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TOPFLYtech TORCHX100 Torch X 100 OBDII GPS Tracker

Introduction

Thanks for your purchase of the high-quality GPS tracker from TOPFLYtech. Please read this user manual carefully before installation and operation. Information in this manual is the property of TOPFLYtech. Changes to the specifications and features in this manual may be made by TOPFLYtech without prior notice. No part of this manual could be reproduced, copied, translated, transmitted, or published in any form or by any means without TOPFLYtech's prior written permission.

The tracker is using GNSS & LTE technologies and could collect device coordinates,

then transfer them via LTE network to the server. It provides customers with cost-effective, efficient, and safe management. It has been widely used in commercial transportation, company vehicle fleet management, intelligent transportation, logistics, car rental, engineering machinery, marine transportation, and other segments.

Quick Reference

FOTA (firmware over the air) Notification

- TOPFLYtech is committed to providing clients with the best user experience.
- We are offering an automatic firmware update feature for every device.
- This feature allows devices to always have the latest version of firmware.
- It can save clients the time and effort of updating firmware manually.
- Please note that this feature is enabled by default.
- If you want to turn it off, please contact TOPFLYtech.
- If this feature is disabled, the fw update can only be done by sending the upgrade command manually.

Product Specifications

| **LTE Specifications**

Operating Band	LTEFDD: B2/B4/B5/B12/B13/B25/B26/B66 LTE TDD: B41

GNSS Specifications

GNSS Chipset	Qualcomm Gen SC GNSS receiver
Parallel GNSS	GPS+Glonass+Beidou+Glonass
Receiver type:	33 tracking / 99 acquisitions- channel GNSS

	receiver
Sensitivity	Acquisition: -149 dBm Tracking: -163 dBm
Position Accuracy in open sky (CEP-50)	Autonomous: < 2 m
Standalone TTFF	Cold Start: < 29S Warm Start: < 27S Hot Start: < lS

BLE

BLE Band	2.402 – 2.480 GHz

Interfaces

OBDII Connector (The function varies under different configurations)	GMLAN (GM or Mazda Single-wire CAN) SAE J1850-VPW, SAE J1850-PWM, ISO 15765, SAE J1939, ISO 14230(KWP2000), ISO9142-2, SAE J1708

SIM card	Nano SIM card slot
LTE/GNSS/BLE Antenna	Internal only

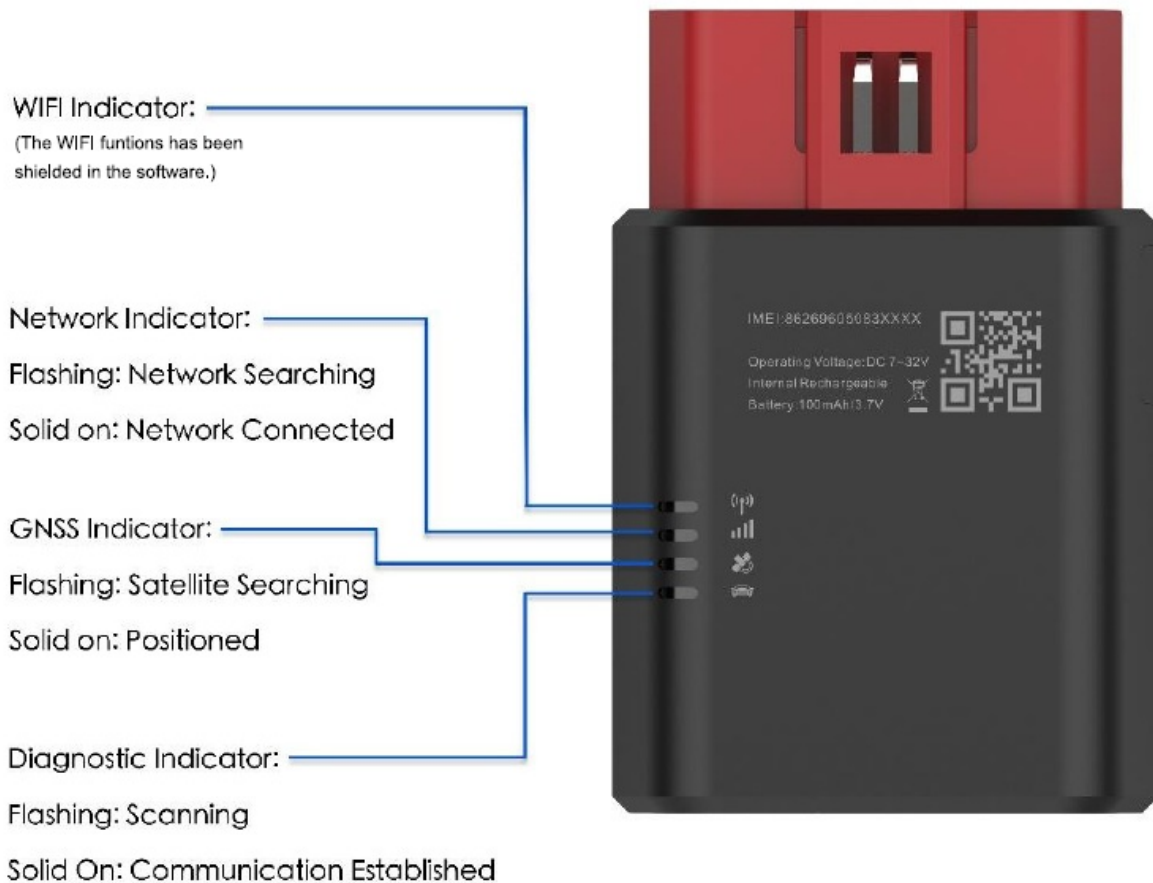|	
Indicator LED	Network, GNSS, and Diagnostic
USB	Debug
FOTA	Yes
BLE (Bluetooth Low Energy)	4.1
Buzzer	Event triggering
General Specifications	
Dimensions	52.8mm*47.8mm*24.8mm (2.08″ *1.88″ *0.98″)
Weight	73.0g (2.6oz)
Backup Battery	Li- Polymer 100 mAh/3.7V
Operating Voltage	7V to 32V DC
Operating Temperature	-30°C – +80°C (-22°F – 176°F)
Storage Temperature	-40°C – +85°C (-40°F – 185°F)
Air Interface Protocol	
Transmit Protocol	TCP, UDP, MQTT, SMS
Data Security & Encryption Option	MD5/ AES128
BLE Accessory Support	Yes
OBDII Data Reading	Yes
Diagnostic Trouble Code (DTC)	Read and Erase

Scheduled Timing/angle/distance Report	Report position and status at preset intervals
External Power Status Alarm	Report when external power is disconnected
Low Power Alarm	Report when the backup battery is low
Network Signal Jamming Detection	Report network jamming
Driving Behavior Monitoring	Aggressive driving behavior detection, e.g. , Harsh braking and acceleration
Crash Detection	Accident data collection for reconstruction and analysis
Data Roaming Control	Avoid additional data consumption
Industry Certifications	
CE, RCM, IC, FCC, PTCRB, AT&T, US Cellular, T-Mobile, Verizon, TDRA, NBTC, CITC, Anatel	

LED indicator

WIFI Indicator:
(The WIFI funtions has been shielded in the software.)

Network Indicator:
Flashing: Network Searching
Solid on: Network Connected

GNSS Indicator:
Flashing: Satellite Searching
Solid on: Positioned

Diagnostic Indicator:
Flashing: Scanning
Solid On: Communication Established

Note: Indicator lights will go out automatically after the tracker turns on for 8 minutes.

Installation Guide

SIM Card Pre-Installation Note

1. SIM card data service should be enabled.
2. If the SIM card is locked via PIN, please unlock it first.
3. Ensure there is sufficient balance/data in the SIM card.

SIM Card Installation

1. Follow the SIM icon direction, then insert the SIM card
2. Give a slight push, then release.

Installation

1. This is a plug-and-play tracker. Before the installation, please ensure your vehicle has an OBDII connector.
2. After plugging the tracker into the car's OBDII connector, it will automatically power

on, and the LED indicators will start to flash. This indicates a successful installation.

3. Please ensure the tracker is firmly connected to the car's OBDII connector.
4. Ignition Detection and OBDII Data Reading

The tracker detects ignition status and reads OBDII data automatically.

Tracker Configuration

- Refer to the frequently used operation commands in this manual

Tracker Operation

Power on and off

1. Power on: Insert a SIM card and connect the tracker to external power. It will turn on automatically.
2. Power off: Remove the SIM card first, then disconnect the tracker from external power. It will power off automatically in around 5-10 seconds.

Location Search

1. SMS Query

   Send a location inquiry SMS command (refer to the Operation Command in this manual) to the tracker. The location information will be sent to you through SMS.
2. Platform Query

   Connect your tracker to the tracking platform then check the real-time position on line. (Additional tracking service charge may happen. Contact with your service provider to get more details.)

Quick Troubleshooting

Unable to Connect to the Tracking Platform

1. Check the APN and IP settings.
2. Check that the SIM card supports the specific network and that the data service is enabled.

3. Make sure there is no limitation or already added server IP to the IP whitelist when using an M2M SIM card.
4. Check the remaining balance or data of the SIM card.

Tracker Shows Offline

1. Check the external power voltage to see whether the tracker is disconnected from external power.
2. Check if the vehicle entered the network blind area.
3. Check the balance or data of the SIM card.
4. If the connection is lost on the last several days of the month, check whether the data service is terminated by the carrier due to reaching the data cap.

Unable to locate

1. Is the device shielded by metallic stuff?
2. Does the vehicle enter an area with no satellite coverage?

Location Drift

- In an area with a poor GNSS signal (like areas with lots of high buildings), location drift may happen. When move to an open area, the drift will no longer exist.

No Command Reply

1. Check the command format. Make sure it's correct.
2. Vehicle may be in a network blind area.
3. Ensure the SIM card is properly inserted.

Warranty and Stock

- The standard warranty period is 12 months starting from the date of purchase.
- If the tracker will be stored for a long time, please connect it to the external power and recharge the internal battery (10 hours) every 3 months. It will be helpful to the internal battery life.

Frequently Used Operation Commands (SMS)

- Commands are not case-sensitive and can be sent via mobile phone or the Web. The content is separated by a comma and ends with #. When set successfully, the tracker will return OK and execute it. Otherwise, there is no message returned.

Function	Command Format
APN Setting	**APN, Current** PIN, APN Name, User Name, Password#
Server Setting	IP, Current PIN, Server Domain Name, or IP, Port Number#
Reporting Interval Setting	**TIMER,Current** PIN,Upload Time(ACC on)Upload Time(ACC off)Angle Compensator.Distance Compensation#-
Enable ELD	**ELDTIME,Current** PIN,ELD upload Interval#
Heartbeat Setting	HBT, Current PIN, Heartbeat Interval#
PIN Setting	**PASSWORD, Current** PIN, New PIN#
Towing Setting	DRAG, Current PIN, Distance#
Speeding Setting	SPEED, Current PIN, Upper Speed Limit#
Position Inquiry	GOOGLE, Current PIN#
Forgot the PIN	**MYSELF#**

APN Setting

- APN, Current PIN, APN Name, Username, Password#

Note

1. Tracker will return "SET APN OK" when it receives this command.
2. If there is no GPRS User Name and APN PIN, the SMS setting is: APN, Current PIN, APN Name,#
3. If there is no APN PIN, the SMS setting is: APN, Current PIN, APN Name, Username,#

Server Setting

- IP, Current P/N, Server Domain Name, or /or P, Port Number#

Server Domain Name or IP:

- Range: Letters, Numerals, and Symbols
- Length Limit 1-128

Port Number:

- Range: Positive Integer
- Length Limit 0-65535

Note: Tracker will return "SET IP OK" when it receives this command.

Reporting Interval Setting

- TIMER, Current P/N, Up/down Time(ACC on): Up/down Time(ACC off).Angle Compensation:
- Distance Compensation#

Upload Time (ACC on):

- Range: Positive Integer
- Range Limit 0, 3-65535
- Default: 25

Upload Time (ACC off):

- Range: Positive Integer

- Range Limit 0, 3-65535
- Default: 600

Angle Compensation:

- Range: Positive Integer
- Range Limit 0-90 degrees
- Default: 30 degrees

Distance Compensation:

- Range: Positive Integer
- Range Limit: 0 – 65535 meters
- Default: 0 meters

Note: Tracker will return "SET TIMER OK" when it receives this command.

ELDTI M E,0000, a#

- a= is the time in seconds, used to set how often to send ELD data.
- a= 0 or 3-65535, where a = 0 disables, Default A = 5

Heartbeat Setting

- HBT, Current PIN, Heartbeat Interval#

Heartbeat Interval:

- Range: Positive Integer
- Range Limit: 1 – 255 minutes
- Default: 5 minutes

Note: Tracker will return "SET HBT OK" when it receives this command.

PIN Setting

- PASSWORD, Current PIN, New PIN#

PIN:

- Range: Letters and Numerals
- Length Limit 1 – 10
- Default: 0000

Note: Tracker will return "SET PASSWORD OK" when it receives this command.

Towing Setting

- DRAG, Current PIN, Distance#

Distance:

- Range: Positive Integer
- Range limit 0-65535 meters
- Default: 0

Note:

1. Tracker will return "SET DRAG OK" when it receives this command.
2. This function will be enabled automatically when ACC is off.
3. The recommended distance setting is no less than 100 meters.

Speeding Setting

- SPEED,Current P/N,Upper Speed Limit#

Upper Speed Limit (KM/H):

- Range: Positive Integer
- Range limit 0-32767
- Default: 0

Note:

1. Tracker will return "SET SPEED OK" when it receives this command.
2. Set "Upper Speed Limit" to O, will turn off speed alarm.

Position Inquiry

- GOOGLE, Current PIN#
- **Note:** Tracker will return the below SMS message when it receives this command.
- http://maps.google.com/maps?q= <Latitude>, <Longitude>
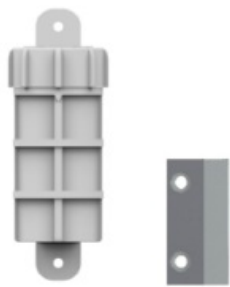
Forgot the PI N

- MYSELF#

Note:

1. If the manager's phone number has been set, only the manager can use "MYSELF#". If no manager setting, the tracker will return the IMEI and current PIN when it received "MYSELF#" from any mobile phone.
2. This command can be used to retrieve the password.

Optional Accessories List

Product	Description	Photo for Reference
TA06	OBDII Power Extension Cable (80cm)	
TA14	J1939 to OBDII Cable (80cm)	

TA20	External TPS Set (BLE)	
TA22	Internal TPS Set (BLE)	

TSTHI-B	BLE 5.0 Wireless Temperature and Humidity Sensor	
TSDTI-B	BLE 5.0 Wireless Door and Temperature Sensor	
TSRI-B	BLE 5.0 Wireless Relay	
TA43	OBDII Extension Cable (80cm) CAN(P6+ Pin14)+Power(Pi n16)+GND(Pin 4+ Pin5)	
TA44	OBDII T Cable (80cm) Extension Connector: CAN(P6+ Pin14)+ Power(Pi n16)+G ND(Pi n4+Pin5) Male to Female Connector: Full Pin to Pin	

TA40	OBDII Y Cable (30cm + 100cm)	
S07	T-button BLE 5.1 Key Fob or Panic button	

FOTA Notification

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- It can save clients the time and effort of updating firmware manually.
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- If this feature is disabled, the fw update can only be done by sending the upgrade command manually.

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, according 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 under the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Suppose this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on. In that case, 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 to 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.

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

Caution!

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

IMPORTANT NOTICE:

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

ISEDC Warning

This device complies with Innovation, Science, and Economic Development Canada licenceexempt 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.

The device is compliance with RF exposure guidelines, users can obtain Canadian information on RF exposure and compliance.The minimum distance from body to use the device is 20cm.

Documents / Resources

TOPFLYtech Torch X 100 OBDII GPS Tracker User Manual	[TOPFLYtech TORCHX100 Torch X 100 OBDII GPS Tracker](#) [[pdf](#)] User Manual 23TORCHX100, 2ASWY23TORCHX100, TORCHX100 Torch X 100 OBDII GPS Tracker, TORCHX100, Torch X 100 OBDII GPS Tracker, OBDII GPS Tracker, GPS Tracker, Tracker

References

- [User Manual](#)

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