tap on **[Record]** to set a marker with voice note on the connected devices.

- Sound recording starts. Recording length is indicated on the button with "Recording… elapsed time: *hour*:*minute*:*second*".

Figure 7.6: Voice note recording starts

- A fade-in tells you under which index and timing (date and time) the marker was set.

- Marker appears on the tab sheet **[Markerlist]**.

- The red status LED flashes during recording

After you have started a record, you can see a small grey popup including the marker number, the date and the time of the marker. The marker appears in the tab [Marker list]. While you are recording a message, the red state-LED is pulsating.
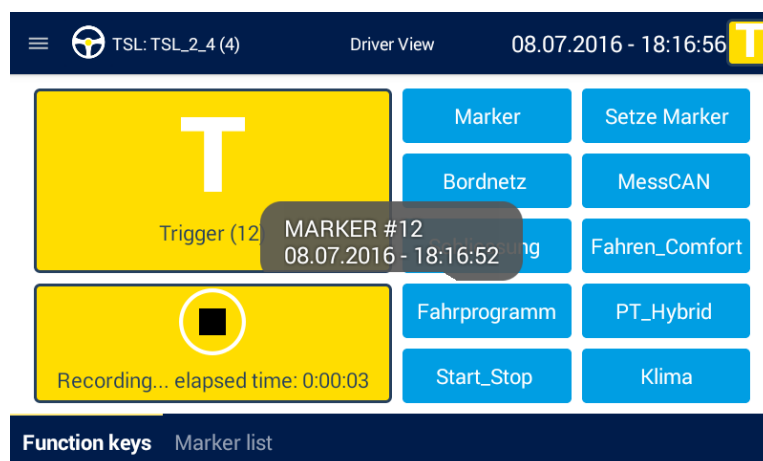
Figure 7.7: Voice note recording starts

To stop the recording, tap on **[Record]** again or
wait until the <Max. recording length> configured in the Telemotive System Client elapses.

- Two brief fade-ins appear one after the other:
  - "Stopped recording!"   Sound recording is stopped.
  - "Uploaded record!"   Sound recording is uploaded.
- 🔊 button appears in the Marker entry.
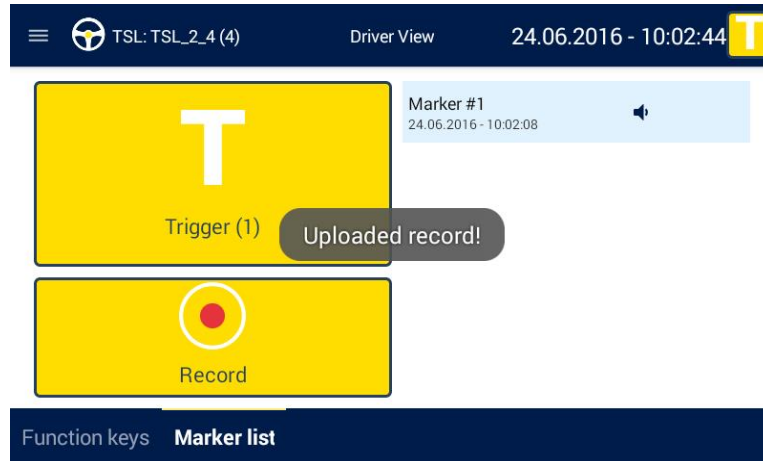
Figure 7.8: Voice note recording stops

7.10.2   Marker without voice note

Note:
Setting a marker without voice note is confirmed acoustically. If you do not hear an acoustic signal, increase the volume (see section 7.7).

Tap on **[Trigger]** to set a trigger on the connected devices.

- A tone sequence indicates that a marker was set.
- A brief fade-in tells you under which index and timing (date and time) the marker was set.
- Marker appears on the tab sheet **[Markerlist]**.

Figure 7.9: Marker set

7.11 Playing voice note

Note:
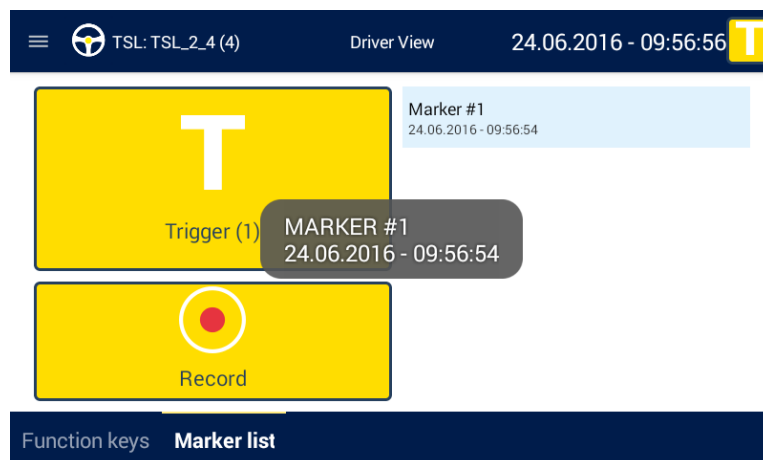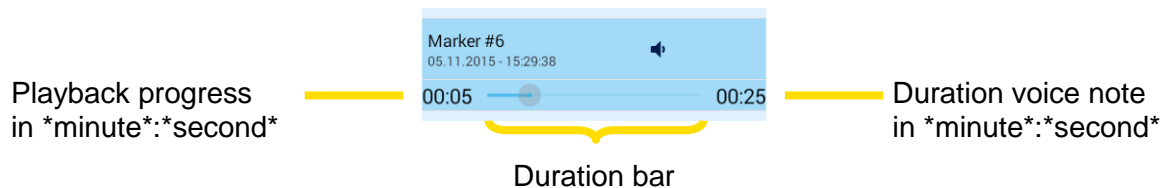**If you do not hear an acoustic signal, increase the volume (see section 7.7).**

The quality of the recording and playback is dependent on the <Speaker> and <Micro-phone> settings on the tab sheet [General] (see section 6.3.8).

Navigate to the tab sheet **[Markerlist]** in the application Driver View 🅐.

Tap on the 🔊 button in the marker entry.

- Voice note of the marker is played.
- The following duration display complements the marker entry.

Playback progress in *minute*:*second* ———

Marker #6
05.11.2015 - 15:29:38   🔊
00:05 ———○——— 00:25

——— Duration voice note in *minute*:*second*

Duration bar

Figure 7.10: Voice note duration display

If you tap on a second 🔊 button while the voice note is played, the playback is stopped and the second voice note is played.

If you want to stop playing the voice note prematurely, tap on the 🔊 button again.

The duration display disappears when the playback of the voice note has ended.

7.12 Scrolling through tab sheet

If the window exceeds the height of the tab sheet, you have the option to scroll.

Swipe the tab sheet vertically:
- upwards   Window is scrolled down.
- downwards   Window is scrolled up.

If the window reached the very top or bottom, this is indicated by a gray margin on the top respectively bottom of the screen.

7.13 Scrolling through tab bar

If the tabs exceed the width of the tab bar, you have the option to scroll.

Swipe the tab buttons horizontally:
- to the left   Tabs adjacent to the right appear.
- to the right   Tabs adjacent to the left appear.

If there is no tab adjacent to the left or right, the tab bar turns gray on the left respectively right edge of the screen.

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7.14 Updating firmware

Find more information on firmware update in the **User manual for the Telemotive System Client**.

Note:
Only update the Remote Control Touch / blue PiraT Remote firmware with the vehicle at standstill.
In the TSL network, the data logger does not record any data during the update.

Launch the Telemotive System Client by double-clicking the shortcut "Telemotive System Client" on the desktop or in the start menu.

Select the desired device in the window <Network Logger>.

- Selected line is highlighted blue.

Click on the application **[Update firmware]** .
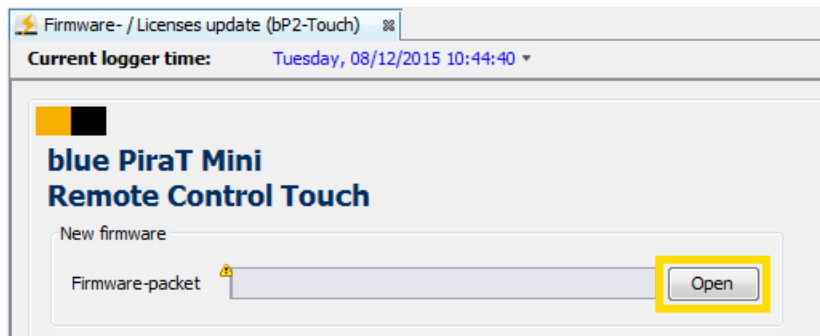
- The tab <Firmware- / Licenses update> opens.

Figure 7.11: Tab "Firmware- / Licenses update"

Note:
If you operate the device in the TSL network, apply the following steps on all TSL members.

Under <New firmware> click on **[Open]**.

- Dialog opens.

Select the desired firmware, click on **[Open]**.
Note:
For the Remote Control Touch as well as blue PiraT Remote you need the same firmware as for the blue PiraT Mini.
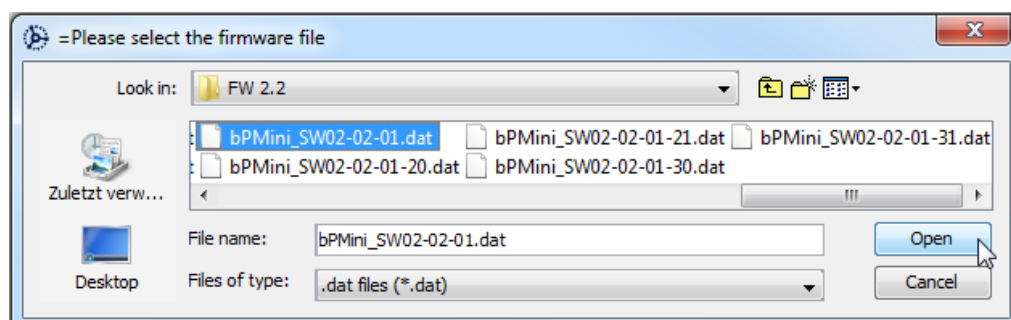

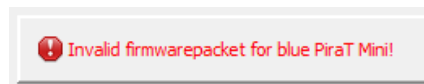**Figure 7.12: Opening firmware-packet**

- Selected firmware appears in the display field.

Figure 7.13: Valid firmware-packet

Note:
If you select an invalid firmware-packet, the following notice message appears and the [Update firmware…] button remains inactive.

Figure 7.14: Notice message for invalid firmware-packet

Click on **[Update firmware…]**.
- Firmware file is verified.
- Dialog opens.
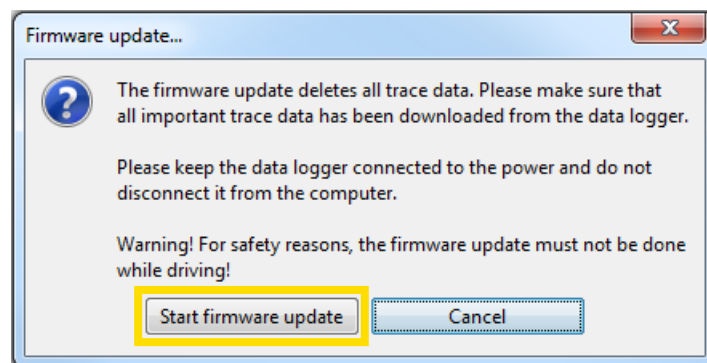
Figure 7.15: Notice message before firmware update

Follow the dialog instructions.
Click on **[Start firmware update]**.
- View "FW-Update" appears.
- State LED lights red.
- Dialog opens.

Figure 7.16: Advancing firmware update

The firmware is updated when:

- the view "FW-Update" disappears,
- the State LED goes out and
- the **[Close]** button is active.

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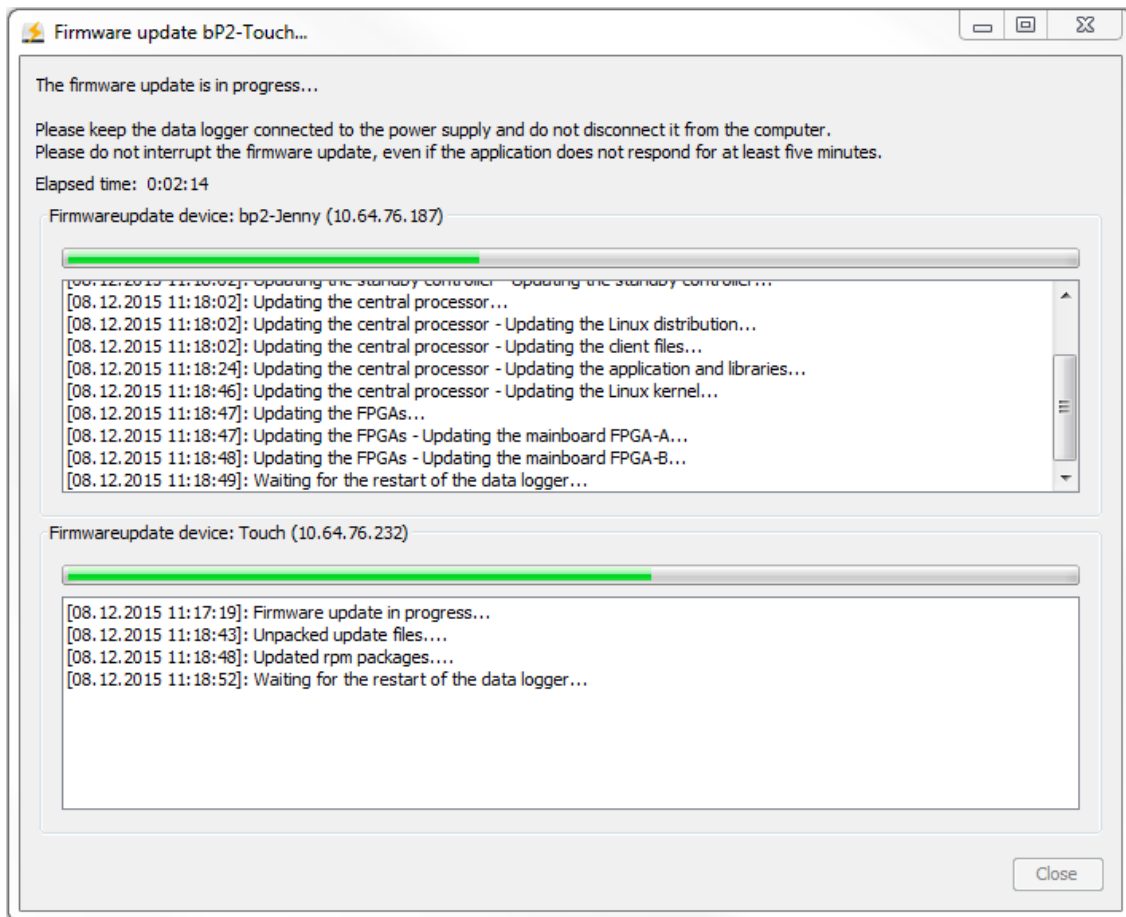
8   Maintenance provisions and safety regulations

Note according to standard EN55011:2009
The device is used in an industrial environment. Due to the occurring, conducted as well as radiated disturbances it possibly can be difficult to ensure electromagnetic compatibility in other environments.

Cleaning
The device may only be cleaned with a clean cloth slightly dampened with water. Other cleaning agents such as gasoline, alcohol, etc., may not be used.

Maintenance
The device is maintenance-free. The case must not be opened by the customer. Unauthorized modifications will void the warranty.
In case of failure, the customer may change the fuse on the cable set or fuses accessible from outside only. The fuse may only be replaced with a fuse of the same type and nominal current rating.

Storage
The device may only be stored within a temperature range of - 20 °C to + 85 °C.

Disposal
Disposal of the device must be in accordance with the statutory regulations.

8.1   Operating conditions

8.1.1 Temperature

The device must not be operated outside the specified temperature range. Adequate ventilation must be ensured. The device must not be placed too close to walls or other devices. The device must not be stacked with other components on each other unless proper ventilation is ensured and the device is to be operated at an ambient temperature of more than 77 °F.

8.1.2 Condensation

The device must not be switched on immediately when brought from cold ambient conditions into a room with normal ambient conditions.

8.1.3 Environment

The device must not be used outdoors or in adverse ambient conditions such as moisture, high humidity or dust. Operation of the device is further not allowed in an environment with flammable or explosive gases.

8.2 Assembly

8.2.1 Cable sets

When inserting the cable sets only little force may be applied. The pins should be checked for correct alignment if increased resistance is felt during insertion of the cable set.

Only original Telemotive components may be used. Other components such as special cable sets must be prepared in strict accordance with the connector pin assignment in the operating instructions, always providing for a spare fuse in the cable set.

Clamp 15 (KL 15) serves as an external wake-up input. It can be used to wake up the device in case of edge change. KL 15 requires a voltage range of 0 to 30 V.

Two pins each designated Clamp 30 (KL 30) and Clamp 31 (KL 31) are interconnected for the power supply of the device.

Important:
Connecting both pins differently with +/- results in destruction of the device. (While modifying or self-building the cable set)

8.2.2 Mounting

The device must only be mounted in the six axes.

In laboratory set-ups and especially in the vehicle the device must be mounted so that it is secured against falling, slipping and skidding.

8.2.3 Positioning of antenna

When the device is operated in a car, the antennas to be connected to the device must not be located outside the vehicle.

8.3 Proper operation

- The Remote Control Touch must exclusively be operated with the Telemotive AG application.
- The application is only compatible with Telemotive System Client.
- Connection with third-party devices is at your own risk.
- Its use while driving is at your own risk.
  If you are using the device while driving, we strongly recommend to focus your attention on the road traffic and the safety regulations according to local road traffic regulations. (see Figure 6.19: Popup in Launcher view)

Any use other than described results in damage to the product. It also involves risks such as short circuit, fire, electric shock, etc. The entire product may not be modified or adapted.

9 Data sheet Remote Control Touch

General data	
Supply voltage	13.8 V
Power unit voltage	7 V to 28 V for system startup 5 V to 29 V operating voltage
Supply voltage reverse-connect protection	yes
Short circuit proof	yes
Operating current (typ.)	350 mA (@ 13.8 V)
Operating current (max.)	< 2000 mA (@ 13.8 V)
Power consumption in standby	< 1 mA
Operating temperature	- 20 °C to + 60 °C
Storage temperature	- 20 °C to + 85 °C
Weight (approx.)	415 g
Power management	
Startup time from standby to full operation	35 s
Wake-up capability	KL 15, trigger button
Case	
Dimensions (approx.)	5.91" x 3.62" x 0.98" (150 x 92 x 25 mm)
Operating elements	Home button
State/Active LEDs	**STATE, ACTIVE**
Connections	
Side view, from the right	8-pol LEMO socket: Power supply, 1x LS-CAN 2x Gbit Ethernet (RJ45)
Rear side	4-pol audio jack plug stereo out/microphone (3.5 mm) OMTP Micro USB 2.0
Screen	
Size	5"
Resolution	800 x 480
Colors	16.7 million
Luminance	700 cd/m²
Touch function	Resistive, multi-touch

Table 9.1: Data sheet Remote Control Touch

10   Data sheet blue PiraT Remote

General data	
Nominal power supply voltage	13.8 V
Power supply voltage	7 V to 28 V for system startup 5 V to 29 V operating voltage
Reverse polarity protection of the supply voltage	Yes
Resistance to short-circuiting	Yes
Power consumption / operating (typ.)	440 mA (@ 13.8 V)
Power consumption / operating (peak.)	< 2000 mA (@ 13.8 V)
Power consumption / standby	< 1 mA
Operating temperature	- 20 °C to + 60 °C
Storage temperature	- 20 °C to + 85 °C
Weight (ca.)	415 g
Power Management	
Startup time from standby to full operation	< 15 s
Start of logging - starting from standby	CAN, LIN, Serial, Analog, Digital < 60 ms
Start of logging - full start	+ ca. 500 ms
Start of logging - Ethernet / OABR, AutoNeg off	< 120 ms
Standby Mode	Configurable time without bus load
Wake	CAN-HS, CAN-LS, LIN, Serial, KL 15, [ON / Trigger] button
Data loss by power loss	If the device is switched off due to sudden power loss, up to 60 sec. of data may be lost.
Case	
Size (ca.)	5.91" x 3.62" x 0.98" (150 x 92 x 25 mm)
Operating controls	Push-button to start and shut down data logger and to set markers
LEDs (STATE, ACTIVE)	**STATE, ACTIVE**
Connectors	
side connectors	2x Gbit Ethernet SUB-D 26-pol: Power supply, 2x HS-CAN, 1x LS-CAN, 1x LIN, 2x Serial, 2x Analog In, 2x Digital In
Rear connectors	4-pol audio jack plug stereo out/microphone (3.5 mm) OMTP Micro USB 2.0 SD card
Screen	
Size	5"
Resolution	800 x 480
Colors	16.7 million
Luminance	700 cd/m²
Touch function	Resistive, multi-touch

Data recording	
Storage type (internal)	10 GB flash
Storage type (external)	USB flash drive
	SD card
Recording modes	Normal, ring buffer
Timestamp accuracy	1 µs
CAN recording	
Channel	2 High Speed, 1 Low Speed
Baud rate	Up to 1000000 Baud at HS-CAN up to 100000 Baud at LS-CAN
Transceiver	TJA1041A, TJA1055T
Filter	CAN ID filter
Status recording	Error frames
Serial recording	
Type	RS232
Channel	2
Baud rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 Baud
Data bits	5,6,7,8
Stop bits	1,1.5,2
Parity	None, odd, even
LIN recording	
Channel	1
Baud rate	1200, 2400, 4800, 9600, 10400, 19200, 20000 Baud
Transceiver	TJA1021
Ethernet recording	
Port	2
Speed	2x 1 Gbit/s Protocol logging / 1 Gbit/s SPY-Mode)
Recording	GNLog, Raw, UTF8, UDP, DLT (optional), EsoTrace (optional)
Analog recording	
Channel	1x Ubat (internal), 2x external
Range of measurement	0 V to + 20 V
Resolution	7 mV
Accuracy	3 %
Sampling interval	1 ms to 100 s
Digital input	
Channel	1x Ubat (internal), 2x external (physically identical with analog input)
Switching threshold	7 V ± 0.2 V
Sampling interval	1 ms to 100 s

Table 10.1: Data sheet blue PiraT Remote

11 Pinout of Remote Control Touch connector

As against to the Remote Control Voice, where the whole communication was send over this cable, the **Remote Control Touch** only uses this cable for power.

Lumberg KV81-8 Pin (RCTouch)	Lemo Pin (cabel)	Bananaplug Pin	Signal
8	8	blue	KL 15 (wake)
6	7	black	KL 31 (ground, -)
7	2	red	KL 30 (power, +)

Table 11.1: Contacts of the angeled Lemo plug

11.1 Contacts of the Remote Control Touch connection

This drawing shows the pinout of the **Remote Control Touch** cable.
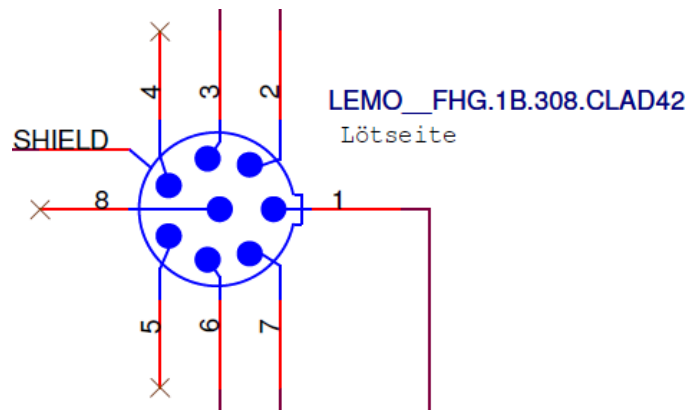
Figure 11.1: Pins of the angeled LEMO plug (FGH.1B.308.CLAD42) at the cable

12   Pinout of blue PiraT Remote connector

@ Logger		comment / depiction / signal name	@ Vehicle interface	
SUB-D 44-pol	**Signal**		**Type**	**Pin**
1	KL15	wake up from KL 15	banana plug **blue**	1
2	HSCAN_L_0	High Speed CAN #01 LOW	DSUB-9 / male	2
3	HSCAN_H_0	High Speed CAN #01 HIGH	DSUB-9 / male	7
4	HSCAN_L_1	High Speed CAN #02 LOW	DSUB-9 / male	2
5	HSCAN_H_1	High Speed CAN #02 HIGH	DSUB-9 / male	7
6	LSCAN_L_0	Low Speed CAN #03LOW	DSUB-9 / male	2
7	LSCAN_H_0	Low Speed CAN #03 HIGH	DSUB-9 / male	7
8	n.c.			
9	KL31	power supply (-)	banana plug **black**	1
10	KL31	power supply (-)	combined with #9	1
11	n.c.			
12	n.c.			
13	n.c.			
14	n.c.			
15	n.c.			
16	n.c.			
17	KL30	power supply (+)	banana plug **red**	1
18	KL30	power supply (+)	combined with #17	1
19	KFZ ANA / DIG COM	Analog / Dig. Interface ground	banana plug **yellow**	1
20	KFZ ANA IN 0	Analog / Dig. Interface #2 IN	banana plug **yellow**	1
21	KFZ ANA IN 1	Analog / Dig. Interface #3 IN	banana plug **yellow**	1
22	KFZ V24 RX 1	Serial l RS232 #2 RX	DSUB-9 / male	2
23	KFZ V24 TX 1	Serial RS232 #2 TX	DSUB-9 / male	3
24	KFZ V24 RX 0	Serial RS232 #1 RX	DSUB-9 / male	2
25	KFZ V24 TX 0	Serial RS232 #1 TX	DSUB-9 / male	3
26	LIN 0	LIN 1	DSUB-9 / male	7

Table 12.1: Contacts of the 26-pol SUB-D plug of blue PiraT Remote

13 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
RCT	**R**emote **C**ontrol **T**ouch
bPR	**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 **EX**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 **EX**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
TSC	**T**elemotive **S**ystem **C**lient
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 13.1: Abbreviations

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