



BLUEPIRAT

BY MAGNA



BLUEPIRAT Series Cellular Network User Guide / 30.09.2020

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Table of contents

1	LICENSE AGREEMENT	3
2	PRODUCT LIABILITY	4
2.1	Terms and Conditions of Sale and Delivery.....	4
2.2	Important operating instructions.....	4
3	Overview.....	5
4	System requirements	6
4.1	Further manuals.....	8
4.2	Additional features by optional licenses.....	9
4.3	Firmware Care	10
5	Configuration	11
5.1	Entering a recipient.....	11
5.2	Inserting text or elements.....	12
5.2.1	Inserting CAN / LIN / FlexRay signals.....	13
5.2.2	Inserting GPS signals.....	14
5.2.3	Inserting logger signals.....	14
5.2.4	Inserting digital / analog signals.....	16
5.2.5	Status messages of the logger	16
6	Abbreviations.....	17
7	List of figures.....	19
8	List of tables	20
9	Contact	21

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2 PRODUCT LIABILITY

2.1 Terms and Conditions of Sale and Delivery

The General Terms and Conditions of Sale and Delivery of MAGNA Telemotive GmbH can be found on our website (<https://telemotive.magna.com>) under imprint.

2.2 Important operating instructions

Please note these important instructions about the handling of devices of MAGNA Telemotive GmbH!

There's a linux system running on the devices and sometimes when the device has a dirty shutdown due to a power break down or unplugging the power supply, the system is corrupt from this time. You know this situation from a PC, when you switch it off some times it maybe will not work any more or show you some mistakes.

In most cases this issue is catched up and repaired by the linux system we use, but sometimes it can happen that the system on the logger is damaged and there's no access to the device any more.

We are optimizing the handling of corrupted systems permanently and are integrating some new enhancements regarding this kind of issues with every new release to save the system. But we can't make the system for 100% save against these influences.

So please use always the provided mechanism for shutting down the device or the implemented standby function in which the device shutting down when no traffic is detected any more in an adjustable time.

3 Overview

This user guide describes the feature of the license **Cellular Network** for the data loggers

- BLUEPIRAT Rapid
- BLUEPIRAT Mini
- BLUEPIRAT2 5E
- BLUEPIRAT2
- BLUEPIRAT Remote

of MAGNA Telemotive GmbH.

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 System Client, which is valid together.

This document refers to **firmware version 05.00.01** and the **System Client** from **version 5.0.1**. 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 our Service Center. (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.

Current supported UMTS sticks:

- 4G Systems | XS Stick P14

Current supported mobile networks

- Vodafone.de
- Telekom.de

Note:

The PIN of the SIM card must be deactivated mandatory. When plugging in the device the XS manager will be installed automatically which offers the possibility for removing the pin. A manual is enclosed to the stick.

Note:

Please take care that the UMTS stick is connected directly to the logger and not to a interconnected HUB.

4 System requirements

The communication between bus systems and control units is monitored, and relevant data can be recorded very precisely with the data logger. The collected data are stored to the logger and can be downloaded via Ethernet to a PC.

Control Unit

You need a Windows based Laptop or PC to configure the devices by the **System Client**. It also allows to save the recorded data and to use them offline later.

System Client

Update, configure and read out your data loggers with System Client. Save time with central administration of your software products. System Client is your key to success for using all our products!

BLUEPIRAT Rapid

High-performance multi-bus data logger for modern vehicle architectures based on Automotive Ethernet. With up to 3 TB internal memory and supreme recording performance. Robust and compact for in-vehicle use.

Due to the increasing complexity of driver assistance systems and the growing number of infotainment applications, the data traffic between ECUs in the most recent vehicle models has grown significantly. Consequently, besides the various classic bus systems, modern vehicle architectures are based on Automotive Ethernet according to BroadR-Reach / IEEE 802.3 100(0)Base-T1, which can keep up with the growing bandwidth demand.

Power Backup

The **Power Backup** is a special component, which is designed to bridge short voltage interruptions. It is connected upstream of the data loggers on the voltage side, and must be connected to them via a dedicated LS CAN port for controlling.

BLUEPIRAT Mini

The **BLUEPIRAT 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 expanded flexibly to one cluster and therefore handled very easily by using [System Link](#).

BLUEPIRAT2

The **BLUEPIRAT2** is our top-class all-in-one data logger. Seven models cover a wide range of interfaces. (Device is EOL)

BLUEPIRAT2 5E

Additionally, the **BLUEPIRAT2 5E** offers improved power management and power backup, five integrated Ethernet ports and super-fast start-up behavior. The BLUEPIRAT2 can be expanded flexibly via [System Link](#). (Device is EOL)

Remote Control Touch (optional)

Operate your BLUEPIRAT data loggers safely and comfortably from the driver's or passenger seat. Via System Link our new remote control becomes part of your logger network. One remote control can handle all connected loggers.

BLUEPIRAT 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. (Device is EOL)

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 Manual, we offer the main manuals for our System Client as well as for the different data logger generations in our Service Center at

<https://sc.telemotive.de/bluepirat>.

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

Under the following links, you always will find the latest versions:

User manual for the System Client

https://sc.telemotive.de/4/uploads/media/SystemClient_UserManual.pdf

User manual for BLUEPIRAT Rapid

https://sc.telemotive.de/4/uploads/media/BLUEPIRAT_Rapid_UserManual.pdf

User manual for BLUEPIRAT Mini

https://sc.telemotive.de/4/uploads/media/BLUEPIRAT_Mini_UserManual.pdf

User manual for Remote Control Touch

https://sc.telemotive.de/4/uploads/media/RCTouch_UserGuide.pdf

User manual for BLUEPIRAT Power Backup

https://sc.telemotive.de/4/uploads/media/BLUEPIRAT_Power_Backup_UserManual.pdf

User manual for BLUEPIRAT2 / BLUEPIRAT2 5E

https://sc.telemotive.de/4/uploads/media/BLUEPIRAT2_UserManual.pdf

User manual for BLUEPIRAT Remote

https://sc.telemotive.de/4/uploads/media/BLUEPIRAT_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.

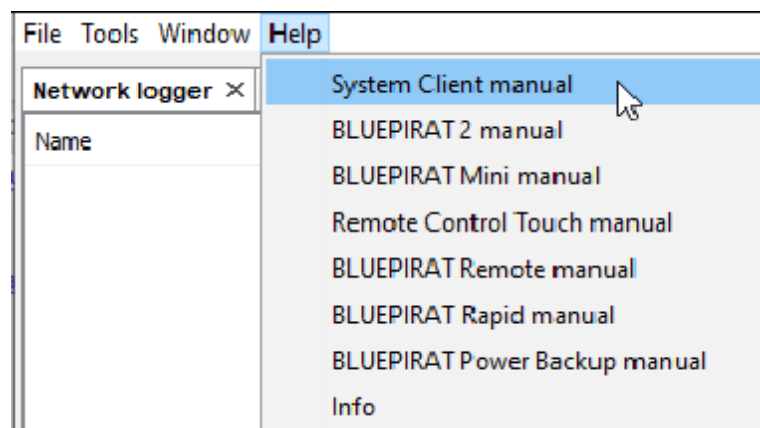


Figure 4.1: links to the manuals in the System Client

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 our Service Center. Currently the following licensed features are available.

Feature	Description
Camera Link	video recording via video server or network cameras Till now, only some cameras from AXIS were supported
WLAN	supporting wireless LAN / WiFi (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
MLBevo / QXDM	The license Connected-Gateway MLBevo enables the recording of data of the ATOP control unit MLBevo via USB to the Magna Telemotive data logger and convert these data with the System Client. (from FW 02.03.01) Additional this license allows to log Qualcomm QXDM logs via USB (from FW 03.06.XX)
Download Terminal	The in the System Client integrated Download Terminal allows an automatization of configured tasks for a defined group of devices. (from FW 02.03.01)
Test automation	Interface for connecting to test automation tools. At the moment, the sending of CAN messages is supported. (from FW 02.04.01)
Cellular network	Allows the logger to send status messages over cellular network. (from FW 03.01.01)
Firmware Care	As part of the " Service Product Firmware Care ", new software and firmware versions are made available for download for a limited period of time. This service is available for 12 months from the date of purchasing the BLUEPIRAT . This period can be extended by licenses.

Table 4.1: Additional features by optional licenses

4.3 Firmware Care

MAGNA Telemotive GmbH invests a great amount in the further development of its products.

For this we regularly provide new functions and enhancements via firmware and client releases.

Basic conditions

As part of the " Service Product Firmware Care ", new software and firmware versions are made available for download for a limited period of time. This service is available for 12 months from the date of purchasing the **BLUEPIRAT**. This period can be extended.

For details, please contact your sales partner (see contact at the end of the manual for addresses).

Affected products

- **BLUEPIRAT Rapid**
- **BLUEPIRAT Mini**
- **Remote Control Touch**
- **BLUEPIRAT2 5E**
- **BLUEPIRAT2**
- **BLUEPIRAT Remote**

Note:

Enhancements are only possible in current firmware releases.

Attention:

Please note that updates to main firmware versions (05.00.01 / 06.00.01) need a special update license and can't be flashed to a device without this license.

To buy these licenses please contact our sales department under TMO.Sales@magna.com (please find the complete address under Contact on the last page).

5 Configuration

The license **Cellular Network**, gives the devices the option of actively sending status messages via SMS or e-mail, thereby prompting the user promptly with feedback on events or errors. The functionality is implemented via an extension of the complex triggers.

The termination of the information on the cellular network can be initiated via all events which are possible for complex triggers too.

These events, which can be configured as triggers, are selectable as triggers for the following actions:

- Send SMS
- Send E-Mail

Attention: For reasons of cost and spam protection, an SMS or e-mail can only be sent every 60 seconds.

A detailed description about configuring the events can be found in the manual for the System Client.

(https://sc.telemotive.de/4/uploads/media/TelemotiveSystemClient_UserManual.pdf)

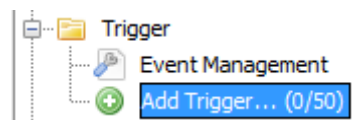


Figure 5.1: creating a new trigger

5.1 Entering a recipient

For sending an SMS / E-Mail, the **[Send SMS]** or **[Send E-Mail]** option must be configured as an action.

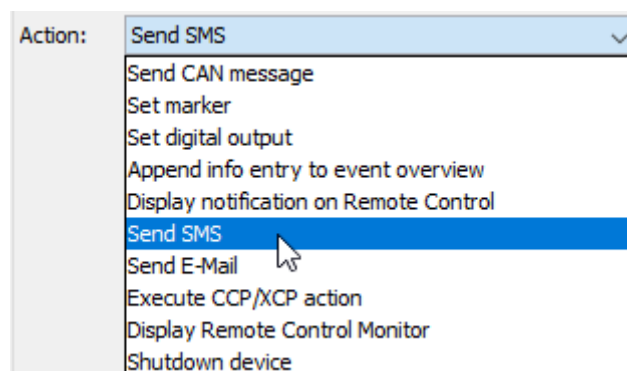


Figure 5.2: choosing the action

Figure 5.3: Entering a recipient

A recipient has to be specified at first. For sending a SMS, a valid telephone number including country code, for sending an E-Mail, a valid e-mail address must be entered.

5.2 Inserting text or elements

In the next step, the text to be sent can be entered. Here, normal text can be used or certain signals can be inserted from the logger using the **[Insert Element]** button. A total of 1500 characters (SMS) are available. For a simpler analysis, it is recommended to describe the selected elements.

E.g. For the [Logger_Status], the result is e.g. Only * OK * or * ERROR *. For a faster overview, this can be inserted with: **Logger_Status: [Logger.Status]** and then appears in the message as: **Logger_Status: OK**

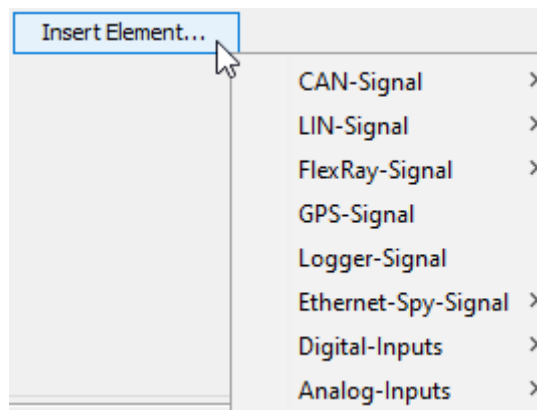


Figure 5.4: Inserting elements

Note:

When sending e-mails, you can't use as many characters in the text field as via SMS. Depending on the mobile phone provider a different numbers of characters can be used (round about 566). In addition, when sending an e-mail, the recipient(s) is written to the beginning of the message and therefore has also to be subtracted from the transferable length.

Please also note, that not every mobile phone provider offers the necessary service "sms2email" (o2 for example, does not offer this service).

5.2.1 Inserting CAN / LIN / FlexRay signals

A data base must be consigned for **CAN, LIN and FlexRay** signals in order for select these signals.

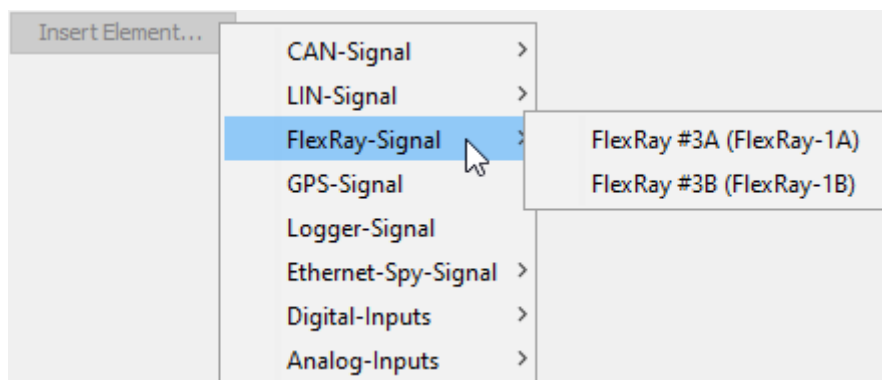


Figure 5.5: Inserting CAN / LIN / FlexRay signals

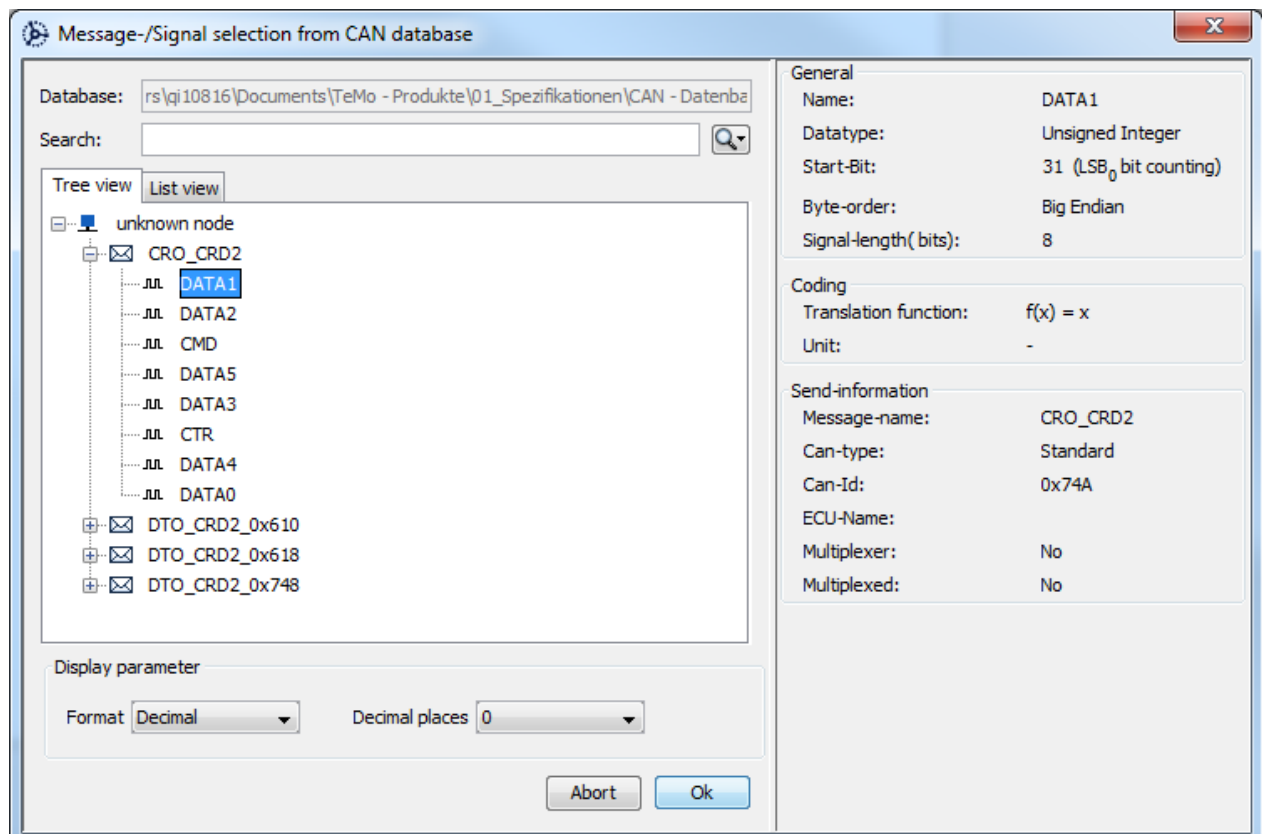


Figure 5.6: Inserting elements

5.2.2 Inserting GPS signals

For inserting **GPS signals**, the available signals are listed. They can be marked and accepted via **[OK]**.

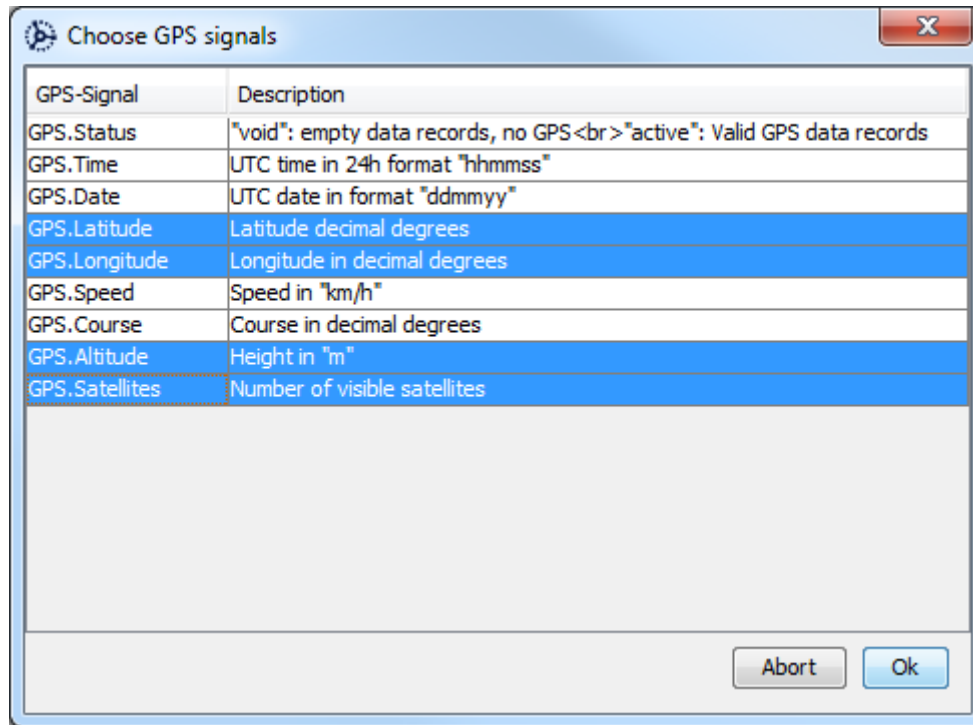


Figure 5.7: Inserting GPS signals

5.2.3 Inserting logger signals

In the same way you can select directly **logger signals**.

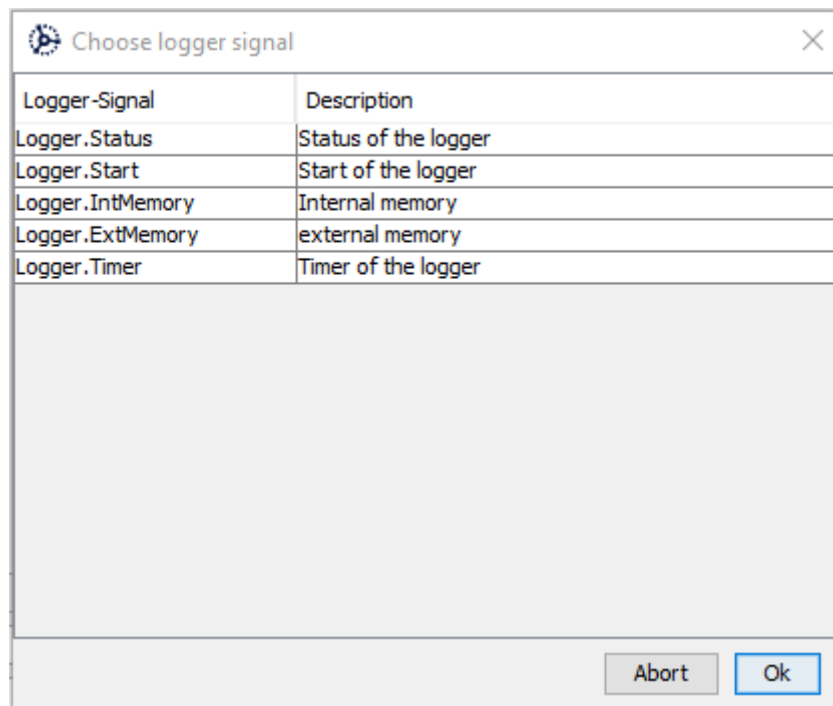


Figure 5.8: Inserting logger signals

The following signals are available for the logger status:

Signalname	Type	Description
Logger.Status	„ok“ „warning“ „mem“ „ring“ „error“	No incidents There are warnings Internal memory is full, logging is stopped Ring buffer is full, old traces are deleted Logger in fault condition
Logger.IntMemory	Double (0..100)	Fill level of the internal memory HDD, SSD, Flash
Logger.ExtMemory	Double (0..100)	Fill level of the external Speicher CF-Flash, SD-Card
Logger.Start	Bool	Logger is started The value 1.00 indicates that the logger is started
Logger.Timer	64Bit Integer	Past time in seconds since logger start or configuration change. The counter is reset to 0 after each restart or configuration change.

Table 5.1: Logger Status Signals

Here is a sample e-mail configured in the text field of a trigger.

For these logger status messages, it is useful to have a description inserted, see below.

Text:

```

Logger Status: [Logger.Status]

Logger started: [Logger.Start]

Fill level of the internal memory: [Logger.IntMemory]

Fill level of the external memory: [Logger.ExtMemory]

Past time in seconds since logger start or configuration change: [Logger.Timer]

```

Figure 5.9: Configured logger signals in the trigger text field

E-Mail:

```

Logger: bPMini_4
S/N: 1007419
Status: Ring
Disk: 100%

```

```

Logger Status: Ring
Logger started: 1.00
Fill level of the internal memory: 100.00
Fill level of the external memory: 97.00
Past time in seconds since logger start or configuration change: 13.00

```

Figure 5.10: Content of a status message e-mail

The values of the fill level of the internal and external memory are percentages.

5.2.4 Inserting digital / analog signals

From the **Digital input**, the current status 0 or 1 will be submitted.

The input signal from the **Analog input** can be configured by the following mask:

The screenshot shows a window titled "Define analog input" with a close button (X) in the top right corner. The window contains the following fields and controls:

- Channel:** A dropdown menu currently showing "Analog #1".
- General:** A section containing:
 - Name:** A text input field containing "Voltage".
 - Unit:** A text input field containing "V".
- Linear conversion:** A section containing:
 - Scale:** A text input field containing "1".
 - Offset:** A text input field containing "0".
 - Hint:** The text $f(x) = \text{Scale} * x + \text{Offset}$.
- Display parameter:** A section containing:
 - Format:** A dropdown menu currently showing "Decimal".
 - Decimal places:** A dropdown menu currently showing "3".

At the bottom right of the window are two buttons: "Abort" and "Ok".

Figure 5.11: Define analog inputs

At last, the configuration must be sent to the logger and is directly active. As soon as the configured event occurs, the information is sent.

5.2.5 Status messages of the logger

For each sent SMS or e-mail, the status of the logger and the memory fill level of the internal hard disk are displayed in the header:

```

Logger: bPMini_4
S/N: 1007419
Status: OK
Disk: 15%

```

Note:

After inserting the UMTS stick into the BLUEPIRAT Rapid, we recommend a restart.

6 Abbreviations

Kürzel / abbreviation	Bedeutung / meaning
BLUEPIRAT	Processing Information Recording Analyzing Tool
bP	BLUEPIRAT
bP2	BLUEPIRAT2
bP2 5E	BLUEPIRAT2 5E
bPMini	BLUEPIRAT Mini
RC Touch	Remote Control Touch
bP Remote	BLUEPIRAT Remote
A2L	ASAM MCD-2 MC Language
AE	Automotive Electronics
ACK	ACKnowledged
CAN	Controller Area Network
CCP	CAN Calibration Protocol
CF	Compact Flash
CRO	Command Receive Object
DAQ	Data Acquisition
DTO	Data Transmission Object
ECL	Electrical Control Line
ECU	Electronic Control Unit
FIBEX	Field Bus Exchange Format
FW	Firmware
GMT	Greenwich Mean Time
INCA	INtegrated Calibration and Application Tool
LAN	Local Area Network = Netzwerk
LIN	Local Interconnect Network
MAC	M edia A ccess C ontrol
MCD	M easure C alibrate D iagnose
MDX	M eta D ata E Xchange Format
MEP	MOST Ethernet Packet
MOST	Media Oriented Systems Transport (www.mostnet.de)
ODT	O bject D escriptor T able
ODX	O pen D ata E Xchange
OEM	O riginal E quipment M anufacturer
PHY	PH ysical Bus Connect
PW	Password
RX	Receiver Data
SD	Secure Digital
SFTP	Secure File Transfer Protocol
SHA	Secure Hash
SSL	Secure Sockets Layer
TCP/IP	Transmission Control Protocol/Internet Protocol
TLS	Transport Layer Security

TMP	Telemotive Packetformat
TSA	Telemotive System Access
TSL	Telemotive System Link
UDP	User Datagram Protocol
USB	Universal Serial Bus
UTC	Universal Time, Coordinated
Wi-Fi	Wireless Fidelity
WLAN	Wireless Local Area Network
XCP	Universal Measurement and Calibration Protocol

Table 6.1: Abbreviations

7 List of figures

Figure 4.1: links to the manuals in the System Client	8
Figure 5.1: creating a new trigger	11
Figure 5.2: choosing the action.....	11
Figure 5.3: Entering a recipient.....	12
Figure 5.4: Inserting elements	12
Figure 5.5: Inserting CAN / LIN / FlexRay signals.....	13
Figure 5.6: Inserting elements	13
Figure 5.7: Inserting GPS signals	14
Figure 5.8: Inserting logger signals.....	14
Figure 5.9: Configured logger signals in the trigger text field	15
Figure 5.10: Content of a status message e-mail.....	15
Figure 5.11: Define analog inputs.....	16

[Index](#)

8 List of tables

Table 4.1: Additional features by optional licenses	9
Table 5.1: Logger Status Signals.....	15
Table 6.1: Abbreviations.....	18

[Index](#)

9 Contact



DRIVING **EXCELLENCE.**
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