TELTONIKA | Telematics

FTC961

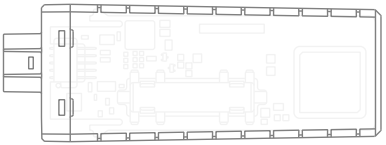
Special and small waterproof tracker

Quick Manual v1.5

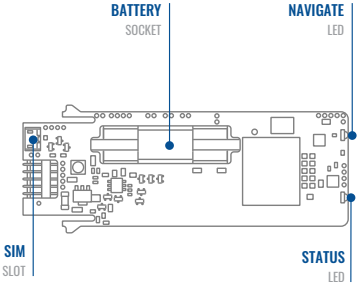
CONTENT

KNOW YOUR DEVICE

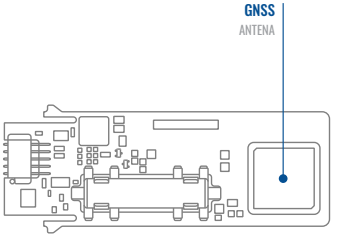
TOP VIEW



BOTTOM VIEW (WITHOUT COVER)

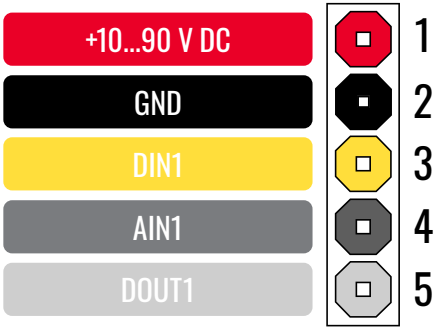


TOP VIEW (WITHOUT COVER)



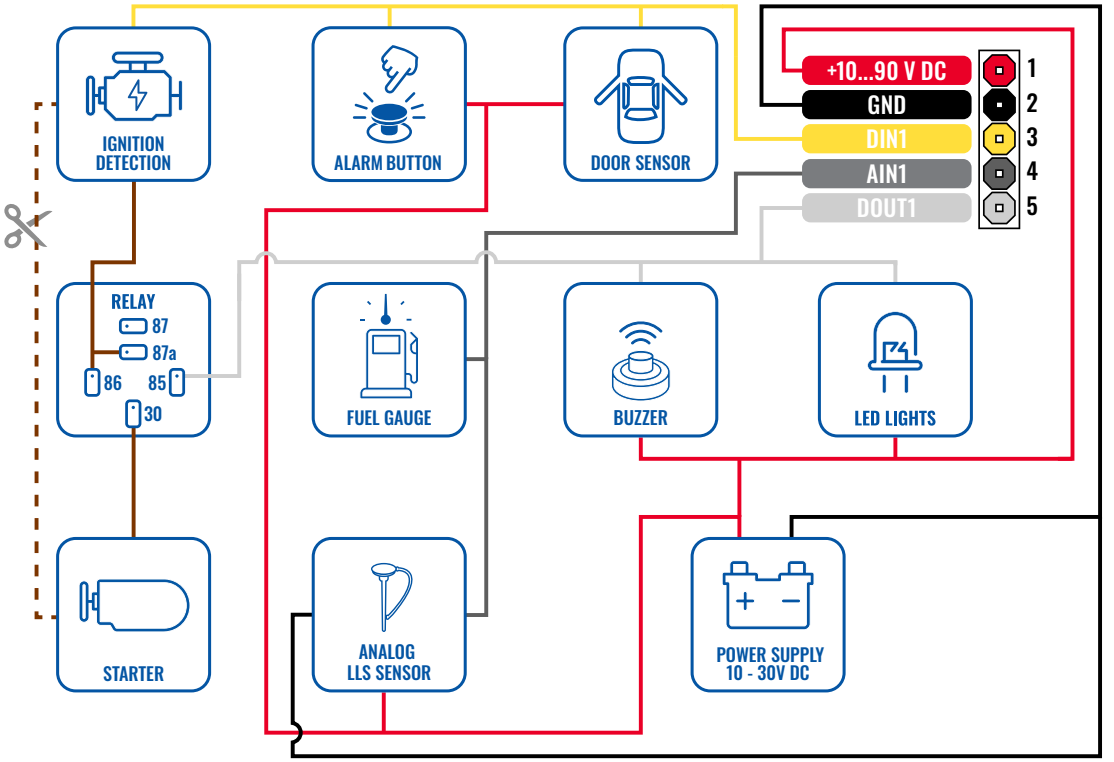
PINOUT

PIN NUMBER	PIN NAME	DESCRIPTION
1	VCC (10-90) VDC (+)	**(Red)** Power supply (+10-90 V DC)
2	GND (-)	**(Black)** Ground
3	DIN1	**(Yellow)** Digital input, channel 1. DEDICATED FOR IGNITION INPUT
4	AIN1	**(Grey)** Analog input, channel 1. Input range: 0-90 V DC
5	DOUT1	**(White)** Digital output. Open collector output. Max. 0,5 A DC



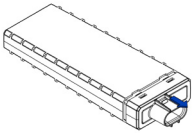
FTC961 pinout

WIRING SCHEME



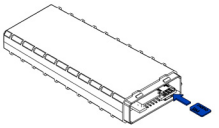
SET UP YOUR DEVICE

HOW TO INSERT MICRO-SIM CARD AND CONNECT THE BATTERY



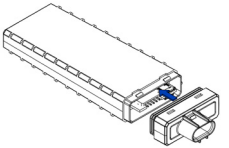
1 COVER REMOVAL

You will receive your device partly closed. Gently remove side cover.



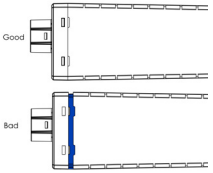
2 MICRO-SIM CARD INSERT

Insert SIM card as shown. Make sure Nano-SIM card cut-off corner is pointing towards SIM slot.



3 ATTACHING COVER BACK

Battery is already connected, so after configuring device fully close casing.



4 DEVICE IS READY

Make sure cover is fully closed.

PC CONNECTION (WINDOWS)

1. Power-up FTC961 with **DC voltage (10-90V)** power supply using **power wires**. LEDs should start blinking.
2. Connect device to computer using Micro-USB cable and install USB driver, see **"How to install USB drivers (Windows)[1]"**

[1] Page 6, "How to install USB drivers"

HOW TO INSTALL USB DRIVERS (WINDOWS)

1. Please download COM port drivers from **here**[1].
2. Extract and run **TeltonikaCOMDriver.exe**.
3. Click **Next** in driver installation window.
4. In the following window click **Install** button.
5. Setup will continue installing the driver and eventually the confirmation window will appear. Click **Finish** to complete the setup.

[1] wiki.teltonika-gps.com/images/d/d0/TeltonikaCOMDriver.zip

CONFIGURATION (WINDOWS)

At first FTC961 device will have default factory settings set. These settings should be changed according to the user's needs. Main configuration can be performed via **Teltonika Configurator tool**[1] (TCT).

[1]/wiki.teltonika-gps.com/view/FTC961

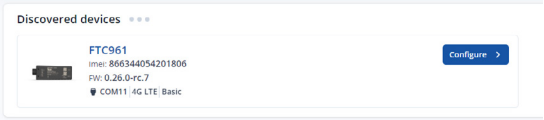
MS .NET REQUIREMENTS

Operating system	MS .NET Framework version	Version	Links
Windows Vista Windows 7 Windows 8.1 Windows 10	MS .NET Framework 4.6.2	32 and 64 bit	www.microsoft.com[1]

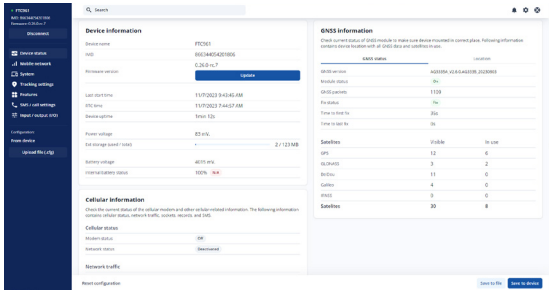
[1] dotnet.microsoft.com/en-us/download/dotnet-framework/net462

Downloaded Telematics Configuration Tool (TCT) setup file will be in compressed archive, extract it and launch TelematicsConfigurationTool.Setup.exe

Once TCT is installed, launch it and you will see connected devices, press configure.



After connection Device status window will be loaded with device, GNSS and Cellular information.



Save to device – Save to device – saves configuration to device.

Upload file – Upload file – loads configuration from file.

Save to file – Save to file – saves configuration to file.

Update – Update – update device firmware.

Reset configuration – Reset configuration – sets device configuration to default.

Most important configurator section is GPRS – where all your server and GPRS settings can be configured and Data Acquisition – where data collecting parameters can be setu p. More details about FTC961 configuration using TCT can be fnd on our **Wiki**[1].

[1] wiki.teltonika-gps.com/view/FTC961_Configuration

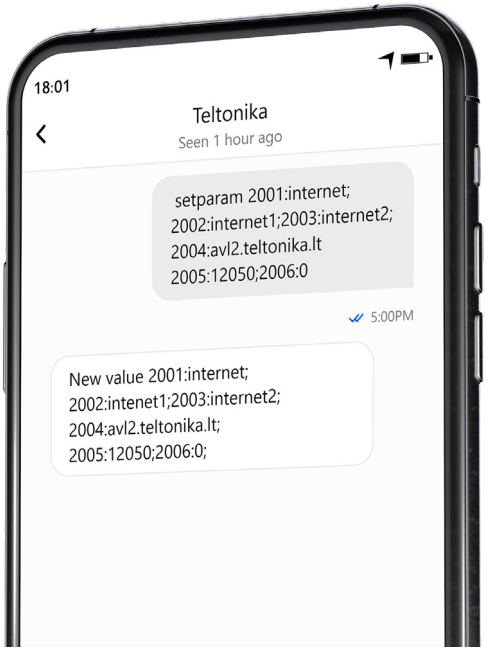
QUICK SMS CONFIGURATION

Default configuration has optimal parameters present to ensure best performance of track quality and data usage.

Quickly set up your device by sending this SMS command to it:

```
«  setparam 2001:APN;2002:APN_username;2003:APN_password;2004:Domain;2005:Port;2006:0»
```

Note: Before SMS text, one space symbols should be inserted.



GPRS SETTINGS:

1. **2001** – APN
2. **2002** – APN username (if there are no APN username, empty field should be left)
3. **2003** – APN password (if there are no APN password, empty field should be left)

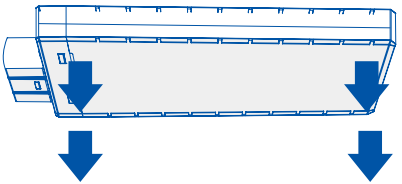
SERVER SETTINGS:

4. **2004** – Domain
5. **2005** – Port
6. **2006** – Data sending protocol (0 – TCP, 1 – UDP)

MOUNTING RECOMMENDATIONS

DEVICE FASTENING

- Locate the battery in your vehicle. If present remove the battery cover to access the battery.
- There is a double sided tape on the back of the device, use it to attach the device on the battery, so that the GNSS antenna and LEDs indicators are facing up.

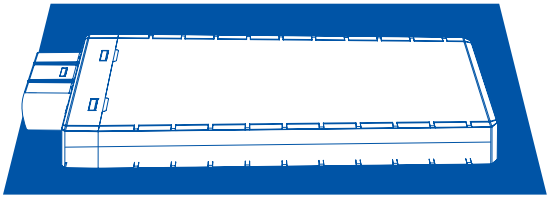


CONNECTING POWER SOURCE

- Device power wire is designed to be directly connected to the positive terminal fastener of the vehicle battery.

CONNECTING GROUND WIRE

- Connect ground wire to the vehicle frame or metal parts that are fixed to the frame.
- If the wire is fixed with the bolt, the loop must be connected to the end of the wire.
- Device ground wire is designed to be directly connected to the negative terminal fastener of the vehicle battery.



LED INDICATIONS

NAVIGATION LED INDICATIONS

BEHAVIOUR	MEANING
Permanently switched on	GNSS signal is not received
Blinking every second	Normal mode, GNSS is working
Off	GNSS is turned off because: Device is not working or Device is in sleep mode
Blinking fast Constantly	Device firmware is being flashed

STATUS LED INDICATIONS

BEHAVIOUR	MEANING
Blinking every second	Normal mode
Blinking every two seconds	Sleep mode
Blinking fast for a short time	Modem activity
Off	Device is not working or Device is in boot mode

BASIC CHARACTERISTICS

MODULE

Name	FTC961-QJAB0: Quectel EG915U-EU with AG3335
Technology	LTE CAT 1/GSM/GPRS/GNSS

GNSS

GNSS	GPS, GLONASS, GALILEO, BEIDOU
Receiver	L1: 75 channel
Tracking sensitivity	-165 dBM
Position Accuracy	<1.8 m CEP
Velocity Accuracy	< 0.1 m/s (within +/- 15% error)
Hot start	< 1 s
Warm start	< 24 s

CELLUAR

2G bands	GSM: B2/B3/B5/B8
4G bands	LTE FDD (CAT 1): B1/B3/B5/ B7/B8/ B20/B28
Data transfer	LTE FDD (CAT 1): Max. 10 Mbps (DL) / Max. 5 Mbps (UL) GSM (GPRS): Max. 85.6 Kbps (DL) / Max. 85.6 Kbps (UL)

Transmit power	Class 5 for GSM850/900: 30±5dBM Class 3 for GSM1800/1900: 29±5dBM Class 3 for LTE-FDD: 26±5dBM
Data support	SMS (TEXT, PDU), Network protocols (TCP, UDP)

POWER

Input voltage range	10 - 90 V DC
Back-up battery	320 mAh Li-Ion battery 3.7 V
Internal fuse	3A

INTERFACE

Digital Inputs	1
Digital Outputs	1
Analog Inputs	1
USB	2.0 USB Type-C
LED indication	2 status LED lights
SIM	Nano-SIM
Memory	128MB internal flash memory

PHYSICAL SPECIFICATION

Dimensions	118x48x18.5 mm (L x W x H)
Weight	118 g

OPERATING ENVIRONMENT

Operating temperature (without battery)	-40 °C to +85 °C
Storage temperature (without battery)	-40 °C to +85 °C
Operating temperature (with battery)	0 °C to +40 °C
Storage temperature (with battery)	-20 °C to +45 °C for 1 month -20 °C to +35 °C for 6 months
Operating humidity	5% to 95% non-condensing
Ingress Protection Rating	IP69K
Battery charge temperature	-20 °C to +45 °C for 1 month
Battery storage temperature	-20 °C to +35 °C for 6 months

FEATURES

Sensors	Accelerometer
Scenarios	Over Speeding detection, Jamming detection, Unplug detection, Trip
Sleep modes,	GPS Sleep, Online Deep Sleep, Deep Sleep, Ultra Deep Sleep
Configuration and firmware update	FOTA Web, Teltonika Configurator (TCT)
Time Synchronization	GNSS, NTP
Ignition detection	Accelerometer, External Power Voltage

SAFETY INFORMATION

This message contains information on how to operate FTC961 safely. By following these requirements and recommendations, you will avoid dangerous situations. You must read these instructions carefully and follow them strictly before operating the device!

- The device uses a 10 V...90 V DC power supply. The nominal voltage is 12 V DC. The allowed range of voltage is 10 V...90 V DC.
- To avoid mechanical damage, it is advised to transport the device in an impact-proof package. Before usage, the device should be placed so that its LED indicators are visible. They show the status of device operation.
- Before unmounting the device from vehicle, ignition **MUST be OFF**.

Do not disassemble the device. If the device is damaged, the power supply cables are not isolated or the isolation is damaged, DO NOT touch the device before unplugging the power supply.

All wireless data transferring devices produce interference that may affect other devices which are placed nearby.

The device must be connected only by qualified personnel.

The device must be firmly fastened in a predefined location.

The programming must be performed using a PC with autonomic power supply.

Installation and/or handling during a lightning storm is prohibited.

The device is susceptible to water and humidity if the device housing is not properly closed

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Battery should not be disposed of with general household waste. Bring damaged or worn-out batteries to your local recycling center or dispose them to battery recycle bin found in stores.

WARRANTY

We guarantee our products 24-month warranty[1] period.

All batteries carry a 6-month warranty period.

Post-warranty repair service for products is not provided.

If a product stops operating within this specific warranty time, the product can be:

- Repaired
- Replaced with a new product
- Replaced with an equivalent repaired product fulfilling the same functionality
- Replaced with a different product fulfilling the same functionality in case of EOL for the original product

[1] Additional agreement for an extended warranty period can be agreed upon separately.

WARRANTY DISCLAIMER

- Customers are only allowed to return products as a result of the product being defective, due to order assembly or manufacturing fault.
- Products are intended to be used by personnel with training and experience.
- Warranty does not cover defects or malfunctions caused by accidents, misuse, abuse, catastrophes, improper maintenance or inadequate installation – not following operating instructions (including failure to heed warnings) or use with equipment with which it is not intended to be used.
- Warranty does not apply to any consequential damages.
- Warranty is not applicable for supplementary product equipment (i. e. PSU, power cables, antennas) unless the accessory is defective on arrival.
- **More information on what is RMA**[1]

[1] wiki.teltonika-gps.com/view/RMA_guidelines