GV500MAP User Manual

EGPRS/LTE Cat-M1/LTE Cat-NB1/GNSS Tracker

TRACGV500MAPUM001

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International Telematics Solutions Innovator

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0. Revision History

Version	Date	Author	Description of Change
1.00	2019-04-19	Vincent Tang	Initial

1. Introduction

The GV500MAP is a vehicle tracking device that plugs into a vehicle's OBD II port. Its compact design allows easy installation. Its built in GNSS receiver has superior sensitivity and fast time to first fix. Its supports LTE CAT M1 B2/4/5/12/13 allowing the GV500MAP's location to be monitored in real time or periodically tracked by a backend server and mobile devices. Its built-in 3-axis accelerometer allows motion detection. System integration is straightforward as complete documentation is provided for the full featured @Track protocol. The @Track protocol supports a wide variety of reports including emergency, geo-fence boundary crossings, driver behaviour or scheduled GNSS position and many other useful functions.

Important Note: For firmware version A01, the device does not support voltage virtual ignition detection function on pure electric vehicles.

1.1. Reference

Table 1: GV500MAP Protocol Reference

SN	Document Name	Remark
[1]	GV500MAP @Track Air Interface Protocol	The air protocol interface between GV500MAP and backend server.

1.2. Terms and Abbreviations

Table 2: Terms and Abbreviations

Abbreviation	Description
PWR	External Power Supply
GND	Ground
OBD	On-Board Diagnostics
SAE	Society of Automotive Engineers
HS_CAN	High Speed CAN
MS_CAN	Medium Speed CAN
SW_CAN	Single Wire CAN

2. Product Overview

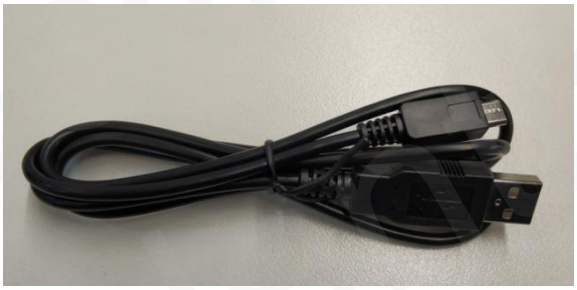
2.1. Description

GV500MAP is GNSS vehicle tracking device based on the OBD II interface. It has compact design and is easy to install. GV500MAP contains a 5-pin micro USB connector, an internal LTE antenna, two internal GNSS antennas and two LEDs.

Figure 1. Appearance of GV500MAP

2.2. Parts List

Table 3: Parts List

Name	Picture
GV500MAP Locator	49.49mm*48.5mm*21.9mm 
Data_Cable_MC5	
Specialized Micro 5-pin USB Cable	

2.3. Interface Definition

The GV500MAP has an OBD II connector. The sequence and definition of the OBD II connector are shown in the following figure:

Figure 2. OBD II Connector on GV500MAP

Table 4: Description of OBD II Connections

Index	Description	Comment
1	SW_CAN	SW_CAN line of ISO 15765; Only support 12V car battery
2	NC	No Connect
3	MS_CAN_H	MS_CAN_H line of ISO 15765
4	GND	Power and digital ground
5	GND	Power and digital ground
6	HS_CAN_H	HS_CAN_H line of ISO 15765
7	NC	No Connect
8	NC	No Connect
9	NC	No Connect
10	NC	No Connect
11	MS_CAN_L	MS_CAN_L line of ISO 15765
12	NC	No Connect
13	NC	No Connect
14	HS_CAN_L	HS_CAN_L line of ISO 15765
15	NC	No Connect
16	PWR	External DC power input, 8-32V

2.4. Motion Sensor Direction

GV500MAP has an internal 3-axis accelerometer supporting driving behaviour monitoring, power conservation and motion detection. The following shows the directions of the motion sensor.

Figure 3. Motion Sensor Direction

3. Getting Started

3.1. Opening the Case

Insert the triangular-pry-opener into the gap of the case as shown below, and push the opener up until the case is unsnapped.

Figure 4. Opening the Case

3.2. Closing the Case

Close the case as shown below.

Figure 5. Closing the Case

3.3. Installing a SIM Card

Open the rubber plug and insert the SIM card into the holder as shown below.

Figure 6. SIM Card Installation

3.4. Device Status LED

Figure 7. GV500MAP LEDs on the Case

Table 5: Definition of Device Status and LED

LED	Device Status	LED Status
CELL (Note 1)	Device is searching network.	Fast flashing (Note 2)
	Device has been registered to network.	Slow flashing (Note 3)
	SIM card needs pin code to unlock.	ON
GNSS (Note 1)	GNSS chip is powered off.	OFF
	GNSS sends no data or data format error occurs.	Slow flashing
	GNSS chip is searching GNSS information.	Fast flashing
	GNSS chip has got GNSS information.	ON

Note:

1. CELL LED and GNSS LED can be configured to turn off after a period of time using the configuration tool.
2. Fast flashing is about 60ms ON / 780ms OFF.
3. Slow flashing is about 60ms ON / 1940ms OFF.