RADIO RECEIVER RFH11

USER MANUAL

Warranty and liability limitations

The RFH11 receiver is provided with a 24 months warranty to become effective from the purchase-sales date. The warranty period shall ensure free of charge repair of troubles occurred due to the manufacturer fault.
The warranty shall be applied, if the receiver is installed by qualified specialists according to this document. Upon expiry of the warranty period, the maintenance and repair of the receiver shall be performed at the buyer's expense.
The warranty may be terminated prematurely in the following cases:
- The receiver was repaired or was attempted to repair by an unauthorized person.
- The receiver was used not for its intended purpose.
- The receiver was stored and/or installed in inappropriate premises with inappropriate climate conditions, an aggressive chemical environment.
- The receiver was mechanically broken and/or intentionally damaged.
- The receiver was damaged due to *force-majeure* (lightning discharge etc.) circumstances.

The manufacturer shall not be liable for the following:
- Receiver malfunctions, if the receiver were installed or used not according to its operation manual.
- Termination or restriction of electrical power supply to the receiver buyer or to the receiver user, and shall not reimburse the receiver buyer or the receiver user for the occurred property or non-property losses.
- Robbery, fire of premises or other incurred losses to the receiver buyer or to the receiver user, and shall not reimburse the receiver buyer or the receiver user for the occurred property or non-property losses as a result of these events.

Attention!

Read this user manual carefully.

Content

1   About radio receiver

Radio receiver RFH11 is a receiver designed to receive encoded radio messages at the frequency range VHF or UHF. The integrated module works with RAS3, RAS2M, LARS, LARS1, Milcol-D encoding systems.

The receiver has programmable filters, enabling filtering of the messages according to:

- Message repetition interval;
- Subsystems of encoding system;
- Communication route;
- Sequence of account numbers.

> Note: We configure the receiver with preset settings on client's request.

2   Main technical parameters

Name	Description
Operating frequency range	146 - 174 MHz (VHF) or 430 - 470 MHz (UHF)
Separation of channels	12.5 kHz
Frequency setting error	not more than ± 200 Hz
Sensitivity	Not lower than 0,5 µV
Modulation	FFSK/FSK
Decoded formats	RAS-3, RAS-2M, LARS, LARS-1, Milcold-D
Output formats	Monas3 and Surgard
Storage of message	300 last received messages
Primary power supply	100 – 240 V (50 / 60 Hz) AC network
RS232 data output ports	1 x DB9
Operating temperature	From 0°C, to +55°C
Dimensions	225 x 235 x 115 mm
Weight	1.21 kg, with cables

3   Receiver assemblies

|	
Receiver	1 pc.
1.5 m AC power supply cable	1 pc.
1.8 m R232 Null Modem cable	1 pc.

> Note: *USB* cable for receiver programming is not included.

4   Power supply

The receiver is powered with the alternating current (AC) source. To ensure an uninterrupted operation the receiver should be connected to a 12 V, 7Ah battery, providing backup power supply for 12 hours.

5   Receiver structure
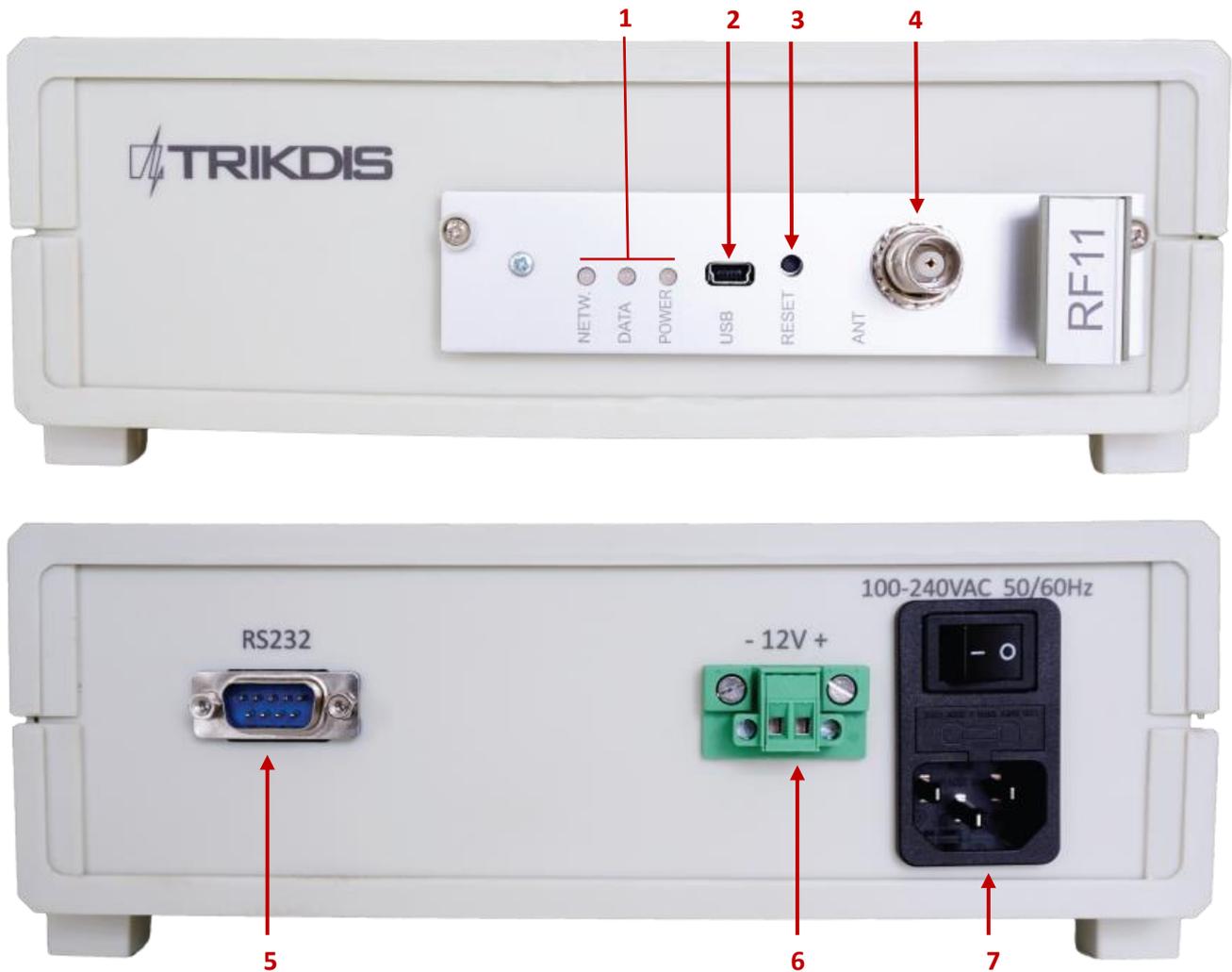
1.	Light indication	6.	Backup battery connection
2.	USB connection port	7.	Power supply connector and power on/off button
3.	RESET button		
4.	Antenna connector		
5.	RS232 data output port		

5.1   Light indication

LED indicator	Operation	Value
"Power"	Flashing green LED	Supply voltage is sufficient
	Flashing yellow LED	Supply voltage is low (below 11.5 V)
	Flashes green and red one after another	Power is supplied only through USB (while configuration is in process)
"Netw."	Flashing green LED	Receiving message
	Lighting yellow LED	Exceeded RF noise level
"Data"	Green LED	There are unsent messages

Lighting green and red simultaneously	Output buffer is overfilled

6 System installation

6.1 Equipment installation steps

1. If received device does not have preset exploitation parameters, please set them as described in **6.2 Setting of operating parameters with R11config.**

> **Note:** To set the parameters you will need R11config software. Ask your distributor to get this software.

2. Connect RFH11 with computer using RS232 cable to forward events to the monitoring software.
3. Set up your monitoring software to display receiver messages. Please follow instructions in your monitoring software documentation.
4. Connect radio antenna to the antenna port.
5. Connect the receiver to power supply with the power supply cable.
6. Turn on the receiver. Flashing green LED indicates that the receiver is connected to power.
7. Check if your monitoring software is displaying messages from the RFH11 receiver.

If nothing was received: check the color of LED "*POWER*" and make sure that all power supply connections are properly connected. If problem persists, please make sure that exploitation parameters are set correctly or contact technical support. How to check and change parameters please refer to **6.2 Setting of operating parameters with R11config.**

6.2 Setting of operating parameters with R11config

1. Connect the receiver to computer with USB cable and run the program R11config (You should get this program from your distributor).
    1.1. In opened window enter Admin password **1234** and click [Enter].

> **Note:** if password is unknown, you can find receiver`s type and software/firmware version by clicking [Device info].
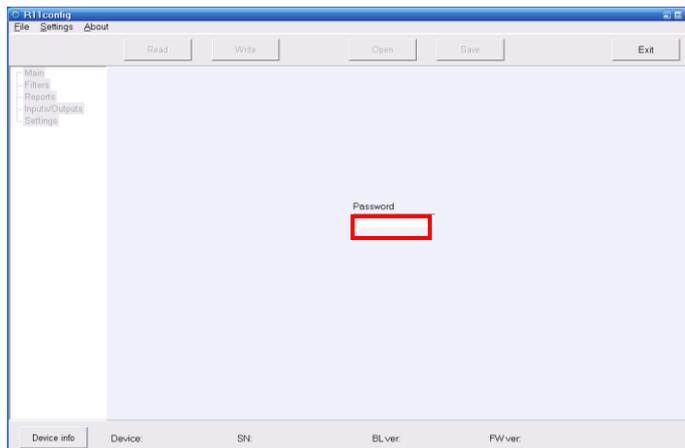
> **Note: USB drivers must be installed in the computer**. If the receiver is connected to a computer for the first time, MS Windows OS should open the window *Found New Hardware Wizard* for installing USB drivers. Download the USB driver file *.inf* for your MS Windows OS from the website http://www.trikdis.com/en/. In the wizard window select the function *Yes, this time only* and press the button *Next*. When the window *Please choose your search and installation options* opens, press the button *Browse* and select the place where the file *.inf* was saved. Follow the remaining wizard instructions to finish the USB driver installation.

2. Select the program directory [Settings], then [COM port] in the drop-down list [COM Port], and then select the port to which the module is connected.
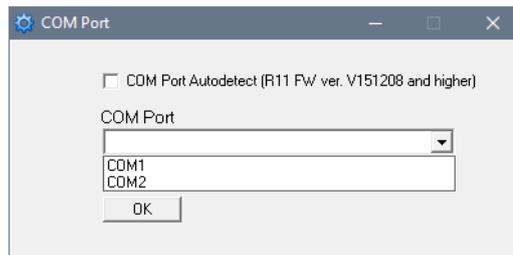

Note: specific port to which the device is connected will appear only after the device is <u>properly</u> connected.

Settings in branch ***Main:***

3. Read the receiver parameters by clicking [Read].
4. Set [Frequency] and [Transmitter ID] in the program branch ***Main***.
5. In the [Transmitter ID] drop-down list you can choose according to what transmitter will be identified by receiver:
   - Account ID – programmed Account ID number will identify transmitter.
   - Transmitter SN –unique serial number will identify transmitter.
   - Transmitter SN + Account ID – transmitter will be identified by both (Transmitter SN and Account ID) numbers.

Note: [Transmitter ID] parameter should be set identically in all radio transmitters.
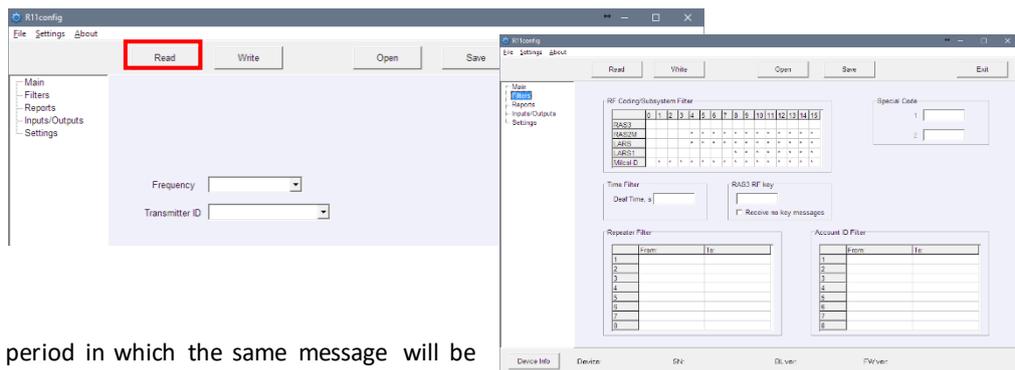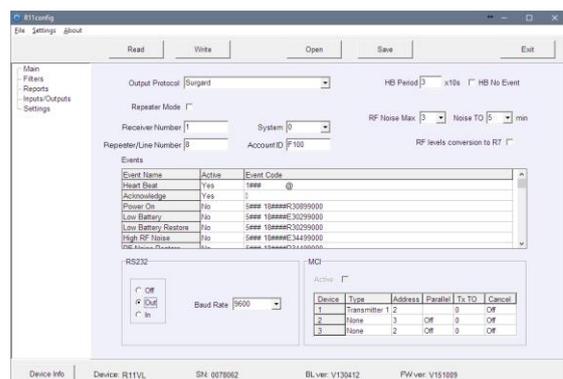

Settings in branch ***Filters:***

- [Time filter] – time period in which the same message will be rejected (recommended time is 90 seconds).
- [RF Coding/Subsystem Filter]– double click on the table, select the required radio coding systems (RAS3, RAS2M, LARS, LARS1, Milcol-D) and mark subsystems allowed for receiving.
- [Account ID filter] – enter ranges (From which – To which) of transmitter Account ID numbers, allowed for receiving.
- [Repeater filter] – enter ranges (From which – To which) of repeater numbers allowed for receiving.

Settings in branch ***Reports:***

Setting output parameters for the monitoring software or transmission modules:

6. Set output protocol:
   6.1. When using MonasMS monitoring software set the [Output protocol] to the *Monas3*. Otherwise, select Surgard or Ademco protocol.
   6.2. Uncheck [Repeater Mode].
   6.3. Set following required parameters: [Receiver Number], [Line number], [System], [Account ID], [HB Period] and [Baud Rate] for RS232.
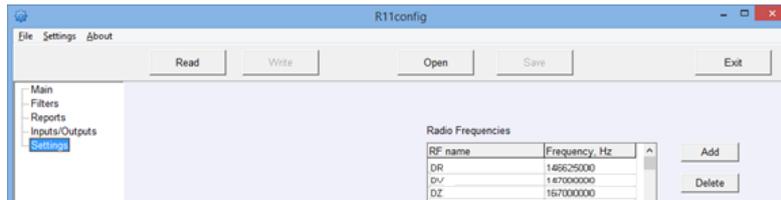
7. Select which service messages will be sent:
   7.1. Double click on the recording row in the table [Events]. Tick the checkbox [Active] if event code should be sent. The recommended event codes are specified in Attachment A.

Settings in branch *Settings:*

8. New frequencies may be entered or the existing ones deleted. Later these frequencies will be available in branch *Main.*

9. All settings can be saved by clicking [Save] button. It can be used later as a template to configure other modules. To open them click [Open] and indicate location. To exit program press [Exit].

ATTACHMENT A

Recommended event codes of service messages

Event code

1401FFFF 12345601001234********03 301 99 000

where:

1234	object number	8191
03	event/restore	
301	event code	
99	subgroup	
000	location	

Event	RAS-3D change into	ECID	Note
Power ON	0330199000	R301 99 000	do not send
Low Battery	0130299000	E302 99 000	send
Low Battery Restore	0330299000	R302 99 000	send
High RF Noise	0135599000	E355 99 000	send
RF Noise Restore	0335599000	R355 99 000	send
Cfg. Change	0362899000	R628 99 000	send
Time fault	0170099000	E700 99 000	do not send
Time Set	0370099000	R700 99 000	do not send
MCI Error	0171299000	E712 99 000	do not send
MCI Restore	0371299000	R712 99 000	do not send
RS232 Error	0171399000	E713 99 000	do not send
RS232 Restore	0371399000	R713 99 000	do not send
CRC Error	0130799000	E307 99 000	do not send
Transmitter PING		E770 99 00X	where: X – next PING period do not send