AVT50 User Manual

EGPRS / LTE Cat-1

V1.01

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Contents

0. Revision History

Revision	Date	Author	Description of Change
1.01	December 25, 2024	Joel	Initial

1. Introduction

The AVT50 is a compact GNSS tracker designed for a wide variety of vehicle tracking applications. It has multiple I/O interfaces that can be used for monitoring or controlling external devices. Its built-in GNSS receiver has superior sensitivity and fast time to first fix. Its seven-band LTE-FDD in Europe and GSM/GPRS 850/900/1800/1900 MHz allowing the AVT50's location to be monitored in real time or periodically tracked by a backend server and mobile devices. Its built-in 6-axis accelerometer and gyroscope allows driving behaviour monitoring, motion detection.

1.1. Specifications

General Specifications	
Dimensions	97mm*48mm*18mm
Network	1.EGPRS: GSM850/GSM900/DCS1800/PCS1900 2.Cat-1: B1, B3, B5, B7, B8, B20, B28
GNSS (Optional)	GPS, GLONASS, BDS, GALILEO
Bluetooth	BLE 5.3
Sensors & Interface	1. G-Sensor (6-axis accelerometer and gyroscope) 2. Ignition wire 3. The multiplex of negative digital input and analog input 4. The digital output of open drain.
Battery	3.7V 150mAh Rechargeable Li-polymer Battery
IP Rating	IP67
Power Supply	7 – 90 V
Operating Temperature	-20℃~+60℃
LED indicator	Power LED NET LED GNSS LED
Debug Port	Type C

2. Product Overview

2.1. Interface Definition

AVT50 has a 5 PIN interface connector that contains the power, GND, IGN, DIN/AIN and OUT. the sequence and definition of the 5 PIN connectors are shown in the following table:

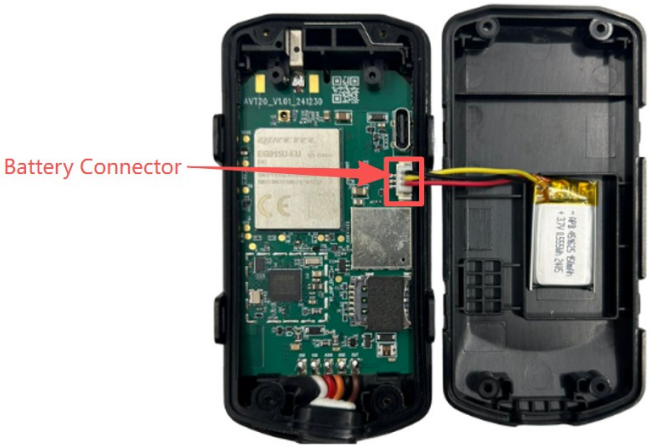
PIN	Defined	Color	Comment
1	VIN	Red	External DC power input, 7 - 90V
2	GND	Black	Power and digital ground
3	IGN	White	Ignition input, positive trigger
4	DIN/AIN	Orange	Analog input and negative trigger input multiplexing.
5	OUT1	Brown	Digital output, Open drain, 150 mA max, with latch circuit

2.2. Install a SIM Card

Open the case and ensure the unit is not powered. Slide the holder right to open the SIM card holder. Insert the SIM card into the holder as shown below with the gold-colored contact area facing down. Take care to align the cut mark. Close the SIM card holder. Close the case.

2.3. Install the Internal Backup Battery

AVT50 has an internal backup 150mAH Li-ion battery.

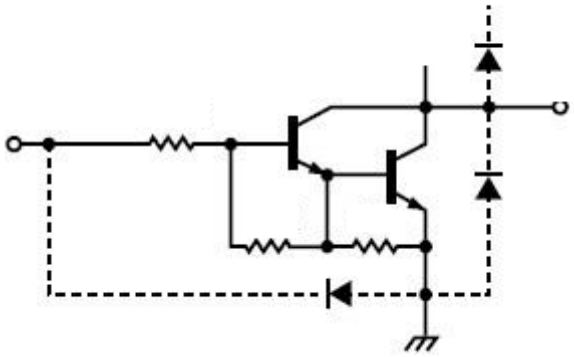


2.4. Power Connection

PWR (PIN1)/GND (PIN2) are the power input pins. The input voltage range for this device is from 7V to 90V. The device is designed to be installed in common vehicles that operate on 12V/24V/48V/64V/72V systems without the need for external transformers.

2.5. Digital Outputs

There is a digital output on AVT50. the digital output is of open drain type and the maximum drain current is 150mA. the output has the built-in over current PTC resettable fuse.



Digital Output Internal Drive Circuit

Table 1. Electrical Characteristics of Digital Outputs

Logical Status	Electrical Characteristics
Enable	<1.5V @150 mA
Disable	Open drain

2.6. Terminal Status LED

LED	Device Status	LED Status
GNSS	GNSS chip is powered off.	OFF
	GNSS sends no data or data format error occurs.	High speed flashing
	GNSS chip is searching GNSS information.	Medium speed flashing
	GNSS chip has gotten GNSS information.	ON
CELL	The device is searching network.	Fast flashing
	The device has been registered on the network.	Slow flashing
PWR	No external power and internal battery voltage is lower than 3.5V.	OFF
	No external power and internal battery voltage is lower than 3.7V.	Slow flashing
	The external power supply has been connected to the device and the internal battery of the device is charging.	Fast flashing
	The external power supply has been connected to the device and the internal battery of the device is fully charged.	ON

Note:

CELL LED, GNSS LED and PWR LED can be configured to be turned off after a period time by using

the configuration tool.

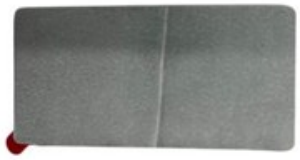
2.7. G-Sensor Direction

AVT50 has an internal 6-axis accelerometer and gyroscope sensor supporting driving behavior monitoring, crash detection and motion detection. The following shows the directions of the motion sensor:

Motion Sensor Direction

2.8. Product Parts List

Table 2. Parts List

Name	Picture
AVT50 Locator	
3M Backing Sticker	
Case Screw 4pcs