Ruptela

Device Center User Manual

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1. Device Center User Manual

Purpose of This Document

The purpose of this user manual is to provide information about the Device Center application. This user manual describes the main features of the application and how to use it.

Document Application

The Device Center can be used with all 4th and 5th generation tracking devices and all computers with a Windows 10/11 operating system.

Document Changelog

Version	Date	Modification
1.37	2024-03-08	Added: Eco5. Updated: Changelog.
1.36	2023-12-28	Added: Plug5. Updated: Formatting.
1.35	2023-01-17	Updated: Serial Port Settings. Updated: Device Testing.
1.34	2022-10-28	Updated: Engine Detection Settings. Updated: Driver Registration Settings.
1.33	2022-09-16	Updated: Geofencing.
1.32	2022-08-05	Updated: Eco-Drive Settings. Updated: Impact and Rollover Detection Settings.
1.31	2022-07-15	New device subversions: Trace5-LTE-EMEA (BT) and Trace5-LTE-LA (BT). Updated: DOUT and DIN Settings. Updated: 1-Wire Interface Settings. Updated: Driver Registration Settings.

		Updated: BLE Settings.
1.30	2022-05-20	New device: HCV5 Lite/Pro5 Lite.
1.29	2022-05-03	Updated: Supported operating systems.
1.28	2022-04-04	Added: Device Testing Video (ES).
1.27	2022-02-18	Added: Trace5-LTE device support related information. Updated: Starting Configuration. Updated: 1-Wire Interface Settings. Updated: Driver Registration Settings. Updated: Geofence Conditions. Updated: Firmware File Extensions.
1.26	2022-01-14	Added: Navigation Bar Button Description. Updated: Various Screenshots.
1.25	2021-01-04	Updated: Configuration File Extensions.
1.24	2021-11-29	Updated: Microsoft .NET framework download links. Updated: Configuring Functionalities.
1.23	2021-08-27	Added: Impact detection.
1.22	2021-05-10	Updated: Changing Devices. Updated: Selecting a Device.
1.21	2021-04-23	Added: Device Management Platform Settings. Updated: Configuration File Extensions. Updated: Connection Settings. Updated: Location Accuracy. Updated: Firmware File Extensions.
1.20	2021-02-12	Updated: Settings Menu.
1.19	2021-01-26	Added: Device Center Troubleshooting. Updated: BLE Settings.
1.18	2020-12-18	Added: Load Configuration from file. Updated: Updating Firmware. Updated: Settings Menu.

		Updated: Manufacturer Specific OBD Data Reading Settings.
1.17	2020-11-27	Added: Importing Files with Geofence Data. Added: Exporting Files with Geofence Data. Updated: Settings Menu.
1.16	2020-11-06	Updated: BLE Settings.
1.15	2020-10-16	Added: Settings Menu. Updated: Configuration Menu.
1.14	2020-09-25	Added: BLE Settings. Added: Location Accuracy. Updated: CAN Interface Settings. Updated: Manufacturer Specific OBD Data Reading Settings. Updated: Configuration file extensions. Updated: Firmware file extensions.
1.13	2020-09-04	Updated: Selecting a device. Updated: Driver registration settings. Updated: GNSS & Network.
1.12	2020-08-05	Updated: Configuration type selection. Updated: Configuration file extensions. Updated: Selecting a device. Updated: Serial port settings. Updated: Firmware file extensions.
1.11	2020-07-16	New devices: HCV5, LCV5, and Pro5.
1.10	2020-06-29	Updated: Create Configuration Without Device. Updated: Custom Engine Detection Settings. Updated: Peripheral and Interface Settings.
1.9	2020-06-05	Added: Troubleshooting. Updated: Overall Status. Updated: Ignition, DIN, and Serial Port status descriptions in Device Testing.
1.8	2020-04-24	Added: Device Testing.

1.7	2020-04-03	New device: Trace5. Updated: Connection Settings.
1.6	2020-02-21	New device: FM-Eco4 T.
1.5	2020-02-03	Updated: Advanced Configuration.
1.4	2019-12-04	Added: Language Switching. Updated: Example images.
1.3	2019-11-15	Added: Geofencing Settings.
1.2	2019-09-30	Updated: Sidebar description. Updated: Loading a Configuration From a File.
1.1	2019-09-13	Added: Description of *Manufacturer OBD* mode in CAN Interface Settings. Updated: Manufacturer Specific OBD Data Reading Settings.
1.0	2019-08-21	Initial draft.

Safety Information

The following information is provided to ensure safe operation of the device. Please read it carefully before you start using the device!

The configuration must be performed using a 2nd safety class computer (with an autonomic power supply).

For configuration use cables that were purchased from Ruptela. Ruptela is not responsible for any harm or damage caused while using the wrong cables.

This crossed-out wheelie bin symbol means that waste equipment should not be disposed of with your other household waste. The product must be taken to separate collection points at the product's end-of-life.

Notations

The following notations are used in this document to highlight important information:

Bold text

Used to indicate user interface elements or for emphasis.

Italic text

Used to indicate items that belong to a list and can be selected.

Note

ℹ️	Used to indicate items that belong to a list and can be selected.

Caution

⚠️	Used to mark actions that require caution when handling the product.

Warning

🚫	Used to mark actions that may cause irreversible damage if performed incorrectly.

Tip

✔️	Suggestions on how to proceed.

Availability table

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	🚫	🚫	🚫

Used to mark which devices support a given functionality. 4th generation device names are written without the FM prefix.

Acronyms and Abbreviations

AIN – Analog Input

APN – Access Point Name

CAN – Controller Area Network

DIN – Digital Input

DOUT – Digital Output

DTC – Diagnostic Trouble Code

IMEI – International Mobile Equipment Identity

IMSI – International Mobile Subscriber Identity

GNSS – Global Navigation Satellite System

GPS – Global Positioning System

GSM – Global System for Mobile Communications

OBD – On-board Diagnostics

RPM – Revolutions per Minute

SMS – Short Message Service

TCP – Transmission Control Protocol

UDP – User Datagram Protocol

USB – Universal Serial Bus

VCOM – Virtual Communication Port

References

Device Center files: https://doc.ruptela.com/articles/#!downloads-publication/device-center

Microsoft Framework: https://dotnet.microsoft.com/download/dotnet-framework/net48

User manuals: https://doc.ruptela.com/articles/#!tracking-devices-publication/tracking-devices-home

1.1   About the Device Center

The Device Center application is used to easily configure Ruptela tracking devices and their main functionalities. The Device Center application 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
- Update the device firmware

Download the Device Center from our documentation website.

Extract the downloaded archive to your desired location. Launch **DeviceCenter.exe**.

> ⓘ   You may need to download the Microsoft .NET Framework to use the Device Center.

> This PC > Desktop > DeviceCenter > DeviceCenter >

Name

- 📁 Drivers
- 📁 es
- 📁 ru
- DeviceCenter.exe
- DiffToSMS.exe
- 📄 EN Advanced Configurator User Manual.pdf
- 📄 EN Device Center User Manual.pdf
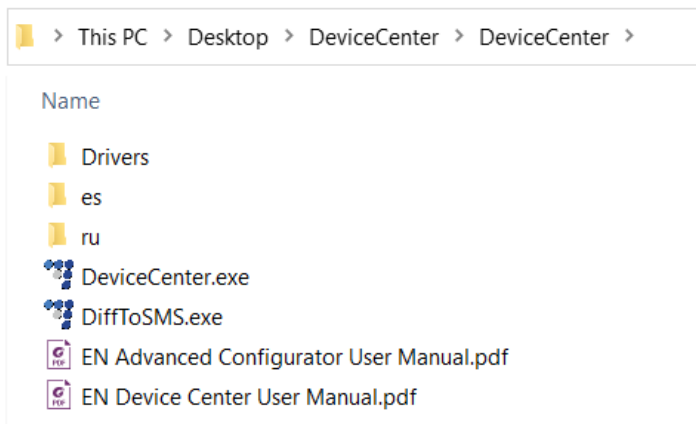
1.2   Main Menu

After launching the Device Center application, you will be directed to the main menu. The main menu has six buttons that lead to other menus:

- **Configure device** – contains the configuration menu
- **Test device** – contains the installation assistant tool
- **Install device** – contains links where you can open an installation quick start guide for your device
- **Our products** – contains a link to a list of our products
- **TrustTrack** – contains a link to our TrustTrack fleet management platform
- **Need some help**? – contains technical support contacts and a link to our documentation website

There is also an **Advanced mode** button that opens the advanced configurator.
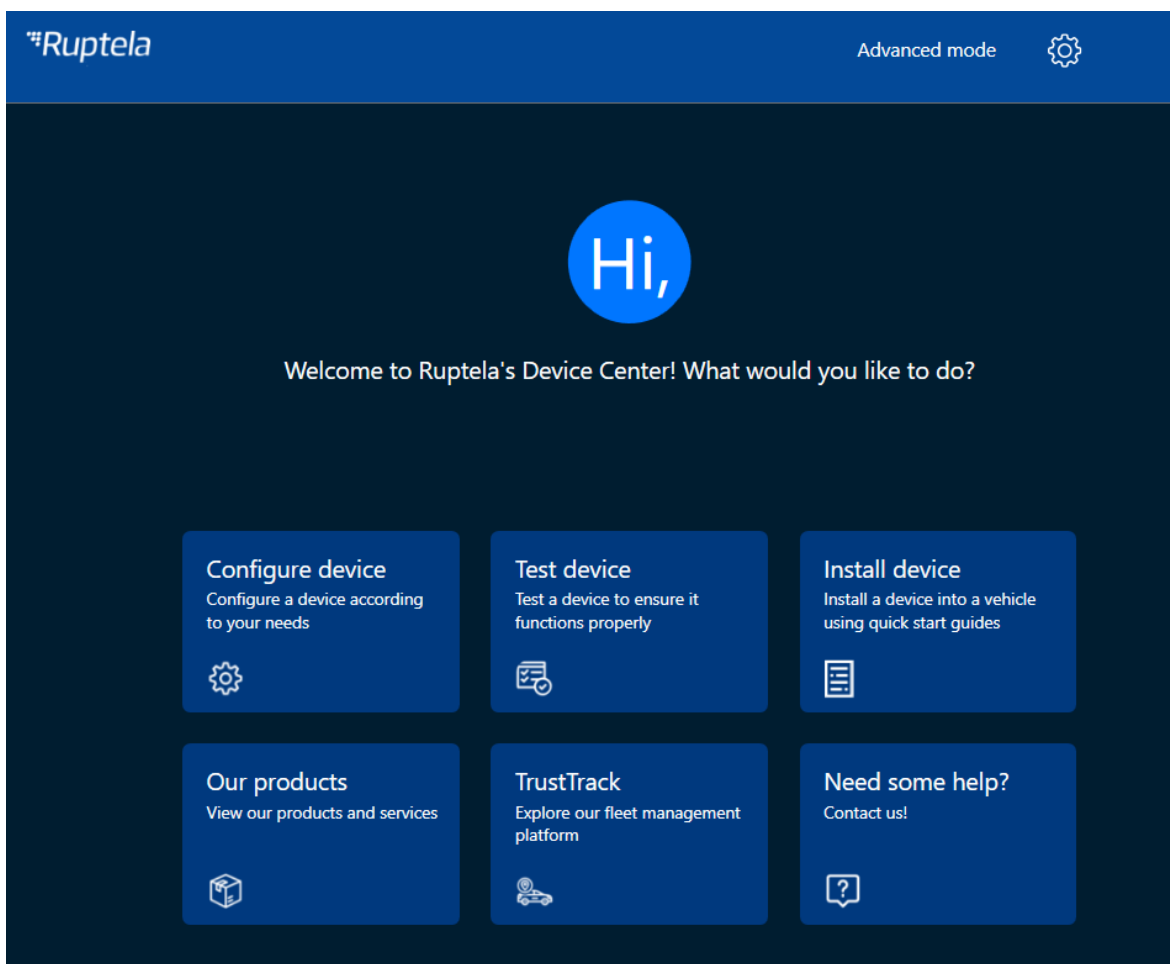
Sidebar

You can navigate between the menus using the sidebar. Hover the mouse over the left edge of the window to open the sidebar. The currently open menu is bolded. Clicking **Contact us!** At the bottom of the window will direct you to the contacts menu.
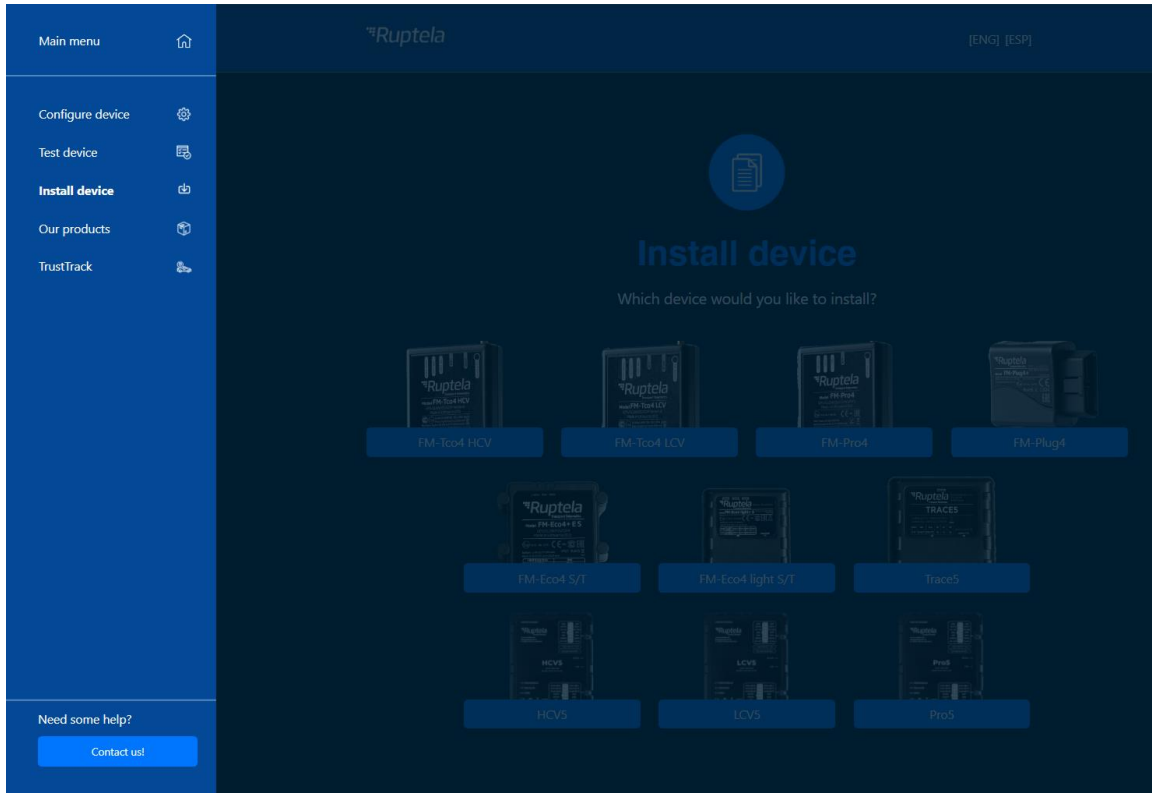
You can return to the main menu at any time by clicking the home icon.

Settings Menu

Click the settings icon to open the **Settings** window.
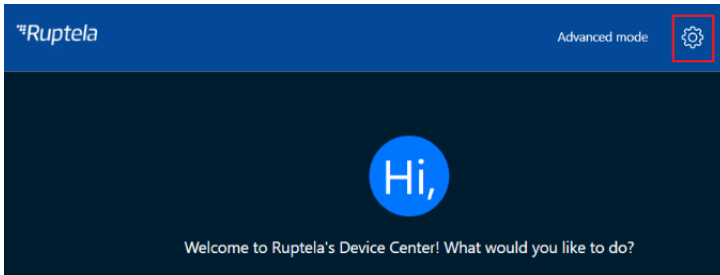
Here you can read the information about the Device Center version and configure general settings:

Language	Set the language of Device Center: • English • *Español* (Spanish) **Note:** You must restart the Device Center to apply this setting. The Device Center will always start in the selected language. Default value: *English*
Color theme	Set the color theme of Device Center to *Dark* or *Light*. **Note:** You must restart the Device Center to apply this setting. The Device Center will always start in the selected color theme. Default value: *Light*
Send anonymous usage statistics	Set whether anonymous usage statistics will be shared to help us improve the Device Center. Usage statistics include basic system parameters, used devices, and configured functionalities/modules.
Configuration source	Set the required configuration source when connecting to a device: • Device Center default • Load from device • Load from file **Note:** You must connect the tracking device once again to apply this setting. Default value: *Device Center default*

Click **Save** to apply the settings.
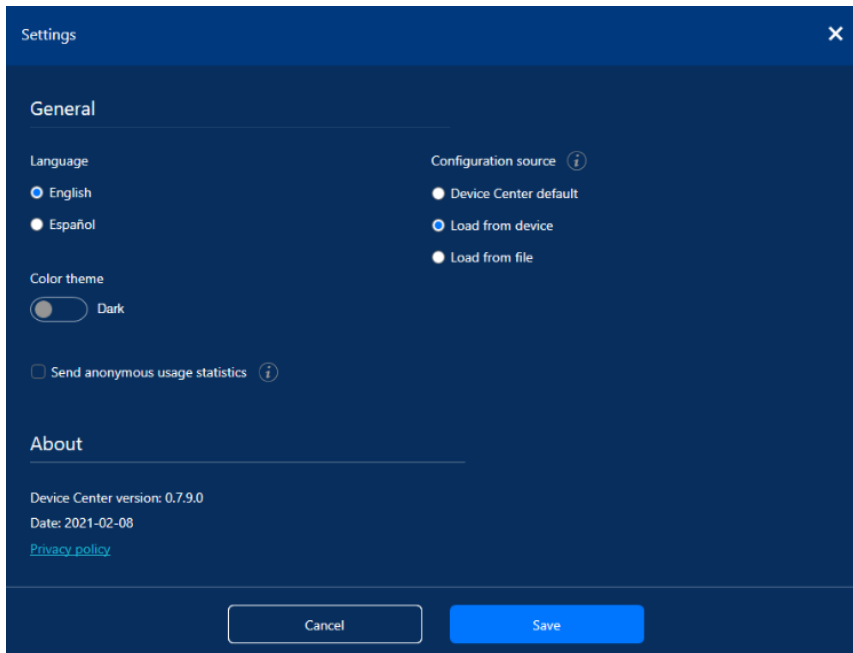
Default Configuration Files

To load a default configuration from a file when selecting a device, in **Configuration source** select *Load from file* and click the **Manage files** button. You will open the **Configuration file manager** window. Follow these steps:

1. Select your **Device type** and click the **Browse** button.
2. Find your configuration file and click **Open**. In the file path field the file path will appear. Click **Add file**. The configuration file will appear in the table below. If you need to delete the file, click the bin icon.

> ℹ️ Only 1 file is allowed per device type.

> ✔️ The file path can also be copied and pasted in the file path field.

> ℹ️ If the file is no longer available or no file is selected, the default Device Center configuration will be used for that device type.

> ✔️ The file path can be selected and copied from the table.

1.3 Starting Configuration

Click **Configure device** in the main menu. Before configuration, you must install the latest version of Microsoft Framework and VCOM drivers, otherwise, your computer will not recognize any devices. VCOM drivers can be installed automatically after clicking **Configure device**. Simply click **Install drivers** when prompted.

Separate drivers are required for Trace5-LTM (Rev.A) and Trace5-2G devices. For Windows 10 users, the drivers are typically installed automatically by the operating system after connecting the device for the first time. For Windows 7/8 users or if the drivers were not installed automatically by the operating system, the drivers can be installed using the Device Center. A separate installer will appear, you will need to click **Install** within the installer and close it after installation to continue.
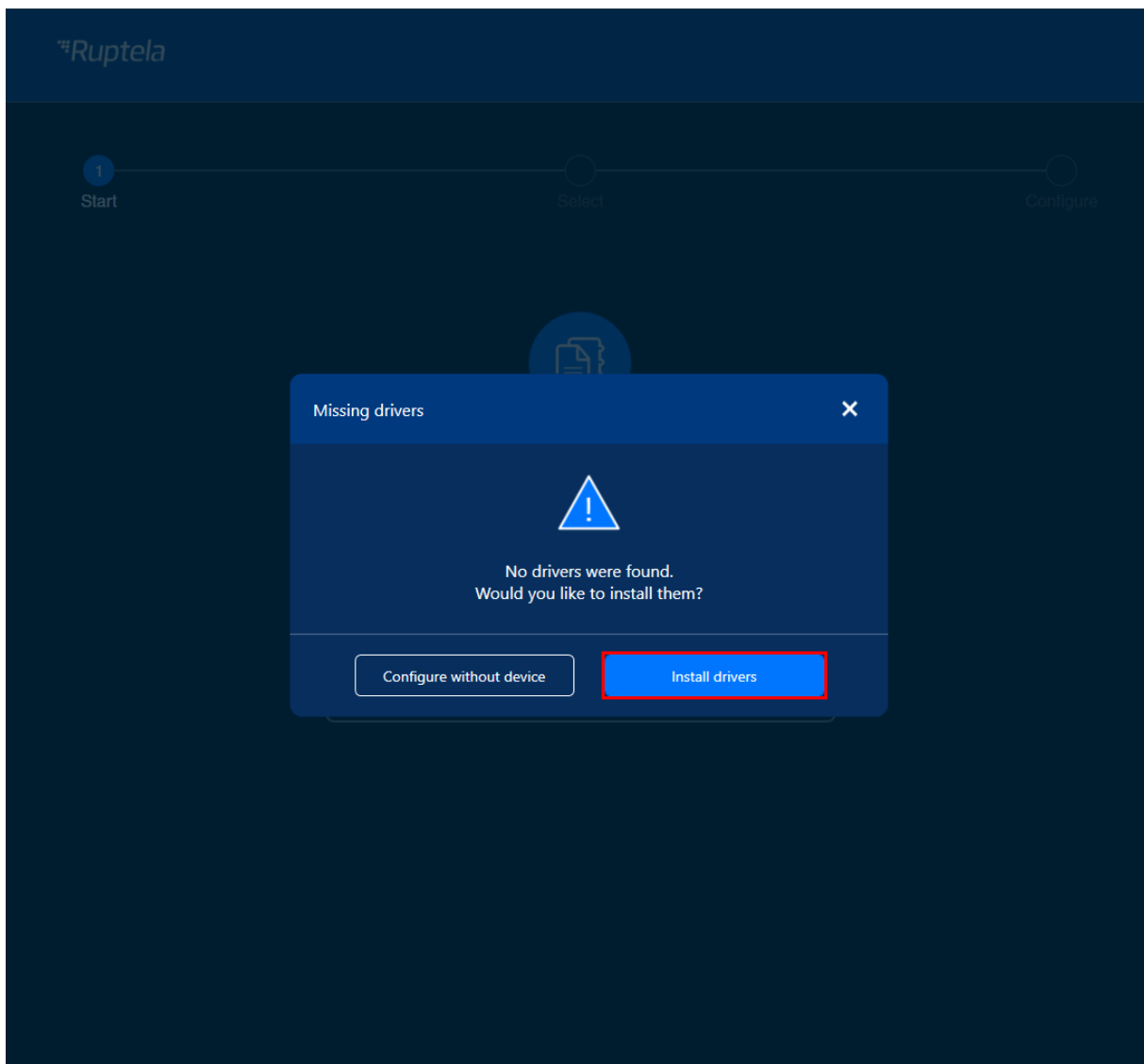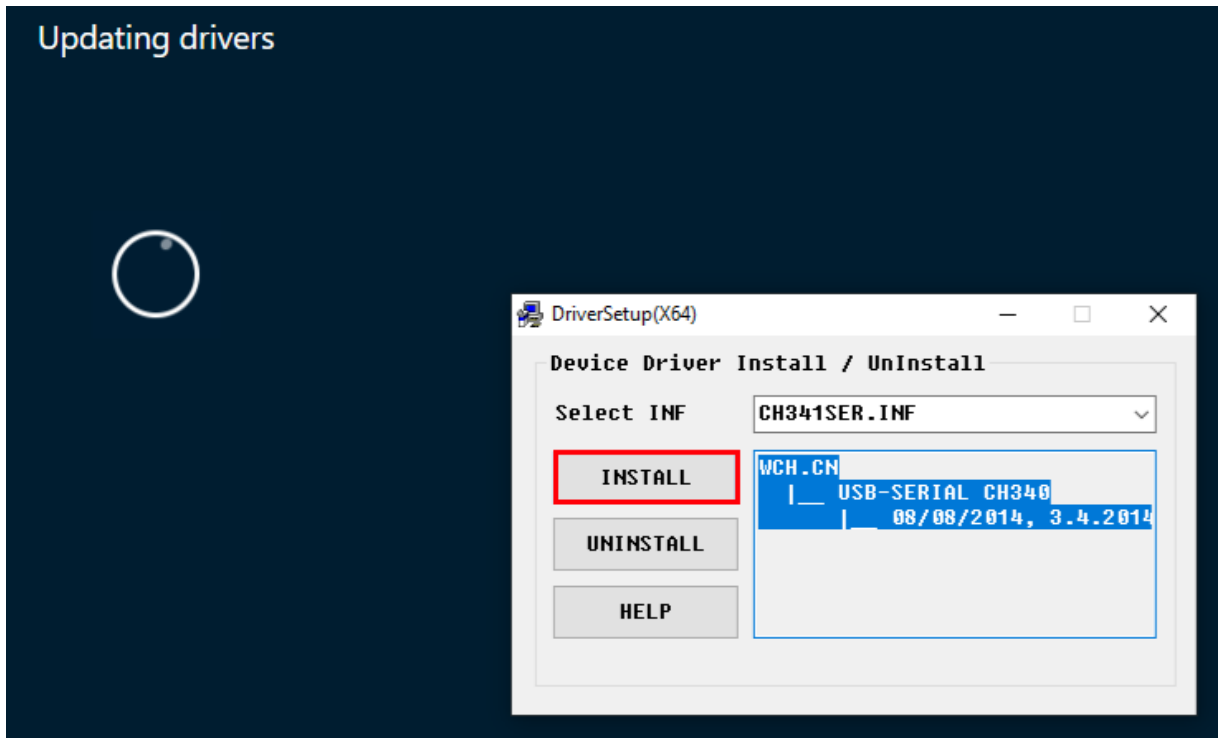
Configuration Type Selection

If the VCOM drivers are installed, you will be directed to the configuration type selection menu. Choose how you want to proceed; the following options are available:

- Connect device
- Create configuration without device
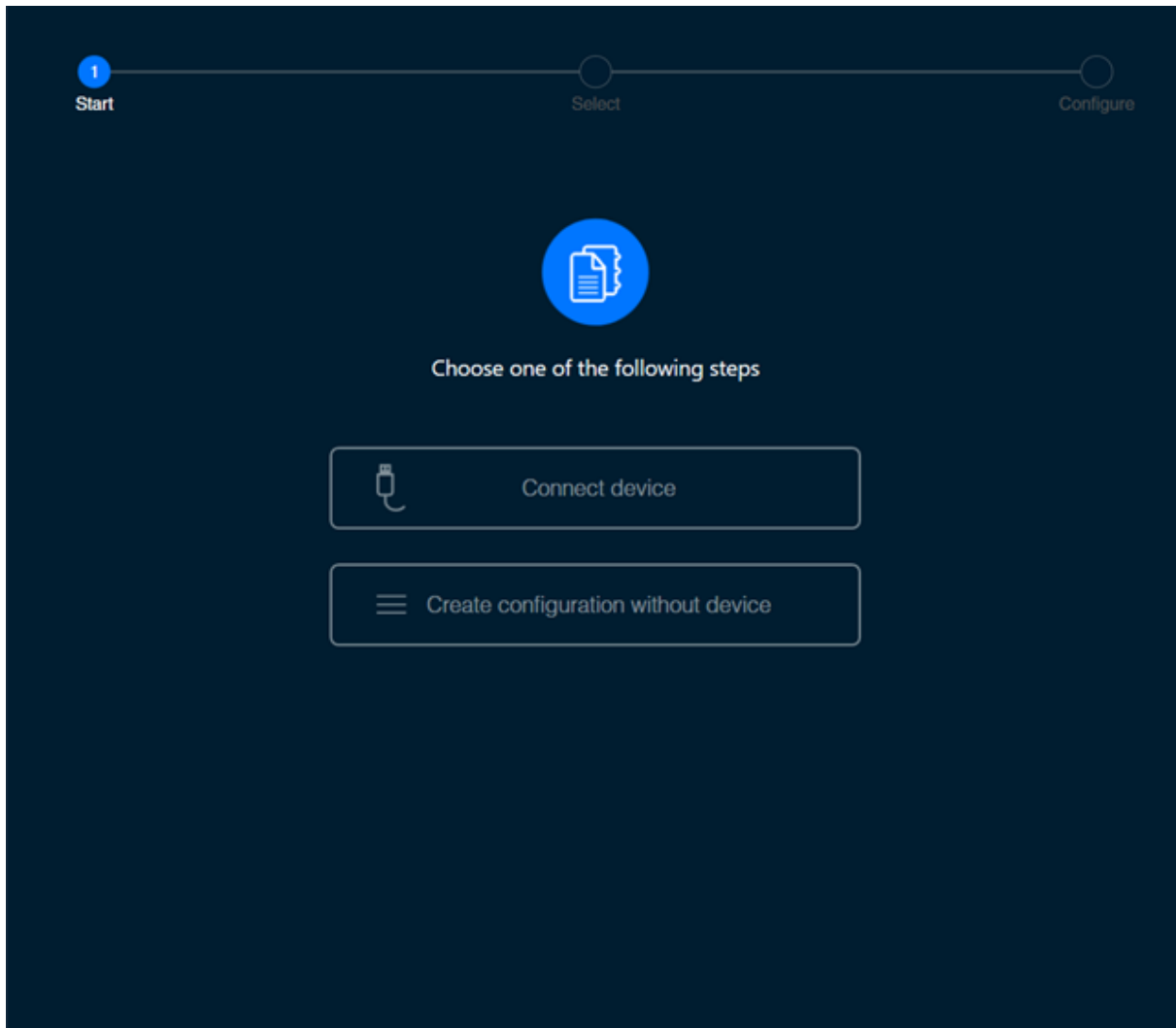
Connect Device

If you click **Connect device**, the Device Center will check if there are any devices connected to the computer. You will be directed to a device selection menu, where available devices will be shown. Select a device by clicking on it. The selected device will be highlighted in white.
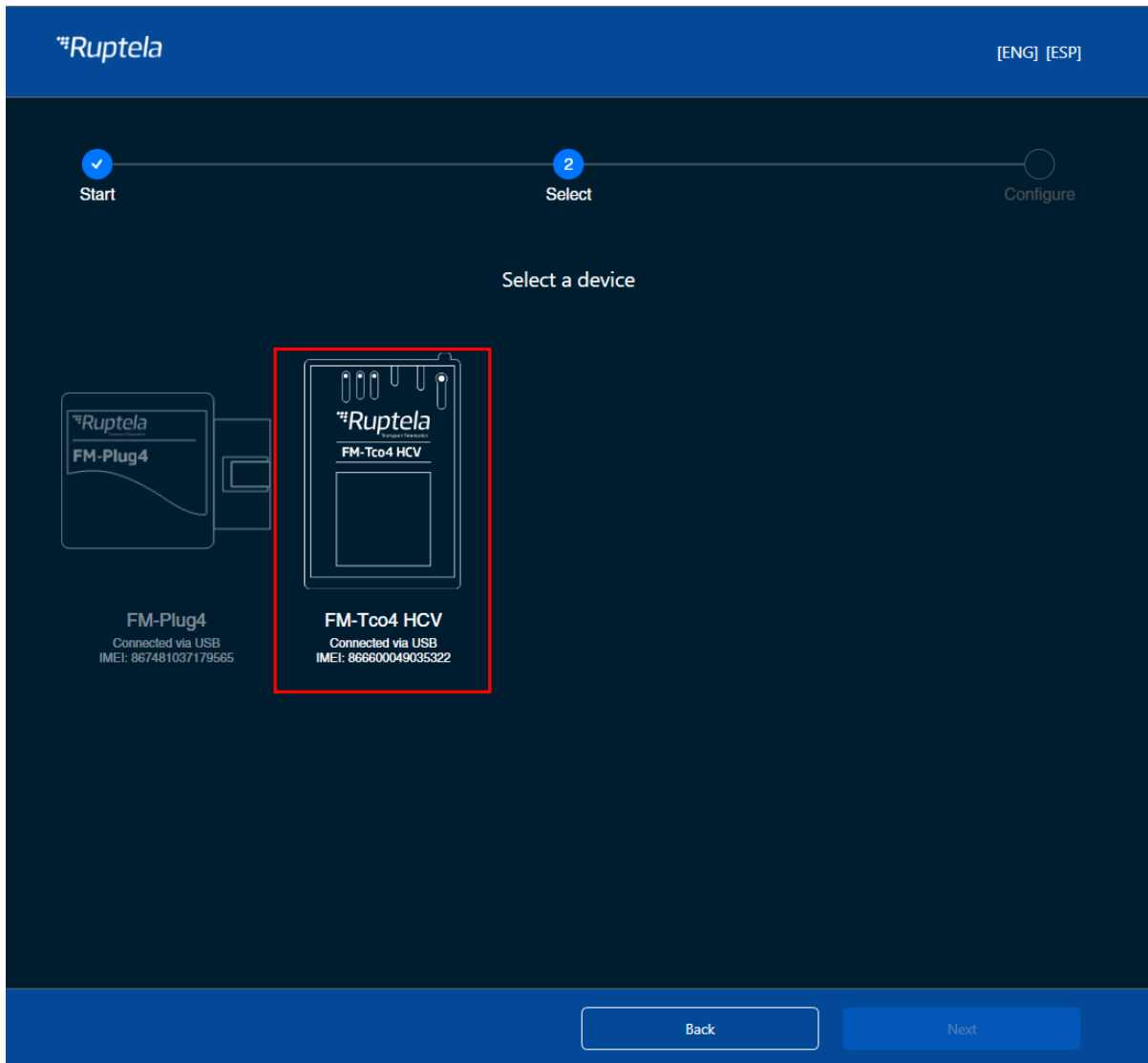
Create Configuration Without Device

If you click **Create Configuration Without Device**, you will be directed to a device family selection window. Select the device family your device type belongs to.
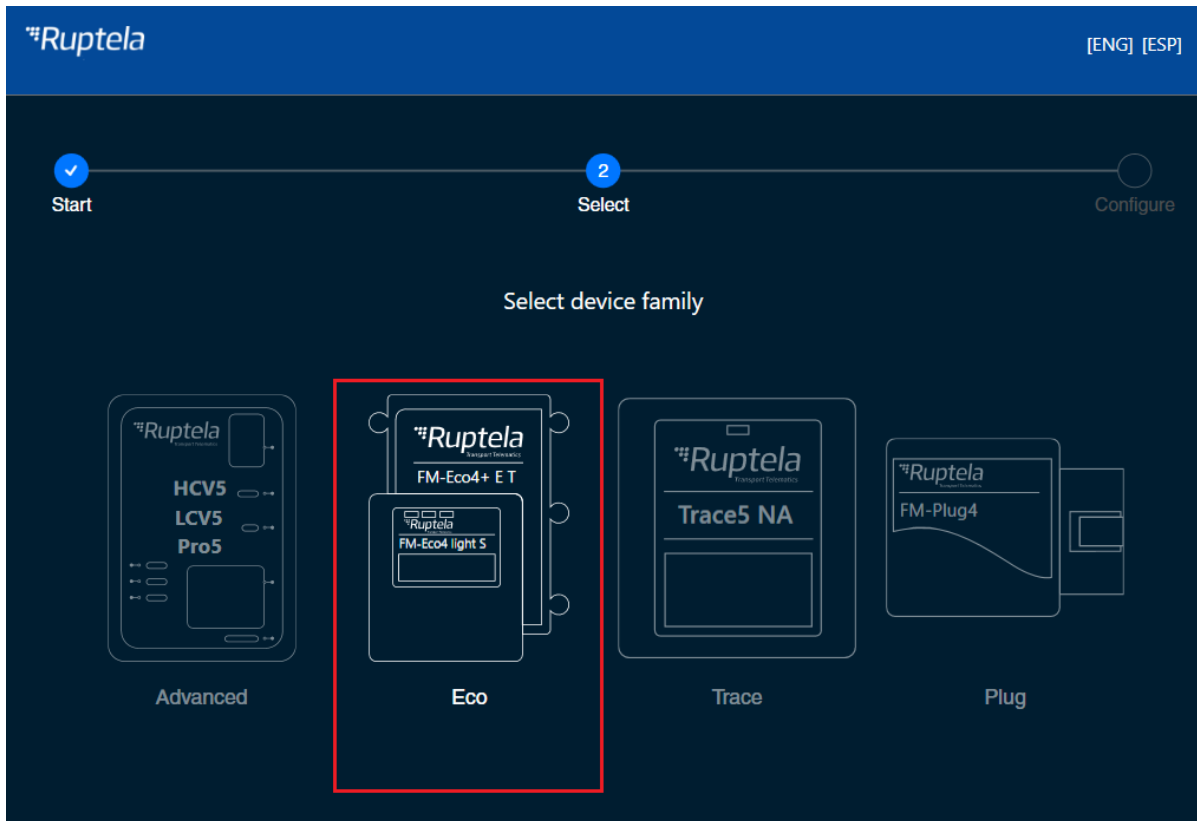
Select for which device type you want to create the configuration by clicking on it.
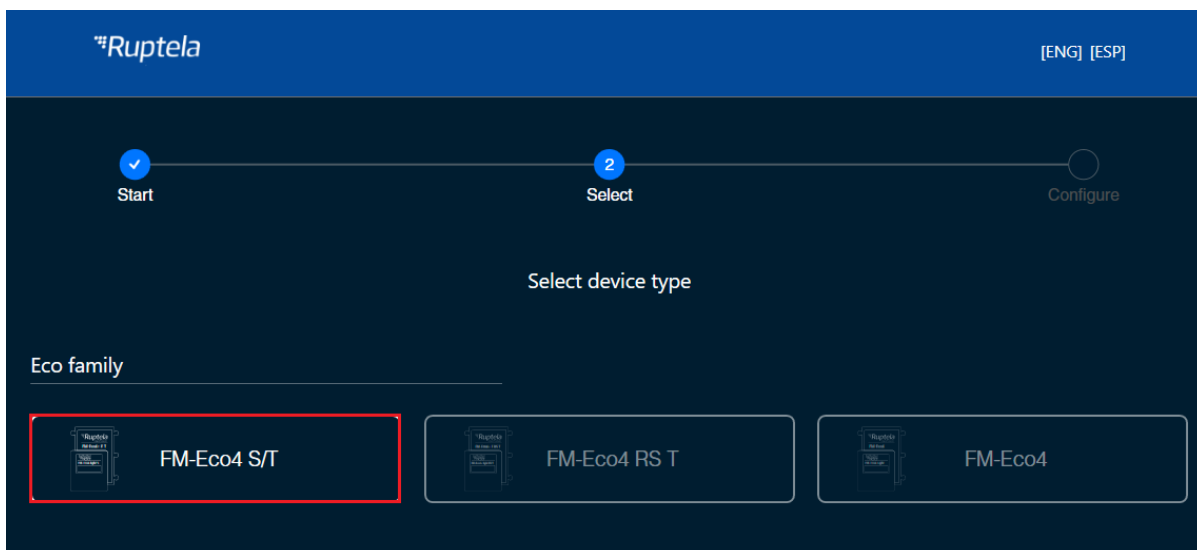
Configuration Menu

After device selection, you will be directed to the configuration menu. This menu has the following elements:

1. A **Test Device** button – opens the device testing interface
2. An **Advanced mode** button – opens the advanced configurator

3. Device information/selection – displays information about the connected device or opens a device type selection drop-down list if no device is connected

4. An information icon – opens the Device Center user manual

5. Settings icon – opens general settings and information about the Device Center

6. A configuration load/save button bar – used to load/save configuration files

7. Device settings grouped by functionalities
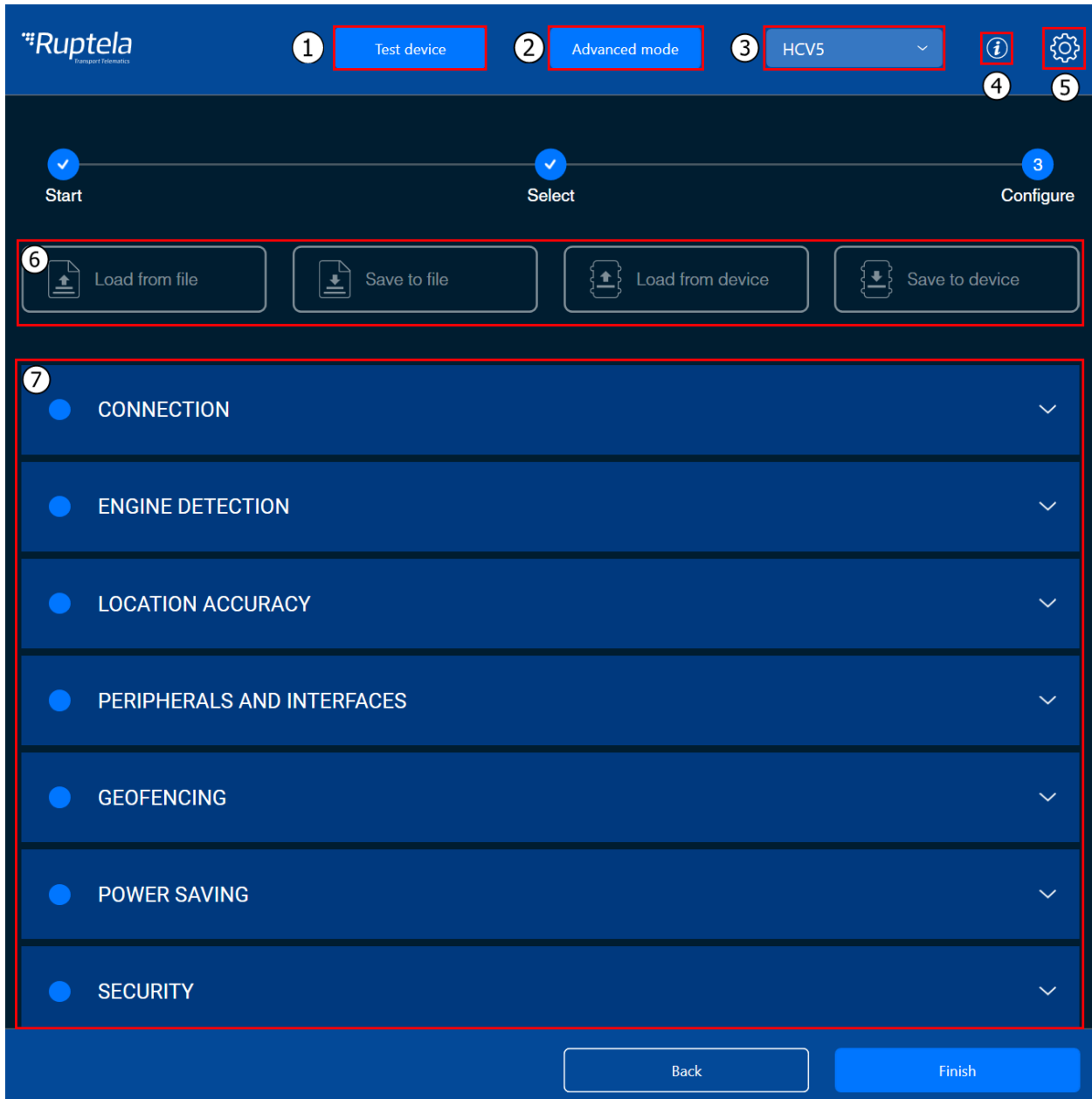
1.4 Configuration Basics

Starting Configuration Advanced Configuration

For a device to be fully operational, it must have a configuration file uploaded to it. A configuration file contains information on which 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 of the same type, making it easy to receive identical data from all your vehicles.

Configuration File Extensions

HCV5: **.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**

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**

✔ Configuration files can easily be recognized by their own icon:

Connecting a Device

If you are creating a configuration without a device, you can connect a device at any moment by clicking **Connect a device**. You will be directed to the device selection menu.

Changing Devices

If you are creating a configuration with a device, you can change devices using the drop-down selector in the top bar and clicking **Change device**.
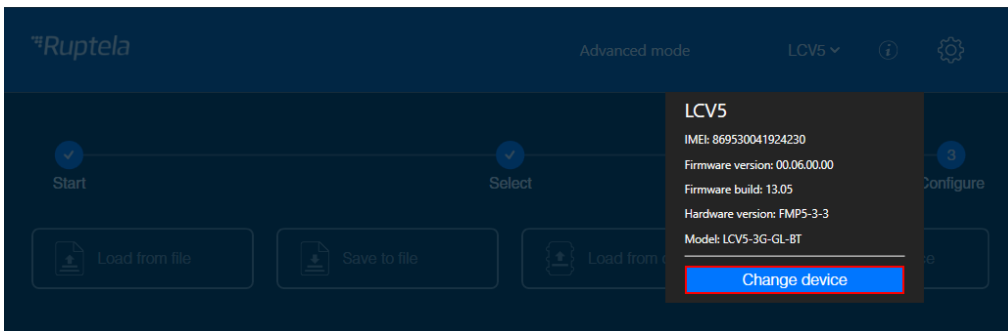
Selecting a Device

If you are creating a configuration without a device, you can select the device type and model using the drop-down selectors in the top bar. When a specific model is selected, unavailable functionalities for that model are not shown.

Example: You wish to prepare a configuration for an LCV5 device with 3G and BLE. Set the device type to *LCV5* and set the model to *LCV5-3G-GL-BT*. DMP network settings will not be displayed.

> ✔ 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.
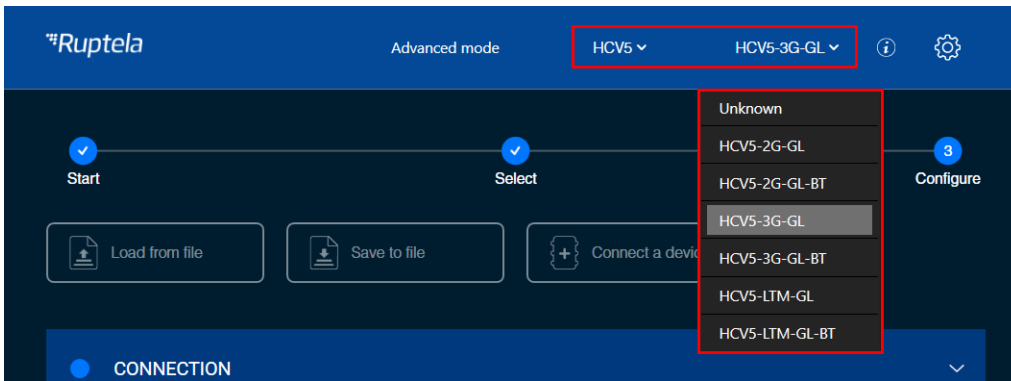
Loading a Configuration from a File

Click **Load from file** in the button bar. Locate your configuration file and click **Open**.

You can also load a configuration file by dragging and dropping the file into the Device Center.

A pop-up window will appear if the configuration file does not match the selected/connected device type. You will be able to load the file and change the device type or keep the device type and load only parameters applicable for that device type.

⚠️ Loading a configuration from a file will discard any changes to the existing configuration.

Saving a Configuration to a File

Click **Save to file** in the button bar. Choose where to save your configuration file and click **Save**.

Loading a Configuration from a Device

Click **Load from device** in the button bar. The configuration will be loaded from the connected device.

⚠️ Loading a configuration from a device will discard any changes to the existing configuration.

Saving a Configuration to a Device

Click **Save to device** in the button bar. The configuration will be saved to the connected device.

⚠️ Saving a configuration to a device will overwrite the existing configuration in the device without any confirmation.

1.5   Advanced Configuration

The Device Center allows you to configure the main functionalities of Ruptela tracking devices. If you wish to have additional control over what data is received or to configure more advanced functionalities, you can switch to the advanced configurator by clicking **Advanced mode** in the top bar at any time.
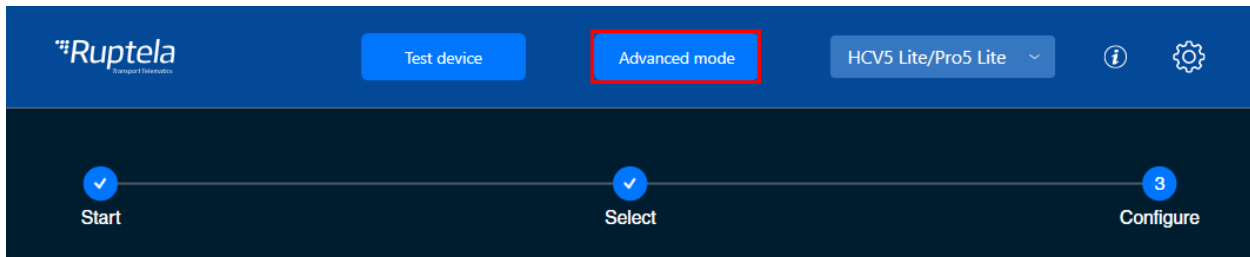
A detailed description of the advanced configurator is available in the advanced configurator user manual.

Close the advanced configurator to return to the Device Center.

1.6 Configuring Functionalities

Device settings are grouped by functionalities. The following groups are available:

- Connection
- Engine detection
- Location accuracy
- Peripherals and interfaces
- Geofencing
- Power saving
- Security
- Eco-Drive
- Driver registration
- Towing detection
- Impact and rollover detection
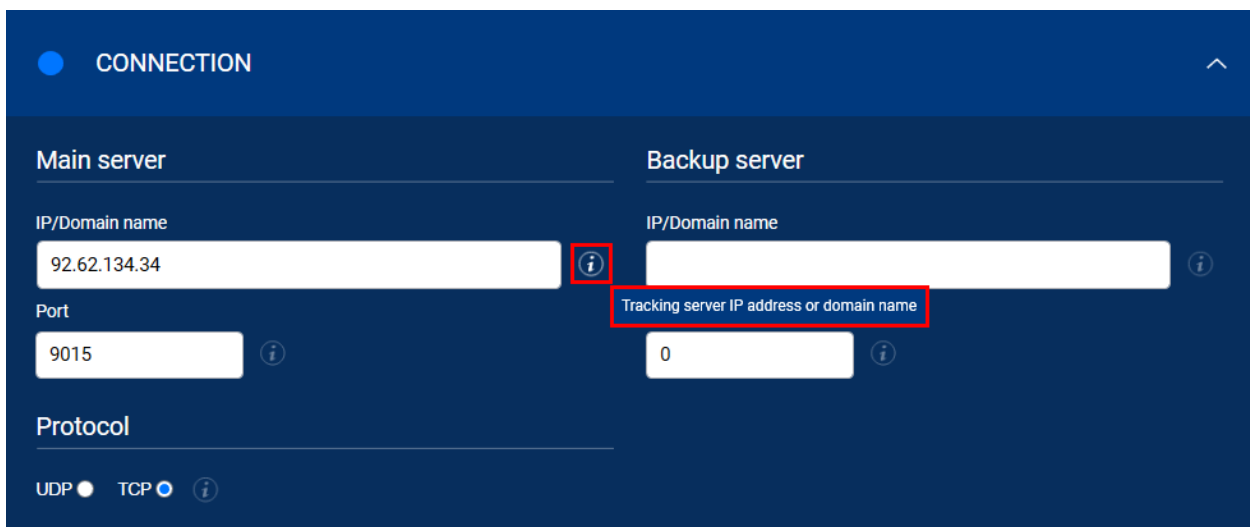
Click on a group to show its settings. Click on the group again to hide the settings.

> **ℹ** Some functionalities must be turned on before their settings are available.

> **✔** Hover over the info icons next to settings to display tooltips.

Connection Settings

5th Generation Devices							4th Generation Devices						
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	✔

Connection settings are used for connecting to the server and mobile network.

> ⚠ Connection settings are mandatory, otherwise, the device will not send any data.

Server Settings

Enter the IP address and port of your fleet management platform tracking server.

IP/Domain name	The IP address of the server. You may enter a numerical address or a domain name. Default value: 92.62.134.34 (TrustTrack server)
Port	The port of the server. Default value: 9015 (TrustTrack server)
Protocol	The connection protocol. Possible values: • *UDP* – uses less data but is less reliable. UDP does not check for lost packets or their order. • *TCP* – uses more data but is more reliable. TCP checks that all packets are received and if needed, resends the missing ones and reorders them. Default value: *TCP*

> ℹ UDP and TCP protocols may have different ports. Make sure you select the correct protocol and enter the correct ports.

Backup Server

You can use a second server as a backup, in case the main server is unreachable. If the main server is reachable, no data is sent to the backup server. Both servers use the same protocol.

IP/Domain name	The IP address of the backup server. You may enter a numerical address or a domain name. Default value: None
Port	The port of the server. Default value: 0
Copy all data	If turned on, a copy of all data will be sent to the backup server even if the main server is reachable. If the main server is unreachable, no data will be sent to any server. **Note:** Copying data will double the data consumption. Default value: Off

APN Settings

APN settings are needed to connect to the internet. They must be provided by your SIM card provider.

Name	The APN name. This parameter is mandatory for most SIM cards. Consult with your SIM card provider for more information.
Username	The APN username. This parameter is optional.
Password	The APN password. This parameter is optional.

Device Management Platform Settings

5th Generation Devices							4th Generation Devices						
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘

Set, how the device will connect to the device management platform to receive remote firmware and/or configuration updates.

Connect to DMP	Turn on to enable periodic connections to the device management platform. Contact technical support to disable this functionality. Default value: On

Connection frequency	Set how often the device will connect to the device management platform. Possible values:
	
	• Every 5 minutes
	• Twice a day
	• *Custom* – allows setting the following:
	    ○ **Connection frequency (s)** – set a custom connection frequency
	    ○ **Inactivity timeout (s)** – set how long the device will wait for updates after connecting before closing the connection
	Default value: *Every 5 minutes*

Engine Detection Settings

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	✔

Select an engine state detection method and set the tracking accuracy. When the engine is turned on, records are generated more often. The detected engine state is also used for trip tracking and by other functionalities, such as driver registration.

Engine state detection method	How the device detects whether the engine is turned on. Possible values: • *Ignition (DIN4)* – DIN4 is used for detection (not applicable for HCV5, LCV5, Pro5, HCV5 Lite/Pro5 Lite, Trace5, and FM-Plug4) • *Movement sensor* – the engine is considered to be on when movement is detected (not applicable for HCV5, LCV5, Pro5, HCV5 Lite/Pro5 Lite, and Trace5) • *Power voltage* – the voltage on pin 16 of the OBD socket is used for detection (FM-Plug4 only)

	• *Custom* – configure your own engine detection conditions
	Default value: *Ignition (DIN4)*
Remote blocking	Allows the engine to be blocked remotely via your fleet management platform. It uses a constant connection to the server and increases data consumption by up to 500 kB per month.
	Default value: Off
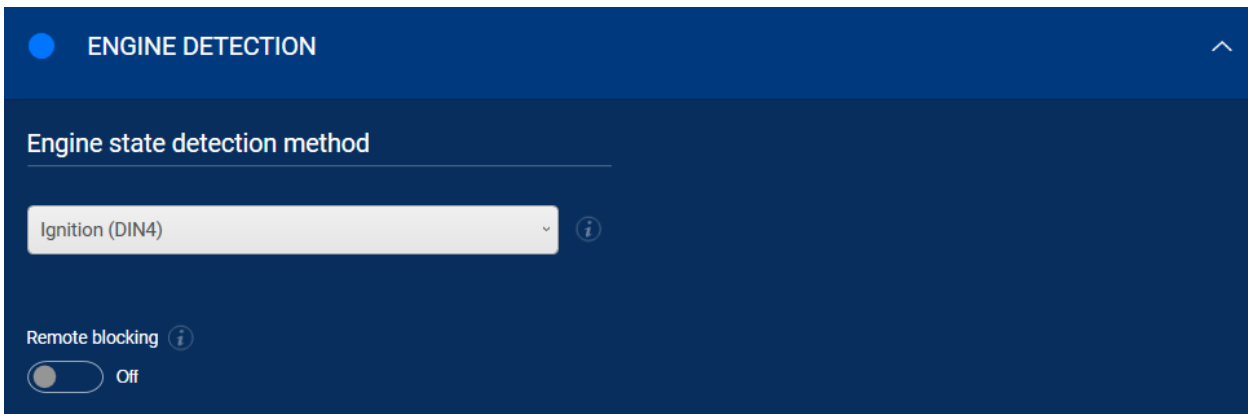
Custom Engine Detection Settings

You can customize the engine detection method according to your needs. Select *Custom* in **Engine state detection method**. To start, decide which detection logic to use and whether to use a delay for state changes.

✔ Advanced configuration description available: Custom Ignition.

Connection detection method	Which logical operator will be used for the engine detection conditions. Possible values:
	• *AND* – all conditions must be true
	• *OR* – at least one of the conditions must be true
	Default value: Device dependent
Engine switch off delay	If turned on, the device registers engine state changes only after the set time period passes.
	Default value: Off
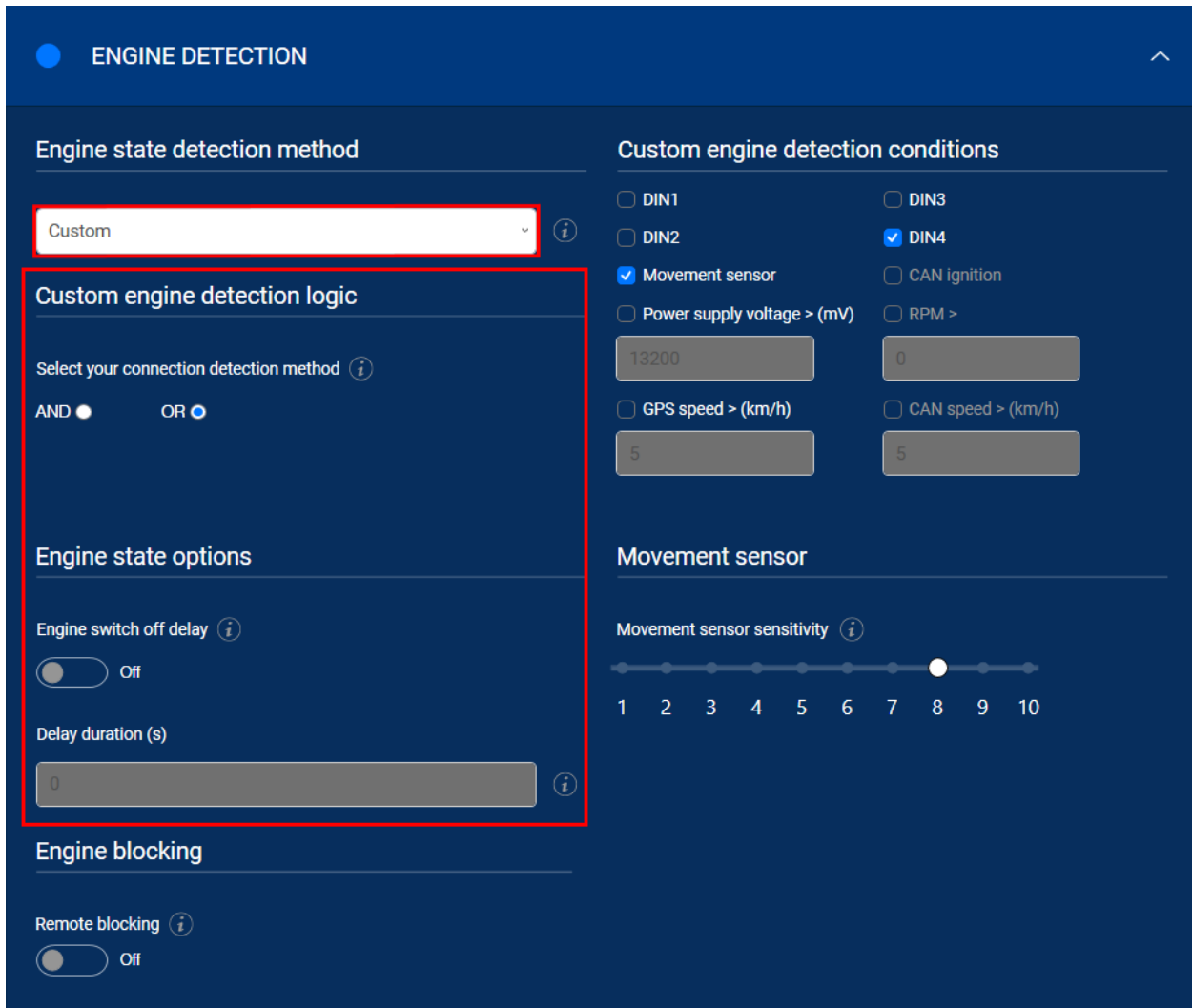
Then, decide which conditions you want to use for engine state detection. The available conditions depend on the device type.

DIN1/DIN2/DIN3/DIN4	If ticked, the condition is true when the configured DIN detects a constant input voltage.
Movement sensor	If ticked, the condition is true after detecting movement.
CAN ignition	If ticked, the condition is true if the engine on state is provided by CAN data. Active only when at least one CAN interface is turned on.
Power supply voltage >	If ticked, the condition is true if the power supply voltage is greater than the entered value (in mV).
RPM >	If ticked, the condition is true if the RPM value provided by CAN or OBD data is greater than the entered value. Active only when at least one CAN interface is turned on.

GPS speed >	If ticked, the condition is true if the speed value obtained from GPS is greater than the entered value.
CAN speed >	If ticked, the condition is true if the speed value obtained from CAN data is greater than the entered value. Active only when at least one CAN interface is turned on.

Movement Sensor

The movement sensor is used for vehicle movement and ignition detection. The movement sensor sensitivity can be adjusted using a slider - the higher the sensitivity, the slighter movements are detected.

✔ The optimal sensitivity depends on the type of vehicle and how it is used.

Location Accuracy

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	✔

Select the location update rate and set the location accuracy to generate more accurate coordinates.

Location update rate	How often the device updates its location. This controls how often data is collected and sent. Possible values: • *High* – at least twice a minute when driving (3-7 MB/month on average)

	• *Medium* – at least once a minute when driving (2-5 MB/month on average)
	• *Low* – at least once every two minutes when driving (1-3 MB/month on average)
	• Custom -– configure parameters, to define how often the data should be updated:
	    ○ **Ignition off (s)** – set how often the location should be updated when the ignition is off. Default value: *3600* s
	    ○ **Distance travelled (m)** – set how far the vehicle should travel to update the location. Default value: *500* m
	    ○ **Ignition on (s)** – set how often the location should be updated when the ignition is on. Default value: *60* s
	    ○ **Angle turned (deg)** – set how far the vehicle should turn to update the location. Default value: *15* deg
	Default value: *Medium*

Stationary filter	Discards coordinates while the vehicle is not moving. Default value: On
Active filter	Discards inaccurate coordinates by evaluating the vehicle's movement speed. Default value: On
Acceleration threshold (m/s^2)	Used in the calculation of the maximum possible distance. If a new coordinate is too far away from the previous one, it will be discarded. Default value: *19.6 m/s^2*
Accuracy filter	Sets the coordinate accuracy. The higher the accuracy, the more coordinates are filtered. We recommend using a lower accuracy, unless you are sure the GNSS signal quality is excellent. Possible values: • Off • *Low* (recommended) • Medium • High Default value: *Off*

Peripheral and Interface Settings

Configure which interfaces and peripherals will be active and how they will behave.

IO Parameters

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	✔

> ℹ️ IO parameters are a part of the advanced configuration. For more information, refer to the advanced configurator user manual.

You can view the currently enabled IO parameters by clicking **View IO parameters**.
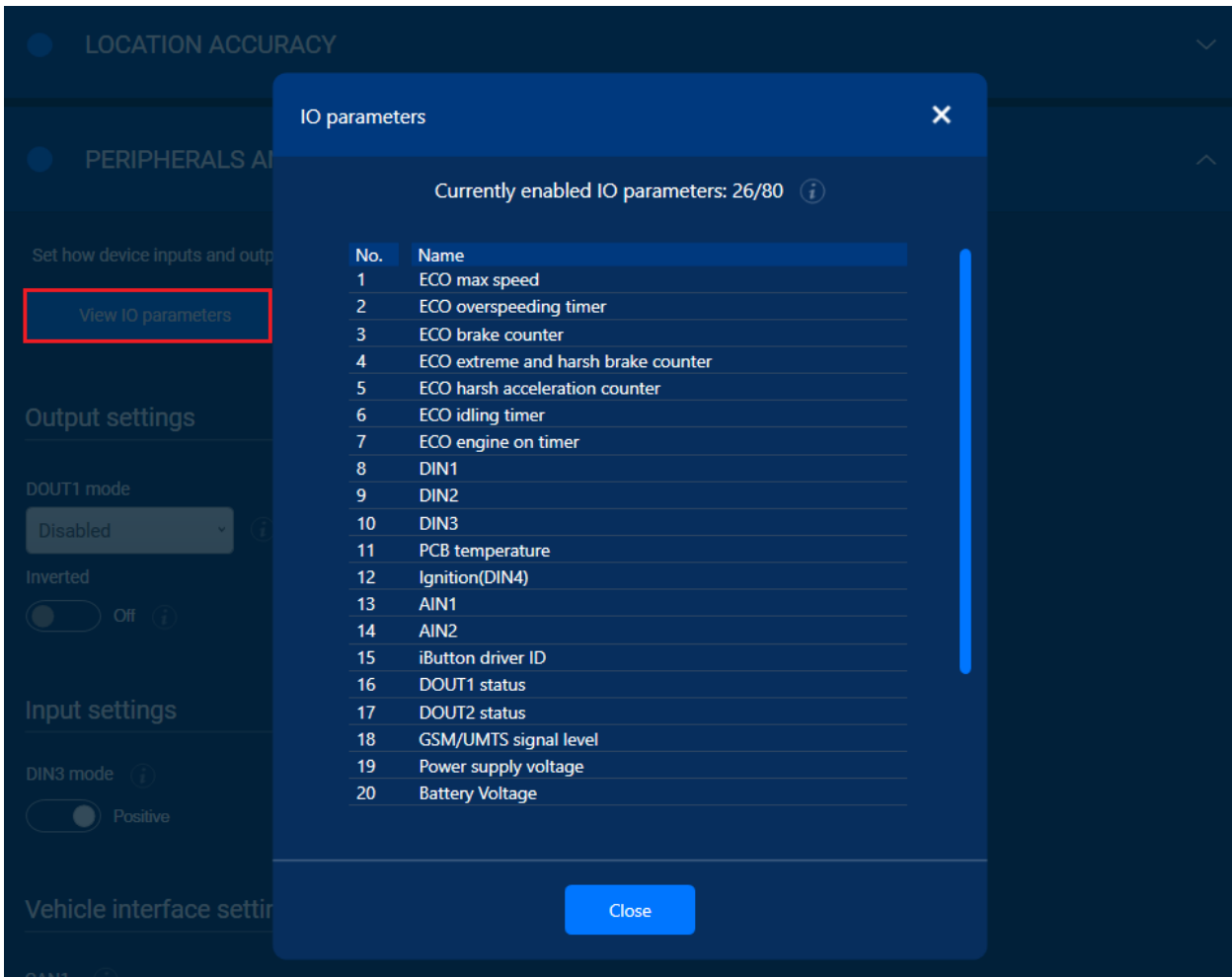
DOUT and DIN Settings

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔*	✔	✔	✔	✔	✔	⊘

* – only *LED, Buzzer, and Blocking* DOUT modes are available

Configure DOUT settings if you connected any peripherals to them.

DOUTX mode	Which mode will be used for DOUTs. The mode selection depends on the connected peripherals. The same mode cannot be used on both DOUTs. Possible values:
	• *Disabled* – the DOUT is disabled but can be controlled remotely via SMS or GPRS commands
	• *Buzzer* – the DOUT controls a connected sound indicator

	• *LED* – the DOUT controls a connected LED indicator
	• *Blocking* – used with *Blocking* driver registration mode, the DOUT blocks the engine from being started until a successful registration is made. The DOUT must be connected to a changeover relay.
	• *GSM jamming block* – the DOUT blocks the engine when GSM jamming is detected. The DOUT must be connected to a changeover relay.
	Default value: *Disabled*
Inverted	If turned on, the DOUT logic will be inverted (e.g., an active DOUT will output a high signal level instead of a low signal level).
	Default value: Off
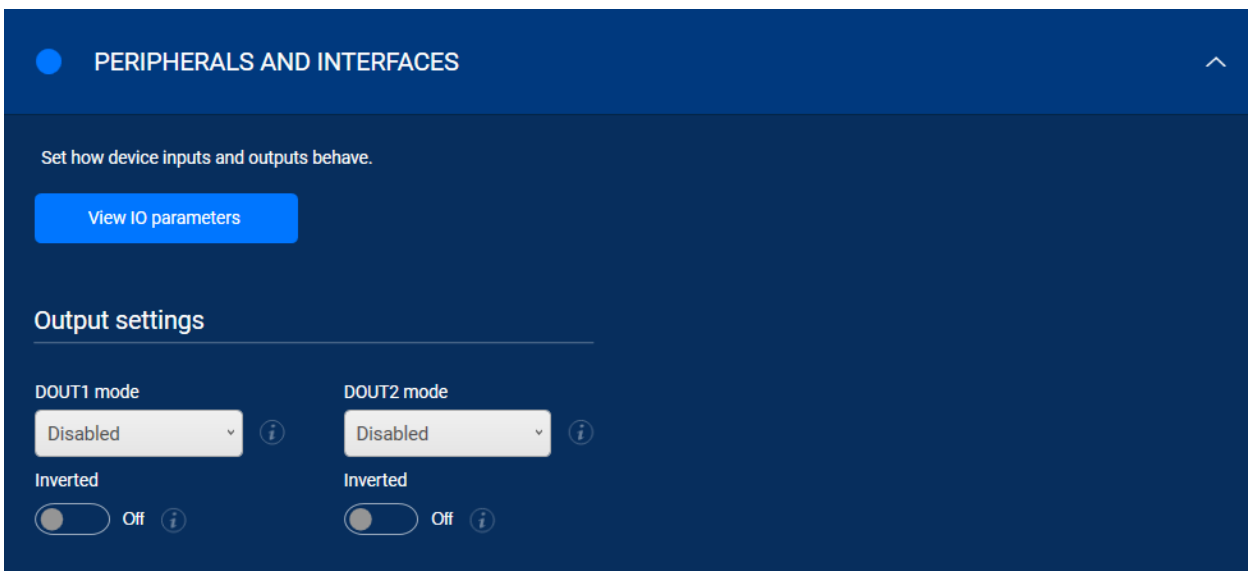
Select which mode to use for digital inputs.

Connection example in *Positive mode* :
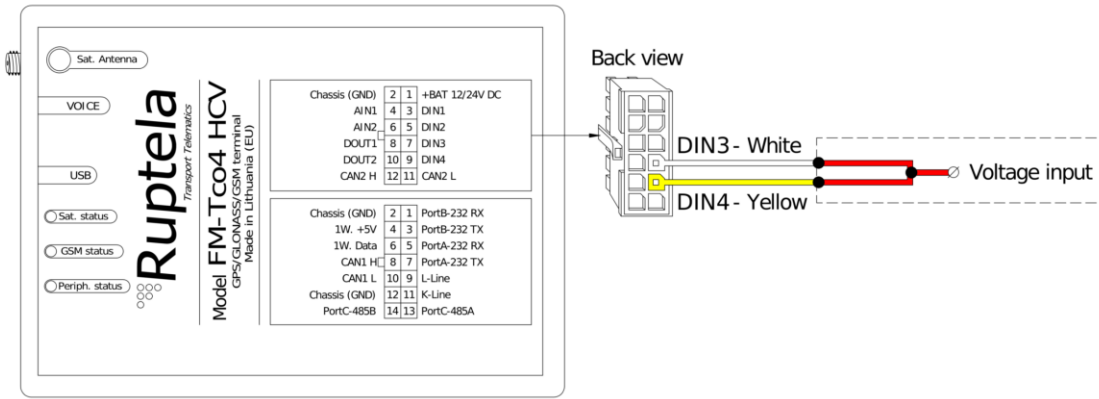
Connection example in *Ground mode*:

BLE Settings

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite / Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔*	✔	✔	✔	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘

* – Trace5-LTE-EMEA (BT) and Trace5-LTE-LA (BT) only.

Configure BLE settings to connect BLE accessories to the tracking device. Click the **Manage accessories** button to open the **BLE accessories** window.

ℹ **BLE** is enabled by default.
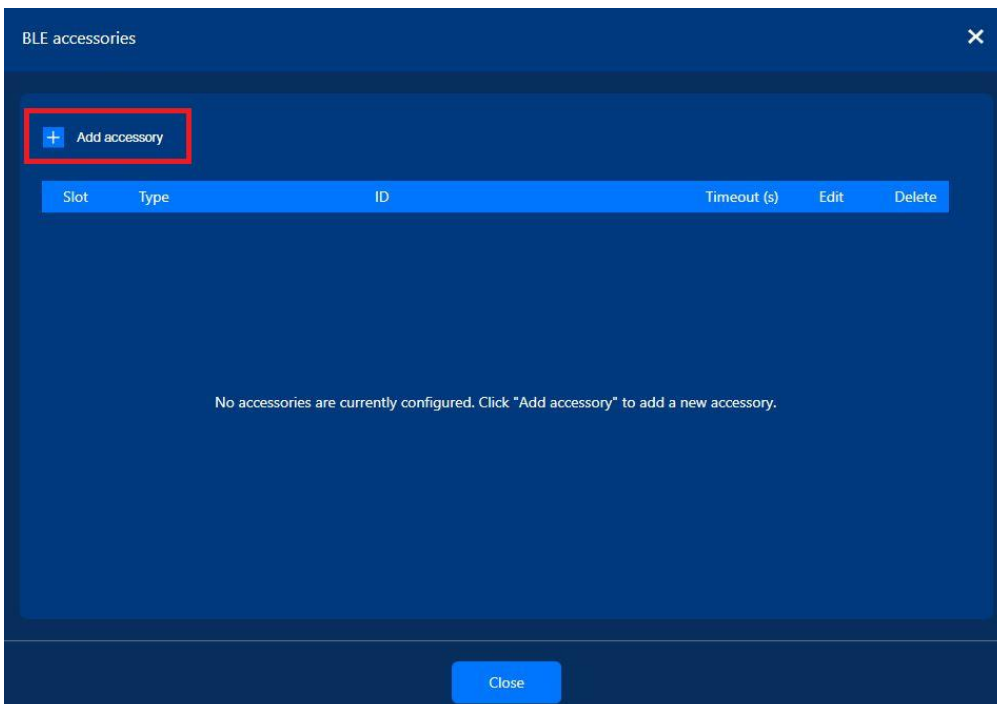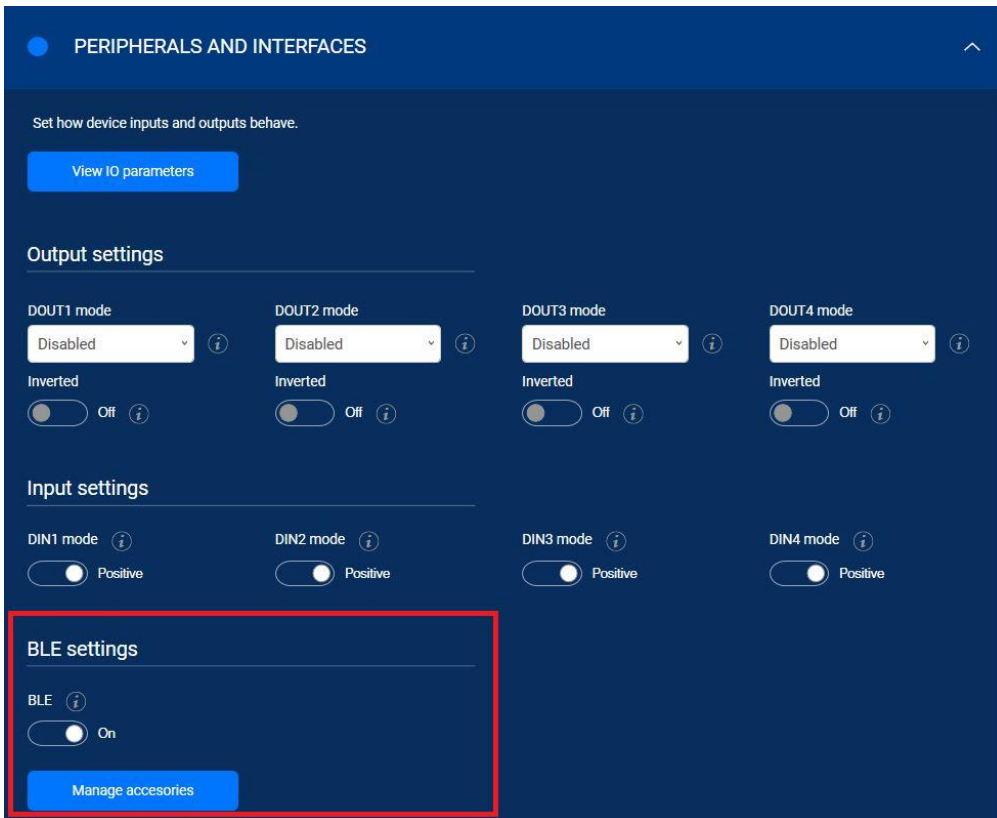
Click **Add accessory** and configure the following parameters for each accessory:

Slot	Select a free slot for the accessory. The slot number is used to recognize which accessories parameters are monitored.
Type	Select the type of accessory:

	- Tzone TZ-BT04 - ELA T - ELA RHT - ELA DI - ELA MAG - ELA MOV - Technoton DUT-E S7 - Technoton GNOM DDE S7 - Technoton GNOM DP S7 - Escort TD - Teltonika EYE - Minew S1
Accessory ID	Enter the accessory ID. You can find the IDs in the following locations: - For the Tzone TZ-BT04 temperature and humidity sensors – on the back of the sensor (in HEX format). - For the ELA sensors – on the sticker of the sensor (in ASCII format). - For the Technoton S7 DUT-E sensors – below the head of the probe (in HEX format). - For the Technoton S7 GNOM sensors – on the head of the probe (in HEX format). - For the Escort TD sensors – under the sensor cap (enter without colons and in lowercase).
Timeout (s)	How much time can pass between two consecutive advertisement packets, received from a particular sensor. If the timeout is exceeded, the IO parameter will contain an error value.

Click the **Save** button to enter the values into the table. To remove an accessory from the list, click the delete icon. If you need to change one of the entered accessories, click the edit icon.

CAN Interface Settings

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
⊘	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	⊘	⊘	⊘

CAN interfaces are used to get various data from vehicle on-board systems.

CAN1/CAN2	If turned on, data will be read via the CAN1/CAN2 interface. Default value: Off
Mode	CAN interface working mode. The same mode can be selected on only one interface. Possible values: • *FMS* – CAN data standard for trucks and heavy vehicles (HCV5, Pro5, HCV5 Lite/Pro5 Lite, FM-Tco4 HCV, and FM-Pro4 only) • *Tacho read* – tachograph data reading (HCV5, HCV5 Lite/Pro5 Lite, and FM-Tco4 HCV only) • *OBD* – CAN data reading via the OBD2 socket (HCV5, LCV5, FM-Tco4 HCV, FM-Tco4 LCV, and FM-Plug4 only) • *Manufacturer OBD* – manufacturer specific OBD data reading via the OBD2 socket for manufacturers that use two CAN interfaces (HCV5, LCV5, and FM-Tco4 LCV only) Default value: *FMS*
DTC	If enabled, DTCs will be read via the OBD2 socket. This requires *OBD* to be selected as the CAN1/CAN2 mode. Default value: Enabled (if *OBD* is selected)
Baudrate	CAN interface data transfer speed. This requires *FMS* or *Tacho Read* to be selected as the CAN1/CAN2 mode. The required baudrate depends on the vehicle itself. Possible values: • Automatic (*Tacho read* mode only) • 125 • 250 • 500

	Default value: *250*

Manufacturer Specific OBD Data Reading Settings

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
🚫	✔	✔	🚫	🚫	🚫	🚫	🚫	✔	🚫	🚫	🚫	🚫

Configure manufacturer-specific OBD data reading settings to read additional data via the OBD2 socket.

Manufacturer	The vehicle manufacturer. *Auto-detect* detects the manufacturer based on the vehicle's VIN. Default value: *Auto-detect*
Manufacturer specific data	If enabled, manufacturer-specific OBD data will be read from the OBD2 socket. Default value: Enabled

> ℹ The received data depends on the vehicle manufacturer, model, year, and in some cases even the engine. Refer to our OBD2 supported vehicles list for more details.
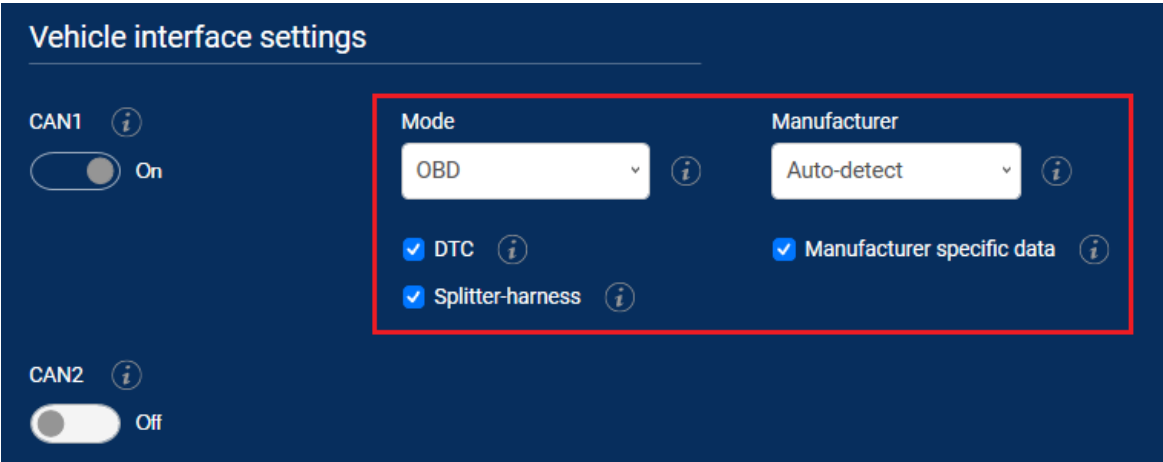
Some manufacturers (Citroen, Peugeot) use two CAN lines in their OBD sockets. Because of this, you need to configure both CAN interfaces to get all the available manufacturer specific data.

When *OBD* mode is used, the second CAN interface is disabled by default. To enable it, select a relevant manufacturer. A pop-up will appear, and the second CAN interface will automatically be enabled with the *Manufacturer OBD* mode.

K-Line Interface Settings

5th Generation Devices							4th Generation Devices						
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
🚫	✔	✔	🚫	🚫	🚫	✔	✔	✔	🚫	🚫	🚫	✔

The K-Line interface is used to read tachograph data in heavy vehicles (HCV5, HCV5 Lite/Pro5 Lite, and FM-Tco4 HCV only). It can also be used to read data via the OBD2 socket.

Serial Port Settings

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
🚫	✔	✔	✔	🚫	🚫	✔	✔	✔	✔	🚫	Eco4 RS T only	🚫

Serial ports are used to connect and communicate with various peripheral devices.

Serial port A/B (RS232)	If turned on, the device will communicate with the peripherals connected to serial ports A/B (some devices have only serial port A). Default value: Off
Connected peripheral	Which peripheral is connected to the serial port. Possible values: • *Fuel sensor* – a fuel sensor is connected • *RFID reader* – an RFID reader is connected Default value: *Fuel sensor*
Serial port C (RS485)	If turned on, the device will communicate with the peripherals connected to serial port C. (Not applicable for the FM-Eco4 RS T device). Default value: Off
Connected peripheral	Which peripheral is connected to the serial port. Possible values: • *Fuel sensor* – a fuel sensor is connected • *EasyCAN Volvo adapter* – a J1708 EasyCAN adapter is connected Default value: *Fuel sensor*
Fuel level sensors	How many digital fuel sensors are connected to serial port C. You may connect up to 8 sensors.

	Default value: 1

1-Wire Interface Settings

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	⊘

* – not available for pre-revision Trace5 devices.

The 1-Wire interface is used to connect temperature sensors and various peripherals used for driver registration.

1-Wire temp. monitoring	If turned on, the device will read temperature data from 1-Wire sensors. Default value: Off
Temperature sensors	How many temperature sensors are connected to the 1-Wire interface. You may connect up to 4 temperature sensors. Default value: 1

ℹ Peripherals used for driver registration are configured in the **Driver registration** section.

Geofencing Settings

5th Generation Devices							4th Generation Devices						
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	🚫	🚫	✔	✔	✔	✔	✔	✔	🚫

Geofencing allows you to control the vehicle using predefined areas – geofences. You can alert the driver, immobilize the vehicle if it is leaving a geofence, or simply monitor vehicle inputs within a geofence.

> ✔ Advanced configuration description available: Geofencing.

Adding Circular Geofences

There are two ways to add new circular geofences:

- Clicking **Add new** above the geofence list
- Clicking the circular button on the map

The left side of the section contains the geofence settings and the geofence is displayed on the map on the right. Click the geofence with the left mouse button and drag it to change its position. Clicking and dragging the geofence with the mouse button while holding the CTRL key will modify its radius. Click **Save** to save the geofence.

Geofence type	The type of geofence you wish to create. Possible values: • *Circular* – for circular geofences, a single center point is defined • *Multipoint* – for multipoint geofences, each point is defined separately Default value: *Circular*
Group	The group you wish to assign the geofence to. You can set different conditions and alerts for different geofence groups. Default value: 1
Latitude	The latitude of the point in decimal degrees.
Longitude	The longitude of the point in decimal degrees.
Radius	The radius of the geofence in meters.

	Range: 25 to 250000 m
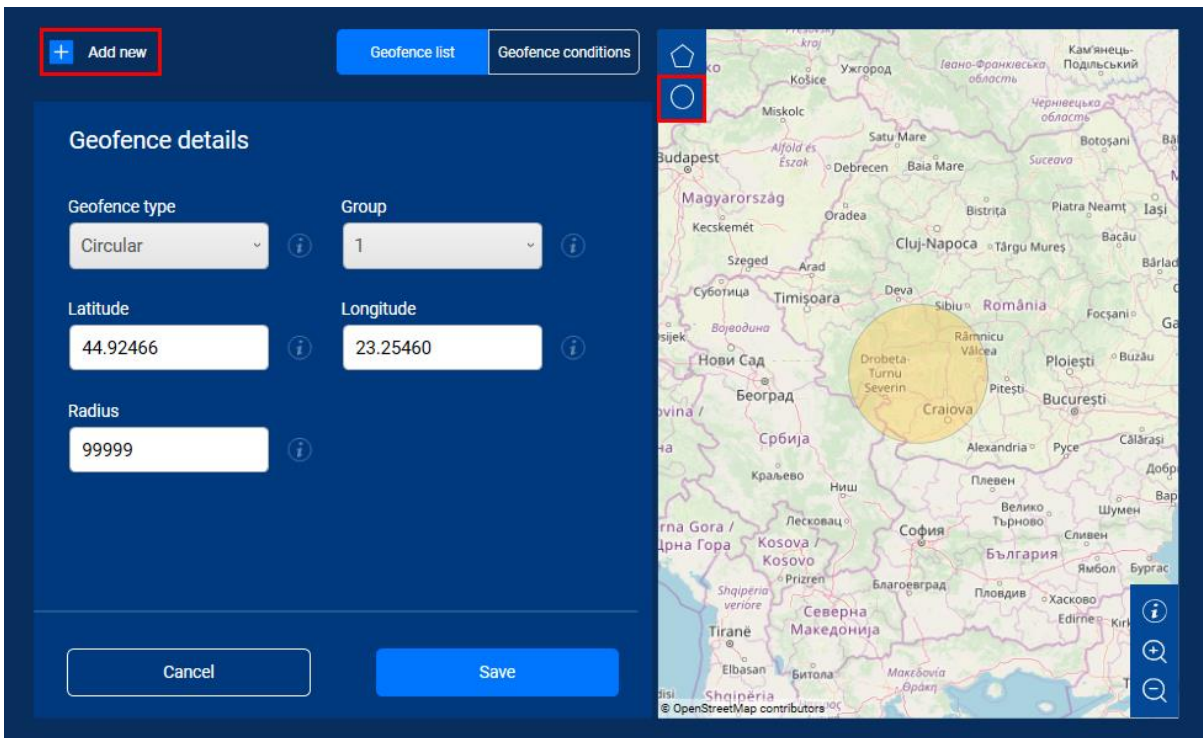
Adding Multipoint Geofences

There are two ways to add new multipoint geofences:

- Clicking **Add new** above the geofence list
- Clicking the multipoint button on the map

The left side of the section contains the geofence settings and points list, the geofence is displayed on the map on the right. There are two ways to add points:

- Clicking **Add point** above the points list. This will add a new point in the center of the map.
- Right-clicking on the map. CTRL + right-click on an existing point will add a new point next to it.

Multipoint geofences can have from 3 to 20 points. Click a point with the left mouse button and drag it to change its position. Click **Save** to save the geofence.

Geofence type	The type of geofence you wish to create. Possible values:
	- *Circular* – for circular geofences, a single center point is defined
	- *Multipoint* – for multipoint geofences, each point is defined separately
	Default value: *Circular*

Group	The group you wish to assign the geofence to. You can set different conditions and alerts for different geofence groups. Default value: 1

Importing Files with Geofence Data

You can import .csv files with geofence data prepared in advance. The data must be provided in the following format before import:

```
File  Edit  Format  View  Help
Geofence ID;Latitude;Longitude;Geofence type;Radius;Geofence group;
1;50,1523841335278;20,1102165376894;C;250000;1;
2;50,0081781722658;30,7170169638258;C;250000;1;
3;45,8870078305207;21,3237064169508;C;250000;1;
4;56,0618238430023;21,0540419993372;P;0;1;
4;55,3528203704636;20,7843775817235;P;0;1;
4;54,9676873027623;22,4922522266099;P;0;1;
4;53,8429133120022;24,2450709410985;P;0;1;
4;54,7348189486987;26,0428337251894;P;0;1;
4;55,8100845410066;25,8630574467803;P;0;1;
4;56,2370693947774;23,660798036269;P;0;1;
4;56,5604094168917;21,9978674609849;P;0;1;
```

Click the import icon next to the **Add new** button, select your file, and open it. If the import is successful, the geofence list and map will be updated automatically even if the list is not open during import.

> ⓘ If the file contains too many geofences or points for multipoint geofences, pop-ups will inform which part of the file caused the import to fail.
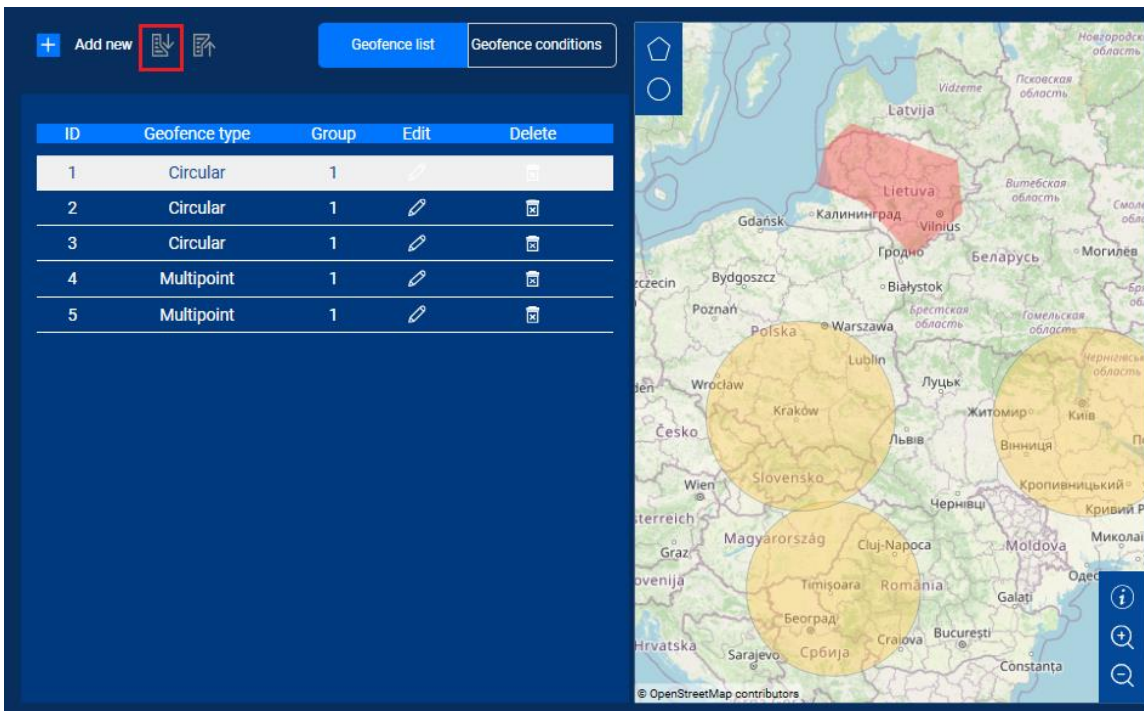
Editing/Deleting Geofences

To edit a geofence, select it in the geofence list or click on it in the map and click the pencil icon in the **Edit** column. The editing process is identical to the creation process. Click **Save** to apply the changes or click **Cancel** to discard them.

To delete a geofence, select it in the geofence menu and click the trash bin icon in the **Delete** column. There is no confirmation when deleting a geofence.
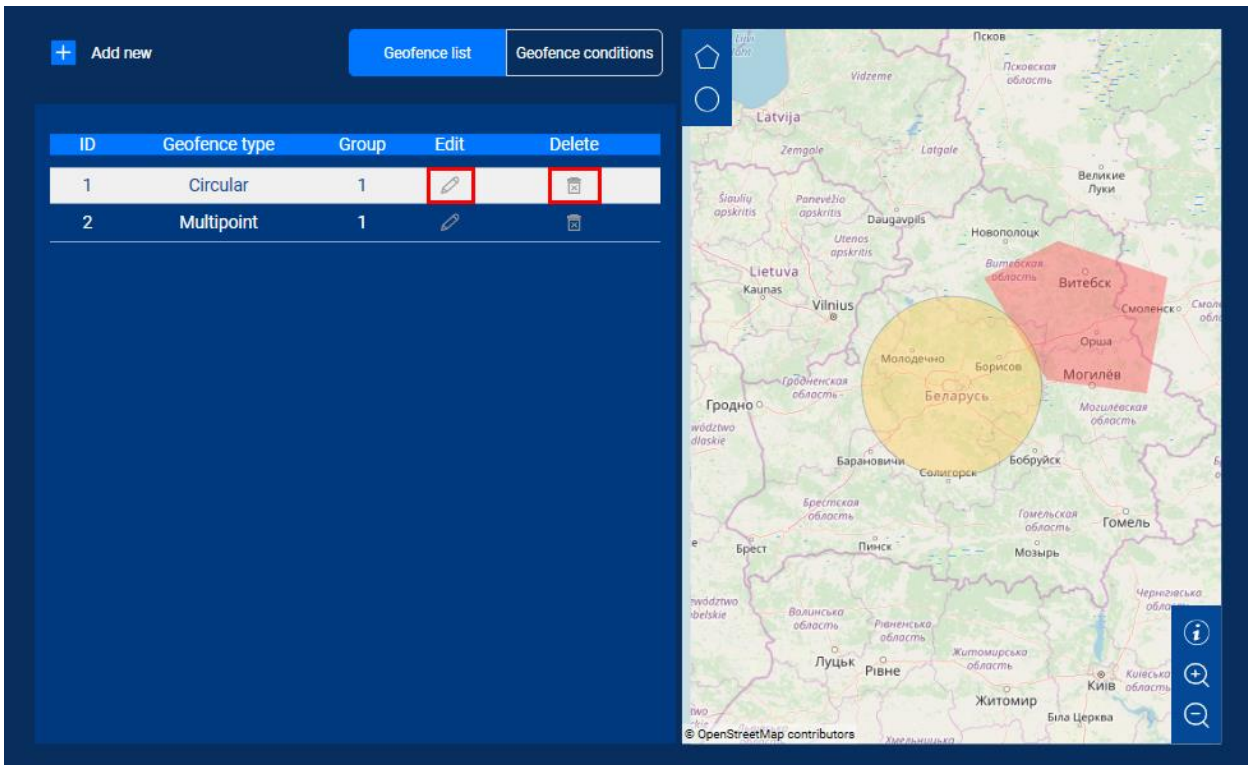
Geofence Conditions

Open the **Geofence conditions** tab. Configure, how the device should behave within/outside of geofence groups. The settings apply to each group separately.

Firstly, select whether the conditions will apply when the vehicle is outside geofences in general (**Outside geofences**) or when the vehicle is inside any geofence group (**Inside geofences**).

Group	[**Inside geofences** only] To which geofence group the settings apply for.
	Default value: 1
Additional geofence parameters	Allows receiving alerts of speed changes within/outside a geofence group. Set the threshold value and the condition.
	If you have previously configured DOUTs, you can select an output mode through which this alert information will be provided to the driver.
	CAN speed data is prioritized. If CAN speed data is unavailable, GNSS speed data is used.
	Default value: Disabled
Geozone border crossing	Enable to generate entering/leaving geofence events.

	Entering events are generated when the vehicle enters any geofence from the outside or enters a geofence in a different group.
	Leaving events are generated when the vehicle leaves any geofence group and is outside.
	No events are generated when the vehicle enters a geofence in the same group.
	Default value: Disabled
Delay timer (s)	How much time must pass to generate an entering/leaving geofence event after crossing geofence borders.
	Default value: Disabled, 0 s
Output mode	Which DOUT mode will be used to activate DOUTs to alert the driver when an event is generated. The DOUTs must already be configured in the desired modes in **Peripherals and Interfaces**.
	More info: Digital Output User Manual
	Default value: Disabled
Digital input state monitoring	Allows receiving alerts of DIN state changes within/outside a geofence group. Select which DIN status you want to monitor by ticking the corresponding checkbox. Choose which state to indicate - *High* or *Low*.
	If you have previously configured DOUTs, you can select an output channel through which this alert information will be provided to the driver.
	Default value: Disabled, *High*
Analog input state monitoring	Allows receiving alerts of AIN input voltage changes within/outside a geofence group. Select which AIN you want to monitor by ticking the corresponding checkbox. Set the threshold value and the condition.
	If you have previously configured DOUTs, you can select an output channel through which this alert information will be provided to the driver.
	Default value: Disabled

Any configured alert will be activated only after entering/leaving a geofence group. If the vehicle enters a geofence in the same group, there will be no alert.
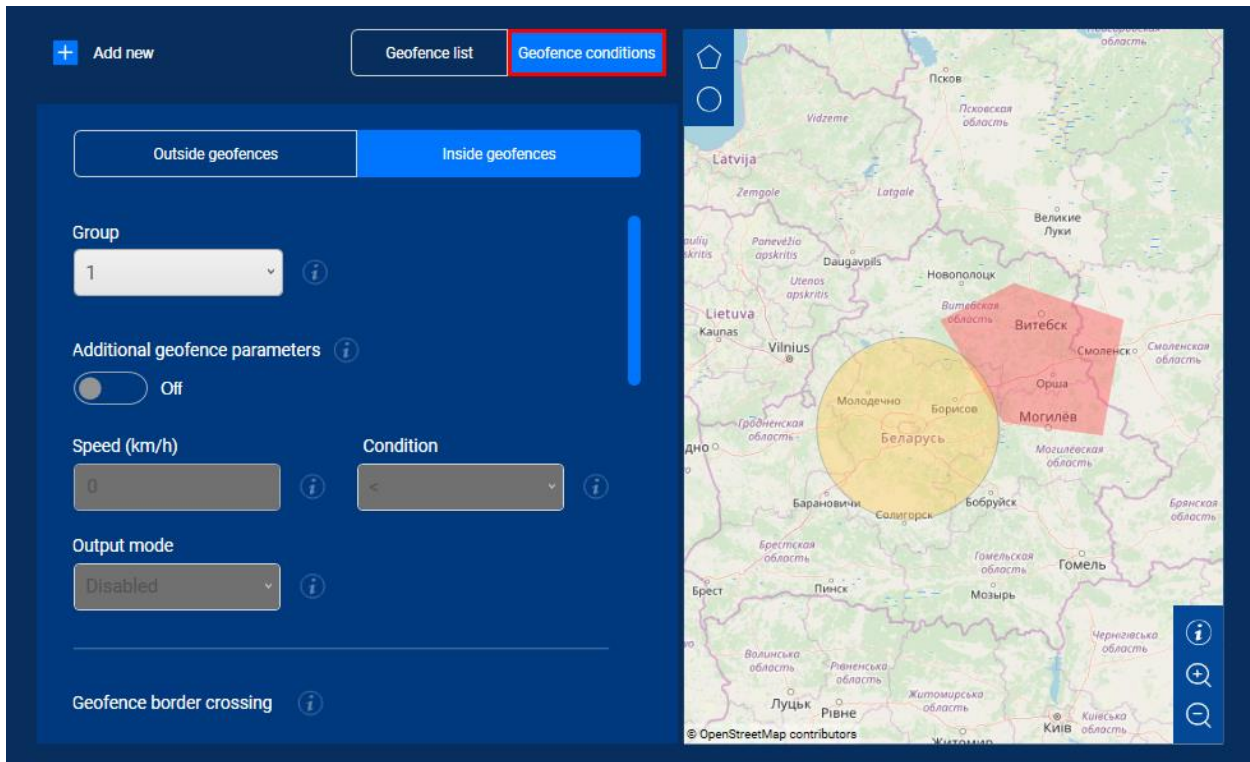
Exporting Files with Geofence Data

After creating and editing the geofences, you can save and export the coordinates to a .csv file. Click the export icon, select the location of the file and filename. A filename with a timestamp is automatically suggested.
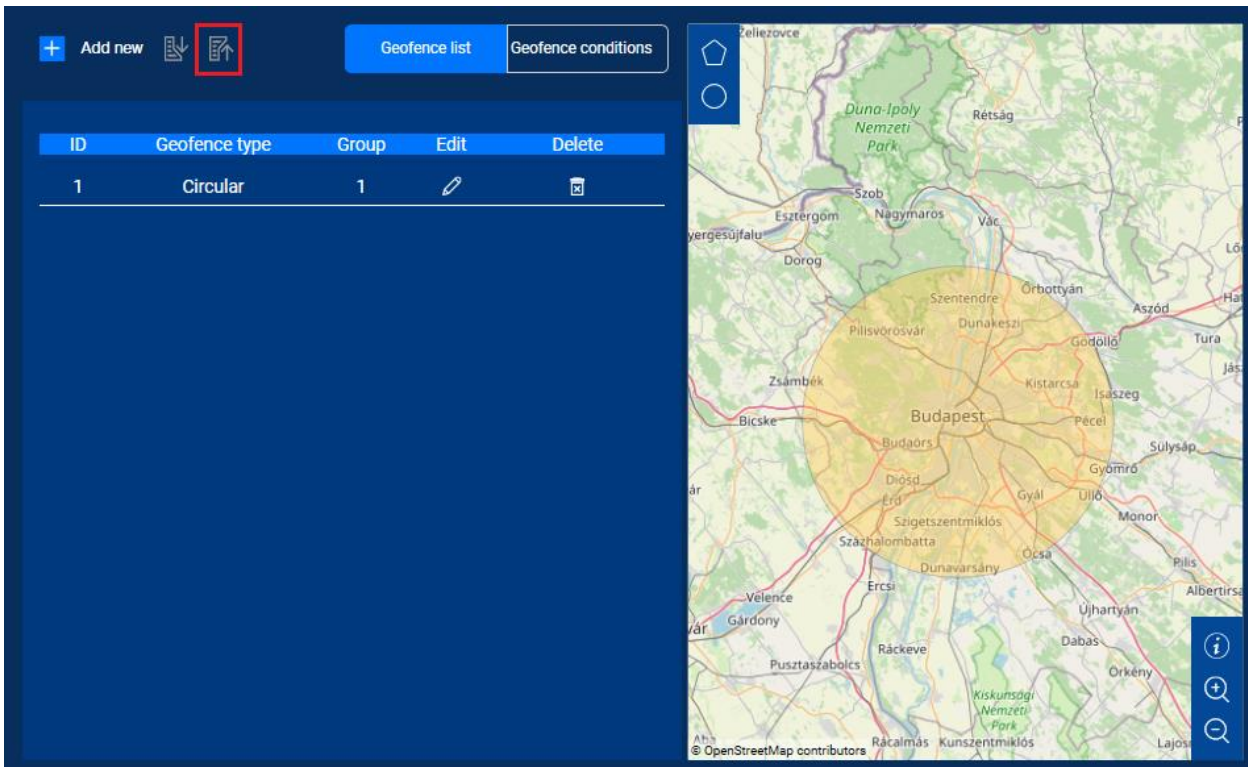
Power Saving Settings

5th Generation Devices							4th Generation Devices						
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	✔

Configure whether and when the device should enter sleep mode to consume less power.

Sleep mode	Which power saving method will be used. Possible values: • Disabled • *Sleep* – disables device communication and reduces power consumption to down to 30 mA The device wakes up when an engine on state is detected. Default value: *Disabled*
Sleep timer	After what time of inactivity (no records are sent) the device will enter sleep mode. If the device has unsent records after the timer runs out, the timer will

	restart. Once the timer runs out for the second time, the device will enter sleep mode regardless of unsent records. Default value: 600 s

> ℹ️ Sleep mode cannot be turned on if *GPS speed* and/or *Movement sensor* are enabled in custom engine detection conditions.

> ℹ️ The device will not enter sleep mode if:
> - The engine is on
> - There is no GNSS and/or mobile signal
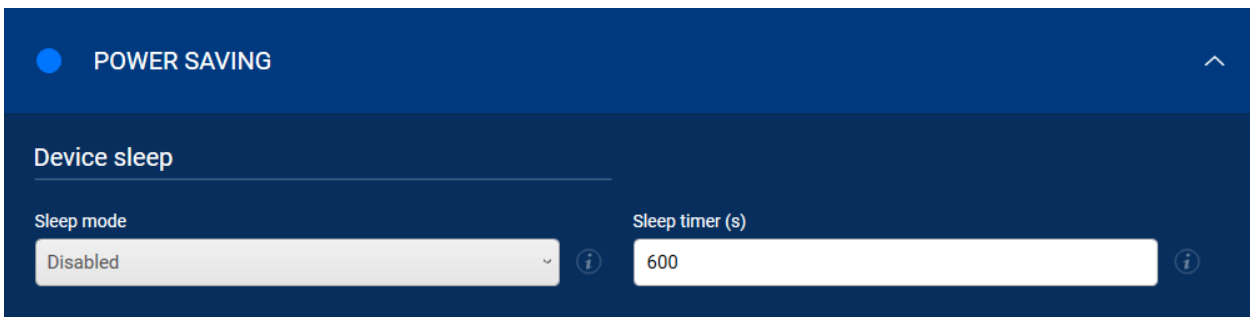
Security Settings

5th Generation Devices							4th Generation Devices						
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	🚫	🚫	✔	✔	✔	✔	✔	✔	✔

Set up various passwords to protect your device.

SMS password	If entered, you will need to include the SMS password before every SMS command. This password cannot contain any names of any SMS commands and can contain up to 16 symbols. The following symbols are allowed: • All digits (0-9)

	• Letters A-Z (lowercase and uppercase) • _ @ # / % - Default value: None
USB password	If entered, you will need to enter this password before saving the configuration to the device. Only ASCII symbols are allowed. Default value: None

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

🚫 Make sure you remember the USB password! If you forget the USB password, the only way to reset it is to return the device to the manufacturer.
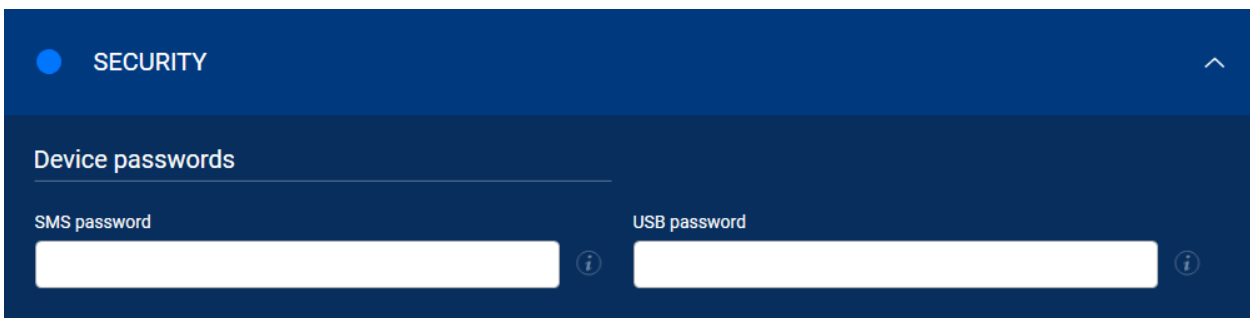
Eco-Drive Settings

5th Generation Devices							4th Generation Devices						
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	✔

Configure various Eco-Drive settings to monitor how the vehicle is driven and to alert the driver about inappropriate driving behavior. Turn on the Eco-Drive functionality to display its settings.

✔️ Advanced configuration description available: Eco-Drive configuration.

Firstly, select a vehicle profile, data source, and output (optional).

Profile	Sets preset values for the Eco-Drive parameters according to the selected vehicle profile. Possible values: • Light vehicle • Truck Default value: *Light vehicle*
Data source	Which source will be used for driving data. Possible values: • Accelerometer • GPS • *CAN* (if at least one CAN interface is turned on) • *OBD* (if *OBD* is selected as a CAN interface mode) *CAN* and *OBD* can be used together with *Accelerometer* and *GPS* sources. Additional options appear when these sources are available. Default value: *GPS*
Eco-Drive panel active	If turned on, the driver will be notified about their driving in real-time via an [Eco-Drive panel](#). Default value: Off
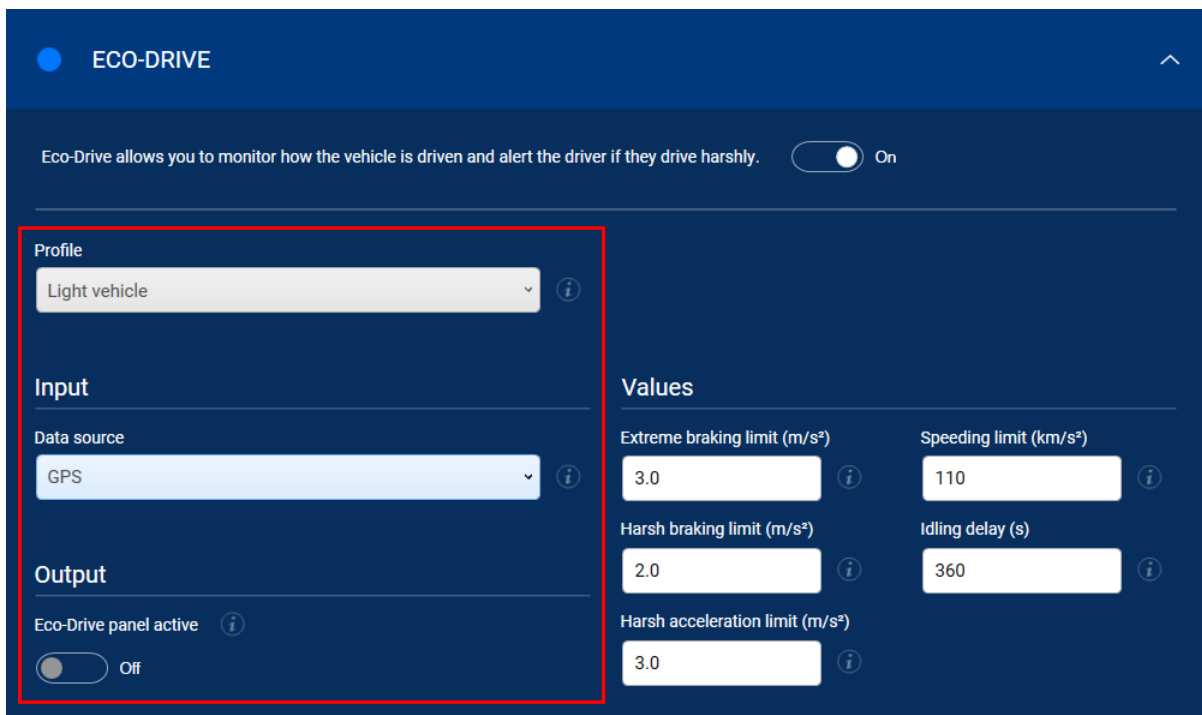
Then, configure the Eco-Drive parameter values according to your needs.

Extreme braking limit	What deceleration will be considered as extreme braking. Deceleration above this limit will trigger an extreme braking event. Default values: 3.0 m/s^2 (light vehicles) 2.0 m/s^2 (trucks)
Harsh braking limit	What deceleration will be considered as harsh braking. Deceleration above this limit will trigger a harsh braking event. Default values: 2.0 m/s^2 (light vehicles) 1.0 m/s^2 (trucks)
Harsh acceleration limit	What acceleration will be considered as harsh acceleration. Acceleration above this limit will trigger a harsh acceleration event. Default values: 3.0 m/s^2 (light vehicles) 2.0 m/s^2 (trucks)
Speeding limit	What speed will be considered as speeding. Speed above this limit will trigger a speeding event. Default values: 110 km/h (light vehicles) 90 km/h (trucks)
Idling delay	What period of idling (engine on with no movement) will be considered as excessive idling. Idling longer than this limit will trigger an excessive idling event. Default value: 360 s

Driver Registration Settings

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✓*	✓	✓	✓	🚫	🚫	✓**	✓	✓	✓	✓	✓	✓

* – not available for pre-revision Trace5 devices.

** – *iButton* and *1-Wire RFID* only.

Driver registration allows you to identify, monitor, and control who drives the vehicle.

> ✓ Advanced configuration description available: Driver Registration.

Firstly, select which registration mode you want to use.

Registration mode	Which registration mode will be used. Possible values: • *Disabled* – no registration mode is used • *Registration* – when the driver registers, successful registration is indicated on connected peripherals • *Mandatory registration* – an alert is activated until a successful registration is made

	• *Blocking* – the engine cannot be started until a successful registration is made • *Dual registration* – registration for two drivers Default value: *Mandatory registration*
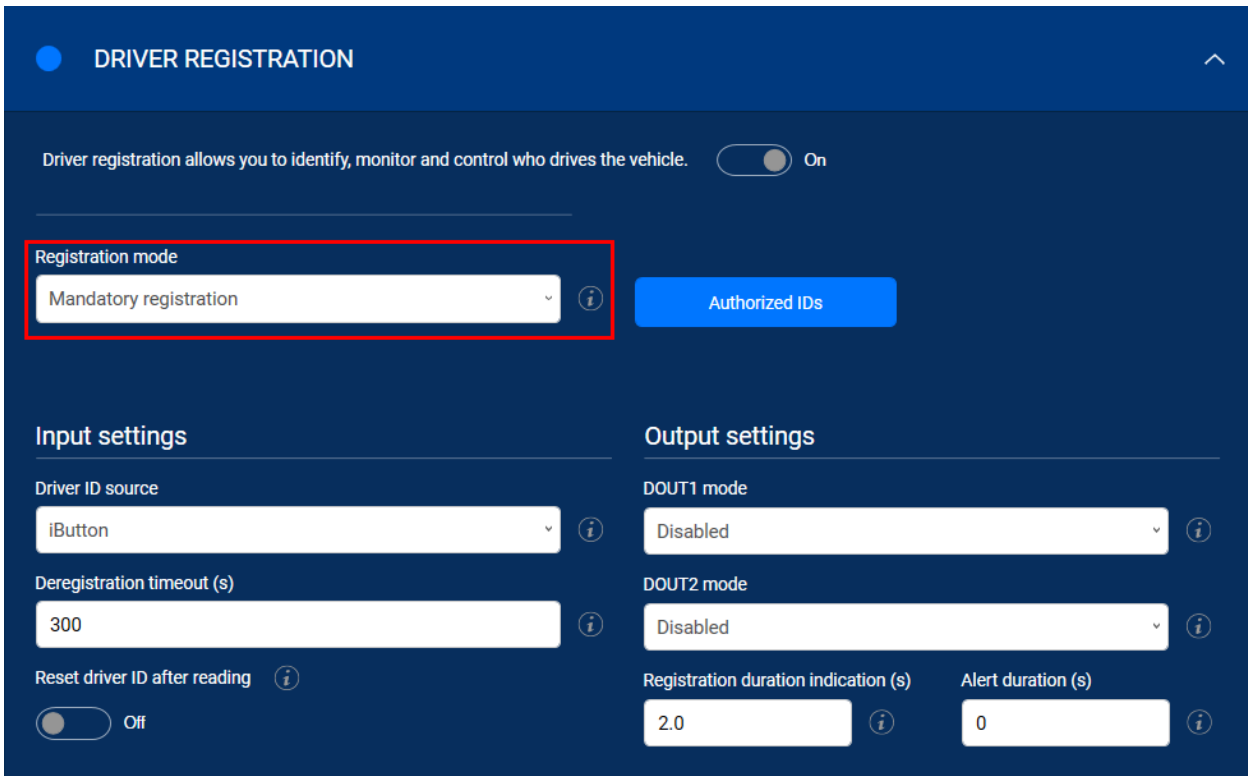
Then, decide which input settings you want to use.

Driver ID source	From which source the driver ID is received. Possible values: • *iButton* – the driver ID is received from an iButton • *RFID PortA* – the driver ID is received from an RFID reader connected to RS232 Port A • *RFID PortB* – the driver ID is received from an RFID reader connected to RS232 Port B • *1-Wire RFID* – the driver ID is received from a 1-Wire RFID reader • *BLE beacon* – the driver ID is received from a BLE button Default value: *iButton*
Deregistration timeout	For how long the device keeps the current registration after the engine is switched off. Default value: 300 s
Reset driver ID after reading	If turned on, the driver ID will be sent only once after registration, not regularly.

	Default value: Off

> ⓘ If *Registration* is selected as the registration mode, all driver ID sources are accepted, no matter the selection.
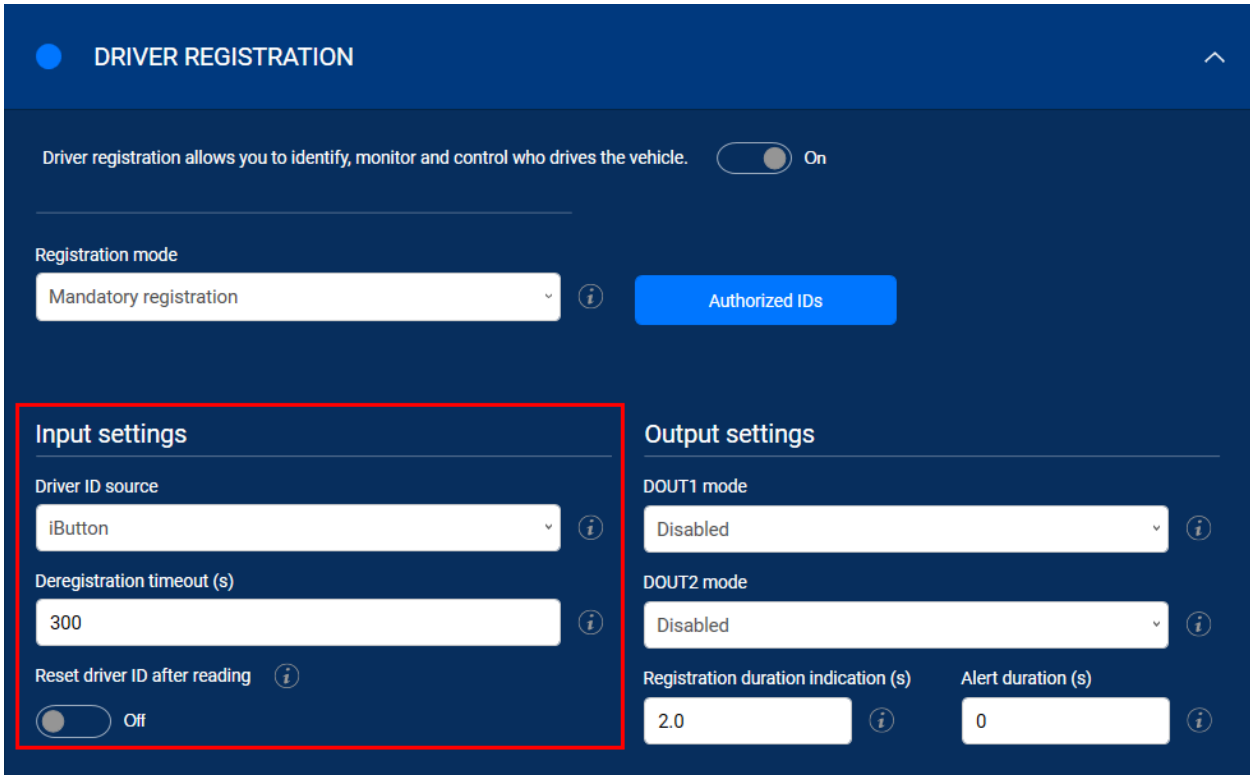
Configure output settings depending on which peripherals you connected/want to connect.

DOUT1/DOUT2 mode	Which mode will be used for DOUTs. The mode selection depends on the connected peripherals. The same mode cannot be used on both DOUTs. Possible values: • Disabled • Buzzer • LED • Blocking • GSM jamming block Default value: *Disabled*
Registration duration indication	For how long a successful registration will be indicated if the DOUTs are in *Buzzer* or *LED* mode. Default value: 2.0 s

| Alert duration | For how long an alert will be active if the engine is started before registration in *Mandatory registration* mode. |
| | Default value: 0 s (the alert is active until successful registration) |

Allow only specific driver IDs to be accepted for registration using the Authorized IDs list.

✔ Detailed description available: Authorized IDs List.

Towing Detection Settings

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	🚫	🚫	🚫	✔	✔	✔	✔	✔	✔

Configure towing detection to know if your vehicle is being towed. Towing is detected when the vehicle tilt changes by a configured angle.

> ✔ Advanced configuration description available: Towing Detection.

Delay after engine is off	Towing detection becomes active after this time period. Default value: 360 s
Engine check after event	For how long after a detected towing event the device will monitor the engine state. Default value: 10 s

Minimum tilt angle	The minimum tilt angle change required for towing to be detected. Default value: 10°
Minimum tilt duration	For how long the tilt must be detected for towing to be detected. Default value: 1000 ms

Impact and Rollover Detection Settings

✔ Advanced configuration description available: Impact and Rollover Detection.

Impact Detection

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	⊘	✔	⊘

Configure impact detection to know if your vehicle hits something or is involved in a collision. An alert is triggered if an impact is detected. The impact threshold is dynamic and depends on the vehicle speed.

Speed measurement after impact can also be enabled to check if the vehicle has stopped after impact.

Speed measurement duration (ms)	For how long the vehicle speed is measured after an impact. If the speed drops to 0 during measurement, an alert is triggered. Default value: 5000 ms

Rollover Detection

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	✔

Configure rollover detection to know if your vehicle has rolled over. Rollover is detected when the vehicle tilt changes by a configured angle in any direction.

Minimum duration	For how long the tilt must be detected for rollover to be detected. Default value: 100 ms
Max X/Y/Z axis angle	The maximum allowed X/Y/Z-axis tilt. If the tilt angle is greater than the entered value, a rollover event is detected. Default value: 70°

Finishing the Configuration

Once you have configured the device, do not forget to save the configuration to a file or the device using the buttons in the top bar.

You can also save the configuration by clicking **Finish** in the bottom bar. You will be prompted to save the configuration to either a file or a device (if connected).
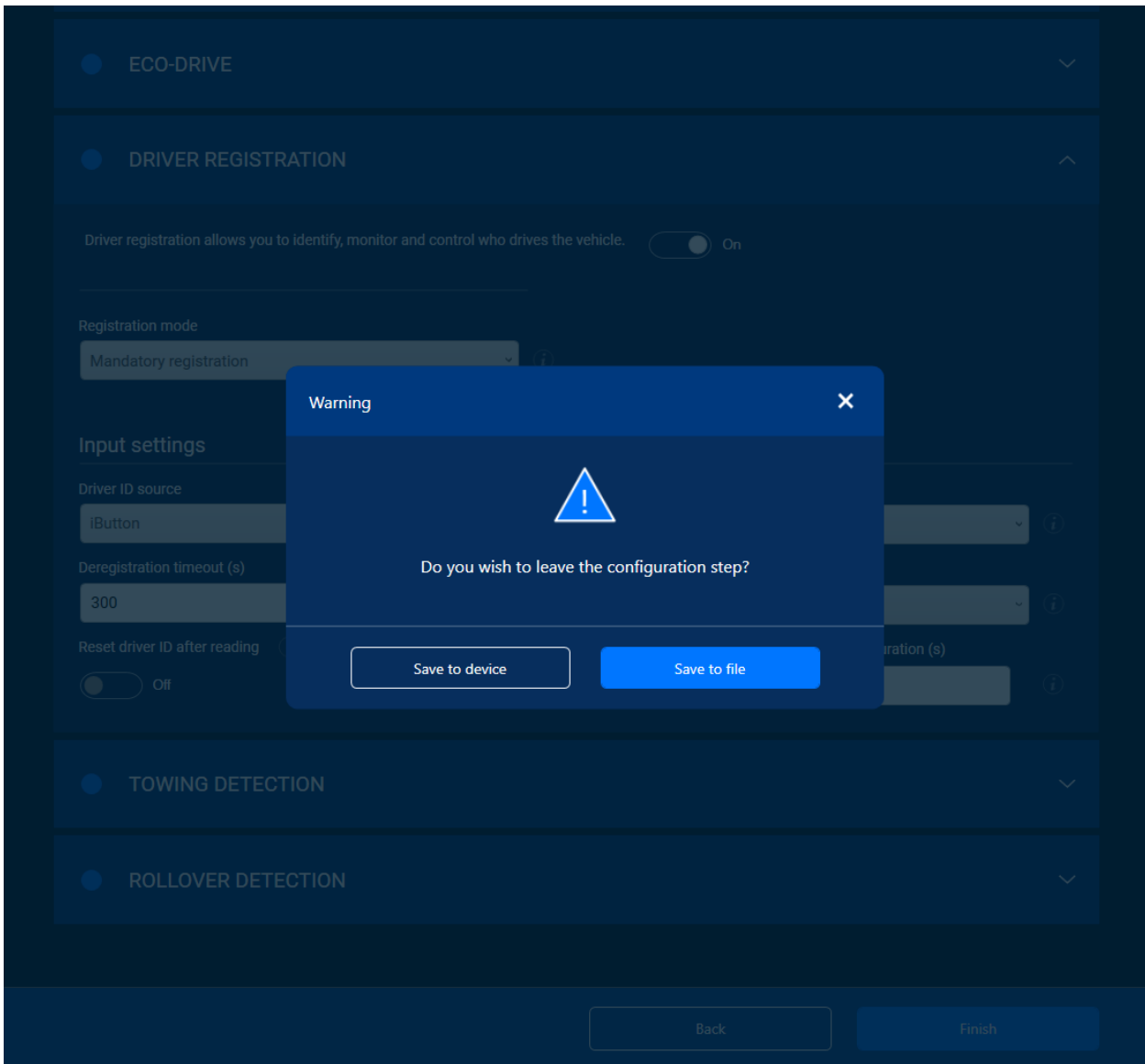
After finishing the configuration, you will be directed to the main menu.

1.7 Updating the Device Center

We highly recommend using the newest version of the Device Center to take advantage of our newest functionalities and improvements. The Device Center can be updated automatically when a new version is available.

If a new version is available, an update prompt will appear after launch. Click **Update Device Center** to update the Device Center. You can click **Continue without updating** if you do not wish to update the Device Center.

> ℹ️ An internet connection is required for automatic Device Center updates.
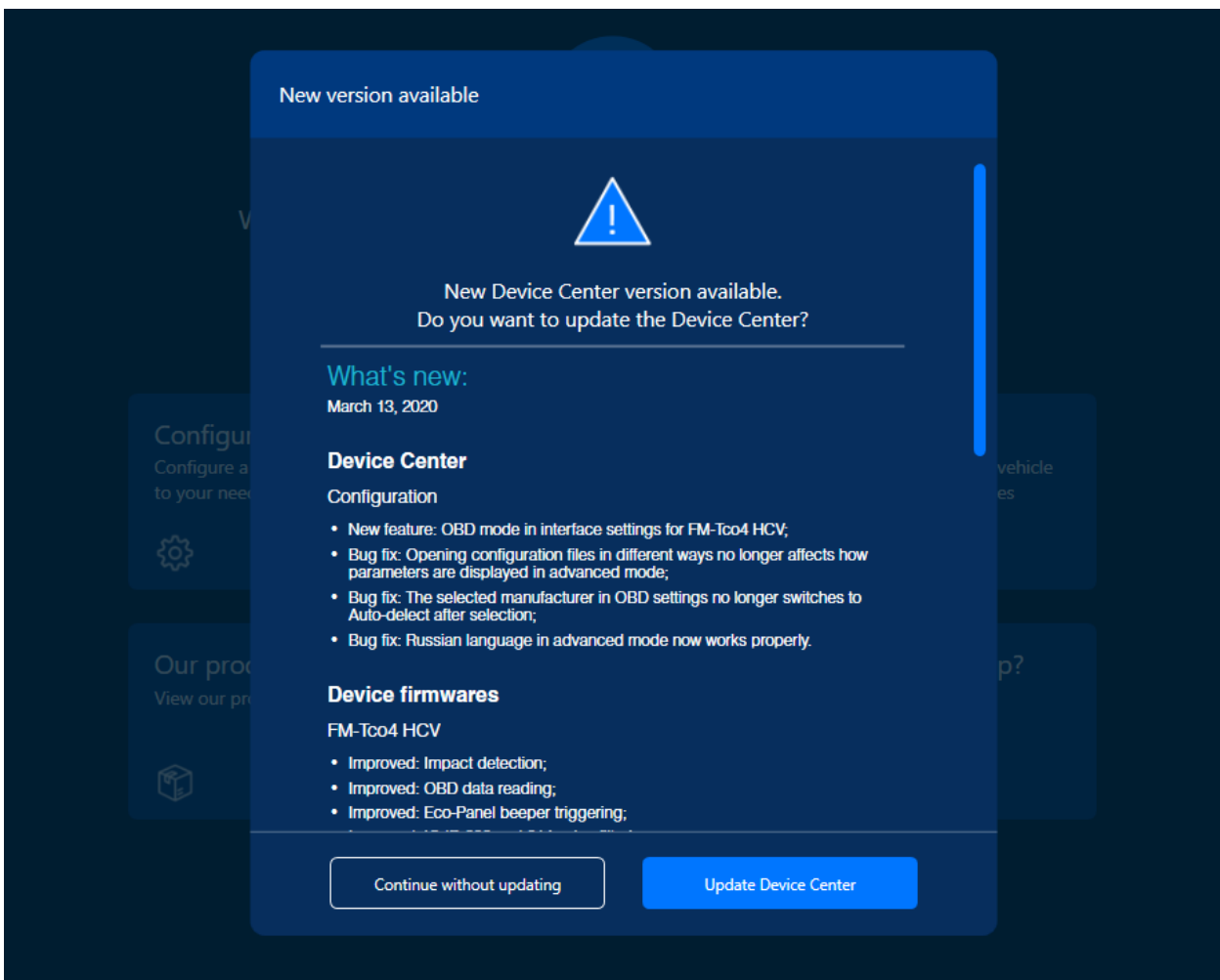
Alternatively, you can download the newest version from our [documentation website](#).

1.8 Updating Firmware

We highly recommend using the newest firmware to take advantage of our newest functionalities and improvements. Device firmware can be updated automatically when the Device Center is newer than the firmware.

> ℹ The device will not send any data during firmware updates.

Firmware File Extensions

HCV5: **.efwt5**

LCV5: **.efwl5**

Pro5: **.efwp5**

HCV5 Lite/Pro5 Lite: **.efwg5**

Trace5-LTM (pre-revision): **.efwa5**

Trace5 NA: **.efwb5**

Trace5 (all other versions): **.efwd5**

Plug5: **.efwe5**

Eco5: **.efwy5**

FM-Tco4 HCV: **.efwt4**

FM-Tco4 LCV: **.efwl4**

FM-Pro4: **.efwp4**

FM-Eco4: **.efwe4**

FM-Eco4 S: **.efwk4**

FM-Eco4 T: **.efwk4**

FM-Eco4 RS T: **.efwj4**

FM-Plug4: **.efwo4**

Updating Firmware Automatically

If the Device Center is newer than the detected device firmware, it will suggest updating the firmware. Click **Update firmware** to update the firmware. Click **Configure without device** to create a

configuration without updating the firmware. If the firmware is not updated, you will not be able to load and save configuration files from/to the device.

✔	This method does not require an internet connection. This allows you to update the firmware at any time or location if you have the newest Device Center.

ⓘ	If the Device Center is older than the firmware, you will not be able to load and save configuration files from/to the device. You will need to update the Device Center.

ⓘ	To update the firmware and the BLE module firmware of HCV5/LCV5/Pro5 devices, the tracking device must be first connected to a power supply.

ⓘ	To update the firmware and the CAN extender firmware of HCV5 Lite devices, the tracking device must be first connected to a power supply.
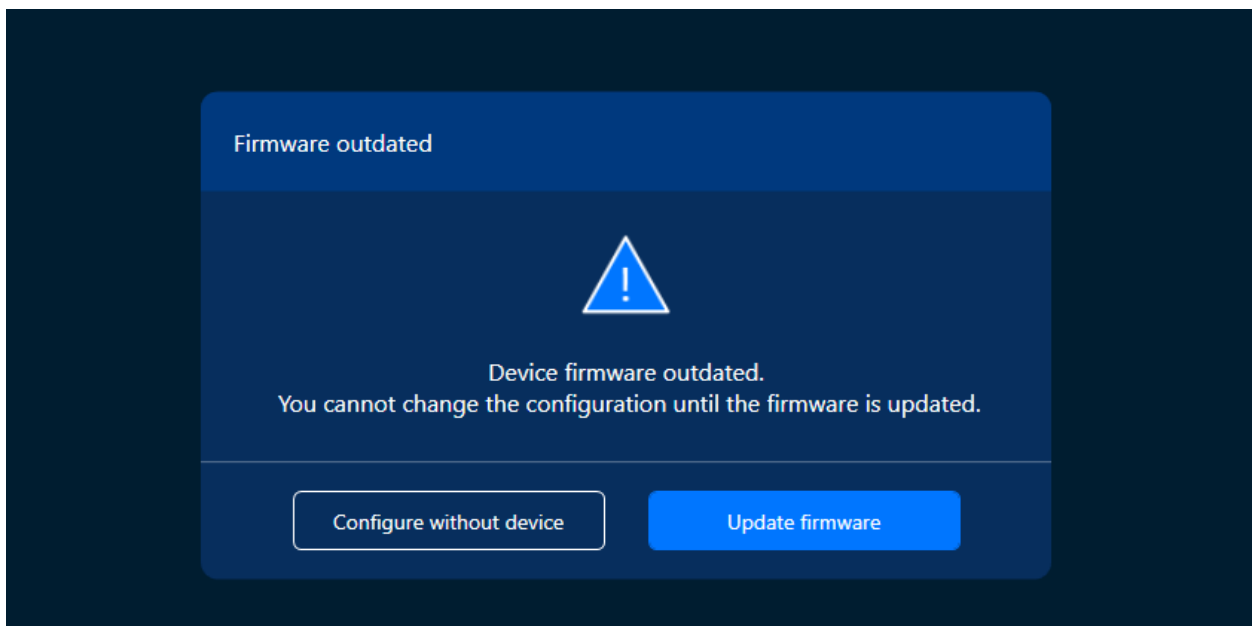
1.9 Device Testing

You can test your devices during installation using the installation assistant tool. The installation assistant checks the status of the main modules and interfaces in real-time, allowing you to monitor the quality of the installation and quickly solve any issues.

Connect the device(s) that you wish to test to your computer. Click **Test device** in the main menu to access the installation assistant. Select the device you wish to test.

> ✔ Connect the device to an external power supply before testing. Some critical modules and interfaces (GNSS, cellular modules) cannot be tested when the device is powered only via USB.
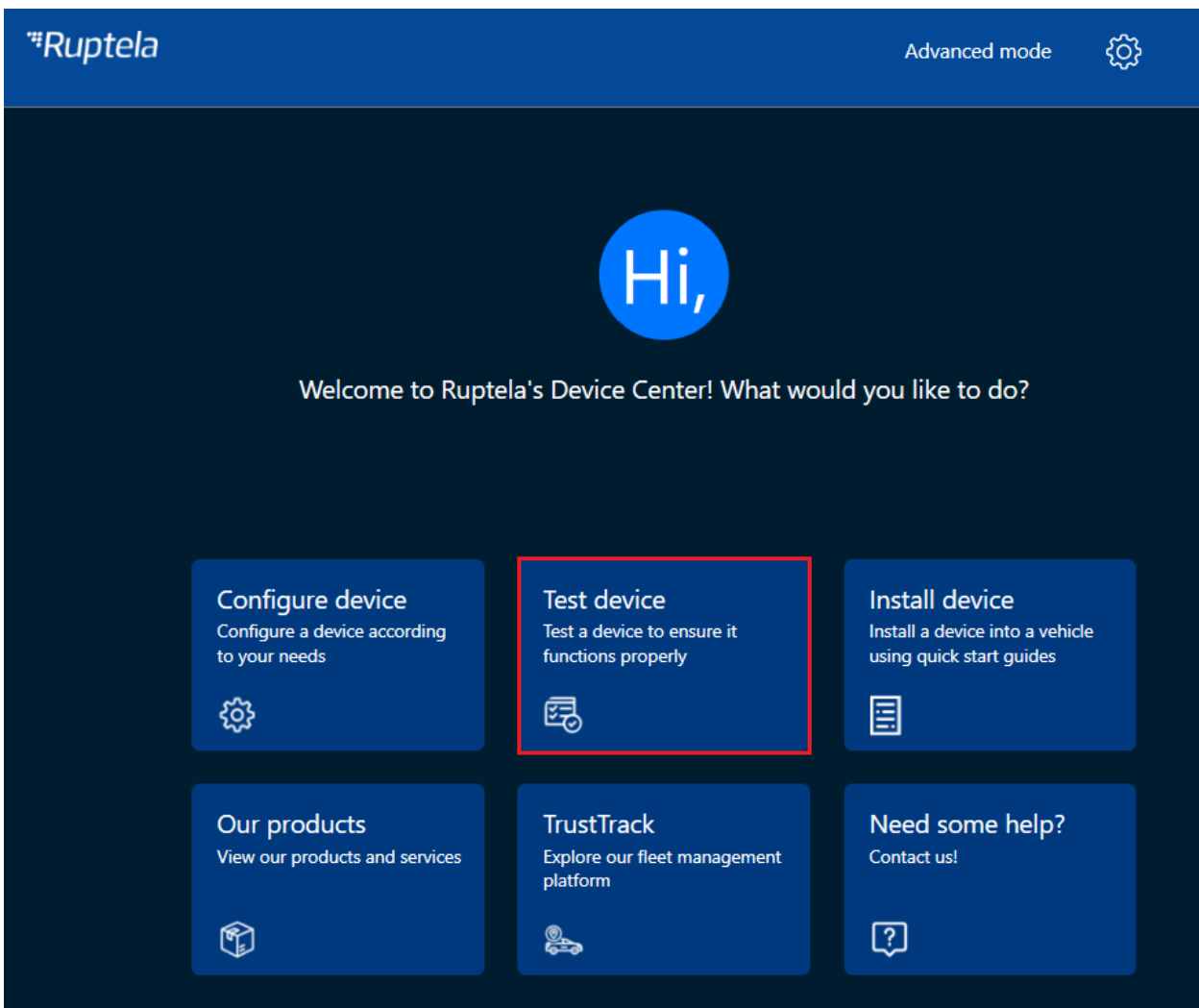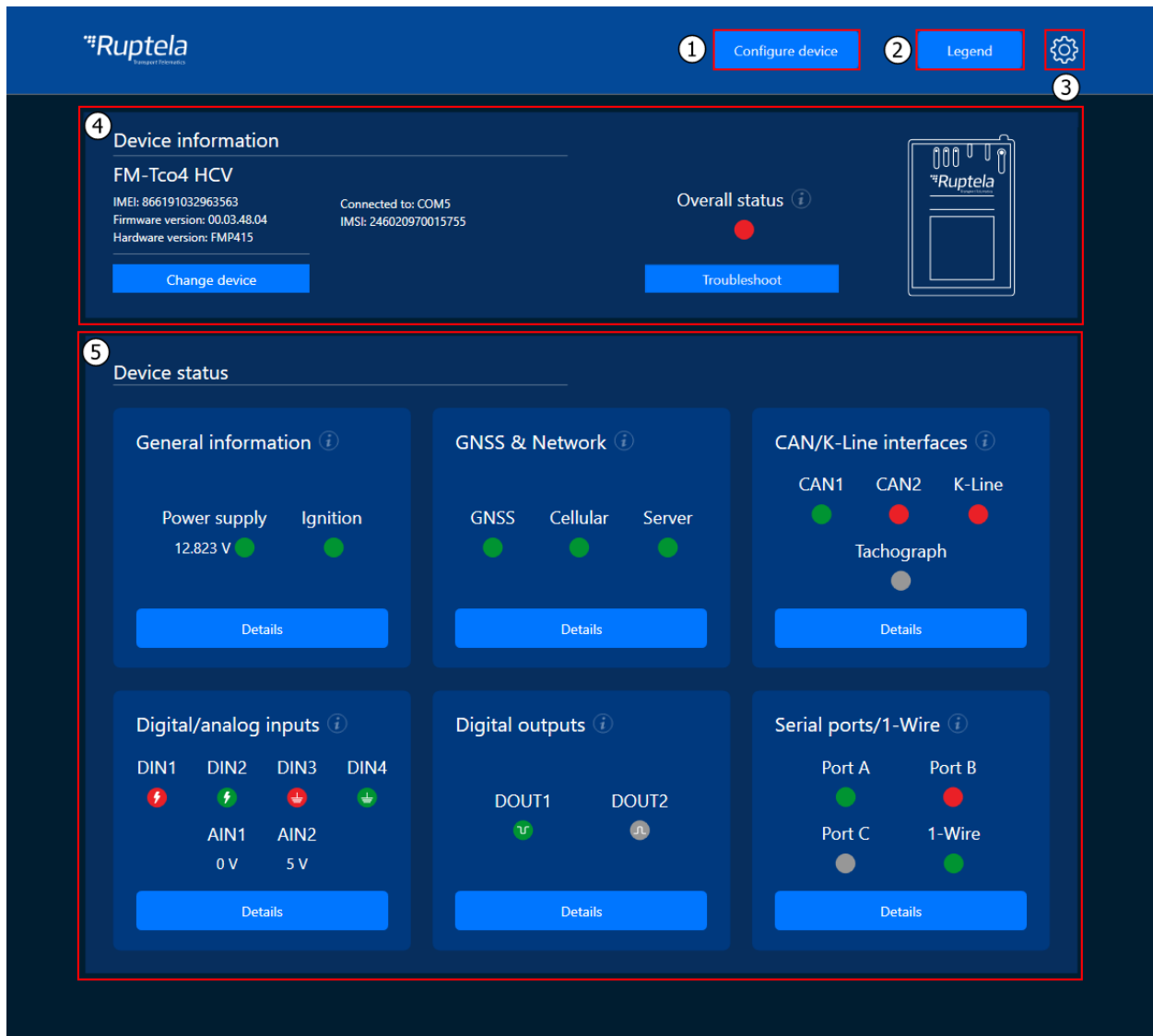
Installation Assistant Main Window

After selecting a device, you may need to wait for about 20 seconds until the installation assistant reads the device configuration and status.

The main window of the installation assistant displays an overview of module and interface statuses.

The main window consists of the following elements:

1. A **Configure Device** button – switches to the device configuration interface
2. A **Legend** button – provides information about the colors and symbols used in the installation assistant
3. Settings icon – opens general settings and information about the Device Center
4. An overview bar – status and information about the currently connected device
5. A status dashboard – a summary of the states of the device modules/interfaces

Colors and Symbols

Click **Legend** in the top bar to display a short explanation of the colors and symbols used in the installation assistant.

Colors

The module/interface is active, functioning properly and is receiving the necessary data that is not zero or error values.

The module/interface is active but is not functioning properly.

The module/interface is not functioning properly or is receiving only zero or error values.

The module/interface is disabled, not in use or not configured.

Symbols

The digital input is set to *Positive mode*.

The digital input is set to *Ground mode*.

The digital output is set to regular mode.

The digital output is set to inverted mode.

The power supply voltage is above 32 V.

Overview Bar

The overview bar displays the following information about the connected device:

- Device type
- Device IMEI
- Firmware version
- Hardware version
- COM port, to which the device is connected
- SIM card IMSI (remains blank if the cellular module is inactive)
- Overall status

You can change the device at any time by clicking **Change device**. You will be redirected to the device selection screen.

A **Troubleshoot** button appears if the overall status is not green, allowing you to investigate what may be causing issues with the installation.
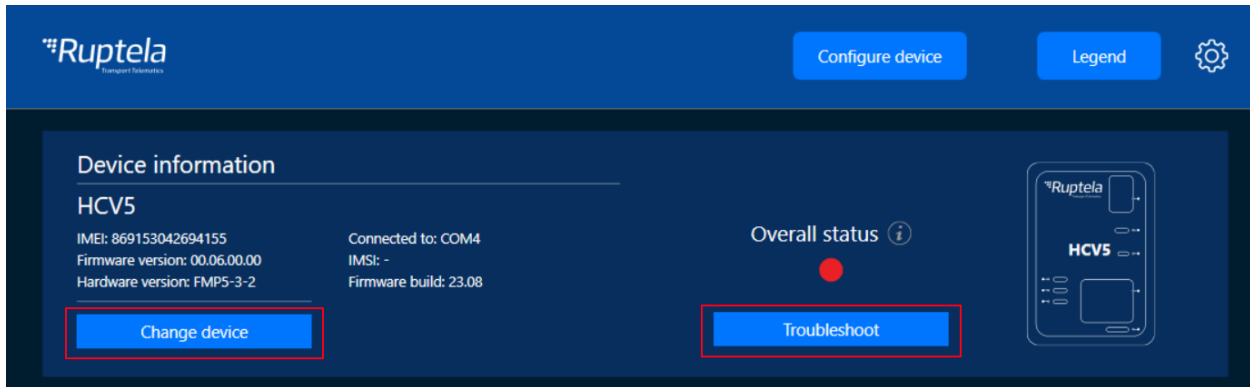
Status Dashboard

The status dashboard displays a summary of the states of the device modules/interfaces depending on the device type. The states are organized into the following sections:

- General information
- GNSS & Network
- CAN/K-Line interfaces
- Digital/analog inputs
- Digital outputs
- Serial ports/1-Wire

Click **Details** to view detailed information about a section.
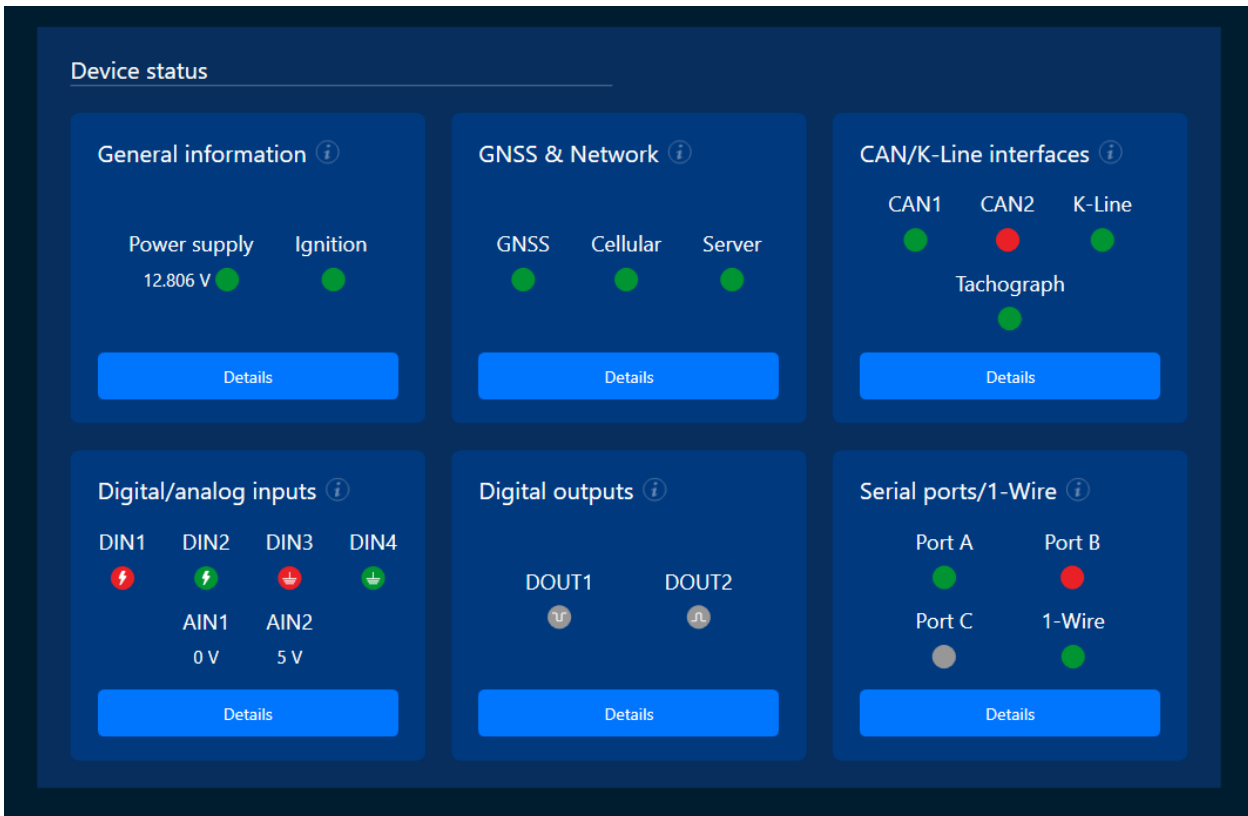
General Information

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	✔

The **General information** section contains information about the device power supply and ignition status, an overview of basic parameter values, and Eco-Drive parameter values.

Power Supply

This subsection displays the following parameter values:

- Power supply voltage – the voltage of the external power supply.
- Battery voltage – the voltage of the internal device battery. A battery voltage of 3.6 V means that the battery is low, a battery voltage of 4.1 V means that the battery is charged.
- Battery charge – the charge percentage of the internal device battery. This value is approximate.

Status

🟢 The power supply is connected, and the power supply voltage is in a suitable range.

🔴 The power supply is not connected, or the power supply voltage is below the threshold.

⚠️ The power supply voltage is above 32 V.

Ignition

This subsection displays the engine state configuration and what conditions are used to detect ignition.

Status

🟢 The ignition is currently on according to the detection conditions.

🟡 The ignition is currently off but was previously on according to the detection conditions.

🔴 The ignition is currently off and was never previously on according to the detection conditions.

⚪ The engine state detection method is set either to *Always On* or *Custom* without enabled conditions.

General information

Power supply 🟢

Power supply voltage: 12.823 V
Battery voltage: 4.099 V
Battery charge: 85 %

Ignition 🟢

Source: DIN4

IO Parameter	Value
ECO max speed	0 km/h
ECO overspeeding timer	0 s
ECO brake counter	0
ECO extreme and harsh brake counter	0
ECO harsh acceleration counter	0
ECO idling timer	0 s
ECO engine on timer	0 s
PCB temperature	32 °C
Power supply voltage	12817 mV
Battery Voltage	4097 mV
Virtual odometer	315736 m
Movement sensor	0 s

Close

GNSS & Network

5th Generation Devices							4th Generation Devices						
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	🚫	🚫	✔	✔	✔	✔	✔	✔	✔

The **GNSS & Network** section contains information about device signal reception and the ability to send data and an overview of relevant parameter values.

> **ⓘ** The device must be connected to an external power supply for the GNSS and cellular modules to function properly.

GNSS

This subsection displays how many satellites the device can receive a signal from and what positioning systems are in use. The more satellites are visible, and the more positioning systems are in use, the more precise the location is.

Status

🟢 The device currently has a GNSS fix and receives signals from enough satellites.

🟡 The device currently has a GNSS fix but does not receive signals from enough satellites.

🔴 The device currently has no GNSS fix and does not receive signals from enough satellites.

Cellular

This subsection displays if the device can connect to a cellular network and send data.

Status

🟢 The device is connected to a cellular network and can send data.

🟡 The device is connected to a cellular network but cannot send data.

🔴 The device is not connected to any cellular network.

Server

This subsection displays if the device configuration contains server and port settings.

Status

🟢 The device configuration contains server and port settings.

🔴 The device configuration does not contain server and port settings.

BLE

> ℹ️ This section is only applicable to devices with a BLE module.

This subsection displays if the device is receiving data from accessories via BLE.

Status

🟢 Data is received via BLE and it does not contain error values.

🟡 Data is received via BLE, but it also contains error values.

🔴 No data is received via BLE, or it contains only error values.

⚪ BLE is disabled or no accessories are configured.

CAN/K-Line Interfaces

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
⃠	✔	✔	✔	⃠	⃠	✔	✔	✔	✔	⃠	⃠	✔

The **CAN/K-Line interfaces** section contains information about vehicle data interfaces and what kind of data is received from the vehicle.

CAN/K-Line

These subsections display the current configuration of the CAN/K-Line interfaces. Click **Configure** to quickly tweak the configuration, if necessary.

Status

🟢 Data is received via the CAN/K-Line interface and it does not contain only zero or error values.

🔴 No data is received via the CAN/K-Line interface, or it contains only zero or error values.

⚫ The CAN/K-Line interface is disabled.

Tachograph
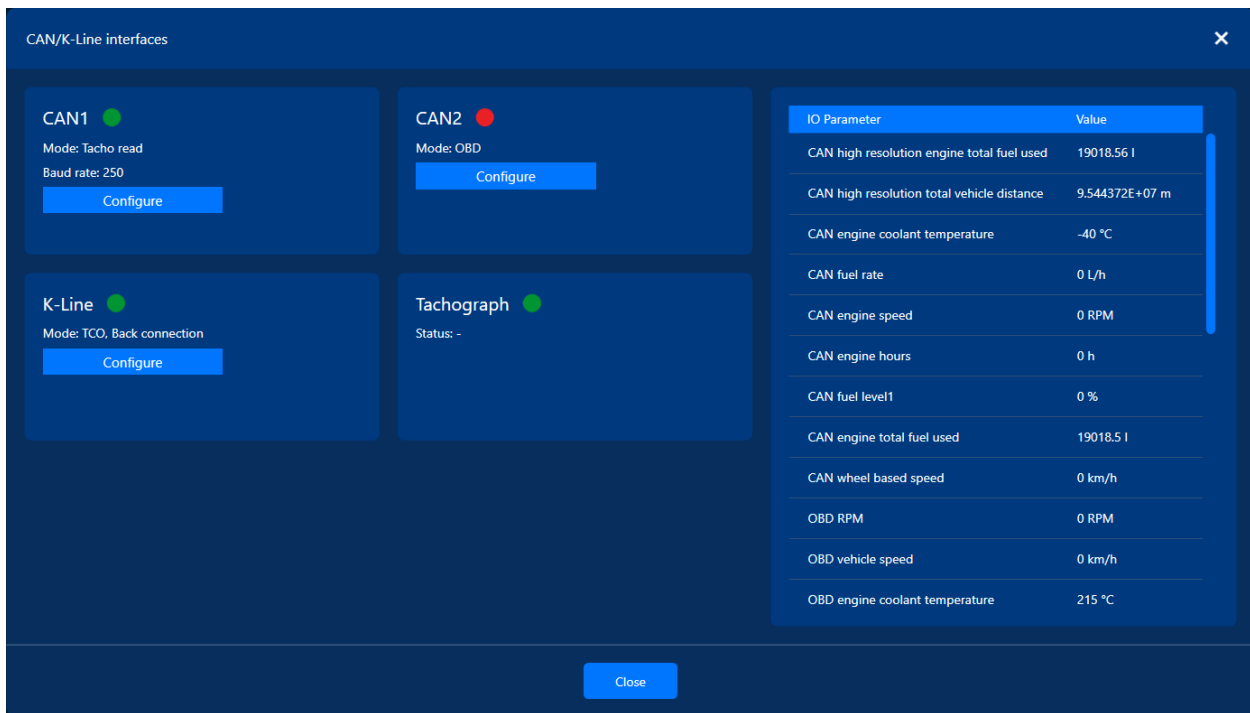
This subsection displays the current status of the tachograph. Possible statuses:

- Tachograph not responding
- Tachograph connection successful
- Tachograph configuration is incorrect
- Tacho file reading is pending, communication is unsuccessful
- The connection is good, but there is no communication

ℹ️ To test the tachograph, one of the CAN/K-Line interfaces must be set either to *FMS*, *Tacho read* or *Back connection*.

Status

Data is received from the tachograph and it does not contain only zero or error values.

No data is received from the tachograph, or it contains only zero or error values.

The CAN/K-Line interfaces are disabled, or tachograph testing is disabled in CAN interface *FMS* mode.

Digital/Analog Inputs

5th Generation Devices							4th Generation Devices						
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	⊘

The **Digital/Analog inputs** section contains information about the state of digital/analog inputs and an overview of relevant parameter values.

DIN

These subsections display the current status and mode of digital inputs.

Status

🟢 The digital input is receiving an input signal.

🟡 The digital input is not receiving an input signal but had received a signal before.

🔴 The digital input is not receiving an input signal and had not received a signal before.

⚫ The digital input is not configured or is disconnected.

⚡ The digital input is set to *Positive mode*.

⏚ The digital input is set to *Ground mode*.

AIN

These subsections display the current status and voltage of analog inputs.

Status

🟢 The analog input is receiving an input voltage. A small voltage (~0.02 V) is always present if the analog input is functioning properly.

🔴 The analog input is not receiving an input voltage. If the issue persists, the input itself may be damaged.

Digital/Analog inputs

DIN1 🔴
Mode: Positive mode
State: No signal

DIN2 🟢
Mode: Positive mode
State: Signal available

DIN3 🔴
Mode: Positive mode
State: No signal

DIN4 🟢
Mode: Positive mode
State: Signal available

AIN1 🟢
Voltage: 0.018 V

AIN2 🟢
Voltage: 5.121 V

IO Parameter	Value
DIN1	0
DIN2	1
DIN3	0
Ignition(DIN4)	1

Close

Digital Outputs

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔️	✔️	✔️	✔️	🚫	🚫	✔️	✔️	✔️	✔️	✔️	✔️	✔️

The **Digital outputs** section contains information about the state of digital outputs and an overview of relevant parameter values.

DOUT

These subsections display the state of digital outputs and their configuration. The DOUT state is gray by default and can be changed only after testing the output itself. Click **Activate output** to test the output.

If the connected peripheral behaves as required, click **Test passed**. The DOUT state will turn green.

If the connected peripheral does not behave as required, click **Test failed**. The DOUT state will turn red.

Status

🟢   The digital output is marked as working properly.

🔴   The digital output is marked as not working properly.

⚪   The digital output has not been tested yet.

⎍   The digital output is set to regular mode.

⎍   The digital output is set to inverted mode.

Serial Ports/1-Wire

5th Generation Devices							4th Generation Devices					
Trace5	HCV5	LCV5	Pro5	Plug5	Eco5	HCV5 Lite Pro5 Lite	Tco4 HCV	Tco4 LCV	Pro4	Eco4	Eco S/T	Plug4
✔	✔	✔	✔	⊘	⊘	✔	✔	✔	✔	✔	✔	⊘

The **Serial ports/1-Wire** section contains information about serial and 1-Wire interfaces and what kind of data is received from connected peripherals.

Port A/B/C

These subsections display the current configuration of the serial interfaces. Click **Configure** to quickly tweak the configuration, if necessary.

Status

🟢 Data is received via the serial interface and it does not contain only zero or error values.

🟡 No data is received via the serial interface, but it was previously received (applies only if the interface is set to *RFID reader* mode).

🔴 No data is received via the serial interface, or it contains only zero or error values.

⚫ The serial interface is disabled.

1-Wire

This subsection displays the current status of the 1-Wire interface. Click **Configure** to quickly tweak the configuration, if necessary.

Status

🟢 Data is received via the 1-Wire interface and it does not contain error values.

🟡 Data is received via the 1-Wire interface, but it also contains error values.

🔴 No data is received via the 1-Wire interface, or it contains only error values.

The 1-Wire interface is disabled.

Serial ports/1-Wire ✕

Port A 🟢

Mode: RFID reader

<u>Configure</u>

Port B 🔴

Mode: Digital Fuel Sensor

<u>Configure</u>

Port C ⚪

This interface is currently disabled.

<u>Configure</u>

1-Wire 🟢

<u>Configure</u>

IO Parameter	Value
Digital Fuel Sensor B1	65535
Temperature sensor0 ID	0x2844A55009000000
Temperature sensor0	27.6 °C

<u>Close</u>

Value Interpretation

The values shown in the IO parameter tables are updated in real-time. The installation assistant changes the statuses according to whether the parameters contain only zero or error values.

Zero values

Values that are equal to zero. The parameters, for which no data is received, are usually filled with zeroes.

For some parameters, zero is a valid value (for example, *GPS speed* should be zero if the vehicle is not moving).

IO Parameter	Value
CAN engine speed	0 RPM

Error values

Values that are equal to the highest possible parameter value (for example, 65535). An absurdly high value is usually an error value.

IO Parameter	Value
Fatigue sensor alert	4.294967E+09

Other values

Values that are not zero or error values are considered proper values. It is up to you to decide, if these values are actually what you are looking for.

IO Parameter	Value
PCB temperature	27 °C

Overall Status

The **Overall status** indicator in the overview bar displays a general status of the installation. The following modules/interfaces are checked:

- Power supply
- Ignition
- GNSS
- Cellular
- Server
- BLE (if enabled)
- CAN (if enabled)
- K-Line (if enabled)
- Tachograph (if enabled)

Status

 All checked modules/interfaces are active and send/receive proper data.

 All checked modules/interfaces are active, but not all of them function properly.

 Some checked modules/interfaces do not send/receive proper data.
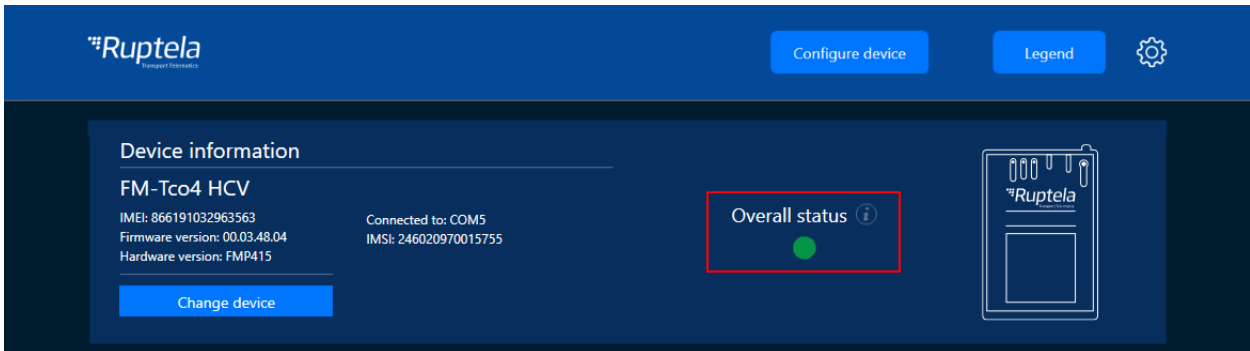

Troubleshooting

If **Overall status** is yellow or red, a **Troubleshoot** button appears, allowing you to investigate what may be causing issues with the installation. Click the **Troubleshoot** button to open a list of possible issues.
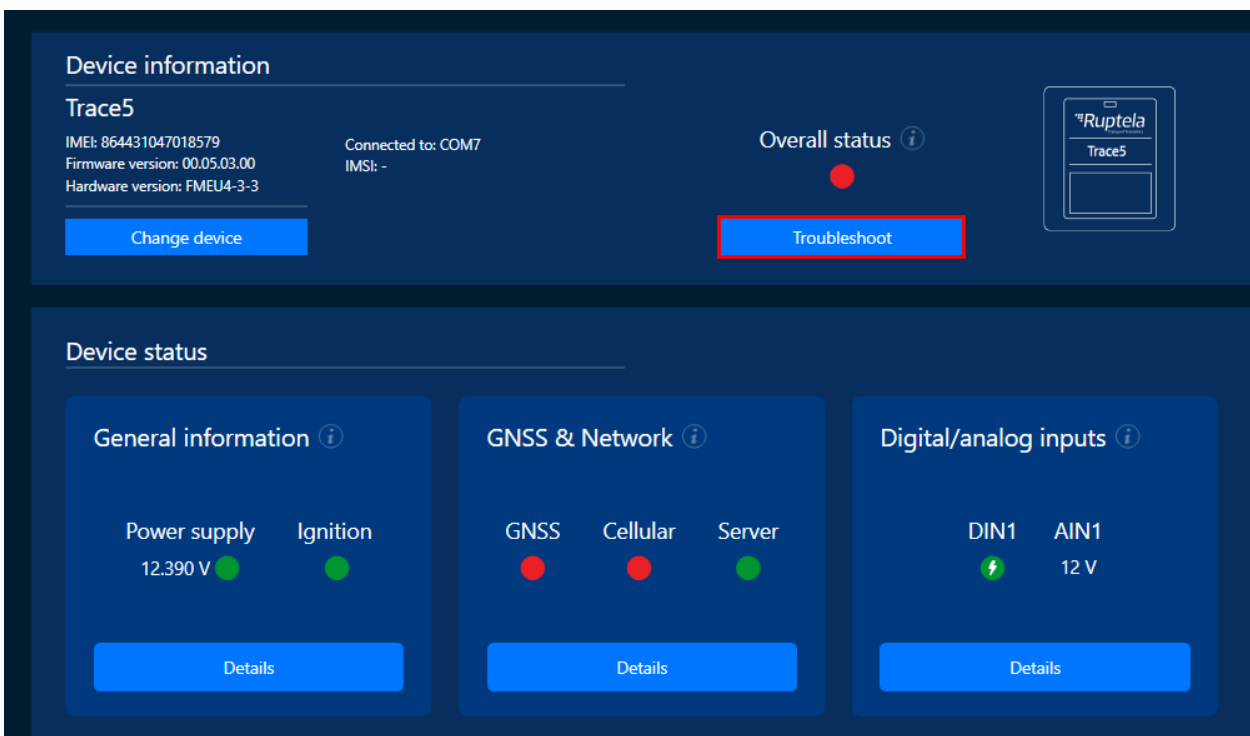
The **Troubleshooting** window contains a list of possible issues according to module/interface statuses. Each issue has a yellow (moderate) or red (critical) impact indicator. Click an issue to expand the issue description. The issue list is not updated while the **Troubleshooting** window is open.
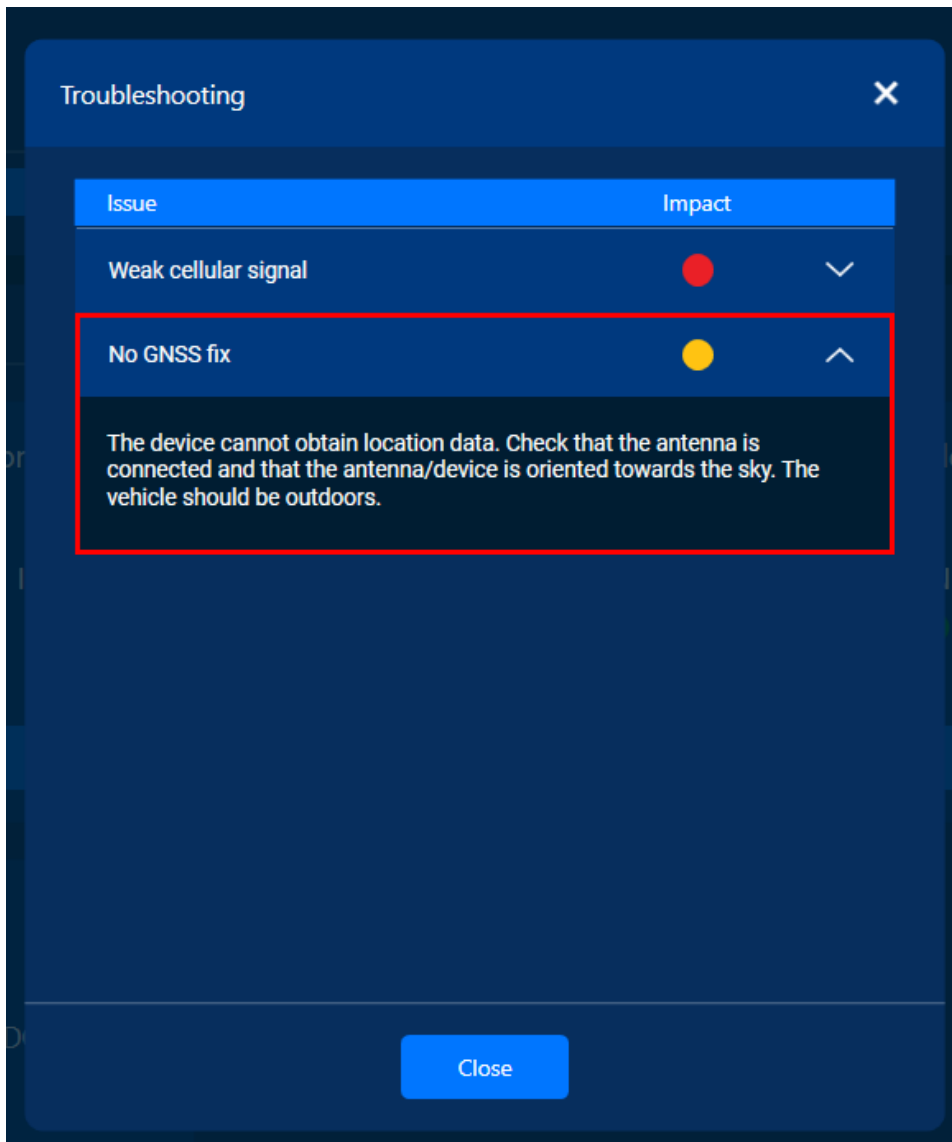

Testing Locked Devices

Some devices may be locked with a USB password. After selecting a device, you will be asked for the USB password if the device is locked. Enter the password and click **OK** to continue to the installation assistant.
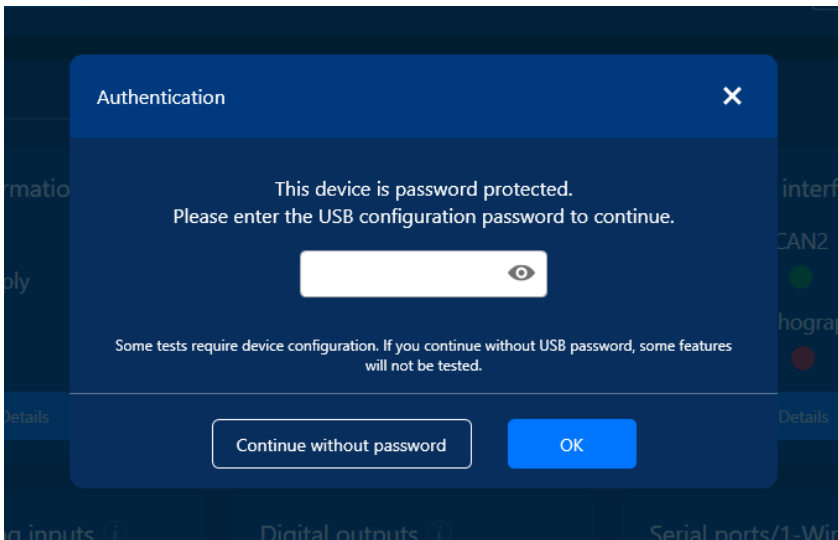
If you do not know the password, you can click **Continue without password** to continue to the installation assistant. However, some functionalities will not be tested, and their status will be *Unknown*.
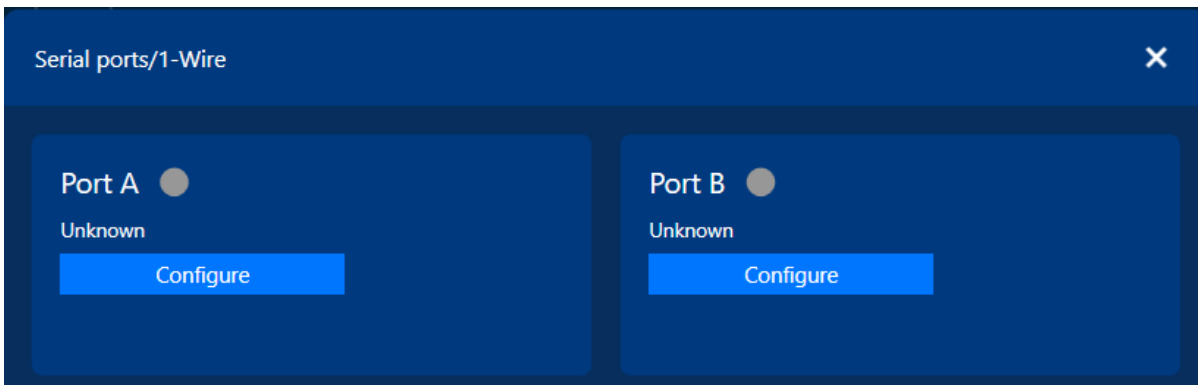
You can enter the password at any time by clicking **Unlock device**.
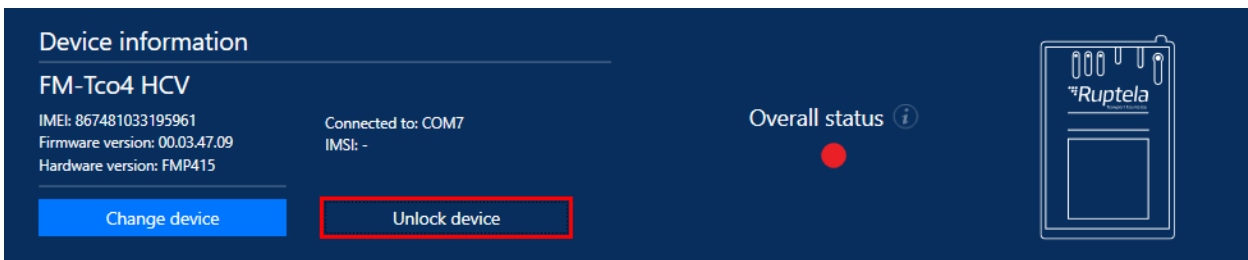
1.10 Device Center Troubleshooting

Commonly reported issues with the Device Center:

1. The Device Center fails to launch
2. Advanced mode fails to load
3. No devices are detected in the Device Center

To solve these issues, we recommend trying the following:

- Updating the Device Center to the latest version
- Downloading the Microsoft Visual C++ Redistributable package:
- x86 architecture: https://aka.ms/vs/16/release/vc_redist.x86.exe
- x64 architecture: https://aka.ms/vs/16/release/vc_redist.x64.exe
- Downloading the Microsoft .NET Framework: https://dotnet.microsoft.com/download/dotnet-framework/net48
- Reinserting the USB cable from both sides if no devices are detected and trying a different or shorter USB cable. Also, you can try to insert the USB cable directly to the PC, without using any hubs.

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