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ITALY

TraX
GPS solutions

X-TraX Group

X-10 MT

100% Designed, developed and assembled in Italy.

All information reported into this document is subject to change without notice.
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Magnetic tracker

Attention please:
- Strictly follow the standards and recommendations for use and installation reported into the reference manual.
- This device must be installed by qualified and competent personnel only.
- Do not sabotage and / or modify the device in any way. Failure to comply with this rule will invalidate the product warranty.
- Using of this device is under the full responsibility of the person who install and use it. It is therefore necessary to use it carefully and in full compliance with the local legislation in force.
- This device is compatible with Nano size SIM Card working on 2G and 4G (LTE) GSM frequencies.
- X-TraX S.r.l. is not responsible for failures or damages caused by improper installations, incorrect settings or any improper use of the device.

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1. Package list

- **X-10 MT** portable tracker with EGPRS/LTE Cat M1 modem and dual-mode GPS/GLONASS receiver
- High capacity rechargeable battery (Li-Ion 5800mA/h)
- Power supply and battery charging cable
- Basement with extra strong neodymium magnets for fixing on metal surfaces

2. General description

X-10 MT is a smart and powerful magnetic portable tracker, combining high performance, flexibility and reliability in an all-in-one solution.
Compact size, long-lasting rechargeable battery and a large suite of customizable functions makes it unique and suitable for a wide range of application, such as: tracking of vehicles (cars, trailers, containers, boats, campers, etc.), shipments and more. Thanks to the anti-jammer function, it can also be used as anti-theft and backup device.
The magnetic basement allows easy fixing on metal surfaces, avoiding installation costs.
X-10 MT is the best choice for your portable tracking application.

7. Directives and conformities

This device is consistent and in conformity to the following International Directives:

- E9 10R-02.6166 Homologation

- With the essential requirements and other relevant provisions of the Directive RED 2014/53/EU
  The product has been tested according to the following standards:
    . Safety: EN IEC 62368-1
    . EMC (Electromagnetic Compatibility): EN 301 489-1 V2.2.3; EN 301 489-3 V2.1.1; EN 301 489-17 V3.2.4; EN 301 489-19 V2.1.1; EN 301 489-52 V1.1.0
    . EMF (Electromagnetic Fields): EN IEC 62311: 2020 clause 7.2
    . Radio Spectrum: EN 301 511 V.12.5.1 clause 4.2.5, 4.2.16 & 4.2.17 (GSM and DCS); EN 303 413 V1.2.1 clause 4.2.2 (GPS); EN 300 220-2 V3.1.1 (RF Receiver)

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6. _Suggestions and implementing rules_

- **_X-10 MT_** works both as a portable smart tracker with a rechargeable battery and as a vehicle tracker that works with an external power source and manages I/O signals.
  It is the user's responsibility to recharge it when necessary.

- To recharge the battery, use only the specific wiring provided in the kit. A full charge takes approximately 12 hours. However, for the first charge it is recommended to keep the device under charge for at least 18 hours.
  The battery life can last up to around 5 months depending on the device settings and the environmental conditions of use.

- The installation of this device must be carried out in a workmanlike manner by qualified and competent personnel only.

- In order to get the first GPS valid fix it is necessary to place the device in a good position (better if in open sky) avoiding any metal surface obstructing it.

- This device is not water resistant. It comes with an internal rechargeable battery and works in environments with temperatures between -20° and 60°. It is therefore recommended to use it in environmental conditions suitable for its features.

- Please strictly follow rules and suggestions for use contained in this manual.

- In order to avoid any warranty restriction please do not dismount, modify or sabotage the device in any way.

- The use of this device is under the full responsibility of the user. It is therefore necessary to use it carefully and in full compliance with the local legislation in force.

- X-TraX S.r.l. is not responsible for any damage or disservice due to inappropriate installation or improper use of the device.

3. _Specifications_

- Size: 73 x 54 x 40mm. Weight: 200gr (battery included)
- Power source: DC 8-30V
- Operating temperature: from -20°C to 60°C
- High capacity rechargeable battery: Li-Ion 5800mA/h (3,7V) - over 5 months lasting in "deep sleep mode" (based on 1 position a day without extra charge)
- Battery full charge: 12h
- Battery lasting depends on the device setting and the environment conditions (e.g. signal strength, temperature). In good environmental conditions and with fully charged battery, the device can reach the following durations:
  - . one position every **5 minutes** > around **48 hours** lasting
  - . one position every **4 hours** > around **2 weeks** lasting
  - . one position every **8 hours** > around **2 months** lasting
  - . one position every **24 hours** > around **5 months** lasting
- Power consumption: in "operating mode" (GPS, GSM/GPRS, G-Sensor ON and battery charging process ON) <150mA @ DC 12V; in "operating mode" (GPS, GSM/GPRS, G-Sensor ON - with battery fully charged) <30mA @ DC 12V; in "sleep mode" (GPS and GSM/GPRS OFF, G-Sensor ON) <3mA @ DC 12V
- GSM/GPRS and GPS status LED
- EGPRS/LTE Cat M1 modem with embedded antenna (external GSM antenna available as optional)
- Dual-mode GNSS receiver with embedded antenna (external GPS antenna available as optional)
- Communication channels: SMS and GPRS/TCP (up to 2 Server IP)
- Unit programming by USB, SMS or GPRS/TCP
- 5 VIP SMS numbers
- Mileage Counter (GPS)
- Advanced real time Tracking setting
- Daily Timer report (up to 3 pre-defined Timers per day)
- Wake-up on movement, Periodical wake-up and Entering sleep mode reports
- Advanced Power Saving Mode setting
- Tow and Speed limit reports (GPS)
- Jamming function
- 4 physical Inputs: 1 Positive trigger + 3 settable to Positive or Negative trigger
- Counter function (up to 4,294,967,295 counts)
- IG function for "Engine On" & "Engine Off" detection
- Up to 4 Analog Inputs (0~30V)
- 4 physical Outputs (Negatives 160mA)
- Up to 12 virtual Outputs (for configuration setting purpose only)
- Up to 100 advanced User-defined reports
- Up to 30 circular Geofences
- Auto-target function
- Up to 100 Time schedules
- Service mode

- 3D G-Sensor (adjustable sensitivity by remote)
- Basement with extra strong neodymium magnets
- Remote Firmware upgrade OTA (by FTP)

4. _Status LED and wiring description_

Device status LED:

GSM LED - Blue	
Status	**Description**
Off	Modem Off, GSM network not available, modem in "sleep mode", SIM card not inserted or SIM PIN code enabled
Blinking 10 x (180ms On / 350ms Off)	Device restarting
Blinking 100ms On / 2sec Off	GSM network authentication in progress
Blinking 2 x 100ms On / 2sec Off	Connected to GPRS Server
Solid On	FPT download in progress

| GPS LED - Green	
Status	**Description**
Off	GPS receiver Off
Blinking 100ms On / 2sec Off	Invalid GPS fix or GPS receiver in "sleep mode"
Blinking 2 x 100ms On / 2sec Off	Valid GPS fix
Solid On	Firmware upgrade by FPT in progress

5. _Quick start_

1- After inserting the SIM card, please turn ON the device by connecting Red wire (Positive) and Black wire (Negative) to main power supply. When the device is successfully connected to power supply both **blue** and **green LED** start blinking.

2- Please wait for few seconds till the modem will successfully authenticate to GSM network. When the GPRS connection is established with the Server **blue LED** is blinking "2 x 100ms On / 2sec Off".

3- In order to get the first GPS valid fix, it's necessary to place the device in a good place (better in open sky condition) avoiding any metal surface obstructing it. When GPS is fixed **green LED** is blinking "2 x 100ms On / 2sec Off".

4- By SMS is possible to enable up to 2 user SMS numbers and assign a name to the device (max 12 characters).
The SMS format must be: **#CFG*_Cell.1_*_Cell.2_*_Name_#**
Example of SMS message to enable one single user SMS number and assign a device name: **#CFG*_+391234567890_**_X10MT_#**

5- After user SMS numbers have been successfully enabled then it is possible to manage a suite of SMS functions by remote, such as query the device position, enable/disable predefined output.
Send **XPOS** SMS string to query the position.
Send **XON** SMS string to enable the predefined output, and send **XOFF** to disable it.

Only authorized SMS numbers by #CFG self-setting procedure (please refer to point No.4) or by Control Room remote settings are able to manage SMS functions (please refer to point No.5).

Attention: For better using and reliability this device must be pretested from authorized Control Room.

SIM Card installation:
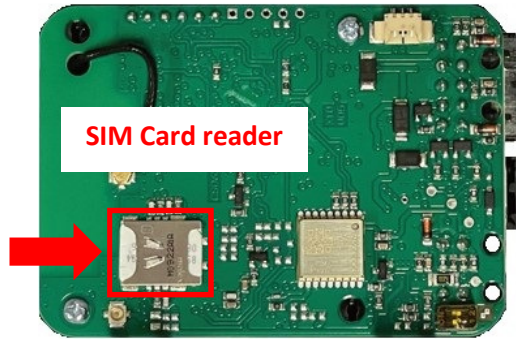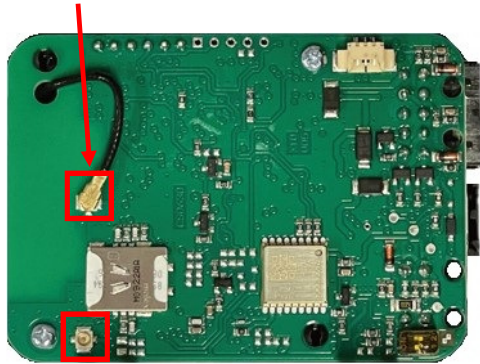

SIM Card reader

Attention: Remove SIM PIN code before using.

Attention: Insert the SIM card into the reader <u>before turning on the device</u> with the chip facing down.

External antennas installation:

External GSM antenna (optional)

External GPS antenna (optional)

Power/Inputs/Outputs ports connection:

**USB:** Micro-USB port is reserved for FW upgrading (USB cable is not included into the kit).
Only Control Room is allowed to perform this operation.

P/I/O: 10 pins connector combining Power, Inputs and Outputs signals. This port provides 4 Inputs (1 Positive/Analog + 3 settable to Positive/Analog or to Negative), and 4 Outputs (all Negatives).
(*) **IG Function:** By connecting Red and Black wires to Positive and Negative signals of the vehicle main battery the devices can detect "Engine On" & "Engine Off" status avoiding to connect White wire (Input 1) to *ACC/Ignition Key* signal. After enabling IG function, Input 1 becomes available for other purposes.
In order to enable this function please contact your reference Control Room providing the exactly voltage levels measured on vehicle main battery when "Engine On" and "Engine Off" conditions.

P/I/O (Power, Inputs and Outputs)	Wire
Pin 1: Power Supply '+' (DC 8-30V) *(*)*	*Red*
Pin 2: GND '−' (Negative) *(*)*	*Black*
Pin 3: Input 1 Positive / Analog 1 (DC 0-30V) *ACC/Ignition Key* *(*)*	*White*
Pin 4: Input 2 Positive / Analog 2 (DC 0-30V) or Negative	*Grey*
Pin 5: Input 3 Positive / Analog 3 (DC 0-30V) or Negative	*Green*
Pin 6: Input 4 Positive / Analog 4 (DC 0-30V) or Negative	*Violet*
Pin 7: Output 1 Negative (160mA @ DC 12V)	*Yellow*
Pin 8: Output 2 Negative (160mA @ DC 12V)	*Orange*
Pin 9: Output 3 Negative (160mA @ DC 12V)	*Brown*
Pin 10: Output 4 Negative (160mA @ DC 12V)	*Blue*

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X-10 MT

P/I/O

External GPS antenna (optional)

GPS

Power supply
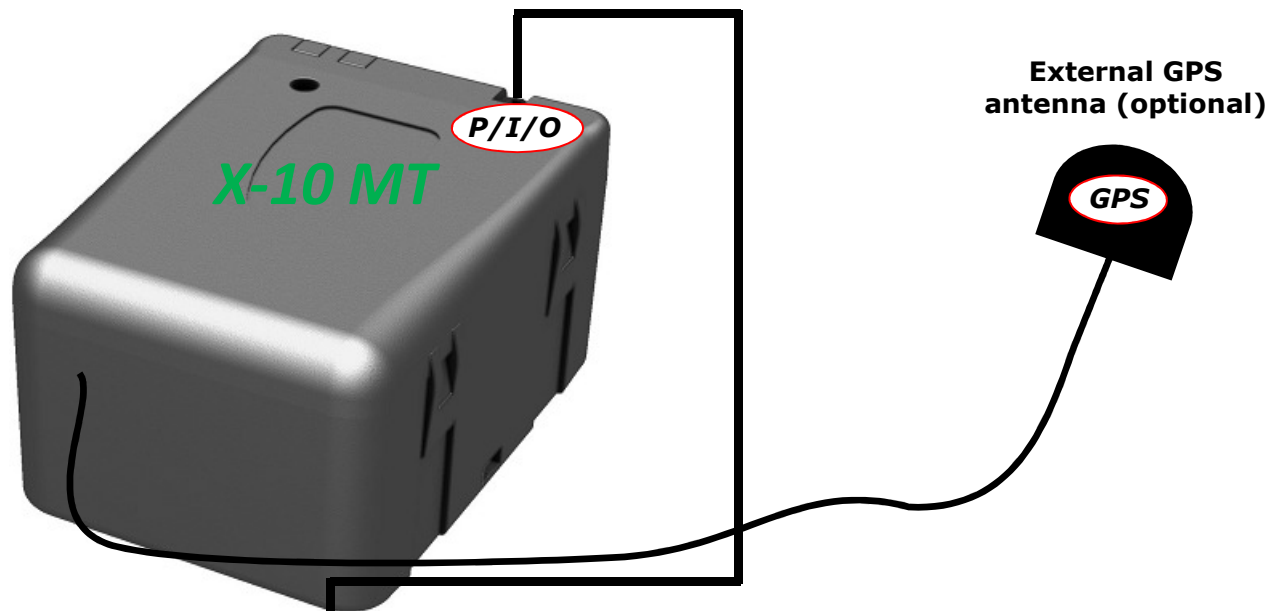
IG Function

Power Supply + (Red)	●	Positive (DC 8-30V) *(*)*
GND – (Black)	●	Negative (GND) *(*)*

(*) **IG Function:** *By connecting Red and Black wires to Positive and Negative signals of the vehicle main battery the devices can detect "Engine On" & "Engine Off" status avoiding to connect White wire (Input 1) to ACC/Ignition Key signal. After enabling IG function, Input 1 becomes available for other purposes.*
In order to enable this function please contact your reference Control Room providing the exactly voltage levels measured on vehicle main battery when "Engine On" and "Engine Off" conditions.

Inputs

Outputs

Input 1 (White)	○	Positive / Analog 1 (DC 0-30V) *Ignition Key (*)*
Input 2 (Grey)	●	Positive / Analog 2 (DC 0-30V) or Negative
Input 3 (Green)	●	Positive / Analog 3 (DC 0-30V) or Negative
Input 4 (Violet)	●	Positive / Analog 4 (DC 0-30V) or Negative

Output 1 (Yellow)	●	Negative (160mA @ DC 12V)
Output 2 (Orange)	●	Negative (160mA @ DC 12V)
Output 3 (Brown)	●	Negative (160mA @ DC 12V)
Output 4 (Blue)	●	Negative (160mA @ DC 12V)