Getting Started Guide

Advanced Telematics Tracker

Model: FT750-L43Q-GL

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.

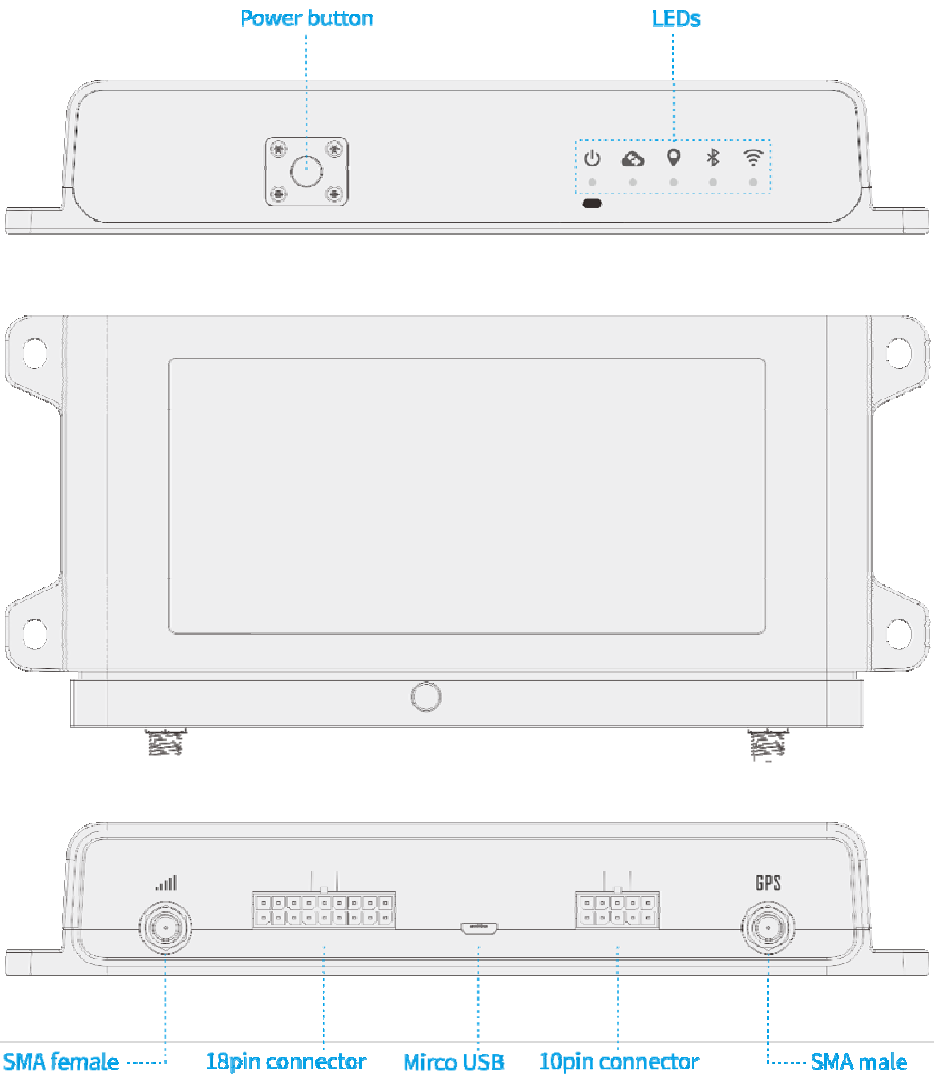
—Do not disassemble nor modify the battery.

—Do not put the battery into a microwave oven or high-pressure container.

— Contact your local waste disposal department to dispose ofthe device/battery in accordance with applicable local lawsand regulations.

About Your New Device

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)
5-10 seconds	Sync settings with the cloud device management portal
>15 seconds	Power down (if unlocked and disconnected from power)

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

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

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 dataLED 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 for5-10s; release when the dataLED 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 LEDwill now emit 3 sets of4 medium flashes. Once unlocked, the user can:

- Power down the device

- Other configuration options

» **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 for2-4s; 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	Flash Count	Error
Network	1	SIM error
	2	No network
	3	Unable to register with network
	5	Service activation error
	6	Service sync failure
GPS	3	GPS signal too weak
Power	4	Battery too low to transmit
	5	Error reading telematics data
	10	Other system error

Troubleshooting

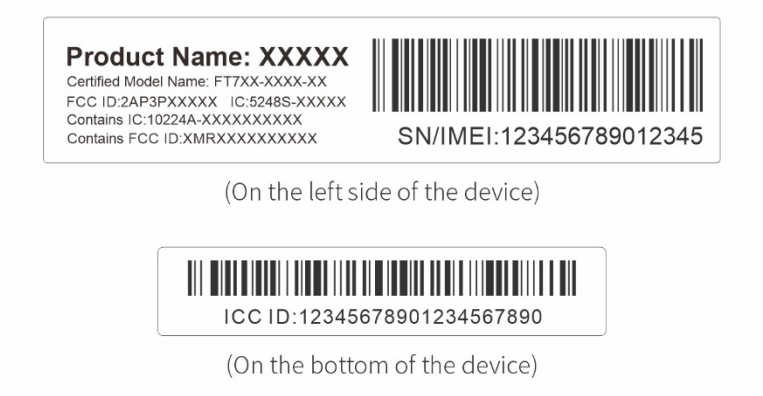
Symptom	Action
Power LED slow flashes a repeated pattern after pressing the power button	The device is in error state; check the error codes above for corresponding actions
LEDs do not illuminate when power button is pressed	Charge device by connecting a 12-48V supply to the external connector

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 ICCID (if available)



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 manualto become familiar with all installation procedures and electrical wiringrequirements prior to starting the installation. This installation guide has been prepared to provide you withdetails necessary to complete the device installation.Also, review vehicle specific wiring diagram before testing any wires.

Use of proper tools and testing equipment is required. Never use a grounding style test light. Use only aDigital 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 suchmanner that it will not get damaged or pinched when vehicle components and trim are reinstalled. Run newwiring along factory harnesses and secure with quality cable zip-ties. Be sure to leave a “service loop” near thedevice, 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 thedevice, determine best possible location under the dash and make sure that the device will be securely attachedusing self-tapping screws or cable zip-ties. Do not force or jam the device into tight places instead of mountingit. When mounting the Device, do not obstruct any serviceable areas such as fuseboxes, etc. The device and itswiring 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 allareas 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 theignition key switch connector behind ignition key cylinder or trace and connect at ignition switchwiring 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 ignitionconnections can be made at the interior fusebox)
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 +12/24/48V present at all times, even when theignition key is in off position or removed. Connect the device’s red wire here.
6. The correct ignition wire will have +12/24/48Vpresent only when the key is in ON position, duringcranking 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 (Programmable 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 #1(Programmable Bias)	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	12/24V Out (20W)– Software controlled	Purple
8	Ignition / ignition tamper input	White/Yellow
9	Digital Input #2 (Programmable Bias)	White/Gray
10	Digital Input #3 (Programmable 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.

Powering on the Device

1. Connect the device to external power (typically with the vehicle).
2. Or power on the device by holding down the multi-functional button for 2-4s.
3. Power LED will illuminate when the system starts.

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) GPS LED slow flashing - Device GPS Receiver is on and attempting to get the device location.

   a) Data LED medium flashing - Retrieving network time.(only if there was no GPS signal)

3) GPSLED rapid flashing - GPS receiver has acquired a fix but is waiting for location within target accuracy.

4) GPS LED off.

5) GPS LED slow flashing - Device GPS Receiver is on and attempting to get the device location.

6) GPS LED rapid flashing - GPS receiver has acquired a fix but is waiting for location within target accuracy.

7) Data LED medium flashing - Device is searching for a cellular network.

8) Data LED rapid flashing - Device is connected to a cellular network and transmitting/receiving data.

9) 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:

(I) This device may not cause harmfulinterference; 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 ≤2.5dBi to ensure RFexposure 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 license-exempt RSSs. Operation is subject to the following two conditions:

(I) 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 présentappareilestconforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitationestautorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareildoit accepter tout brouillageradioélectriquesubi, mêmesi le brouillageest susceptible d'encompromettre 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 séparationd'aumoins 20 cm doitêtremaintenue entre l'antenne de cetappareilettoutes les personnes.

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

Cetappareilnumeriquede la classe B estconforme a la norme NMB-003 du Canada.

BT (2412-2480MHz) POWER: 7±1dBm

Wi-Fi (2412-2472MHz) POWER:
14.5dBm @802.11a/6Mbps
12.5dBm @802.11a/54Mbps
17.5dBm @802.11b/1Mbps
17.0dBm @802.11b/11Mbps
16.5dBm @802.11g/6Mbps
15.0dBm @802.11g/54Mbps
15.5dBm @802.11n/HT20 MCS0
15.0dBm @802.11n/HT40 MCS0
14.5dBm @802.11n/HT20 MCS7
13.0dBm @802.11n/HT40 MCS7
13.5dBm @802.11ac/VHT20 MCS0
12.0dBm @802.11ac/VHT40 MCS0
11.5dBm @802.11ac/VHT20 MCS7
10.5dBm @802.11ac/VHT40 MCS9
11.5dBm @802.11ac/VHT80 MCS0
10.5dBm @802.11ac/VHT80 MCS9

GSM:850/900/1800/1900
WCDMA:850/1700/1900/2100
CAT4: FDD B2/B4/B5/B12/B13/B25/B26

Class 4 (33dBm±2dB) for GSM850
Class 4 (33dBm±2dB) for EGSM900
Class 1 (30dBm±2dB) for DCS1800
Class 1 (30dBm±2dB) for PCS1900
Class E2 (27dBm±3dB) for GSM850 8-PSK
Class E2 (27dBm±3dB) for EGSM900 8-PSK
Class E2 (26dBm±3dB) for DCS1800 8-PSK
Class E2 (26dBm±3dB) for PCS1900 8-PSK
Class 3 (24dBm+1/-3dB) for WCDMA bands
Class 3 (23dBm±2dB) for LTE FDD bands
Class 3 (23dBm±2dB) for LTE TDD bands