



EN Pro5S user manual



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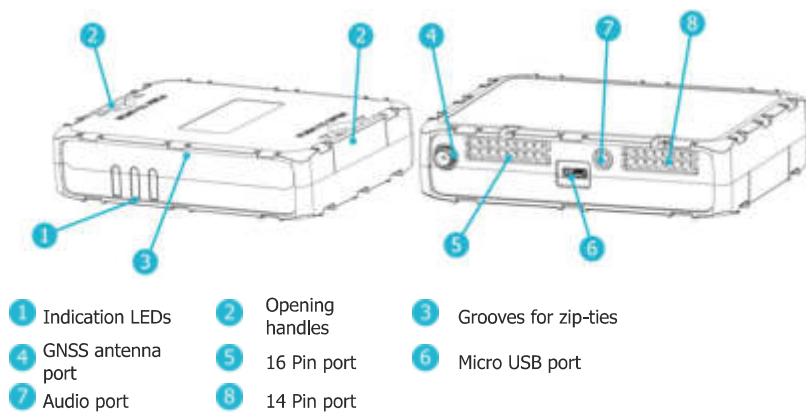


About

Pro5S is an advanced and powerful tracking device with low power consumption. It acquires its position with a GNSS signal and transfers data to a server via cellular networks. Pro5S comes in the following variation:

- Pro5S-LTE-LA-BT – LTE CAT4 and BLE

Device Overview



Key Features

- Real-time data from GNSS and accelerometer
- Driver behavior monitoring (Eco-Drive)
- CANbus data reading (FMS, J1939 and J1708)
- OBD data reading (including proprietary manufacturer data)
- BLE connectivity
- Temperature monitoring
- Driver registration and identification
- Remote ignition blocking
- Fuel monitoring
- Tampering detection
- Antenna detection
- Internal geofences
- Jamming detection
- Commands and configuration via SMS
- Additional sensors and peripherals

Package Contents

-  By default, no SIM card is provided in the package. SIM cards can be obtained from your local phone operator.

The device is packed in a cardboard box. The package contains the following items:

1. The device itself
2. A 14 pin cable
3. A 16 pin cable
4. An external GNSS antenna (available as an optional accessory)



Certifications

The Pro5S-LTE-LA-BT device have comply with the following:

Federal Communications Commission (FCC) Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

RF exposure warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

FCC ID: 2BFH8PRO5SLTELA

Contains FCC ID: XMR2023EG950ALA



RoHS

The Restriction of Hazardous Substances Directive restricts the use of six hazardous materials in the manufacture of various types of electronic and electrical equipment.



WEEE

The Waste Electrical and Electronic Equipment Directive is the European Community Directive set collection, recycling, and recovery targets for electrical goods and is part of a legislative initiative to solve the problem of huge amounts of toxic electronic waste.

Indication LED Patterns

LED	Pattern	Description
GNSS	Once every second	Accurate signal
	Once every 0.4 seconds	No signal
Network	Once every 4 seconds	Connected to network and internet
	Once every second	Connected to network, no internet
	Once every 0.2 seconds	No signal
	Always on	The link with the server is open
Peripherals	Always off	No devices connected
	Once every 5 seconds	One device connected
	Twice every 5 seconds	Two devices connected
	Three times every 5 seconds	Three devices connected
All	Once every 5 seconds	Sleep mode

14 Pin Cable Pinout

Pin	Pin no.	Wire color	Description
+BAT	1	Red	Power supply (9-32 V)
GND	8	Black	Ground connection
DIN3	4	Pink	Digital input 3
DIN4	5	Yellow	Digital input 4
AIN1	12	Grey	Analog input 1
AIN2	11	Green	Analog input 2
DOUT1	2	Purple	Digital output 1
DOUT2	9	Orange	Digital output 2
CAN2-L	6	Blue	CAN Low
CAN2-H	13	White	CAN High
NC	14	-	N/A
K-Line	7	Brown	CAN K-Line
1W +5V	10	Red/Yellow	1-Wire power
1W Data	3	Green/Yellow	1-Wire data

16 Pin Cable Pinout

Pin	Pin.no.	Wire color	Description
GND	8	Black	Ground connection
PortA-232 RX	10	Blue/Yellow	RS232 RX
PortA-232 TX	2	Green/Brown	RS232 TX
PortB-232 RX	11	Red/Cyan	RS232 RX
PortB-232 TX	3	Pink/Green	RS232 TX
PortC-485 A	1	White/Brown	RS485 line A
PortC-485 B	9	Yellow/Brown	RS485 line B
DIN1	4	Yellow/Black	Digital input 1
DIN2	5	Pink/Black	Digital input 2
AIN3	14	White/Grey	Analog input 3
AIN4	6	White/Green	Analog input 4
DOUT3	12	White/Purple	Digital output 3
DOUT4	13	White/Orange	Digital output 4
CAN1-L	7	Blue/Red	CAN Low
CAN1-H	15	White/Red	CAN High
1W +5V	16	Red/Yellow	1-Wire power

Physical Characteristics

Dimensions	101 x 74 x 23 mm
Weight	128 ± 1 g
Housing material	Plastic
Internal storage	8 MB (max. 39000 records)
External storage	Up to 32 GB (max. 250000000 records)
Accelerator	Built-in 3 axis
Connectors	Molex Micro-Fit 14 Pin and 16 Pin, insulated

Configuration interface	Micro USB
Audio interface	3.5 mm (not available for LTE Cat M1/NB-IoT option)
Antenna	Internal and external (available as an additional accessory)

Technical Characteristics

Environmental Specifications

Temperature	Operating: -20 to +60 °C Storage: -20 to +45 °C Battery charging: 0 to +45 °C Battery discharging: -20 to +60 °C
Relative humidity	5% to 95% Non-condensing

Electrical Specifications

Power supply range	9 – 32 V DC
Internal battery	LiPo 3.7 V 1050 mAh
Protections	Battery and 1-Wire power line short circuit protection Reverse polarity protection Electrostatic discharge protection on USB, SIM card slot, and 1-Wire data line Overcurrent protection on the 1-Wire power line and digital outputs Overvoltage protection on inputs Charging protection 2 amp fuse on the power line

Power Consumption @ 12 V DC

Operating (battery charging)	Normal operation (data sending interval ~15 s): ~160 mA Normal operation (constant link enabled): ~155 mA Peak value: ~260 mA
Sleep mode	All modules disabled: ~6 mA Modem in sleep mode, other modules disabled: ~8 mA Modem enabled, other modules disabled: ~16 mA GNSS module enabled, other modules disabled: ~22mA

Connectivity

Network information	Antenna: Internal Frequency bands @ 3G (WCDMA) B1/ 2/ 4/ 5/ 8 Frequency bands @ 4G (LTE CAT4) B1/B2/ B3/ B4/ B5/ B7/ B8/ B28/ B66
GNSS module	Module: U-blox EVA-M8M Antenna: Internal and external (available as an additional accessory) Positioning systems: GPS, GLONASS, Galileo Augmentation systems: QZSS, SBAS (WAAS, GAGAN, EGNOS, MSAS)

	Aided start services: AssistNow Online (A-GPS) Tracking sensitivity: -154 to -164 dBm Reacquisition sensitivity: -152 to -160 dBm Cold start duration: < 30 s Aided start: As low as 3 s Navigation update rate: 10 Hz Horizontal position accuracy: 2.5 m (CEP, 50%, 24 hours static, -130 dBm, > 6 SVs) Module: NRF52832 BLE version: 5.1 Low energy
BLE module	

Interfaces

Power Supply

Pins	+BAT, GND
Purpose	To power the device
Parameters	Voltage range: 9 – 32 V DC

Analog Inputs

Pins	AIN1, AIN2, AIN3, AIN4
Purpose	To monitor the values of various peripherals
Parameters	Voltage range: 0 – 30 V DC Resolution: 12 bit
Applications	Various sensors

Digital Inputs

Pins	DIN1, DIN2, DIN3, DIN4
Purpose	To monitor the values of various peripherals
Parameters	Voltage range: 0 – 30 V DC Voltage threshold: 4 V DC All inputs can be used in ground mode Voltage threshold in ground mode: 250 mV DC
Applications	Ignition detection Various sensors

Digital Outputs

Pins	DOUT1, DOUT2, DOUT3, DOUT4
Purpose	To control various peripherals
Parameters	Maximum voltage: 32 V DC Maximum current: 1 A All outputs can be used in inverted mode
Applications	Driver registration Engine blocking Warning indication Network jamming detection

CAN Interfaces

Pins	CAN1-H, CAN1-L, CAN2-H, CAN2-L
Purpose	To read various data from vehicle on-board systems
Applications	Tachograph data reading

FMS data reading
J1939 data reading
HCV and LCV CAN data reading
Trailer data reading
OBD data and DTC reading
Manufacturer-specific OBD data reading

K-Line

Pins	K-Line
Purpose	To read tachograph and OBD data
Applications	Tachograph data reading OBD data and DTC reading

Serial Ports

Pins	Port A-232 RX, Port A-232 TX, Port B-232 RX, Port B-232 TX (RS232) Port C-485 A, Port C-485 B (RS485)
Purpose	To connect and communicate with peripheral devices
Applications	Refrigerators RS232 cameras Digital fuel level sensors RFID readers Fatigue sensors

1-Wire

Pins	1W +5V, 1W Data
Purpose	To monitor the values of various peripherals
Applications	Driver registration Temperature sensors Trailer assignation

For the device to work, you first need to insert a SIM card. To do so, open the device housing and perform the actions described below.

Opening the Device

The housing is meant to be opened using your hands. Use the opening handles on the bottom of the housing. Push one handle away from the housing (1) and gently lift up that side of the housing (2). Repeat the process for the other side (3) (4). The bottom part of the housing should come off easily.

- ☐ Make sure that the device is powered off before opening it!
- ☐ The use of inappropriate tools or excessive force may cause permanent damage to the device.

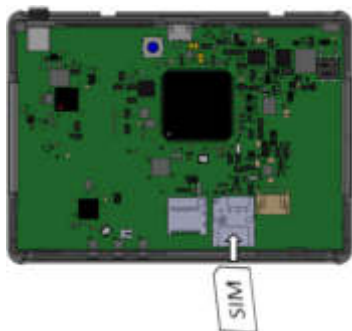


- ☐ Avoid opening the device more times than required, as it may wear out the opening handles.

Inserting a SIM Card

Insert your SIM card into the device, as shown in the image below. The microchip must be facing down.

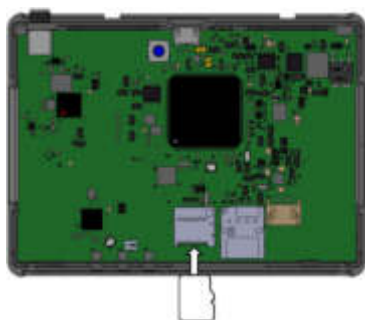
-  All SIM card security codes must be disabled, otherwise, the SIM card will not work with the device.
-  An industrial grade SIM is strongly recommended if the device will be exposed to temperatures higher than 40° C.



-  Use a non-prepaid SIM card to ensure that the balance does not suddenly run out and cause connectivity issues.

Inserting an SD Card

Insert your SD card (microSD, up to 32 GB) into the device, as shown in the image below. The SD card must be facing up.



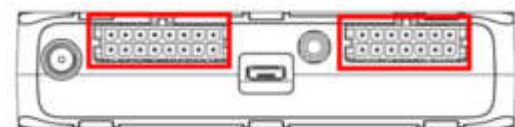
To close the device, simply put the top back on and push one side down until you hear a click. Push down the other side until you hear a click.



Cable Connection

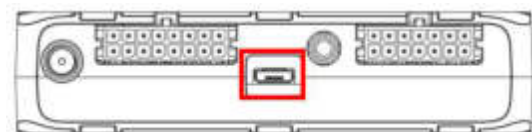
14 and 16 Pin Cable Connection

Connect the 14 and 16 Pin cables to their respective ports on the device, as shown in the image below. The cables can be connected in only one way.



USB Cable Connection

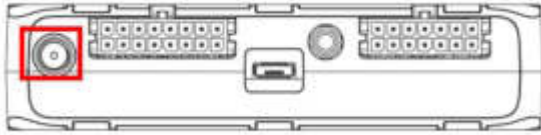
Connect the USB cable to the micro USB port, as shown in the image below. The cable can be connected in only one way. Connect the other end to your computer.



-  The device can be configured when powered via USB, using an external power supply for configuration is optional.

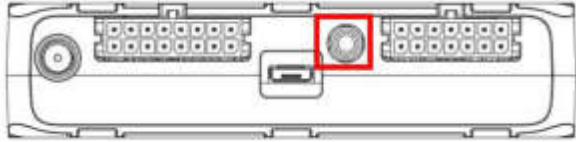
Antenna Cable Connection

Connect the antenna cable to the antenna port, as shown in the image below. Make sure that the cable is fully twisted onto the port.



Audio Cable Connection

Connect your audio equipment using a 3.5 mm audio cable, as shown in the image below. The cable can be connected in only one way.



Configuration options

For the device to be fully operational, it must have a configuration file uploaded to it. A configuration file contains information on what functionalities are active, how they are configured and what kind of data is included in records.

You can upload the same configuration file to multiple devices, making it easy to receive identical data from all your vehicles.

Configuration can be uploaded:

- Via USB cable using Advanced configurator
- Over the air using device management platform
- Over the air using Telematics platforms that support this feature
- Via SMS commands

 The configuration file must be prepared using Advanced Configurator tool before it can be uploaded via mentioned methods or use DIFF to SMS tool for SMS configuration

Configuration preparation

The advanced configurator is used to configure Ruptela tracking devices and all their functionalities, allowing you to find the best solution for your needs. The advanced configurator allows you to do the following:

- Make a new configuration file
- Edit an existing configuration file
- Send a configuration file to your device
- Load an existing configuration file from your device
- Modify all device functionalities
- Update the device firmware

Launching the Advanced Configurator

1. Download Advanced Configurator from [Downloads](#) section
2. Extract it to you preferred location in computer (No installation required)
3. Navigate to folder where it was extracted and launch Advanced Configurator.exe to start program

Configuration File Extensions compatibility

HCV5: **.ft5c**

Pro5S: **.ft5c**

LCV5: **.fl5c**

Pro5: **.fp5c**

HCV5 Lite/Pro5 Lite: **.fg5c**

Trace5-LTM (pre-revision): **.fa5c**

Trace5 NA: **.fb5c**

Trace5 (all other variants): **.fd5c**

Plug5: **.fe5c**

Smart5: **.fm5c**

Eco5: **.fy5c**

FM-Tco4 HCV: **.ft4c**

FM-Tco4 LCV: **.fl4c**

FM-Pro4: **.fp4c**

FM-Eco4: **.fe4c**

FM-Eco4 S: **.fk4c**

FM-Eco4 T: **.fk4c**

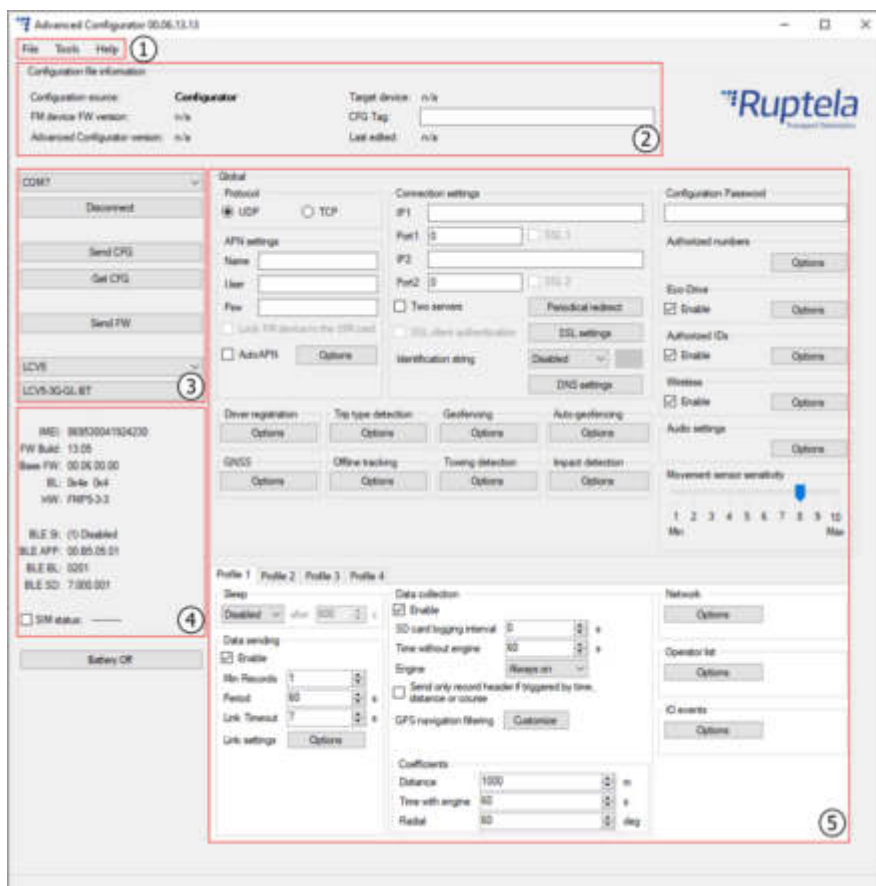
FM-Eco4 RS T: **.fj4c**

FM-Plug4: **.fo4c**

Advanced Configurator Overview

The main device configurator window has the following main sections:

1. Menu toolbar
2. Configuration file information
3. Interaction with the device – used to load/send configuration and firmware files
4. Connected device information
5. Configuration settings



Menu toolbar: File

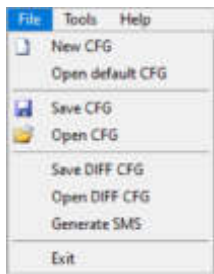
The menu toolbar contains two drop-down lists – **File** and **Tools**. When **File** is clicked, the following configuration file actions are displayed in the drop-down list:

- | | |
|-------------------------|--|
| New CFG | Resets the current configuration and begins the creation of a new configuration. |
| Open default CFG | Loads a default configuration with predefined values. |
| Save CFG | Saves the configuration file. |
| Open CFG | Loads a preset configuration file. |

Save DIFF CFG	Creates a DIFF file which is used to change only one or a few certain parameters without a need to upload the full configuration to the device. It is useful when updating devices over-the-air.
Open DIFF CFG	Opens a saved DIFF configuration file.
Generate SMS	Generates an SMS command to configure the FM device remotely. More information: Device Configuration via SMS
Exit	Closes the advanced configurator.

! **Save DIFF CFG** will only save changes made to the initial configuration (a loaded preset configuration).

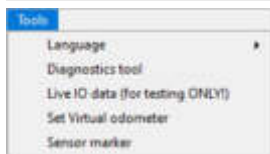
! If you click **Exit**, the configurator will close without any prior confirmation and the configuration will not be saved.



Menu toolbar: Tools

When the **Tools** menu is opened, the following options are displayed in the drop-down list:

Language	Select the language. English and Russian are available.
Diagnostic tool	Only applicable for the 4 th generation devices. Opens a window where you can troubleshoot your tracking device.
Live IO data	Opens a window where all enabled inputs and outputs and their current parameter values are listed.
Set Virtual odometer	Opens a window where you can set a new value for the virtual odometer (in meters).
Sensor marker	Opens a window where you can mark your temperature and humidity sensors.



Menu toolbar: Help

If you need some help with the advanced configurator, click **Help** to open the latest user manual.



Configuration File Information

The configurator displays additional information about the loaded configuration file. The following information will be displayed at the top of the configurator once the configuration is loaded:

Configuration source	From where the configuration was loaded: • Configurator – the configuration was loaded from a file • Device [IMEI] – the configuration was loaded from the device
FM device FW version	The current device firmware version. Displayed only if the configuration was loaded from the device.
Advanced Configurator version	The configurator version on which the currently loaded configuration was made.
Target device	The FM device model for which this configuration was created or from which device it was loaded.
CFG Tag	An input field where additional information about the configuration file can be saved. The maximum length is 32 symbols. Only ASCII characters

are allowed.

Last edited

The exact time and date when the configuration was last edited.

 If the configuration was loaded from the device and the **Last edited** value is *2000.01.01 00:00:00*, the device cannot get time from any source at this moment.



If any changes were made to the currently loaded configuration, a small "*" symbol will appear next to the name of the configuration.

Connected Device Information

The configurator displays additional information about the connected tracking device on the left of the main configurator window. The following information will be displayed:

BL The bootloader version.
FW The current firmware version of the device.
IMEI The unique IMEI code of the device.
SIM status Displays the current status of the connected SIM card and enables the

Lock FM device to the SIM card functionality.

The proper **SIM status** will only be shown if an external power supply is connected. Otherwise, *Error* will be displayed. Possible values:

- *Ready* – the PIN code is acknowledged, or the PIN code check is disabled. The GSM/GPRS modem can operate normally.
- *Error* – represents a wide range of possible SIM card issues. Common reason – an old FW version which does not support the SIM card.
- *Unknown* – the communication between the device and the GSM/GPRS modem has failed, therefore, the SIM status is unknown.
- *PIN Request* – the SIM card requests a PIN code (or the provided PIN code is incorrect).
- *PUK Request* – the SIM card requests a PUK code.
- *Locked* – the FM device is locked to a different SIM Card.
- *Not inserted* – no SIM card is inserted.

Only for the 5th generation devices with BLE

BLE St The BLE status. 0 – disabled, 1 – enabled, 2 – not connected, 3 – not supported, 4 – bad version, 5 – no power.

BLE APP The current BLE firmware version.

BLE BL The current BLE bootloader version.

BLE SD The current BLE SoftDevice version.

Only for HCV5 Lite/Pro5 Lite devices

EXT St The CAN extender status. 0 – compatible, 1 – incompatible, 2 – not responding, 3 – no power.

EXT FW The current CAN extender firmware version.



If the external power supply is connected to the tracking device and a SIM card with a PIN code is inserted, you will have to enter the PIN code.

 If the **SIM status** checkbox is not enabled, the **Enter PIN** window will not appear when connecting to the FM device, meaning that you will not be able to access your device.

If the wrong PIN is entered three times in a row, the SIM card will be locked, requiring the PUK code, provided by the service operator. After PUK code verification, you will need to set a new PIN code.

 If the wrong PUK code is entered ten times in a row, the device will be permanently blocked, requiring a new SIM card.

Configuration Password

This functionality restricts access to the configuration. You will need to enter this password each time before saving or loading the configuration. The password is **mandatory**.

In the main window, locate the **Configuration password** section and enter the password.

Over-the-air configuration updates ignore the configuration password.

Make sure to remember the password! If you forget the configuration password, the only way to reset it is to return the device to the manufacturer.

Device Type and Model Selection

The functionalities that are available for configuration depend on the device type and model.

When a device is connected, the type and model are selected automatically and only the available settings for the exact type/model combination are displayed. If the model could not be detected, it is set to *Unknown* and all settings available for the device type will be displayed.

When no device is connected, you can manually select the device type and model in the drop-down selectors.

Example: An HCV5 series device selected and the model is set to *Pro55-LTE-LA-BT*.

If you do not know the exact model of the device, select *Unknown* in the version drop-down selector. All settings available for the device type will be displayed.

Configuring the FM Device for the First Time

The purpose of this chapter is to help configure the FM device for the first time in order to send basic data to the server.

The **Default Configuration** is a present configuration file that makes the configuration process significantly easier and shorter. Follow these steps to load the default configuration file:

1. Select your FM device from the drop-down list. *Tco4 HCV* is selected by default.
2. Click the **File** tab, located at the top left side of the configurator, and select **Open default CFG**.

Default parameters will be loaded. However, you will need to enter a few other entries on your own to establish the connection and complete the configuration:

1. Select which protocol to use:

- **UDP** – Uses less data but is less reliable. The default setting.

- **TCP** – Uses more data but is more reliable.

2. Fill the **Connection settings**. Enter an IP address (255.255.255.255 format) or a domain name (up to 40 characters) and a **Port** where the device will send collected data. No default server is provided.

3. Fill the **APN settings**. This includes the APN name, username, and password (if they are needed). No default APN is provided.

4. HCV5 Lite/Pro5, Trace5-LTE, Eco5 LTE and Smart5 LTE versions only: Choose the authentication type from the drop-down list: *None*, *PAP*, or *CHAP*. **AutoAPN** must be disabled.

5. Select the **COM port** through which the FM device is connected to the computer.

6. Click **Connect**.

7. Click **Send CFG** to upload the configuration to your device.

A screenshot of a software configuration window titled 'Global'. The window is divided into several sections. On the left, there are buttons for 'Connect' (6), 'Send CFG' (7), 'Send FW' (4), and a dropdown menu for 'HCV5 Lite / Pro5 Lite' (5). The main area contains 'APN settings' with fields for 'Name', 'User', and 'Pass', and a dropdown for 'Auth type' (1) set to 'None'. There is also an 'AutoAPN' checkbox. To the right, the 'Connection settings' section includes fields for 'IP1', 'Port1', 'IP2', and 'Port2' (2). Below this are checkboxes for 'Two servers' and 'Periodical redirect', and a field for 'Identification string'. At the bottom, there are sections for 'Driver registration', 'Geofencing', and 'Auto-geofencing', each with an 'Options' button.

Now the device is configured to send data to the specified server. Standard IO parameters are enabled (loaded with the configuration file). You can log in to your tracking platform to see whether the device is sending data.

☑ The APN settings (name, login, and password) are provided by your mobile network operator.

Proceed to complete [Advanced configurator](#) user manual for information on how to configure the other functionalities.

Update/Configure Device via DMP platform

This section only describes the Update function of DMP and assumes you already have an account and are familiar with it. Full DMP manual is available with detailed explanations in this [Device management platform](#) user manual.

Before starting the update/configuration of the device(s), make sure that the following is already done:

- The FW file is uploaded to **Your Files**
- The created CFG file is uploaded to **Your Files**
- If updating multiple devices, an IMEI list of devices is prepared

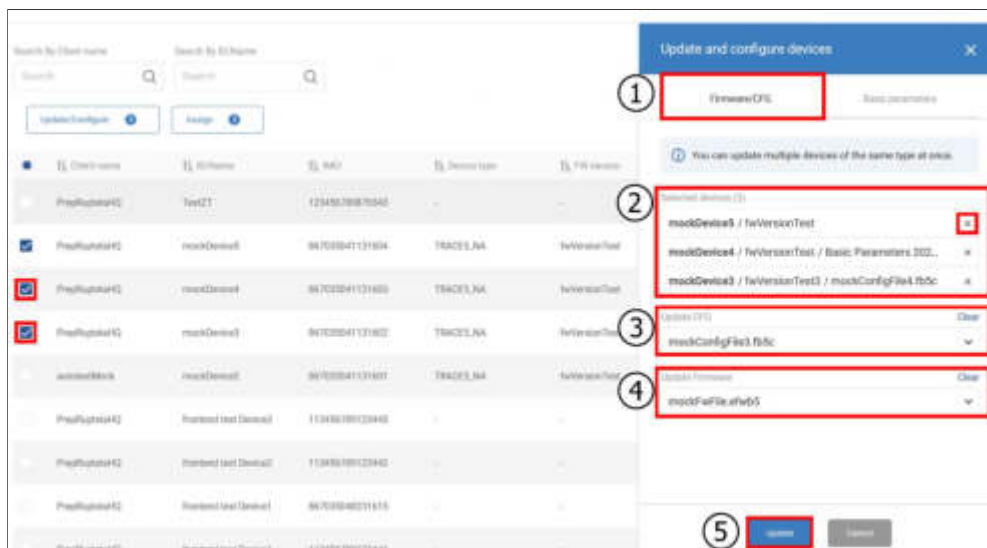
Find the device(s) you wish to update. Tick the checkbox next to the device(s) and then click **Update/Configure**.

Updating Firmware or Configuration

⚠ You may only update the firmware/configuration for multiple devices of the same type.

To update the firmware/configuration of the devices, follow these steps:

1. In the **Update and configure devices** window, select the **Firmware/CFG** tab.
2. Review the list of **Selected devices**. To add additional devices, return to the list and tick the checkboxes next to the ones you want to add. To remove them from the list, click the **X** next to the device.
3. Select a configuration file from the **Update CFG** drop-down list. Leave the field empty if no changes will be made to the configuration.
4. Select a firmware file from the **Update Firmware** drop-down list. Leave the field empty if no changes will be made to the firmware.
5. Click **Update** to upload and send the firmware/configuration files to the device.



Configuration via SMS Commands

Alternatively, the device can be configured using SMS commands. Please refer to the following documents for an in-depth description:

- [Device configuration via SMS](#)
- [SMS commands list](#)

Updating Firmware

We highly recommend using the newest firmware to take advantage of our newest functionalities and improvements. Device firmware can be updated in the following ways:

- Manually by sending a firmware file via USB to the device using Advanced Configurator tool
- Over-the-air using your fleet management software that support Ruptela Protocol FW update function
- Over-the-air using DMP platform

 The device will not send any data during firmware updates.

File Extension

Firmware file extension for Pro5S devices: **.efwt5**

General firmware file pack for all the tracking devices: **ReleasePack_XXXX-XX-XX.fwp**. Where **XXXX-XX-XX** is the release of the firmware update. See [Downloads](#) section

Installation Method

To install the device, you need to connect it to a power supply and an ignition source. They may be found in the following locations:

- The OBD diagnostic port
- The fuse box
- The 9-Pin Deutsch port

Required Tools

Before starting the installation, make sure you have the following tools:

- A panel removing tool
- A wrench

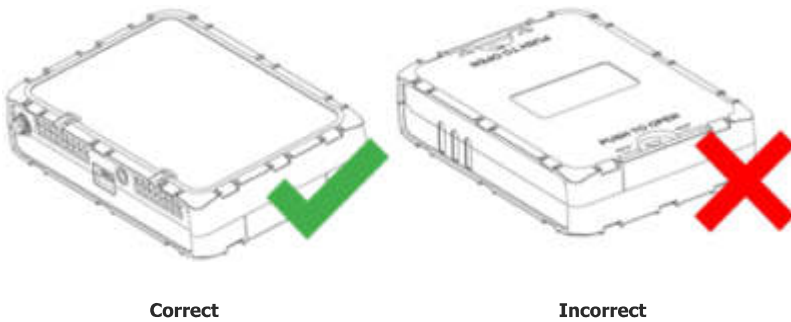
- Zip-ties or double-sided tape
- Crimp terminals

Installation Recommendations

- ⚠ Make sure the installation is carried out only by qualified personnel!

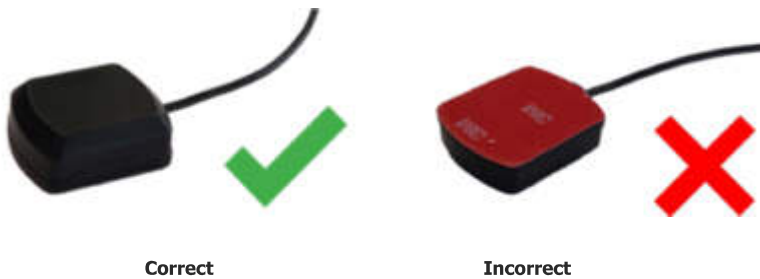
Before starting the installation, decide where you will install the device. The installation location depends on the vehicle and the selected installation method. Follow these recommendations to ensure that the device works properly:

- Install the device in a service access area (under the dashboard, behind the fuse box, etc.)
- Fix the device firmly to the attaching surface, make sure it does not move or shake
- Avoid installing the device near metal surfaces or cables
- Do not install the device near heat emitting or moving parts
- Install the device with the label positioned towards the sky



External GNSS Antenna Positioning

It is recommended to place the GNSS antenna behind the dashboard as close to the windshield as possible and further away from the doors. It must be uncovered and facing up as shown in the picture below.

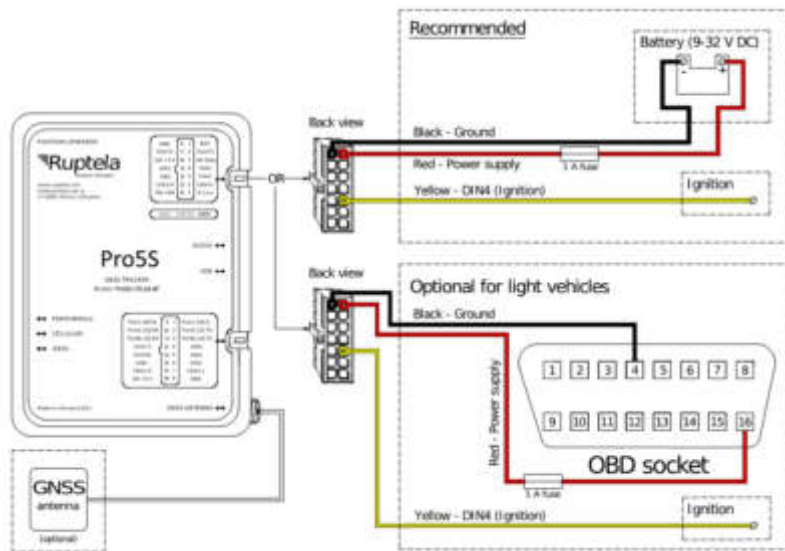


- ⚠ Incorrect antenna placement may result in reduced tracking accuracy.

Wiring Diagram

Power input: 9-32 V DC.

- ⚠ It is mandatory to use an external automotive 1 A fuse.
- ⚠ We recommend using specialized insulation methods that ensure reliable long-term performance under harsh field conditions. Heat shrink connectors, crimp or solder wire connectors, insulating tape, and similar materials can be used.



Installation Check-up

1. Take several minutes to review the installation, check that everything is connected properly.
2. Start the vehicle, drive outside if the vehicle was in a building and wait for several minutes.
3. Check that the required data is received by sending an SMS command, using the installation assistant, or checking your fleet management platform (see chapter "Using TrustTrack" if you are using TrustTrack).
4. Finish up the installation, make sure there are no hanging wires and that all panels are firmly reattached.

Troubleshooting

If you did not receive the required data during the installation, you can send several SMS commands to your device to check what might be wrong.

gsminfo

Use the *gsminfo* SMS command to know if the device is connected to mobile networks and the internet.

Command syntax: *password gsminfo*

Response example: *ST:2019.06.20 23:26:33; OP 22210, **lvl 15**, LAC 20030, CID: 28289, GSM; M:I 126, R 125, SP: 0; **GPRS 0**: O 64,C 0, E 248; LK:O 575, E 1, TMO 126; RS: 04; P 0*

The relevant parameters and their values are described in the table below.

lvl The mobile signal level. If **lvl** is lower than 10, the signal is weak, and it is likely that there is no connection to the network.

GPRS The internet status. Possible values:

- 0 – no internet connection
- 1 – the device is connected to the internet

In the previous example, the GPRS value is 0. This would mean that the device is not connected to the internet.

getapn

If the device is connected to mobile and internet networks but does not send any data, check the APN and connection settings with the *getapn* SMS command.

Command syntax: *password getapn*

Response example: *APN: banga User: PSW: IP1: 92.62.134.38 Port1: 9021 IP2: 195.14.173.3 Port2: 9000 TCP/UDP: 0*

The parameters and their values are self-explanatory, except for **TCP/UDP**.

TCP/UDP This parameter shows which protocol is used. Possible values:

- 0 – TCP
- 1 – UDP

 If the *getapn* response text is very long (for example, the APN, username and password are 32 symbols long each and two servers are used), it might not fit into a single message and be cropped.

coords

Use the *coords* SMS command to know if the device has an accurate GNSS fix.

Command syntax: *password coords*

Response example if there is no GNSS fix: *GPS is not available*

Response example if there is a GNSS fix: **2019-06-20 07:01**, lat. 46.1443183, long. 11.881766, alt. 217.5, **sat. 8**, dir. 198.10, **hdop 100**, **state 3**

The relevant parameters and their values are described in the table below.

Datetime	The current date and time in GMT.
sat.	The number of visible satellites. At least 4 satellites must be visible to get an accurate GNSS signal.
hdop	The current HDOP (signal accuracy) level. If the HDOP level is above 3.5, the GNSS signal is inaccurate.
state	The current GNSS state. Possible values: 1 – GNSS module off 2 – GNSS module on, no fix 3 – GNSS module on, fix acquired 4 – GNSS module not responding 5 – GNSS module is in sleep mode 6 – GNSS module disabled

reset

When all else fails, use the *reset* SMS command to restart the device. Configuration parameters will not be lost.

Command syntax: *password reset*

Response example: *Resetting device*

 This chapter applies only if you are using the TrustTrack fleet management platform

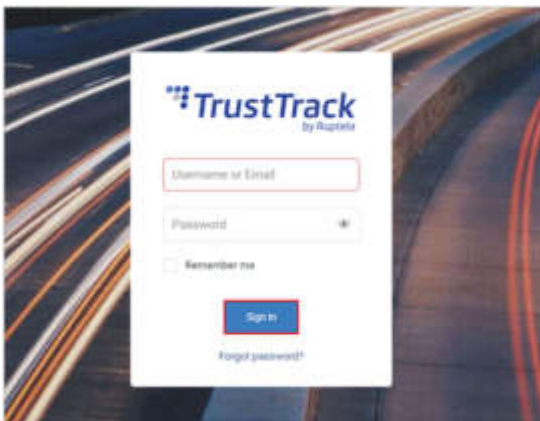
 TrustTrack documentation website: <https://www.fmsdocumentation.com/>

Accessing TrustTrack

TrustTrack can be accessed via the web or using an app. Use the same server domain (typically track2.ruptela.com) for both web and app. Your login credentials are sent to you by e-mail. If you have not received them, contact your sales manager.

Accessing TrustTrack via Web

To access TrustTrack via the web, enter your server domain into the browser. Enter your credentials and click **Sign In**.



Accessing TrustTrack via App

Download the TrustTrack app:

- [iOS](#)
- [Android](#)

Once downloaded, launch the app. Enter the server domain. You will only need to do this once. Tap **Continue**.

