

Installation and Operating Instructions

DGPS/GLONASS Receiver SMART-6L with GSM Modem



Version: V8.20180417



3030248901-02-EN

Read and follow these operating instructions.
Keep these operating instructions in a safe place for
later reference.

Company details

Document Installation and Operating Instructions
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1 For your safety

1.1



Basic safety instructions

Please read the following safety instructions carefully before using the product for the first time.

- Do not make any unauthorized modifications to the product. Unauthorized modifications or use may impair safety and reduce the service life or operability of the unit. Modifications are considered unauthorized if they are not described in the product documentation.
- Comply with road traffic rules. Stop the vehicle before operating the GPS receiver or connected components.

Systems with modem

If you use the GPS receiver with a modem, note that the modem emits radio waves when switched on. These can interfere with other devices or be harmful to human health.

You should therefore follow the following instructions when using the GPS receiver with a modem:

- If you wear a medical device, ask your doctor or the device manufacturer about how to prevent hazards. Medical devices such as pacemakers or hearing aids can be affected by the radio transmissions of modems.
- If you wear a pacemaker, keep the modem away from the pacemaker.
- Switch off the modem as soon as you are close to petrol stations, chemical plants, biogas plants or other locations where combustible gases or fumes can occur. These gases can be ignited by a spark and explode.
- Maintain a minimum distance of 20 cm (8 inches) between the antenna of the modem and your body.
- Never switch on the modem in an aircraft. Ensure that it is not accidentally switched on during flight.

1.2

Intended use

The product is intended for accurate positioning of agricultural vehicles.

The product is only intended for use in the agricultural sector. The manufacturer shall not be held responsible for any other use of the system.

The operating instructions form part of the product. The product may only be used in accordance with these operating instructions.

The manufacturer cannot be held liable for any personal injury or property damage resulting from such non-compliance. All risk arising from improper use lies with the user.

1.3 Layout and meaning of warnings

All safety instructions found in these Operating Instructions are composed in accordance with the following pattern:

	 WARNING
	<p>This signal word identifies medium-risk hazards, which could potentially cause death or serious physical injury, if not avoided.</p>

	 CAUTION
	<p>This signal word identifies hazards that could potentially cause minor or moderate physical injury or damage to property, if not avoided.</p>

NOTICE
<p>This signal word identifies hazards that could potentially cause damage to property, if not avoided.</p>

There are some actions that need to be performed in several steps. If there is a risk involved in carrying out any of these steps, a safety warning appears in the instructions themselves.

Safety instructions always directly precede the step involving risk and can be identified by their bold font type and a signal word.

Example

1. **NOTICE!** This is a notice. It warns that there is a risk involved in the next step.
2. Step involving risk.

1.4 Disposal



When it has reached the end of its service life, please dispose of this product as electronic scrap in accordance with all applicable waste management laws.

1.5 Cleaning

Do **not** clean the product with a high pressure cleaner to prevent moisture from entering the connector.

1.6

EU declaration of conformity

Herewith we declare that the product designated below, on the basis of its design and construction in the form brought onto the market by us, is in accordance with the relevant safety and health requirements of the EU Directives 2014/53/EU and 2011/65/EU. If alterations are made to the product without prior consultations with us, this declaration becomes invalid.

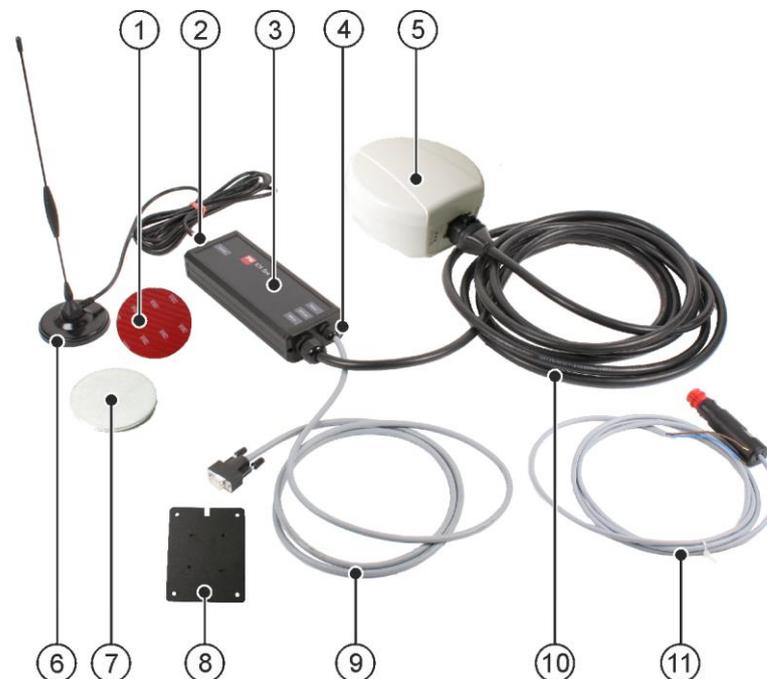
Product name:	ME_GER D-GPS/GLONASS SMART-6L
Item number:	3130247606
Variants:	3030247607
Harmonised standards applied:	EN 60950:2006 EN 301 489:2017 EN 303 413:2017 UNECU Addendum 9 EN 50581:2012

2 Product description

2.1 About the GPS receiver

The GPS receiver can be used worldwide. In Europe and North America, it works with the GPS system and the WAAS and EGNOS correction systems. In locations where WAAS and EGNOS cannot be used, the GPS receiver can use the GPS system together with GLONASS satellites. The correction signal is then calculated internally (using GLIDE technology).

The GPS receiver can also function with other correction signals. In order to do this, the GPS receiver must be connected with a GPS modem or an RTK radio modem.



①	Adhesive plate for GSM antenna	⑥	GSM antenna
②	Connector for antenna cable	⑦	Metal plate for GSM antenna
③	GSM modem installed in junction box	⑧	Magnetic plate
④	Connector for the power supply cable	⑨	Connector cable for the steering job computer
⑤	DGPS/GLONASS receiver SMART-6L	⑩	Connector cable - DGPS/GLONASS receiver to GSM modem
		⑪	Power supply cable

GLONASS

GLONASS is a Russian satellite system which can be used in addition to the American GPS system.

WAAS and EGNOS

WAAS and EGNOS are satellite-based correction services which can be used in Europe and North America.

GLIDE

GLIDE technology can be used in parallel to other methods. This thus increases path-to-path accuracy.

RTK

Systems which work with RTK consist of a fixed base station and a mobile receiver. The base station transmits correction signals to the mobile receiver by means of a modem. This enables levels of accuracy in the centimeter range.

Accuracies

The accuracy of the GPS receiver is dependent on the site in which you are located.

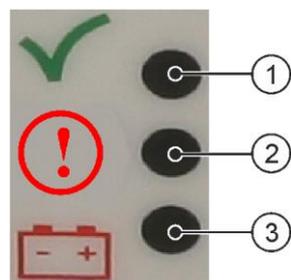
Accuracy is also described using the following values:

- Path-to-path accuracy describes the maximum displacement of the GPS position during field work. A path-to-path accuracy of 2.5 cm means that the overlap or defect during parallel movements is a maximum of 2.5 cm.
- Absolute accuracy is the accuracy with which a movement can be repeated after days, months or years. An absolute accuracy of 2.5 cm means that the deviation of a movement after one year is a maximum of 2.5 cm. This maximum deviation also applies if, after one year has passed, you use the field limits, guidance lines, obstacles, etc. in the TRACK-Leader application from the previous year.

2.2

Meaning of the LED lights

The GPS receiver has three LED lights, which display the current state of the GPS receiver.



①	Green LED light	③	Red LED light
②	Yellow LED light		

- Green: The GPS receiver is receiving GPS signals.

- Yellow: The GPS receiver is not receiving GPS signals. There is an error (e.g. an expired or faulty RTK or L band license).
- Red: The GPS receiver is in operation. Voltage is connected.

3 Brief instructions

This chapter will provide you with an overview of the steps which you will need to complete in order to use the product.

These steps will vary depending on whether you have received the modem already configured.

Configured modem

1. Mount the GPS receiver. [→ 11]
2. Mount the antenna. [→ 12]
3. If you want to connect a terminal, you will need to prepare a junction box for connecting a terminal. [→ 12]
4. Secure the junction box with the modem in the vehicle. [→ 14]
5. Connect the components. [→ 15]
6. Activate the GPS receiver on a terminal. [→ 16]
7. Configure the GPS receiver [→ 16].

Non-configured modem

1. Insert the SIM card. [→ 17]
2. Mount the GPS receiver. [→ 11]
3. Mount the antenna. [→ 12]
4. If you want to connect a terminal, you will need to prepare a junction box for connecting a terminal. [→ 12]
5. Secure the junction box with the modem in the vehicle. [→ 14]
6. Connect the components. [→ 15]
7. Perform the configuration with a SMS. [→ 20]
8. Activate the GPS receiver on a terminal. [→ 16]
9. Configure the GPS receiver. [→ 16]

4 Assembly instructions

4.1 Mounting the GPS receiver



GPS receiver on the roof of a tractor

NOTICE

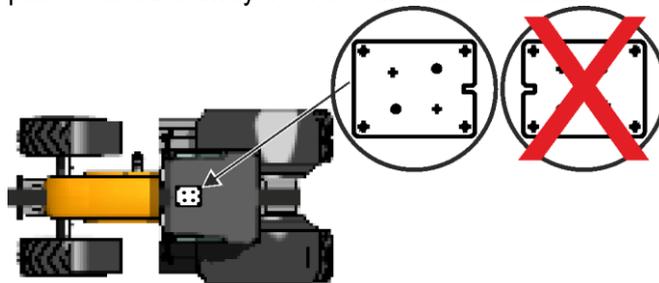
The GPS receiver needs an open view of the sky.

- Mount the GPS receiver on the roof of the vehicle cab.
- Avoid shadowing the GPS receiver's view of the sky.

Procedure

To mount the GPS receiver:

1. Identify a suitable location on the roof of the vehicle: as far forward as possible, and in the centre of the vehicle.
2. Use alcohol to clean the position on which will you will mount the GPS receiver.
3. Expose the adhesive surface of the magnetic plate. The notch in the magnetic plate must face away from the direction of travel.



4. Place the GPS receiver onto the magnetic plate so that it locks. The connection must thus face away from the direction of travel.
 - ⇒ You have now mounted the GPS receiver onto the roof of the vehicle.
 - ⇒ You can now connect the GPS receiver to a terminal.

4.2 Mounting the antenna

	 CAUTION
	<p>Crushing hazard from a very strong magnet The base of the antenna is a very strong magnet.</p> <ul style="list-style-type: none"> ◦ Never insert your fingers between the base of the antenna and a metal surface. ◦ Grip the antenna firmly in your hands, but do not place your fingers on the magnetic base.

NOTICE

The antenna requires an unobstructed view of the sky.

- Mount the antenna on the roof of the vehicle cab.
- Avoid placing the antenna in the shade.

Procedure

To mount the antenna:

You have fitted the GPS receiver.

1. Identify a suitable location on the roof of the vehicle: this should be as far away as possible from the mounted GPS receiver.
2. Use alcohol to clean the position on which will you will mount the antenna.
3. Glue the double sided adhesive plate to the cleaned surface.
4. Clean the provided metal plate.
5. Remove the paper from the adhesive plate and glue this onto the metal plate.
6. Position the antenna on the metal plate.

⇒ You have fitted the antenna.

4.3 Preparing a junction box for connecting a terminal

If you are using the junction box on a terminal and without automatic steering, you need an additional power supply.

	 WARNING
	<p>Physical injury due to electrical shock If voltage is present during assembly, this can lead to physical injury due to electrical shock.</p> <ul style="list-style-type: none"> ◦ Disconnect the power supply from the vehicle battery before working on the junction box.

NOTICE

Damage to the vehicle's electrical system

Switching the polarity of the cables can cause damage to the vehicle's electrical system.

- Pay attention to the polarity of the cable cores and the terminals!

Procedure

Proceed as follows if you want to connect the power supply cable:

- The junction box is not connected to the power supply.

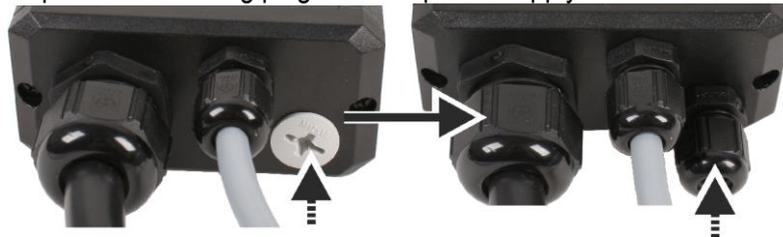
1. Screw the junction box open.



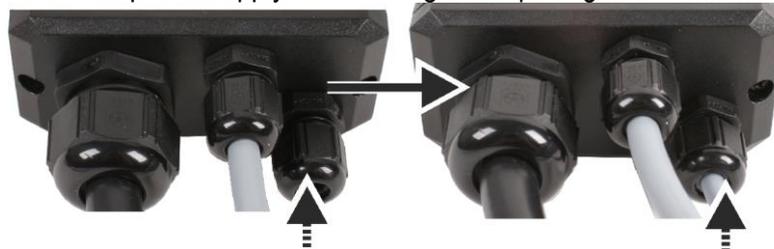
2. Slide the lid of the junction box carefully to the back.



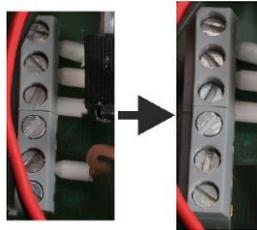
3. Replace the blanking plug from the power supply connector with a grommet.



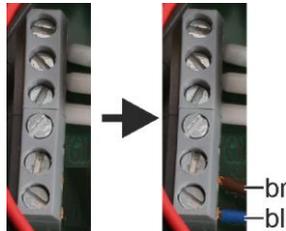
4. Guide the power supply cable through the opening.



- Remove the brown cable core from the left clipper block. Use a screwdriver to do this.



- Insulate the removed brown cable core because it is live.
- Insert the cable core of the power supply cable into the clipper block. Pay attention to the proper colours. You can also see the proper colour by the abbreviation beside the clipper block. The table at the end of this section shows the abbreviations for the colours.



- Close the screw connections of the connectors.
- Slide the lid of the junction box back on.
- Screw the junction box closed.

⇒ You have prepared the junction box for connection to a terminal.

Abbreviation	Color
gn	green
ge	yellow
ws	white
br	brown
bl	blue

4.4

Securing the junction box in the vehicle

To secure the junction box in the vehicle:

- You have prepared a junction box for connecting a terminal if you want to connect a terminal.

1. Find a dry spot in the vehicle cab. Make sure that the distances between the junction box, the GPS receiver and the antenna are not too large so that the cables are sufficiently long.
 2. Secure the junction box tightly.
- ⇒ You can now connect to the individual components.

4.5

Connecting the components

NOTICE

Kink damage to the antenna cable

The antenna cable can become damaged if it is bent during installation.

- Do not bend the antenna cable.

NOTICE

Damage to the vehicle's electrical system

Switching the polarity of the cables can cause damage to the vehicle's electrical system.

- Pay attention to the polarity of the cable cores and the terminals!

Procedure

To connect the components:

- You have fitted the GPS receiver.
 - You have fitted the antenna.
 - You have fitted the junction box.
1. Run the cable for the GPS receiver from the junction box out of the vehicle cab.
 2. Connect the cable to the GPS receiver.
 3. Run the antenna cable into the vehicle cab.
 4. Connect to the antenna cable to the junction box.
 5. Connect the junction box with the steering job computer or the terminal by means of the connector cable.
 6. If you are not going to use a steering job computer, connect the power supply cable to the appropriate power supply socket on the vehicle. Ensure that voltage is only generated when you are working with the GPS receiver. This will keep your data volume low.
- ⇒ You have connected to the components to each other.

4.6 Activating the driver of the GPS receiver on a terminal

You will need to activate the GPS receiver differently depending on where you have connected it.

Version	Driver
Via the terminal's serial interface	"AG-STAR, SMART-6L" or "GPS_STD"
Via the TRACK-Leader TOP steering job computer	"PSR CAN"
Via the TRACK-Leader AUTO steering job computer	"TRACK-Leader AUTO"

You can read how to activate a driver in the operating instructions for the terminal.

4.7 Configuring the GPS receiver

The GPS receiver can be configured differently for various terminals. You can find out how to do this in the operating instructions for the terminal.

The following tables show the values which you can select in the parameter "correction signal" during configuration:

Value	Path to path accuracy	Absolute accuracy	Comment
EGNOS/WAAS	15cm	60cm	
EGNOS/WAAS + GLIDE	<15 cm	60cm	
GLIDE	15-18cm	70cm	Alternative to EGNOS/WAAS for India, Africa and South America
RTK radio	2cm	2.5cm	
RTK GSM	2cm	2.5cm	
TerraStar-C	4cm	4cm	
TerraStar-L	15cm	40cm	

Information for GLIDE

If you have selected a correction signal with GLIDE, please note:

- Switch the GPS receiver off when driving on roads.
- After starting the systems each time, it takes ca. 5 minutes until the system is ready for operation. Wait on the field to be worked during this time, before you start working.
- Ensure that the GPS receiver does not lose the GPS signal during work. (e.g. due to shadowing by buildings or trees). If the signal gets lost, it can cause the GLIDE to restart. This can lead to track offset.

Information for TerraStar

If you have selected “TerraStar” as a correction signal, please note:

- There are two different TerraStar correction signals: TerraStar-C and TerraStar-L. These differ mainly in their accuracies.
- The accuracies are available ca. 5 to 10 minutes after switching on the GPS receiver under the open sky.
- If the GPS signal fails due to shadowing by buildings or trees, the full accuracy is available again at the latest after ca. 5 minutes. For this reason, you should avoid driving along rows of trees or buildings.
- During the convergence, the GPS receiver and the vehicle should not be moved and the location should not be changed.

Information for RTK

If you have selected “RTK radio” or “RTK-GSM” as a correction signal, please note:

- For the values “RTK radio” and “RTK GSM” you need an RTK activation and additional hardware.
- You can also use the optional “RTK-Assist” function.
If the RTK signal fails during work, RTK-Assist bridges the failure with TerraStar satellite correction data for up to 20 minutes.
- The RTK-Assist bridging accuracy is available approximately 30 minutes after switching on the GPS receiver under the open sky.
- If the receiver does not receive any correction data even after bridging with RTK-Assist, it switches to autonomous operation. Automatic steering and SECTION-Control are then no longer possible.

4.8

Inserting the SIM card

If you want to configure your modem with an SMS, a SIM card with a data tariff must be inserted into the modem. You will need the SIM card in order to dial into the GSM network. Ensure that you have a good connection quality to your provider. You may obtain a better GSM signal by switching providers.

You have to use a mini-sized SIM card.

NOTICE

Data loss

All data on the SIM card before working with the modem will be deleted.

- Before inserting the SIM card, ensure that it does not contain necessary data.

NOTICE

Data volume too low

The data volume made available by your provider is too low. To find out what happens if your data volume is used up, please contact your provider.

- Ensure that your data tariff provides a data volume of at least 200 MB.

Procedure

Insert the SIM card as follows:

- The power supply is switched off.
- You have switched off the PIN request of the SIM card with a mobile phone.

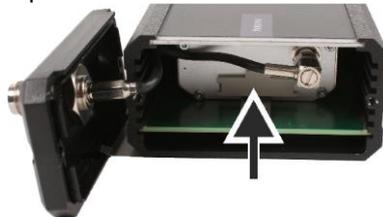
1. Screw the junction box open.



2. Carefully flap the latch to the side.



3. Open the SIM card slot.



4. Insert the SIM card. In doing so, make sure that the SIM card is in the right position.



5. If you want to remove the SIM card again, press it inwards a little bit. The SIM card will then be ejected.
6. Close the opening.
7. Flap the latch shut.
8. Screw the junction box closed.

5 Configuring the modem

If you have a non-configured modem, you must configure this before you can work with it. During configuration, the required data will be saved onto the SIM card.

You have two options for configuring the modem:

- Configuration via touch terminal
- Configuration via SMS

5.1 Configuration via touch terminal

If you want to change the configuration of the modem using a touch terminal, you must proceed as follows:

Procedure

1.  - Open the "Service" application.
2. Tap "GPS".
3. The "Settings" screen appears.
4.  - Open the configuration menu.
5. Configure the parameters. The explanations for the individual parameters can be found in the table at the end of this section.
6.  - Save the changes.
 - ⇒ The following message appears: "Should the data be transmitted to the modem?"
7. "Yes" - to confirm.
 - ⇒ The data is being transmitted to the modem. This will take approx. 30 seconds.

Parameter	Meaning	Possible entries
APN	Connection to the provider.	Provider URL or IP address.
User	Name for the Internet access. The name is the same for all users of a provider.	Name that was given by the provider. Some providers do not require entering a name.
Password	Password for the Internet access. The password is the same for all users of a provider.	Password that was given by the provider. Some providers do not require entering a password.
URL/IP	Connection to the correction data server.	Correction data server URL or IP address.
Port	Port at the correction data server.	Port number

Parameter	Meaning	Possible entries
NTRIP user	Name from the correction service to identify the customer account.	Letters and numbers. Pay attention to the use of upper and lower case letters.
NTRIP password	Password for the identification name.	Letters and numbers. Pay attention to the use of upper and lower case letters.
Mountpoint	Manual entry of a correction data source available only with GPRS connections.	Name of the correction data source / data stream.

5.2 Configuration via SMS

In order to configure the modem with an SMS, you must create a configuration record. A consideration record consists of the individual parameters which are required during configuration.

The syntax for a configuration record is as follows:

```
CONFIG,NTRIP,[Baud rate],[APN],[User],[Password],[URL/IP]:[Port],[NTRIP user]:[NTRIP password],[optional_parameter]
```

Example

Provider: Vodafone

Correction signal: FARM-RTK

```

      ①      ②      ③ ④      ⑤      ⑥
      ↓      ↓      ↓ ↓      ↓      ↓
CONFIG,NTRIP,19K2,web.vodafone.de,d2,gprs,62.180.42.59:2102,
user,password,MOUNT:FARMRTK-DE-31,SKIP-TABLE,NEED-GGA
      ↑      ↑      ↑      ↑      ↑
      ⑦      ⑧      ⑨      ⑩      ⑪
  
```

Example

Provider: T-Mobile

Correction signal: SMART-NET Germany

```

      ①      ②      ③ ④      ⑤      ⑥
      ↓      ↓      ↓ ↓      ↓      ↓
CONFIG,NTRIP,19K2,internet.t-mobile,tm,tm,62.216.224.200:7803,
user,password,MOUNT:01imax,SKIP-TABLE,NEED-GGA
      ↑      ↑      ↑      ↑      ↑
      ⑦      ⑧      ⑨      ⑩      ⑪
  
```

①	[Baud rate]	⑦	[NTRIP user]
②	[APN]	⑧	[NTRIP password]
③	[User]	⑨	MOUNT:[Mountpoint]
④	[Password]	⑩	SKIP-TABLE
⑤	[URL/IP]	⑪	NEED-GGA
⑥	[Port]		

The table below explains the meaning of the parameters:

Parameter	Meaning	Possible input
[Baud rate]	Baud rate for serial interface.	"4K8" (4800), "9K6" (9600), "19K2" (19200), "38K4" (38400), "57K6" (57600) – the default setting is "19K2".
[APN]	Connection to provider.	URL or IP address of the provider.
[User]	Name for the Internet connection. The name is the same for all users of a provider.	Name specified by the provider. Some providers do not require you to input a name.
[Password]	Password for the Internet connection. The password is the same for all users of a provider.	Password specified by the provider. Some providers do not require you to input a password.
[URL/IP]	Connection to the correction data server.	URL or IP address of the correction data server.
[Port]	Port on the correction data server.	Port name.
[NTRIP user]	Name for identifying the customer account on the correction service.	Letters and numbers.
[NTRIP password]	Password for the identification name.	Letters and numbers.
MOUNT:[Mountpoint] (optional parameter)	Manual input of a correction data source, only possible with GPRS connections.	"MOUNT:"Name of the correction data source.

Parameter	Meaning	Possible input
SKIP-TABLE (optional parameter)	Prevents the download of the source table, only used when "MOUNT:[Mounpoint]" is also used.	"SKIP-TABLE".
NEED-GGA (optional parameter)	The modem regularly transmits a GGA message with the current position. This is required if the correction service operates using the VRS concepts, and if it requires a GGA position.	"NEED-GGA".
SKIP-NMEA (optional parameter)	The modem transmits no GGA message with the current position. This enables testing of the modem without a GPS receiver, does not work concurrently with "NEED-GGA".	"SKIP-NMEA".

NOTICE

Configuration error with wrong spelling

If you use the wrong spelling when creating a configuration set, the modem will not be properly configured.

- Pay attention to the proper use of upper and lower case letters.

Procedure

Proceed as follows in order to configure the modem with an SMS:

You have inserted the SIM card. [→ 17]

1. Create a configuration record. Pay attention to upper and lower case letters.
2. Send the configuration record to the telephone number of the SIM card which you have inserted into the modem.

⇒ You will receive an SMS in response with the configuration record that you have sent.

6 While working

6.1 Determining the status of the modem using the LED lights



The following status messages are available:

Status	LED	Notice
Switched off	Off	Switch on, by connecting the power source
SIM card missing	Continuously lit	Insert the SIM card
Initialization	Changes from continuously lit to slow flashing	The modem will dial in to the GSM network. Approximate duration: 30-60 seconds
Correction data flow	Fast flashing	Correction data transfer in progress
Error message	Switching between fast and slow flashing	Restart the modem

6.2 Querying the status of the modem via SMS

You can query the status of your modem, or example for diagnostics purposes.

Procedure

Proceed as follows in order to query the status of the modem via SMS:

1. Enter the command required for the desired query. Take a look at the commands which are available in the table at the end of this chapter.
2. Send the command to the telephone number of the SIM card which you have inserted into the modem.

⇒ The modem will then answer you by SMS with the status.

Command	Output value
NTRIP,STATUS	Base station used, RTCM data format
NTRIP,USER	NTRIP user account (user, password), optional configuration parameters

Command	Output value
NTRIP,LIST	List of base stations within a 140 km range
GPRS,STATUS	APN, user, password, mobile phone provider, bytes received, bytes transmitted, signal quality (minimum 3)
NMEA,LIST	Type of received GGA messages
NMEA,FIX	Last known GGA position

7 Technical specifications

GPS receiver SMART-6L

Operating voltage	8 – 36 V DC
Current consumption	241 mA at 12V DC
Power input	2.9 W
GPS standard	NMEA 0183
Frequencies	GPGGA, GPVTG, GPGSA, GPZDA, GPRMC
Transmission rate	19200-115200 baud
Data bits	8
Parity	no
Stop bits	1
Flow control	None

GSM modem

Operating temperature	-20 - +60 °C
Storage temperature	-40 - +85 °C
Protection class	IP31
Data output format	RTCM, CMR and others
Transmission rate	2400-115200 Baud
Data bits	8
Parity	no
Stop bits	1
Operating voltage	8 – 32 V DC
Current consumption	106 mA at 1 2V DC

	Current peaks of up to 1.6 A possible
Band	850/900/1800/1900 MHz
Data communication	GPRS class 10

8 List of accessories

GPS receiver

Item number	Item name
3030247606	DGPS/GLONASS receiver SMART-6L with connector cable to the terminal
3130247606	DGPS/GLONASS receiver SMART-6L with no connector cable to the terminal

Complete GPS receiver package with additional components

Item number	Item name
3030248901	DGPS/GLONASS receiver SMART-6L with GSM modem, GSM antenna and RTK activation
30302489	DGPS/GLONASS receiver SMART-6L with VHF radio modem (135-174 MHz), VHF mobile antenna and RTK activation
3030248900	DGPS/GLONASS receiver SMART-6L with UHF radio modem (403-473 MHz), UHF mobile antenna and RTK activation

Retrofit

Item number	Item name
3030248920	GSM modem
3030248912	GSM antenna for GSM modem
3030248921	VHF radio modem (135-174 MHz)
3030248922	Radio modem UHF (403-473 MHz)
3030248910	Mobile antenna for radio modem VHF
3030248911	Mobile antenna for radio modem UHF
3030248931	RTK activation
3030248930	L band activation
3030248932	TerraStar-C activation, 1 year subscription
3030248952	TerraStar-C activation, 3 months subscription
3030248935	TerraStar-L activation, 1 year subscription
3030248936	RTK-Assist activation, 1 year subscription

Connector cable

Item number	Item name
31302476	Connector cable - DGPS/GLONASS receiver to terminal
31302453	Adapter cable for connection to the TRACK-Leader TOP steering job computer
31300583	Dust protection cap for the connector cable

Mounting accessories

Item number	Item name
3130247601	DGPS/GLONASS receiver – Magnetic plate and adhesive tape

Additional items

Item number	Item name
3030248150	RTK base station, VHF max. 5 W
3030248151	RTK base station, UHF max. 35 W

Dual antenna – Components

Item number	Item name
3030248960	Dual antenna upgrade kit with DGPS/GLONASS receiver SMART-6L, junction box and roof bracket for 2 GPS receivers
3030247607	DGPS/GLONASS receiver SMART-6L for dual antenna systems
3130248960	Roof bracket for 2 GPS receivers with fastening material
3130248920	Junction box for 2 GPS receivers
3030248961	DGPS/GLONASS receiver SMART-6L activation for dual antenna system
3130264341	ECU-S1 activation for extremely low speeds