GT-102, GNSS 4G Vehicle Tracker - With Digital/Analog Input/Output

RoHS Compliant

Overview

Built-in GPS+GLONASS with AGPS support and 4G LTE modules, GT-102 is a very **sensitive,** live car GPS tracker. The sensitive GPS always fixes position even in GPS difficult environment (weak GPS signal). Both GPS+GLONASS and 4G antennas are built-in, **no antenna wiring** demand. It's **compact** and very **easy to hide** it from driver's sight.

With **built-in** Li-ion **battery** and charging circuit, GT-102 continues working, alerts its guardian/manager if the external power is tampered (removed) by accidental or malicious users.

From the body, the waterproof S/R cable with 8-pin Microfit connector brings out tracker interfaces for additional functions. All these features make GT-102 a **robust** and **strong** vehicle tracker.

The 8-pin connector supports up to two RS-232 ports. It could be used for **RFID reader,** magnetic stripe card reader, bar code reader, taxi printer or any other similar communication demand. Shared with RS-232 ports, maximum **4 I/O interfaces** could be provided – including digital input/output, and analog input. Functions could be immobilization, lock/unlock, engine ON/OFF status, temperature, or fuel sensors etc.

In addition to the tracker hardware, APP or WEB portal could be customized to meet your special demand on functions/reports based on MOQ.

Features

- Sensitive GNSS (GPS+GLONASS) w/ AGPS works pretty well even in GNSS **difficult** environment.
- In addition to high communication performance, the well-certificated Gemalto module works **smoothly** with MNOs (Mobile Network Operators).
- Compact design, no antenna wiring demand, easy to install and **hide** it from driver's sight.
- **Flexible** functions like RFID reader, magnetic stripe card reader, immobilization, engine on/off status, lock/unlock, and others supported by digital input / output and analog input.
- Smart power **saving** – draw only fractions of mA power while sleep, no impact to the vehicle battery.
- Built-in battery and charging circuit
  - Alert **guardian** as external power is removed.
  - **Automatic** charging based on power level
- The popular nano-SIM and **eSIM** support, eject with a SIM pin or any other thin pin.
- Report/alerts **buffering** as there is no cell coverage
  - Resume reports automatically as cellular signal (cell coverage) recovers.
- Geo-fence support
  - Circular x 32, polygonal x 10
  - Alerts: IN and/or OUT, **late**
- Pre-stored multiple **APNs**
- SMS **command** setting

Technical Specifications

Cellular Module

LTE	Gemalto/Cinterion ELS modules
Model: Operator/Area,	Model **A**: Telstra/APAC 4G LTE: Band 3,5,8,28;

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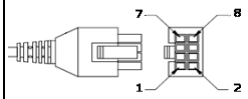
Band Frequency	1800/850/900/700MHz 3G WCDMA: Band 1,5,8 2100/850/900MHz Model **E**: EMEA, APAC 4G LTE: Band 1,3,8,20,28; 2100/1800/900/800/700MHz 2G GPRS: Band 3,8 1800/900MHz Model **F**: EMEA, APAC 4G LTE: Band 1,3,8,20,28; 3G WCDMA: Band 1,8 2G GPRS: Band 3,8 Model **U**: AT&T, T-Mobile/NA 4G LTE: Band 2,4,5,12; 1900/1700(AWS)/850/700MHz 3G WCDMA: Band 2,4,5 1900/1700(AWS) Model **V**: Verizon/USA 4G LTE: Band 4,13 1700/2100 (AWS), 700MHz Model **J**: Docomo/Japan 4G LTE: Band 1,18,19 2100, Japan lower, upper 800 MHz
LTE Features 3GPP Release 9	DL max. 10.2 Mbps, UL max. 5.2 Mbps UE CAT 1 supported

GNSS (GPS & GLONASS)

Receiver Type	SiRFstarV - 52 channels, L1 frequency, C/A code GPS & QZSS:1575.42MHz GLONASS: 1598.0625~1605.375MHz
Horizontal Position Accuracy	< 2.5m (Autonomous) (50% 24hr static, -130dBm)
Max. Altitude	<18,000 m
Max. Velocity	<1,852 km/hr.
Dynamics	<4g

General

Dimension (mm)	92 x 55 x 17 (mm) excluding cable
Interfaces 	1. Power switch button x 1, 2. Dual-color LED (green/red) x 1, 3. Nano-SIM card holder x 1, 4. 8-pin Microfit connector x 1,
8-pin Connector & Colors of Cable Wires  	1. BAT+; **Red** 2. BAT-; **Black** 3. DI/DO/AI/RX1; **White** 4. DI/DO/AI/TX1; **Green** 5. GND; **Gray** 6. DI/DO/AI/RX2; **Yellow** 7. DI/DO/AI/TX2; **Blue** 8. GND; **Brown**
Max. (total 4) I/O Configuration (DI: Digital Input DO: Digital Output AI: Analog Input)	RS232 x 2, or 2 of (DI, DO, AI), each 2 pins DI+/-: positive / negative trigger DO: max. sink current 200mA AI: 12-bit resolution
External Power from BAT+/BAT-	12V/24V, Input range 5V~40V
Internal Battery	Rechargeable, Li-ion, 900mAh
Positioning	GPS/GLONASS/QZSS w/ AGPS
Communication	4G LTE Cat 1
G-sensor	3-axis, ±2g~±16g
Power consumption	Power OFF: 50 uA Sleep: 0.18 mA Normal working+: 150 mA
Capacity of Data Buffer (by internal Flash)	16,384 records – i.e. 273 hours or 11 days if data is continuously sent once per minute
Watertight	IPX6 as SIM holder side sealed
Humidity	< 85%RH, non-condensing
Working	-20 °C ~ 75 °C external power

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Temperature	-20 °C ~ 60 °C internal battery

+ Depending on network environment and report interval

Major Functions

Power ON/OFF	Toggle switch button by a thin pin – Turn ON: hold pin until LED ON Turn OFF: hold pin until LED OFF Please power off GT-102 if it would not be used for a long time period. Otherwise, the internal battery might be fully depleted. As the internal battery is fully depleted, the tracker would not work even if there is external power. In this case, please connect external power to charge the internal battery and then toggle switch button to power ON GT-102.
SIM Change	Eject SIM tray with a SIM or thin pin
LED Red	Wakeup from sleep: One blink Power ON: 5 blinks Power OFF: Steady ON then OFF (when LED OFF, power is also OFF)
Major I/O Functions	ACC(DI+): Engine ON/OFF detection SOS(DI-): SOS panic button CUT(DO): Immobilization by relay LCK(DO): Door lock ULK(DO): Door unlock FUL(AI): Fuel level, temperature
Geo-Fence	Circular x 32, polygonal x 10,
Major alerts	SIM holder ejection Engine ON/OFF (by ACC)+ Move Idling – still with engine on for 3-min+ Main power loss+ Geo-Fence IN, OUT, late
Report interval	Time / distance configurable

OTA (Over The Air)	Firmware upgrade Tracker setting/configuration
Position viewing	App, Web
Smart phone APP support	Android, iOS - Setup, live, history, event, I/O status
Login account	● 1 login account for each tracker ● QR-code scan login support ● Add your own login alias ● Add other trackers under your account with their permission ● No limit on number of trackers ● Organize trackers in groups ● No limit on number of groups
Language	English, Japanese, Chinese etc.
History	30-day server log

+Model-specific

Order Information

GT-102XY, X=A,E,F,U,V,J; Y=E,F etc.

Pin\Model	A	E	F	I
1	BAT+	BAT+	BAT+	BAT+
2	BAT-	BAT-	BAT-	BAT-
3	DI+_ACC	DI+_ACC	DI+_ACC	DI+_ACC
4	DO_CUT	DO_CUT	DO_CUT	DI-_SOS
5	GND	GND	GND	GND
6	DI-_SOS	RX2	RXD2	RX2
7	AI_Fuel	TX2	TXD2	TX2
8	GND	GND	GND	GND

DI+/-: positive / negative trigger
DO: Max sink current 200mA
RX/TX: data in/out, RS232
RXD/TXD: data in/out, TTL

*ODM is welcome.

Model-specific Function Overview – GT-102E

- RS-232 RFID/ Magnetic stripe card reader support
  - Local card database for fast access control
  - Valid card restores power of engine starter.
- Engine status detection via DI+_ACC

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- Idling alert - stop moving while engine running

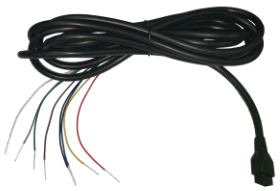
- Cut power of engine starter via DO_CUT
  - Anti-theft – cut power of engine starter as engine is OFF automatically or not.

- Server features available on APP/WEB
  - Restricted access route, alert as
    - Enter the no-entrance route
    - Leave the no-entrance route
  - Designated driving route, alert as
    - Leave the designated driving route
    - Back to the designated driving route
  - Late alerts
    - Do not leave after a specified time.
    - Do not come back after a specified time.

Standard Accessory

Microfit extension cable - Two ends: 8-pin Microfit connector (to tracker) and open wires (to vehicle) No. of signals: 2 Length: 3m	

Optional Accessory

Microfit extension cable - Two ends: 8-pin Microfit connector (to tracker) and open wires (to vehicle) No. of signals: 8 Length: 3m	

*This document is subject to change without notice.