

# Getting Started Guide

Advanced Telematics Tracker

Made by: flex  
Model: FT700-LM0Q-  
GL/FT700-LM0Q-  
TE/FT750-L430-GL

# In-Cab Advanced Telematics Tracker

## Safety Warnings

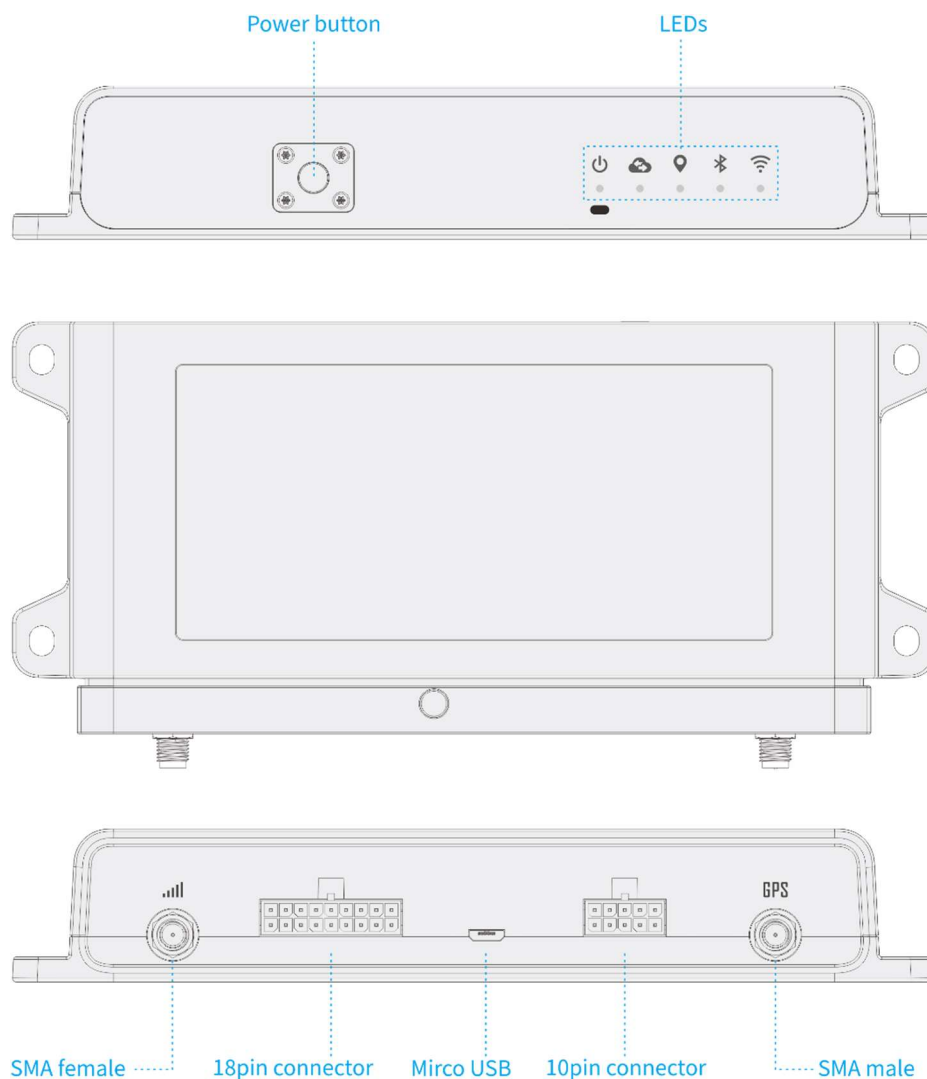
➤ **Read this complete guide before installing the device.**

This device contains a Lithium Ion battery. If these guidelines are not followed, the battery may experience a shortened life span or may present a risk of damage to the device, fire and/or bodily injury.

- Do not penetrate the battery or device with a nail etc., nor make a hole in the battery.
- Do not throw the battery or the device into fire, nor heat the battery above the specified operating temperature range of 158°F / 70°C.
- Do not place the device in direct sunlight in an enclosed space such on the dashboard of an unattended vehicle.
- Do not disassemble nor modify the battery.
- Do not put the battery into a microwave oven or high-pressure container.
- Contact your local waste disposal department to dispose of the device/battery in accordance with applicable local laws and regulations.

## About Your New Tracker

The device you are about to install connects to your vehicle's onboard diagnostics port to gather applicable diagnostics data. It contains a GPS receiver for location and an LTE cellular modem to communicate.



## Multi-function Button

The device has multi-functions in one button. It can be used to power on and off the device, force a manual sync with the device management server and to check for any error conditions. The button has the following functions:

| Button Press Duration | Action                                                |
|-----------------------|-------------------------------------------------------|
| 2-4 seconds           | Power on (when off)<br>Check for errors (when on)     |
| 5-10 seconds          | Sync settings with the cloud device management portal |
| >15 seconds           | Power down (if unlocked)                              |

The LEDs indicate device activity at start-up in response to button presses and its live functional status.

|              | GPS                      | Data                           | Power                                      |
|--------------|--------------------------|--------------------------------|--------------------------------------------|
| Off          | GPS Off                  | Modem Off                      | Device off or sleeping                     |
| On           | GPS has location fix     | Connected to cellular network  | System is awake                            |
| Rapid Flash  | Receiving GPS location   | Transferring cellular data     | Telematics transferring data (if equipped) |
| Medium Flash | Searching for satellites | Searching for cellular network | Device unlocked (3 sets of 4)              |

## Powering on the Device

1. Harness the device with external 12, 24 or 48V power supply (typically with the vehicle).
2. Power on the device by holding down the multi-functional button for 2-4s.
3. A power LED will illuminate when the system starts. The device will initiate a set of start-up activities (see start-up sequence LED behavior below).

## Manually Syncing Settings with the Cloud

1. Press and hold the multi-functional button for 5-10s; release when the data LED **illuminates**.
2. The device will now connect to and sync with the cloud; a rapidly flashing data LED should be seen while the device is syncing (Note: Pending activity may delay syncing for a few minutes. If a slow flashing data LED is seen, check the error codes below).
3. The data LED will turn off when the sync is complete.

## Unlocking the Device (for shutdown and configuration)

After powering on, the device will automatically lock itself after 30 minutes to prevent unauthorized personnel from tampering with or powering down the device. Once locked, the device can only be unlocked from the cloud device management portal. To unlock the device, execute the following steps:

- » Unlock the device in the cloud device management portal.
- » Press and hold the multi-function button for 5-10s; release when the data LED illuminates.
- » The device will now connect to and sync with the cloud; a rapidly flashing data LED should be seen.

- » If the device was able to connect to the network and successfully received its unlock command, the power LED will now emit 3 sets of 4 medium flashes. Once unlocked, the user can:
  - Power down the device
  - Connect to Bluetooth (if the device is capable)
  - Connect over serial port to configure the device (if available)
- » **Note:** The device will stay in the unlocked state for 30 minutes after which it will lock itself again

## Error Codes and Troubleshooting

When the device is running, you can check the system status via the multi-function button and LED. The following steps explain how:

1. Press and hold the multi-function button for 2-4s; release when the GPS LED illuminates.
2. If there are any errors, the red, green, or blue LEDs will flash a certain number of times, followed by a 3s pause. It will then flash the next error (if any). Look up the error in the LED table below.
3. Repeat the process from step 1 to see the errors again

### Error Codes

| LED Color | Flash Count | Error                           |
|-----------|-------------|---------------------------------|
| Green     | 1           | SIM Error                       |
|           | 2           | No Network                      |
|           | 3           | Unable to register with network |
|           | 5           | Service activation error        |
|           | 6           | Service sync failure            |
| Blue      | 3           | GPS signal too weak             |
| Red       | 4           | Battery too low to transmit     |
|           | 5           | Error reading telematics data   |
|           | 10          | Other system error              |

### Troubleshooting

| Symptom                                                                                  | Action                                                                              |
|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Power LED slow flashes a repeated pattern of LED flashes after pressing the power button | The device is in error state; check the error codes above for corresponding actions |
| LEDs do not illuminate when power button is pressed                                      | Charge device by connecting a 12V supply to the external connector (if available)   |
| LEDs do not illuminate when power button is pressed after a certain time of charging     | Replace the device                                                                  |

## Record Device Information

Record the following information for activation and for your records:

- » Device Product Name (see image of label below)
- » Device Model Name (see image of label below)
- » Device SN/IMEI (see image of label below)
- » Device ICC ID (if available)



(On the left side of the device)



(On the bottom of the device)

## Pre-installation

### \*Recommended tools and supplies for installation

#### Basic Tools:

- Wire Strippers
- Connector Crimping Tool
- Panel Removal Tool
- Digital Multimeter (DMM)
- T-10S Torx Screwdriver

#### Basic Supplies:

- Ring Terminals
- Cable Zip-Ties
- Electrical Tape
- Spare Fuses (3 Amp)
- Self-Tapping Screws

Review this installation manual to become familiar with all installation procedures and electrical wiring requirements prior to starting the installation. This installation guide has been prepared to provide you with details necessary to complete the device installation.

Use of proper tools and testing equipment is required. Never use a grounding style test light. Use only a Digital Multi Meter (DMM) to test wires in the vehicle.

Ensure that all wiring is protected from heat sources and sharp metal edges and is routed in such manner that it will not get damaged or pinched when vehicle components and trim are reinstalled. Run new wiring along factory harnesses and secure with quality cable zip-ties. Be sure to leave a “service loop” near the device, enough slack in the wiring to allow working room and strain relief.

The device is NOT waterproof, never mount the device in the engine compartment. When mounting the device, determine best possible location under the dash and make sure that the device will be securely attached using self-

tapping screws or cable zip-ties. Do not force or jam the device into tight places instead of mounting it. When mounting the Device, do not obstruct any serviceable areas such as fuse boxes, etc. The device and its wiring must be mounted away from any moving parts such as brake, gas, and clutch pedals and linkages.

## Installation

### \*Identify correct wires

1. Remove any interior/under dash trim necessary to gain access to vehicle's wiring as well as all areas where interconnecting wire harnesses will need to be located.
2. Individually isolate any wires in the device's harnesses that will not be used during installation.
3. It is strongly recommended to locate and connect constant power and ignition wires at the ignition key switch connector behind ignition key cylinder or trace and connect at ignition switch wiring harness running down steering column. (Note: If the ignition switch harness is not accessible, amperage restriction exists, or the vehicle has an electronic starting system, constant power and ignition connections can be made at the interior fuse box)
4. Use a multimeter and the color tables below to identify constant power and ignition wires.
5. The correct constant power wire will have battery voltage +12V (or +24V) present at all times, even when the ignition key is in off position or removed. Connect the device's red wire here.
6. The correct ignition wire will have +12V (or +24V) present only when -- the key is in ON position, during cranking and while motor is running. Connect the device's white/yellow wire here.

### Connector A (18- PIN FCI ) CABLE COLOR TABLE :

| Pin no. | Cable definition                    | Color        |
|---------|-------------------------------------|--------------|
| 1       | Ground                              | Black        |
| 2       | 1-wire                              | Yellow       |
| 3       | CANH (2.0B) / ISO-15765 or J1939    | Blue         |
| 4       | CANL (2.0B) / ISO-15765 or J1939    | Gray         |
| 5       | ADC#1 (48V)                         | Brown/Yellow |
| 6       | RS-232 #2 TxD                       | Gray/Pink    |
| 7       | RS-232 #2 RxD                       | Gray/Brown   |
| 8       | GND                                 | Black        |
| 9       | ADC#2 (48V)                         | Red/Blue     |
| 10      | J1708-                              | Brown/Red    |
| 11      | J1708+                              | Brown/Green  |
| 12      | ISO-9141 K Line                     | White        |
| 13      | ISO-9141 L Line                     | Green        |
| 14      | Digital Input #4 (Programable Bias) | White/Blue   |
| 15      | Digital Output #1 (close to ground) | Black/brown  |
| 16      | Digital Output #2 (close to ground) | Black/Blue   |
| 17      | Digital Output #3 (close to ground) | Black/Orange |
| 18      | Digital Input #5                    | White/black  |

#### CONNECTOR B (10-PIN FCI) CABLE COLOR TABLE:

| Pin no. | Cable definition                             | Color        |
|---------|----------------------------------------------|--------------|
| 1       | Ground                                       | Black        |
| 2       | 12/24/48V Power in                           | Red          |
| 3       | CANH (2.0B or FD) / ISO-15765 or J1939       | Gray/Green   |
| 4       | CANL (2.0B or FD) / ISO-15765 or J1939       | Gray/Yellow  |
| 5       | RS-232 #1 TxD                                | Orange       |
| 6       | RS-232 #1 RxD                                | Pink         |
| 7       | 12V Out (2.5W)                               | Purple       |
| 8       | Digital Input #1_ignition (Programable Bias) | White/Yellow |
| 9       | Digital Input #2 (Programable Bias)          | White/Gray   |
| 10      | Digital Input #3 (Programable Bias)          | White/Green  |

#### \*Chassis Ground Connection

1. Connect the device's ground wire (black) to vehicle's chassis.
2. For a solid connection, use a ring tongue terminal connector, star washer and a self-tapping screw.
3. Do not ground under existing bolts that hold brackets or panels in place.

After wiring installation is complete, turn on the device by holding the power button for 2-4s until the power LED illuminates. You may see the device progress through a series of start-up steps, indicated by different LEDs as detailed below. This process typically takes 2 minutes but can take up to 20 minutes on first power-up. Depending on GPS and cellular signal, a typical sequence may proceed as follows:

- 1) Power LED-Power on (~30s).
- 2) Data LED medium flashing - Retrieving network time.
- 3) GPS LED slow flashing - Device GPS Receiver is on and attempting to get the device location.
- 4) GPS LED rapid flashing - GPS receiver has acquired a fix but is waiting for location within target accuracy.
- 5) GPS LED off.
- 6) GPS LED slow flashing - Device GPS Receiver is on and attempting to get the device location.
- 7) GPS LED rapid flashing - GPS receiver has acquired a fix but is waiting for location within target accuracy.
- 8) Data LED medium flashing - Device is searching for a cellular network.
- 9) Data LED rapid flashing - Device is connected to a cellular network and transmitting/receiving data.
- 10) Data LED off (device has finished start-up sequence and is operational).

#### Warranty Information

**WARNING:** Any disassembly and reassembly will compromise sealing and void the warranty. For optimal performance, please do not disassemble or modify this product.

## FCC Warning statements

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.

**Suppliers Name:** Flex Industrial, Ltd.

**Suppliers Address (USA):** 6201 America Center Drive, San Jose, CA 95002, USA

**Suppliers phone number:** 408 576 7000

**Caution:** The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The maximum antenna gain for the licensed transmitter is  $\leq 2.5\text{dBi}$  to ensure RF exposure compliance is complied with ruled part power.

**Note:** 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.

### FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. It maintains at least a 20 cm separation between the EUT and the user's body and must not transmit simultaneously with any other antenna or transmitter.

## ISED Warning statements

This device complies with Canada's licence-exempt RSSs. 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.

Pour se conformer aux exigences de conformité CNR 102 RF exposition, une distance de séparation d'au moins 20 cm doit être maintenue entre l'antenne de cet appareil et toutes les personnes.

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

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## CE Warning statements (For FT 700 Model)

Hereby, Flex Industrial, Ltd. declares that the radio equipment type FT700 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:

**Suppliers Name:** Flex Industrial, Ltd.

**Suppliers Address (USA):** Level 3, Alexander House 35 Cyberville, Ebene, Mauritius

**Suppliers phone number:** +1 408 576 7000

EU Declaration of Conformity document link: [https://flex.com/-/media/Project/Flex/BrandSite/S2S/tracking\\_I3/tracking-pdfs/trinity-declaration](https://flex.com/-/media/Project/Flex/BrandSite/S2S/tracking_I3/tracking-pdfs/trinity-declaration)

## Declaraciones de advertencia del Instituto Federal de Telecomunicaciones IFT – México (For FT 700 Model)

IFT (México): La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada..

---

BT POWER: 6.5±1dBm

**For FT 750 Model:**

WCDMA:850/1700/1900/2100

CAT4: FDD B2/B4/B5/B12/B13/B14/B66/B71

**For FT 700 Model:**

GSM850/900/1800/1900

CATM1: FDD B1/2/3/4/5/8/12/13/18/19/20/26/28; TDD B39

NB1: FDD B1/2/3/4/5/8/12/13/18/19/20/26/28

---