ROYAL Eijkelkamp
Meet the difference

Global Data Transmitter Single Prime GPRS/UMTS/LTE

- **GPRS, UMTS or LTE version**
- **Internal barometric and temperature sensor**
- **Data available on Eijkelkamp web portal or e-mail**
- **Easy to link to your own web environment (through API)**
- **External antenna connection**
- **Powered with standard alkaline batteries**
- **Real time alarms possible (flood control)**
- **Secure data transmission**
- **Plug and play**

Contents

Disclaimer

M-113401E

1   Introduction

1.1   How to use this manual

This manual is intended as a reference manual by which users can use and configure the Global Data Transmitter Single Prime GPRS (or Global Data Transmitter Single Prime UMTS and the LTE version), henceforth called the modem. Make sure you have read and understood the manual before you use the modem. For an overview of the modem and its components, refer to chapter 3.
Make sure that you:
- know the contents of this manual;
- follow up all directions;
- do not change the sequence of the procedures.

1.2   Original instructions

The original instructions for this manual have been written in English. Other language versions of this manual are a translation of the original instructions.

1.3   Working principle

1.3.1   Eijkelkamp Smart Sensoring

The purpose of Eijkelkamp Smart Sensoring is to collect data of measurements in the field. Eijkelkamp Smart Sensoring works by means of a wireless data connection to the GSM network (GPRS, UMTS[1] or LTE[2]). The data connection is encrypted to prevent unwanted access. Eijkelkamp Smart Sensoring consists of sensors (e+ loggers and/or Divers), the modem, and the GDT Server. The communication between these devices and their function will be discussed in the following sections.
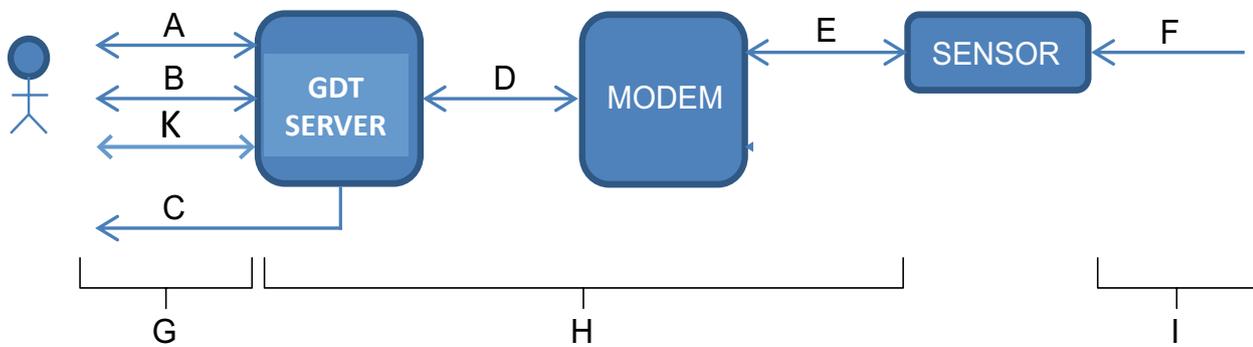
1.3.2   Data communication overview

A   Eijkelkamp Web Portal
B   E-mail
C   SMS alarm
D   GSM Network
E   Sensor cable
F   Sensor measurement
G   Send interval
H   Wake-up interval (shorter when alarm is set)
I   Measurement interval
K   API link

1.   UMTS is optional.
2   LTE Cat-M1 is optional

Device / tool	Communication	Activity	Refer to
Sensor	Sensor cable	• perform the measurements • store data	
Modem	Sensor cable GSM (UMTS and LTE are optional)	• intermediates between the GDT Server and the sensor • communicates with the GDT Server • the internal barometer measures the air pressure and temperature	1.3.4
GDT Server	GSM (UMTS and LTE are optional)	• communicates with the modem and its connected sensor • collects and stores data • configures the modem and sensor settings	1.3.5
Eijkelkamp Web Portal E-mail	Internet	• user can configure modem and sensor settings • receives data from the GDT Server • user can view the status of the modem and sensor	1.3.6 and 1.3.7

1.3.3   Communication intervals

The following figure shows an example of how the various communication intervals between the devices can be arranged.
A   Measurement interval of sensor 1
B   Measurement interval of internal barometer
C   Wake-up interval
D   Send interval

Measurement interval
A measurement interval is the interval between two sensor measurements of a sensor. The measurement interval can be adjusted.

Wake-up interval
The wake-up interval is the frequency in which the modem starts up (wakes up from sleep mode) to intermediate between the GDT Server and the connected sensor.

Note
SMS messages are only sent in case of an alarm situation (and hence not in a specific interval).

Send interval
The send interval is the frequency with which the GDT Server collects any unsent measurement data and sends the new data to the user or the Eijkelkamp Web Portal.

1.3.4   Modem

For an overview of the modem and its components, refer to chapter 3. The modem is the connecting element between the sensor and the GDT Server in Eijkelkamp Smart Sensing. The modem is designed to obtain measurement data from a central location without having to travel to the location(s) where the sensors are placed. The modem will periodically become active at wake-up intervals and log into the GDT Server.
The most important functions of the modem are:
*   Transporting sensor data of the connected sensor to the GDT Server;
*   Enabling remote monitoring and control of the connected sensor.

The most important features of the modem are:
*   No software needed;
*   Global connectivity;
*   Powered with standard alkaline batteries;
*   Easy 'plug-and-play' installation;
*   Internal barometer;
*   One sensor can be connected (for 2 sensors connection use the GDT-S Prime Plus or for multiple sensor connection use the GDT-Multiple)

There are three methods to get access to the modem. The following table gives an overview.

Option	Tool	Refer to
Eijkelkamp Web Portal	Web browser	Online manual on Eijkelkamp Web Portal
E-mail functionality	E-mail addresses	Supplement 2 (M-11320102E)
API	REST-client	Eijkelkamp

1.3.5   GDT Server

The GDT Server is designed to control the modem and its connected sensor. The following table gives an overview.

Type of control	Specification
Communication	Collecting data at wake-up intervals
Monitoring	Checking the status
Configuration	Changing the settings
Alarming	Sending an e-mail and/or SMS notification in case the userdefined or predefined limits are exceeded. Also signals an alarm in the Eijkelkamp Web Portal

1.3.6   Eijkelkamp Web Portal

The webportal is designed to give easy access to the GDT Server.
The web portal:
*   Gives quick access to the data;
*   Has a user-friendly interface to configure the modem and sensor settings.

Requirements:
*   Internet access;
*   Web browser;
*   User account to log into the Eijkelkamp Web Portal.

Note
Refer to the online manual on the Eijkelkamp Web Portal for detailed information on how to use the web portal.

1.3.7　E-mail functionality

The user can communicate with the modem by sending an e-mail to the GDT Server. The e-mail interface is meant for advanced users of the modem.
Requirements:
* Internet
* A user e-mail address
* A modem e-mail address

Note
Refer to Supplement 2 for detailed information on how to use the e-mail functionality.

1.3.8　API functionality

The API is designed to give easy access to the GDT Server.
The API:
* Gives quick access to the data;
* Allows configuration of modem and sensor settings.

Requirements:
* Internet access;
* REST-client;
* User account to use the API.

Note
Contact Eijkelkamp for detailed information on how to use the API.

1.4　Service and support

1.4.1　Qualified personnel

Eijkelkamp maintains a staff of experienced service personnel. Their expert knowledge could be of assistance at inspection, installation, or repair activities. For information with respect to specific adjustments, installation, maintenance or repair jobs, which fall beyond the scope of this manual, contact Eijkelkamp.

Make sure you have the following data at hand:
* Product code[3]
* Date of manufacture
* Serial number
* Date of purchase
* Invoice number

1.4.2　Contact details

The address and contact details can also be found on the front of this manual.
Royal Eijkelkamp
Nijverheidsstraat 9
6987 EN Giesbeek
The Netherlands
Telephone　　+31 313 88 02 00
E-mail　　　　info@eijkelkamp.com
Internet　　　royaleijkelkamp.com

3.　The product code can be found in the footer of every page. The product code starts with an M.

2 Safety

2.1 Symbols in the manual

⚠️ **WARNING**
'Warning' identifies a hazard that could lead to personal injury, including death.

⚠️ **CAUTION**
'Caution' identifies a hazard that could lead to damage to the machine, damage to other equipment and/or environmental pollution.

ℹ️ **Note**
'Note' is used to highlight additional information.

2.2 Intended use

The modem is designed to communicate with a sensor (e+ logger or Diver) in the field. The modem has 1 sensor port, so only 1 sensor can be connected to the modem. The user can configure the modem according to his/her own wishes, for instance regarding wake-up interval.

⚠️ **CAUTION**
The modem has class IP68 protection (only with connected connectors). This means the modem is dust protected and resistant against temporary immersion. The temporary immersion must not exceed 50 hours, at a maximum of 2 meter under water. Do not continuously submerge in water. When there is water inside the enclosure, contact Eijkelkamp.

⚠️ **CAUTION**
Every other or further use is not in conformance with the intended use.

2.3 Qualification of the user

The user should have a general knowledge about the use of a computer system and computer programs. For the basic maintenance work a general technical background is required.

2.4 Liability

The modem is delivered factory sealed with IP68 protection class (50hrs@2mH$_2$O).

⚠️ **CAUTION**
We prefer not to open the modem in the field. Only open the modem in a clean and dry environment. Avoid unnecessary opening of the modem.

The IP68 protection class can only be preserved and guaranteed when the following parts are clean, dust-free and undamaged:
- enclosure;
- sealing of the enclosure;
- connector.

Furthermore, make sure that:
- The sensor cable is correctly connected. Refer to 4.2.3.
- The modem is mounted correctly in the monitoring well. Refer to 4.2.1.
- The work is performed according to the local ESD safety regulations.
- Only original Eijkelkamp or recommended parts are used.

2.5 Regulations and instructions

2.5.1 Modem

⚠️ **WARNING**
- **Do not use the modem when it is wet or moisty inside the enclosure.**
- **Dry a wet or moisty modem with a dry, lint-free cloth. Do not dry the modem in any other way.**

2.5.2 Battery

The modem will operate with two Alkaline D-type batteries, refer to 6.1.
The lifetime will largely depend on the frequency of the wake-up interval.

⚠️ **WARNING**
- **Do not use a damaged battery.**
- **Keep the battery away from fire or heating source.**
- **Do not submerge the battery in water.**
- **Always use the correct battery. Only use original parts.**
- **Do not short circuit the battery.**
- **Do not charge the battery.**

2.5.3 Connection

⚠️ **WARNING**
Do not use worn and/or damaged cables.

2.6 Environment and disposal of waste

⚠️ **CAUTION**
Always observe the local rules and regulations with respect to processing or disposing of (non-reusable) parts.

⚠️ **CAUTION**
Always first remove the battery. Refer to 5.4. For correct disposal of the battery, refer to 2.6.2.

2.6.1 Correct disposal of the product

WARNING
Do not dispose with other types of waste! This could possibly cause harm to the human health or the environment. If worn, damaged or not necessary anymore, please return the modem to your local dealer for correct disposal or repair.

2.6.2 Correct disposal of the battery

WARNING
Do not dispose with other types of waste! The battery contains substances that can cause harm to the human health or the environment.
To protect natural resources and promote material reuse, separate batteries from other types of waste and recycle them through your local battery return system.

M-113401E

3   Product overview

3.1   Outside view
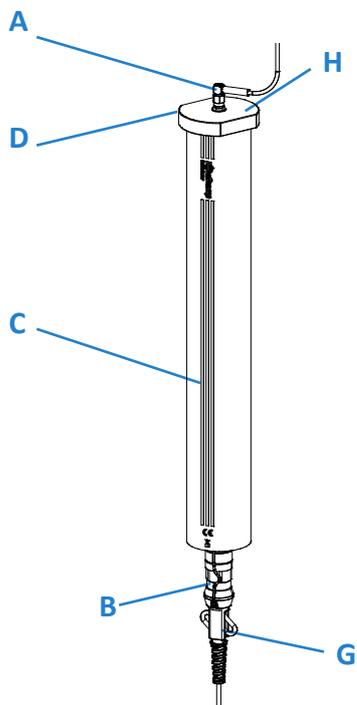
A	Antenna connector[4]
B	1 sensor port[3] (5-pin male connector, A-coded)
C	Enclosure
D	Top cap
E	Start switch (magnetically activated)
F	Connection / Error LED
G	Sensor cable
H	Vent

CAUTION

The modem has class IP68 protection (only with connected connectors). This means the modem is dust protected and resistant against temporary immersion. The temporary immersion must not exceed 50 hours, at a maximum of 2 meter under water. Do not continuously submerge in water. When there is water inside the enclosure, contact Eijkelkamp.

4   Including a protection cap

3.2 Inside view

A	PCB
B	SIM card (in SIM card holder)
C	Battery
D	Sensor connector
E	Desiccant bag
F	Magnet
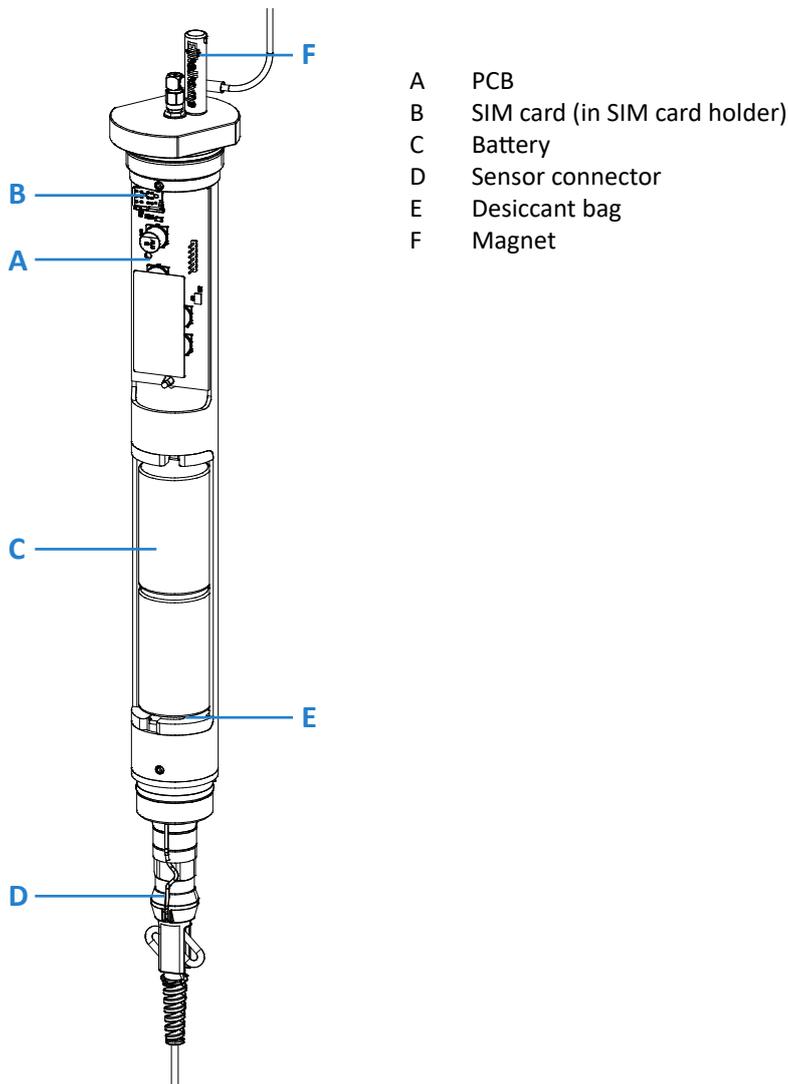
3.3 Explanation of the controls

The controls consist of a Start switch (magnetically activated) and one LED (connection or error). Refer to 3.3.2 for the explanation of the LED. After the Start switch is magnetically activated, the LED shows the status of the modem after the connection has been established (or if it has failed). To save energy, the LED will be automatically disabled after about 15 seconds once a successful connection has been established, or after an error has occurred.

Note
The LED is always OFF until the Start switch is magnetically activated.

Note
When the batteries are inserted into the modem:
- **The green and the red LED will go on simultaneously to indicate the modem is powered. Shortly after that the green LED will blink to indicate that the modem is establishing contact with the GDT-server.**

3.3.1   Start switch

The Start switch (magnetically activated) is used to initially turn on the modem and afterwards to establish a connection to the GDT Server.

The Start switch is concealed in the top cap.

When the Start switch is magnetically activated :
- The green LED will blink.
- The modem starts to connect to the GDT Server.
- When the connection is established the green LED stays on for 15 seconds.

i   **Note**
It is not possible to turn off the modem by magnetically activating the Start switch.

3.3.2   Connection / Error LED (green / red)

The Connection LED shows the status of the connection with the GDT Server.

	Description
Blinking (green)	The modem is busy connecting to the GDT Server.
ON (green)	The modem is connected to the GDT Server.
Blinking (red)	An error occurred
OFF	The modem is operating normally

3.4   Technical data

3.4.1   Mechanical specifications

Specification	Dimensions
Enclosure	ø enclosure 48 mm, ø top cap 60 mm, length 340 mm

Specification	Weight
GDT-S prime (incl. alkaline batteries)	approx. 890 g

Specification	Materials
Enclosure	Alu EN AW-6060, top cap POM (synthetic material), bottom cap POM (synthetic material)

3.4.2   Electrical specifications

Item	Specification
Battery size: D	2x 1.5 V Alkaline-Manganese Dioxide
Life time of the battery	Based on Duracell MX1300 and ambient temperature of 10°C 3 years (at a 1 hour measurement interval and 24 hour wake-up interval)
Modem time accuracy	Better than 1 minute/day

3.4.3   Connections

Messaging	Specification
Message mode	web portal, e-mail, SMS alarm, other
GPRS	Quad band type (850, 900, 1800, 1900 MHz)
UMTS (optional)	Five band (800,850,900,1900,2100 MHz)
LTE Cat-M1 (optional)	LTE frequency bands (B1, B2, B3, B4, B8, B12, B13, B20, B28)
SIM card (nano SIM card socket)*	Multi-network SIM M2M
Antenna connector	SMA connector
Sensor port	5-pin male M12 connector, A-coded

*   SIM card exchangeable by the user. The functionality of SIM cards other than Multi-network SIM M2M is guaranteed only after the functionality tests are fulfilled by Eijkelkamp. Therefore it is advised to use tested SIM cards only.

Integrated barometer sensor	Specification
Barometer measuring range	10 ... 1200 mbar *
Resolution	0.01 mbar
Accuracy barometer	± 2 mbar (at 300 ... 1100 mbar, 0 ...50 °C
Temperature measuring range	-40 ... +85 °C
Resolution	0.01 °C
Accuracy temperature	± 0.8 °C (at 25 °C) ± 2.0 °C (0 ... 50 °C)

*   1 mbar is approximately 1 cmH_2O

Antenna	Specification
GPRS (external)	Quad band type (850, 900, 1800, 1900 MHz)
UMTS (optional)	Five band (800,850,900,1900,2100 MHz)
LTE (optional)	LTE frequency bands (B1, B2, B3, B4, B8, B12, B13, B20, B28)
Connector	SMA Bulkhead

Sensor ports	Specification
Number of sensor ports	1
Port 1 (external)	sensor (e+ logger or Diver) via sensor cable

3.4.4   Ambient conditions

Item	Specification
Temperature	-20 ... +60 °C
Ingression protection (enclosure)	IP68 (50 hours@2mH$_2$O)

3.4.5   Certifications

Item	Specification
CE	CE compliant
EMC / ESD	EN 61000-6-2:2005 / EN 61000-6-4: 2005

4 Getting started

4.1 Unpacking

1. When unpacking, carefully follow the instructions as given on the packaging or on the product.
2. Check that your delivery is correct and complete. Refer to the order list and the delivery list. If incomplete, contact Eijkelkamp.

⚠️ **CAUTION**
Depending on the order, the modem is pre-installed with SIM card. Avoid unnecessary opening of the modem because of the risk of leakage.

3. Check the delivery for any transport damage. Report any damage immediately by filing a claim against the carrier and mark the bill of lading accordingly.

4.2 Installing batteries

The modems needs to be fitted with batteries, therefore refer to 5.4 for placing them.
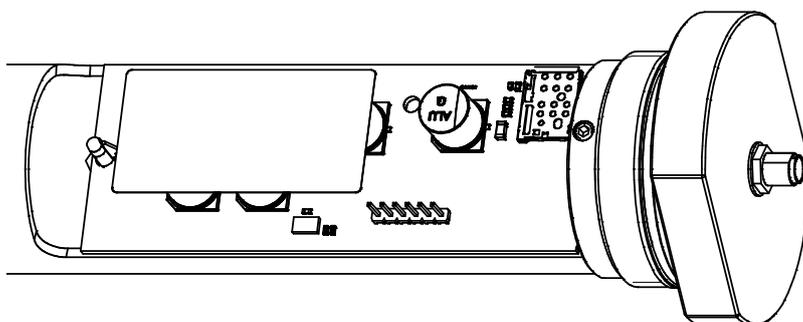
4.3 Setting up first-time communication

A new modem needs to be setup for customer use. This must be done by scanning the QR-code placed inside the modem. In the web page that opens the initial settings for a specific modem can be changed.

ℹ️ **Note**
When you make changes use "Apply" to activate the new setup.

M-113401E

4.4   Installation

⚠️ **CAUTION**

The guarantee will be void when the modem is not used for its intended use and/or at incorrect installation. Refer to 2.2 and 2.4.

4.4.1   Mounting the modem

⚠️ **CAUTION**
- **Place the modem in a protective environment.[5]**
- **Do not expose the modem to direct sunlight.**
- **Avoid deformation of the enclosure.**
    - **Do not use too much force when mounting the modem.**
- **The connector should be easily reachable and there should be enough space to connect the cable to the connector.**
- **All parts must be clean and dry prior to installation.**
- **Do not expose the modem to vibration, direct heat sources and/or forms of radiation and magnetism.**

We distinguish two installation methods, namely;
1. Directly in the monitoring well, e.g. finished with a street cover (A) or
2. In a monitoring well that is installed in a well cover (B)

The modem is fitted with a GPRS/UMTS/LTE antenna GDT-S Prime (art. no: 113434). The external antenna is intended to be installed on the cover of the well cover or with the mounting plate (C) in the street cover.

Adjust the universal monitoring well adapter ring (D) to your monitoring well so that the modem hangs correctly in the monitoring well. Then connect the sensor cable to the modem. Install sensor, sensor cable and modem into the well cover.

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5. If the protective environment is air-tight, the internal barometer data cannot be used. In this case, use the data of another barometer location or external Baro Diver.
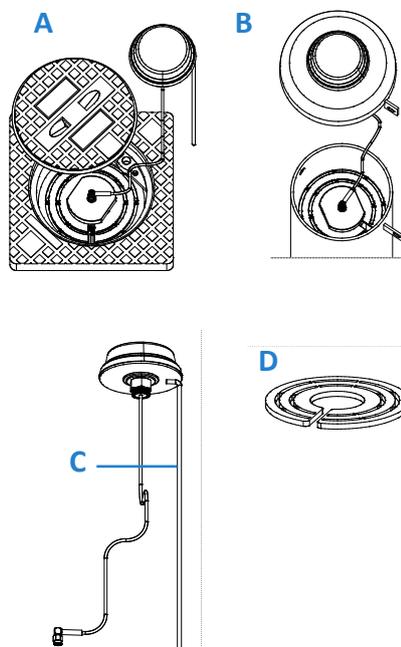
4.4.2   Connecting the antenna

⚠️ **CAUTION**
All parts must be clean and dry prior to installation.

1. Mount the antenna.
2. Screw the SMA connector onto the modem. Do not use more torque than 5 lbs/0.57 Nm.

⚠️ **CAUTION**
Do not use force.

4.4.3   Connecting the sensor cable

⚠️ **CAUTION**
All parts must be clean and dry prior to installation.

⚠️ **CAUTION**
Do not use force. There is only one way to connect the cable to the sensor port. Always check the position of the positioning cam (B).

1. Slide the safety cord (C) over the sensor connector (D).
2. Install the sensor cable connector, pay attention to the postioning cam (B).
3. Fasten the sensor cable by turning the locking ring clockwise.

⚠️ **CAUTION**
Do not fasten the cable too tight onto the connector. Use your thumb and index finger. For an internally clean connector, the IP68 protection class is guaranteed at a torque of 0.6 Nm.

4. Click the safety cord in the safety ring (E).
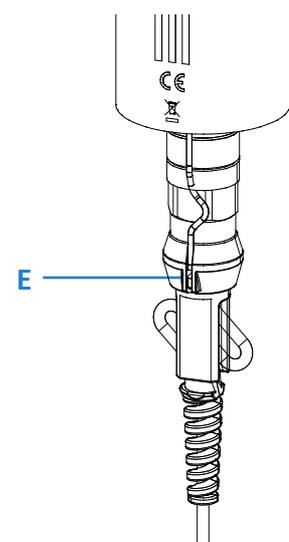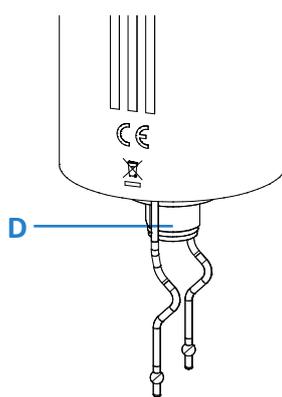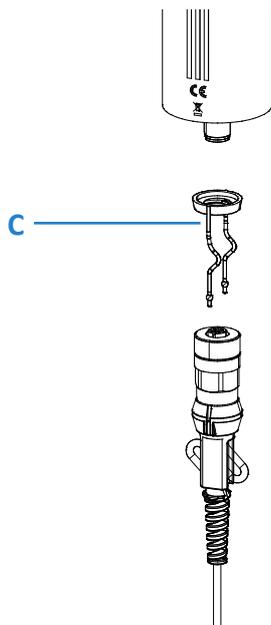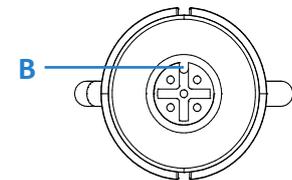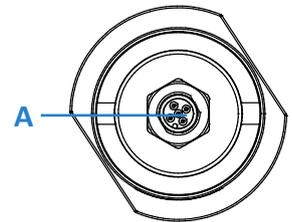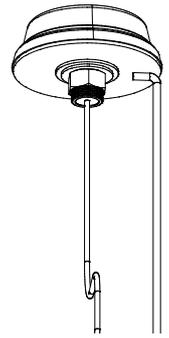
4.5   Commissioning

A   Connection / Error LED (green/red)
B   Start switch
C   Magnet

1. Activate the Start switch by moving a magnet (C) close to position B on top of the modem. The connection LED (A) will start blinking green..

Note
The LED should blink green. Refer to 3.3 to see which status the LED indicates.

2. The GDT Server will activate the connected sensor.
3. If commissioning is OK the green LED goes off after 15 seconds.

Note
If the LED should blink red, follow the steps from the table below.
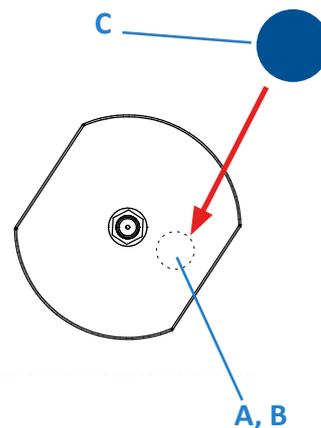
Option	Specific action
1	Retry the activation with the Start switch
2	Reposition the antenna, for example higher up
3	Check if the SIM card is correctly installed
4	Check with the network provider if the connection still works correctly
5	If none of the above solves the problem, contact Eijkelkamp

5 Maintenance

5.1 Preparation

⚠️ **CAUTION**
Only original parts must be used, otherwise the guarantee will be void.

Make sure you take with you the following tools and accessories:
- Cloth (clean, dry and lint-free);
- Replacement desiccant kit. Refer to 6.1.
- Replacement battery. Refer to 6.1.
- Replacement SIM card (optional).
- Replacement antenna.
- Replacement cable and sensor.

5.2 General inspection overview

The modem requires little maintenance. However, if you need to do maintenance work, always check the following points during maintenance.

Inspection	Check	Action (if required)
Enclosure (external)	Dirt / Humidity	Clean and dry with a dry, lint-free cloth.
Enclosure (internal)	Humidity	Replace the desiccant kit. Refer to 5.3.6. If wet or moisty, contact Eijkelkamp
Sensor cable	Wear or damage	Replace the cable.
Antenna	Wear or damage	Replace the antenna.
SIM card		Refer to 5.5

ℹ️ **Note**
It is advised always to take a replacement battery with you. Check the battery capacity level beforehand via the Eijkelkamp Web Portal or the e-mail functionality. Refer to the Online Manual or to Supplement 2 on how to check the battery capacity level.

5.3 Inspection and cleaning

⚠️ **We advise you to take the necessary ESD safety regulations and to apply new acid-free vaseline to the O-rings of the modem during assembly (when the o-rings are damaged, contact Eijkelkamp).**

5.3.1 Inspecting and cleaning the outside of the modem

1. Check the outside of the modem for dirt and humidity. Pay special attention to the vent. The vent has to be free of dirt. Never use sharp tools to clean.
2. Clean and dry the modem with a dry, lint-free cloth.

5.3.2 Dismounting the modem

> **ℹ Note**
> **If you need to open the enclosure, it is advised to remove the modem from the measuring site, so the modem can be taken to a clean and dry environment.**

1. Check if the cable and connector are still connected correctly. Also check the cable and connector for possible defects.
2. Disconnect the antenna from the antenna connector. Turn the hexagon locking counter clockwise.
3. Disconnect the sensor cable from the sensor port. Turn the hexagon locking counter clockwise.
4. Clean the antenna connector and sensor port with a dry, lint-free cloth.
5. Take the modem to a clean and dry environment.

5.3.3 Opening the enclosure

> **⚠ CAUTION**
> **Do not open the modem in the field. Only open the modem in a clean and dry environment.**

> **ℹ Note**
> **It is advised not to open the enclosure unless it is really necessary (e.g. for placing / replacing the batteries). Opening the enclosure increases the risk of leakage afterwards.**

1. Turn the housing counter clockwise and **carefully** remove the slider out of the housing.
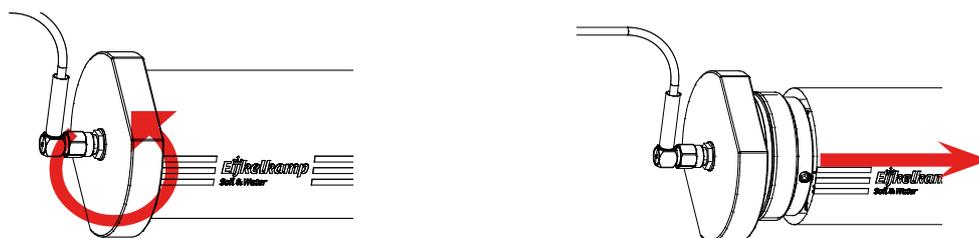
5.3.4 Inspecting and cleaning the inside of the modem

1. Check the inside of the modem for dirt, dust, humidity and damage. Pay special attention to the sealings of the slider top cap and the bottom cap, the sealing rings must be free of dirt, undamaged and not-twisted.

> **⚠ WARNING**
> **The modem must be free from dirt, dust, humidity and damage. Only clean the seal and flash ridge with a clean lint-free cloth if necessary. Never touch the electronics of the printed circuit board (PCB)!**

> **⚠ CAUTION**
> **Do not use greasy substances and agents, such as white spirit, acetone or thinner.**

5.3.5 Replacing the desiccant bag

> **⚠ CAUTION**
> **Only use original parts. A new desiccant kit can be ordered at Eijkelkamp. Refer to 6.1.**

> **⚠ CAUTION**
> **Work only in a dry environment, try to act quickly during the replacing of the desiccant bag!**

1. Remove the old desiccant bag carefully and check whether this bag is excessively wet. If this is the case, this could be an indication of leakage. Please contact Eijkelkamp service department.

⚠️ **CAUTION**
The new desiccant bag (A) must be taken out of its package at the last moment. It must be protected against all kinds of moisture before it is placed in the dry enclosure of the modem.

2. Carefully place the new desiccant bag into the same place as the old one
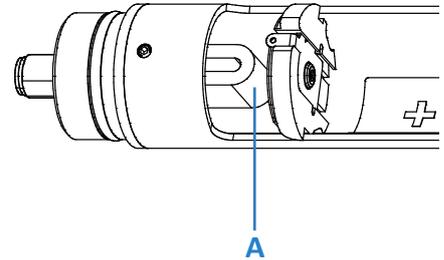
3. If it is not necessary to replace the battery, close the enclosure immediately. See 5.3.6.

5.3.6   Closing the enclosure

1. Check whether the O-rings (A) are clean and undamaged.
2. Check whether the top cap and the bottom cap with the O-rings is dirt-free, along with the sealing surfaces (B) in the housing tube.
3. If no grease is visible on the surface, apply a thin layer of acid-free vaseline (prevent dirt, work clean)
4. Carefully slide the modem back into the housing tube and turn the slider into the housing with a turning movement completely to the top cap.
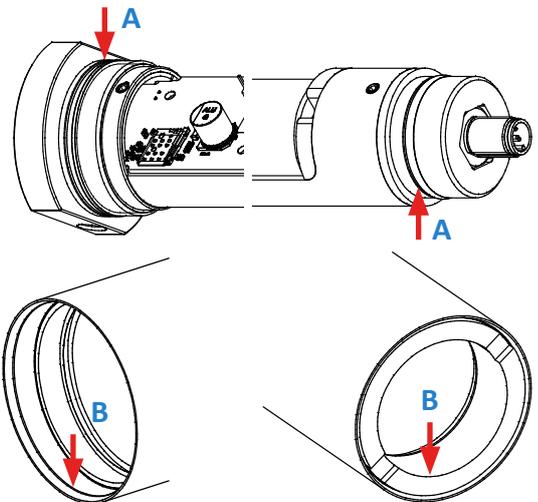
5.3.7   Mounting the modem

1. Connect the antenna to the antenna connector. Refer to 4.2.2.
2. Connect the sensor cable to the sensor port. Refer to 4.2.3.
3. Re-install the modem in the monitoring well or well cover.
4. Start the commissioning process. Refer to 4.3.

5.4   (Re-)placing the battery

On receipt of a 'low battery' alarm, the battery must be replaced along with the desiccant bag.

⚠️ **We advise you to take the necessary ESD safety regulations and to apply new acid-free vaseline to the O-rings of the modem during assembly.**

ℹ️ **Note**
When O-rings are damaged contact Eijkelkamp.

ℹ️ **Note**
Use original or recommended parts. Refer to 6.1.

1. Follow all procedures of 5.3.1 to 5.3.5.

⚠️ **CAUTION**
Work according to your local ESD safety regulations. Avoid touching the printed circuit board (PCB).

ℹ️ **Note**
All setting changes that have not yet been saved will be lost when the battery is disconnected.

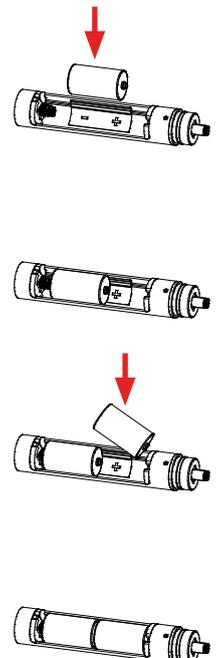2. Carefully remove the empty battery.
3. Place the replacement battery pack.

> ⚠ **CAUTION**
> **Prevent damage to the battery.**

> ℹ **Note**
> **Make sure the battery is placed in the correct position.**

> ℹ **Note**
> **When the battery is inserted into the modem:**
> - **The LED will briefly go on to indicate the modem is powered**
> - **The modem will behave as if the Start switch was magnetically activated**
> - **When this is not the case, check if the contacts from the battery holder are correctly placed to the contacts of the battery.**
> - **If necessary take out the battery and carefully bend the contacts and place the battery once again.**

6. Use the QR instruction 4.3 to set the new batteries and reconfirm the top port sensor configuration

> ℹ **When placing two D cell alkaline batteries change to/check if the battery capacity max (µAh) is 10400000 µAh.**

7. Follow all procedures of 5.3.6 to 5.3.7.
8. Dispose of the old battery in a proper way. Refer to 2.6.2.

5.5   (Re-)placing the SIM card (optional)

> ⚠ **WARNING**
> **Depending on the new SIM card the modem settings may need to be changed, therefore always contact Eijkelkamp.**

> ⚠ **WARNING**
> **Always disconnect the battery before replacing the SIM card.**

> ⚠ **CAUTION**
> **Make sure that the PIN code of the SIM card is turned off or set to the desired PIN code.**

> ℹ **Note**
> **If a PIN code is used, make sure that the PIN code that was configured in the modem is identical to the PIN code of the SIM card.**

1. Follow all procedures of 5.3.1 to 5.3.5.
2. Remove the battery. Refer to 5.4
3. Push onto the SIM. Refer to step 1 in the figure.
4. Remove the SIM card from the holder. Refer to step 2 in the figure.
5. Place the new SIM card into the holder. Refer to step 4 and 5 in the figure.
6. Place the battery. Refer to 5.4.
7. Follow all procedures of 5.3.6 to 5.3.8.

| 4 | 5 | 6 | 1 | 2 | 3 |
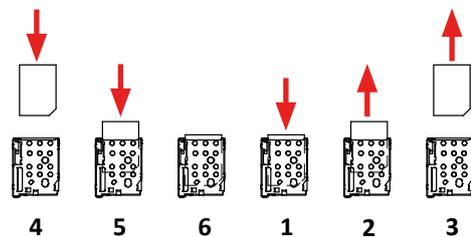
5.6 Storage

⚠️ **CAUTION**
Do not place the modem in a humid and dusty environment. Do not place any heavy materials on top of the modem.

1. Clean the outside of the modem. Refer to 5.3.1.
2. Dismount the modem. Refer to 5.3.2.
3. Store the modem in a clean and dry place.

ℹ️ **Note**
If a modem is not to be used for a longer period of time, it is important that the modem will be set in the power OFF mode via the Eijkelkamp Web Portal or e-mail functionality. Refer to the online manual on Eijkelkamp Web Portal or Supplement 2 on how to put the modem in the power OFF mode. In case the modem will not be used for a very long period of time, it is also advised to disconnect the battery. Even if the modem is in the power OFF mode, it actually continues to draw a minimum amount of current and thus drains the battery. However, it is also advised not to open the enclosure of the modem unless you really need to do so. Opening the enclosure increases the risk of leakage afterwards. Consider whether the battery needs to be removed or not. If the battery needs to be removed, refer to step 1 and 2 of 5.4.

6 Specifications

6.1 Parts list

⚠️ **CAUTION**
Only original parts must be used, otherwise the guarantee will be void (except Battery D).

Article number	Part name
113401	Global Data Transmitter Single Prime (GDT-S Prime) GPRS
113402	Global Data Transmitter Single Prime UMTS
113408	Global Data Transmitter Single Prime LTE
113121	Battery (D, LR20, MX1300), 1.5 Volt, alkaline, low in mercury and cadmium free, blister pack of 2 pieces (or similar).
113434	GPRS/UMTS/LTE antenna for GDT-S Prime
11313401	Antenna mounting plate
113135	Adaptor ring GDT-S
H276414	Dessicant bag 5 gr.

7   Declaration of Conformity

7.1   EC Declaration GPRS

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*EC Declaration of Conformity**

The undersigned, representing the manufacturer:

Eijkelkamp Soil & Water BV
Nijverheidsstraat 30
6987 EM Giesbeek
The Netherlands

Herewith declare that the product:

Type: **Global Data Transmitter Single Prime (Quad-Band GSM/ GPRS)**
Art.nr.:   11.34.01
Function(s):   connecting element between sensor (e+-logger or diver) and the GDT Server in the Eijkelkamp Smart Sensoring.
                  The most important functions of the modem:
-          Passing through the collected data of the connected sensor to the GDT Server;
-          Enabling remote monitoring of the connected sensor.

is in conformity with the essential requirements of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:

a)   2014/30/EU EMC Directive
b)   1999/5/EC R&TTE **(applies only the module; Quectel M95)**
c)   2012/19/EU Waste Electrical and Electronic Equipment (WEEE)
d)   2011/65/EU RoHS Directive

and that the standards and/or technical specifications referenced below have been applied:

a)   *EMC-Directive:*

EN 61000-6-2:2005/C11:2005   Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments

EN 61000-4-2:2009	Electrostatic discharge (ESD) immunity test
EN 61000-4-3:2006/ A1:2008/ A2:2010	Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4:2012	Electrical fast transient (EFT)/ burst immunity test
EN 61000-4-6:2014	Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-8:2010	Power frequency magnetic field immunity test

EN 61000-6-4:2007/A1:2011   Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

b)   *R&TTE Directive:* **(applies only the GSM/GPRS module; Quectel M95)**

EN 301 489-1 V1.9.2   Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

EN 301 489-7 V1.3.1   Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 7: Specific conditions for mobile and portable radio and ancillary equipment of digital cellular radio telecommunications systems (GSM and DCS)

EN 301 511 V9.0.2   Global System for Mobile communications (GSM); Harmonized EN for mobile stations in the GSM 900 and GSM 1800 bands covering essential requirements under article 3.2 of the R&TTE directive (1999/5/EC)

Giesbeek, 02-Nov.-2016

Manufacturer:
Signature

Huug Eijkelkamp
CEO

7.2 EC Declaration UMTS

((*EC Declaration of Conformity**

The undersigned, representing the manufacturer:

Eijkelkamp Soil & Water BV
Nijverheidsstraat 30
6987 EM Giesbeek
The Netherlands

Herewith declare that the product:

Type: **Global Data Transmitter Single Prime (UMTS; Five-Band 3G)**
Art.nr.: 11.34.02
Function(s): connecting element between sensor (e+-logger or diver) and the GDT Server in the Eijkelkamp Smart Sensoring.

The most important functions of the modem:
- Passing through the collected data of the connected sensor to the GDT Server;
- Enabling remote monitoring of the connected sensor.

is in conformity with the essential requirements of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:

a) 2014/30/EU EMC Directive
b) 1999/5/EC R&TTE **(applies only the UMTS/HSPA module; Quectel UG96)**
c) 2012/19/EU Waste Electrical and Electronic Equipment (WEEE)
d) 2011/65/EU RoHS Directive

and that the standards and/or technical specifications referenced below have been applied:

a) *EMC-Directive:*

EN 61000-6-2:2005/C11:2005 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments

EN 61000-4-2:2009	Electrostatic discharge (ESD) immunity test
EN 61000-4-3:2006/ A1:2008/ A2:2010	Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4:2012	Electrical fast transient (EFT)/ burst immunity test
EN 61000-4-6:2014	Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-8:2010	Power frequency magnetic field immunity test

EN 61000-6-4:2007/A1:2011 Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

b) *R&TTE Directive:* **(applies only the UMTS/HSPA module; Quectel UG96)**

EN 301 489-1 V1.9.2 Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

EN 301 489-7 V1.3.1 Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 7: Specific conditions for mobile and portable radio and ancillary equipment of digital cellular radio telecommunications systems (GSM and DCS)

EN 301 489-24 V1.5.1 Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 24:Specific conditions for IMT-2000 CDMA Direct Spread (UTRA and E-UTRA) for Mobile and portable (UE) radio and ancillary equipment

EN 301 511 V9.0.2 Global System for Mobile communications (GSM); Harmonized EN for mobile stations in the GSM 900 and GSM 1800 bands covering essential requirements under article 3.2 of the R&TTE directive (1999/5/EC)

EN 301 908-1 V7.1.1 IMT cellular networks; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive; Part 1: Introduction and common requirements

EN 301 908-2 V6.2.1 IMT cellular networks; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive; Part 2: CDMA Direct Spread (UTRA FDD) User Equipment (UE)

Giesbeek, 02-Nov.-2016

Manufacturer:
Signature

Huug Eijkelkamp
CEO

7.3 EC Declaration LTE

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EC Declaration of Conformity*

The undersigned, representing the manufacturer:

Eijkelkamp Soil & Water BV
Nijverheidsstraat 9
6987 EN Giesbeek
The Netherlands

Herewith declare that the product:

Type:	**Global Data Transmitter Single Prime (LTE Cat-M1)**
Art.no.:	113408
Function(s):	Connecting element between sensor (e+-logger or Diver) and the GDT Server in the Eijkelkamp Smart Sensoring.

The most important functions of the modem:

- Passing through the collected data of the connected sensor to the GDT Server;

- Enabling remote monitoring of the connected sensor.

is in conformity with the essential requirements of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:

a) 2014/30/EU EMC Directive
b) Radio Equipment Directive 2014/53/EU (applies only the LTE module; Quectel BG95-M3)
c) 2012/19/EU Waste Electrical and Electronic Equipment (WEEE)
d) 2011/65/EU RoHS Directive

and that the standards and/or technical specifications referenced below have been applied:

a) EMC-Directive:

EN 61000-6-2:2019	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 61000-4-2:2009	Electrostatic discharge (ESD) immunity test
EN 61000-4-3:2020	Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4:2012	Electrical fast transient (EFT)/ burst immunity test
EN 61000-4-6:2014	Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-8:2010	Power frequency magnetic field immunity test
EN 61000-6-4:2019	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

b) Radio Equipment Directive: (applies only the LTE module; Quectel BG95–M3)

EN 301 489-1 V2.2.3 (2019-11)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility
EN 301 489-17 V3.2.4 (2020-09)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard for ElectroMagnetic Compatibility
EN 301 489-19 V2.1.1 (2019-04)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 19: Specific conditions for Receive Only Mobile Earth Stations (ROMES) operating in the 1,5 GHz band providing data communications and GNSS receivers operating in the RNSS band (ROGNSS) providing positioning, navigation, and timing data; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU
EN 301 908-1 V13.1.1 (2019-11)	IMT cellular networks - Harmonised Standard for access to radio spectrum - Part 1: Introduction and common requirements
EN 301 908-13 V13.1.1 (2019-11)	IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 1: Introduction and common requirements
EN 303 328 V2.2.2 (2019-07)	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum
EN 303 413 V1.1.1 (2017-06)	Satellite Earth Stations and Systems (SES); Global Navigation Satellite System (GNSS) receivers; Radio equipment operating in the 1 164 MHz to 1 300 MHz and 1 559 MHz to 1 610 MHz frequency bands; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU

Giesbeek, 02-Nov.-2021

Manufacturer:

Signature

Huug Eijkelkamp
CEO