FTW880

Fast & Easy tracker

Quick Manual v1.2 | 2025-03-13

CONTENTS

GLOSSARY

CEP – Circular Error Probable: a statistical statistical measure used to describe the accuracy of a positioning system, commonly used in the context of GNSS. CEP represents the radius of a circle, centered on the true position, within which a given percentage (usually 50%) of the measured positions are expected to fall.

COM port – Serial communication interface that is used to transfer information to/from devices such as modems, terminals and various peripherals.

COLD start – A COLD start occurs when the GNSS receiver lacks all the necessary information for a position fix, requiring it to start from scratch. This means it needs to acquire and decode the almanac and ephemeris data from the satellites, determine the satellite positions, and calculate its position.

FOTA – Firmware-Over-The-Air.

HOT start – A HOT start occurs when the GNSS receiver has all the necessary information to calculate a position fix readily available. This includes the almanac and ephemeris data, the approximate time, and its last known position.

IMEI – Unique numeric identifier for mobile devices. GSM networks use the IMEI number to identify valid devices. IMEI only identifies the device and has no particular relationship to the subscriber.

NITZ – Network Identity and Time Zone: a mechanism in GSM, used to provision time, date and other parameters to mobile devices in a network.

NTP – Network Time Protocol: a networking protocol for clock synchronization between computer systems.

SELV – An electrical system in which the voltage cannot exceed 50 VAC or 120 VDC under normal conditions, and under single-fault conditions, including earth faults in other circuits.

Record – AVL data stored in device memory. AVL data contains GNSS and I/O information.

WARM start – A WARM start occurs when the GNSS receiver has some, but not all, of the necessary information for a position fix. It might have valid almanac data but needs to download new ephemeris data or doesn't have an accurate estimate of its current time or position.

ℹ SIM card should be inserted in the module while the connector is plugged off (while module has no power).

SAFETY INFORMATION

This section contains information on how to operate FTW880 safely. By following these requirements and recommendations, you will avoid dangerous situations. You must read these instructions carefully before operating the device and follow them strictly!

SIGNALS AND SYMBOLS

Warnings and cautions which are general to the use of the device under all circumstances are included in this section. Some warnings and cautions are also inserted within the manual where they are most meaningful.

CAUTION! Cautions alert users to exercise appropriate care for safe and effective use of the product.

WARNING! This classifies a hazard of medium risk level. Failure to comply with the warning may result in serious injury.

Please note: Notes provide additional guidelines or information.

— The device uses a 10 V...30 V DC power supply. The nominal voltage is 12 V DC. The allowed range of voltage is 10 V...30 V DC.

CAUTION: Using a power supply outside this range may result in damage to the device or minor injuries. Always verify the power source before connection.

— 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.

WARNING: 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.

WARNING: 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.

This sign on the package means that all used electronic and electric equipment should not be mixed with general household waste.

DATA SAFETY AND PRIVACY

In accordance with the General Data Protection Regulation (GDPR), this Data Processing Agreement (DPA) establishes obligations between Teltonika, the data processor, and its customers, acting as data controllers. The DPA outlines how Teltonika will handle customer data while adhering to GDPR regulations. This includes details on the data Teltonika can process, security measures in place, and customer rights concerning their data.

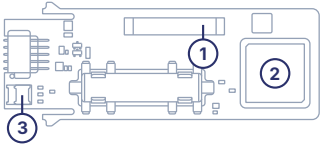
For a comprehensive understanding of the agreement, including permitted sub-processors, data breach procedures, and dispute resolution, please refer to the full Data Processing Agreement:

teltonika-gps.com/about-us/policies-certificates/data-processing-agreement

KNOW YOUR DEVICE

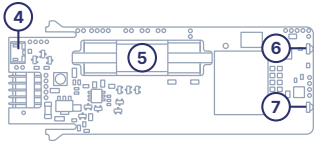
Top view

Top view (without cover)



1. GSM antenna
2. GNSS antenna
3. SIM slot

Bottom view (without cover)



4. USB Type-C connector
5. Battery socket
6. Navigate LED (Blue LED)
7. Status LED (White LED)

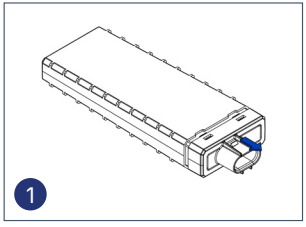
STANDARD PACKAGE CONTAINS

— 10 pcs. of FTW880 trackers

— 10 pcs. of Input/Output power supply cables (0.7 m)

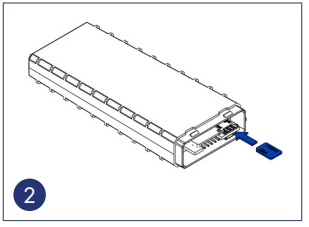
— Packaging box with Teltonika branding

SET UP YOUR DEVICE



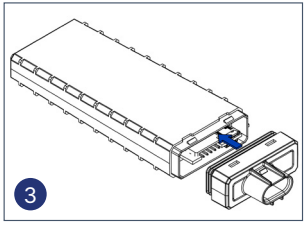
1. Cover removal

You will receivyour device partly closed. Gently remove side cover.



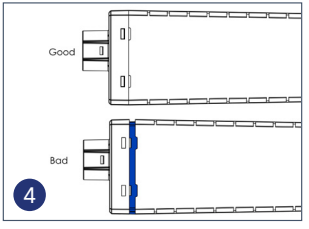
2. Nano-SIM card insert

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.

PINOUT

Pin number	Pin name	Description
1	VCC (10-30)V DC (+)	(Red) Power supply (+10-30 V DC)
2	GND (-)	(Black) Ground

PC CONNECTION (WINDOWS)

1. Power-up FTW880 with **DC voltage (10-30V)** power supply using **power wires**. LEDs should start blinking.
2. Connect device to computer using USB Type-C cable
3. Install USB driver, see "How to install USB drivers (Windows)[1]"

HOW TO INSTALL USB DRIVERS (WINDOWS)

1. Download COM port drivers from here[2].
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.

CONFIGURATION (WINDOWS)

Most Teltonika devices are shipped with default factory settings.Use Telematics Configuration Tool (TCT)[3] to change these settings according to your needs.

	TCT
Operating system	Windows 10 Windows 11
MS .NET Framework version	MS .NET framework 6.0
Version	64 bit
Disk Storage	1 GB of free disk space
Internet	Ethernet port or Wi-Fi w/ network access for auto-update

[1] Page 10, "How to install USB drivers"

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

[3] wiki.teltonika-gps.com/view/QSG_New_platform

QUICK SMS CONFIGURATION

The default configuration ensures best track quality and optimal 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»
```

1. Before SMS text, one space symbol should be inserted. This space is dedicated for device SMS password.

GPRS SETTINGS:

2. **2001** – APN
3. **2002** – APN username (leave field empty if there is no APN username)
4. **2003** – APN password (if there are no APN password, empty field should be left)

SERVER SETTINGS:

5. **2004** – Domain
6. **2005** – Port
7. **2006** – Data sending protocol (0 – TCP, 1 – UDP)

DEFAULT CONFIGURATION SETTINGS

MOVEMENT AND IGNITION DETECTION:

Vehicle movement will be detected by accelerometer

Ignition will be detected by vehicle power voltage between 13.2 – 30 V

DEVICE MAKES A RECORD ON STOP IF:

1 hour passes while vehicle is stationary and ignition is off

RECORDS SENDING TO SERVER:

Every 120 seconds, records are sent to the server (if device has made a record)

DEVICE MAKES A RECORD ON MOVING IF ONE OF THESE EVENTS HAPPEN:

Every 300 seconds

Vehicle drives 100 meters

Vehicle turns 10 degrees

Speed difference between last coordinate and current position is greater than 10 km/h

After successful SMS configuration, FTW880 device will synchronize time and update records to configured server. Time intervals and default I/O elements can be changed by using TCT[1] or SMS parameters[2].

[1] wiki.teltonika-gps.com/view/FTW880_Configuration

[2] wiki.teltonika-gps.com/view/FTW880_SMS/GPRS_Commands

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

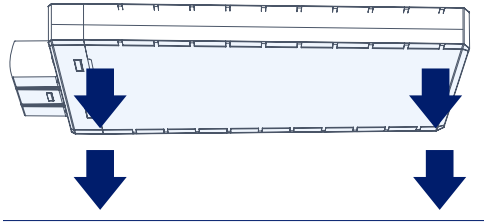
— Device power wire is designed to be directly connected to the positive terminal fastener of the vehicle battery.

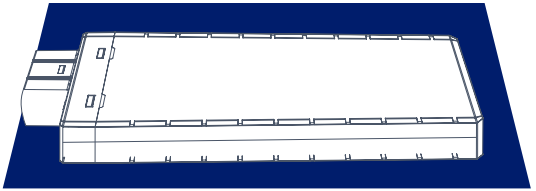
CONNECTING GROUND WIRE

— 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.





TROUBLESHOOTING

Troubleshooting section provides guidance to resolve frequently encountered issues during the setup and operational phases of the FTW880 device.

COMMON ISSUES AND SOLUTIONS (FAQ)

Problem	Solution
The device does not turn on when connected to power.	1. Ensure the input voltage range is within 10 - 30 V DC. 2. Avoid overvoltage and ensure that the device is mounted and connected according to mounting recommendations.
Inability to receive GPS signals.	1. Ensure that the device is mounted correct side up according to mounting recommendations 2. Check if device is not obstructed by metallic surfaces or other thick materials

FREQUENTLY USED SMS/GPRS COMMANDS

Command	Description	Response sent on success?	Response sent on failure?
cpureset	Restarts the device	No	Yes
getstatus	Returns status of the device	Yes	Yes
allver	Returns information about device firmware and hardware	Yes	No
web_connect	Triggers FOTA service / connection	Yes	Yes

LED INDICATIONS

NAVIGATION LED

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

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	FTW880 - Q2AB0: Quectel BG95-M1 with AG3335
Technology	LTE CAT M1/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	< 25 s
Celluar	
4G bands	LTE FDD (CAT M1): B1/B2/B3/B4/B5/B8/ B12/B13/B18/B19/B20/B25/B26/B27/B28/ B66/B85
Data transfer	LTE FDD (CAT M1): Max. 588 Kbps (DL) / Max. 1119 Kbps (UL)
Transmit power	Class 5 for LTE-FDD 21 ± 2.7dBM

Data support	SMS (TEXT, PDU), Network protocols (TCP)

Power

Input voltage range	10-30 V DC
Back-up battery	320 mAh Li-Ion battery 3.7V (1.18 Wh)
Internal fuse	3A

Interface

GNSS antenna	Internal High Gain
GSM antenna	Internal High Gain
USB	2.0 USB Type-C
LED indication	2 status LED lights
SIM	Nano-SIM
Memory	128MB internal flash memory

Physical Specification

Dimensions	118×48×18.5 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 +45 °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	0 °C to +45 °C
Battery storage temperature	-10 °C to +50 °C for 1 month -10 °C to +35 °C for 3 months 0 °C to +30 °C for 1 year

Features

Sensors	Accelerometer
Scenarios	Green Driving, Over Speeding detection, Jamming detection, Excessive idling detection, Unplug detection, Crash Detection, Auto Geofence, Trip
Sleep modes	Deep Sleep, Online Sleep, Power Off Sleep
Configuration and firmware update	FOTA Web, Teltonika Configurator (TCT)
Time Synchronization	GNSS, NITZ, NTP
Ignition detection	Accelerometer, External Power Voltage

CERTIFICATION AND APPROVALS

IC NOTICE

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

This Class B digital apparatus complies with Canadian ICES-003.

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. To comply with RSS-102 RF Exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for the transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

REMARQUE IC

Cet appareil est conforme aux Normes RSS d'Industy Canada. Son utilisation est soumise à deux conditions:

1. Ce dispositif ne peut pas provoquer d'interférences, et
2. Ce dispositif doit accepter toutes les interférences reçues, y compris les interférences susceptibles de provoquer un fonctionnement non souhaité.

Cet appareil de classe B est conforme à la norme canadienne ICES-003.

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Pour se conformer aux exigences de conformité d'exposition aux radiofréquences RSS-102, cette subvention s'applique uniquement aux configurations mobiles. Les antennes utilisées pour l'émetteur doivent être installées pour fournir une distance de séparation d'au moins 20cm de toutes les personnes et ne doivent pas être co-localisées ou fonctionner en conjonction avec une autre antenne ou émetteur.

- 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.
- 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 generates, 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 or more 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.
- Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. To comply with FCC RF Exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for the transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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

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[2]

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

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

TELTONIKA

COMPANY DETAILS

Teltonika Telematics
Saltoniškių g. 9B,
LT-08105 Vilnius, Lithuania
Phone: +370 612 34567

TELEMATICS WEBSITE

teltonika-gps.com

For more information about our products and services, please visit our website: teltonika-gps.com.

WIKI KNOWLEDGE BASE

wiki.teltonika-gps.com

For technical assistance, troubleshooting, and further inquiries, refer to our comprehensive support resources at our technical assistance portal: Teltonika Wiki.

FOTA WEB

fota.teltonika.lt