

AVT80 User Manual

EGPRS/LTE Cat-1

V1.01



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0. Revision History

Revision	Date	Author	Description of Change
1.01	Dec 10, 2025	Joel	Initial

1. Introduction

The AVT80 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 AVT80'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	95mm*60mm*22mm
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. VCC (8-90V) 2. G-Sensor 3. 1wire (1wire VDD, 1wire data) 4. IGN input. 5. 2pcs OUTPUT 6. Analog input and negative trigger input multiplexing.
Battery	3.7V 150mAh Rechargeable Li-polymer Battery
IP Rating	IP67
Operating Temperature	-20°C~+60°C
LED indicator	Power LED NET LED GNSS LED
Debug Port	Type C

2. Product Overview

2.1. Interface Definition

AVT80 has a 8 PIN interface connector that contains the power, Input, Output, Analog input, 1wire etc. the sequence and definition of the 8 PIN connectors are shown in the following table:

PIN	Defined	Color	Comment
1	VIN	Red	External DC power input, 8 - 90V
2	GND	Black	Power and digital ground
3	IGN	White	Ignition input, positive trigger
4	ADIN	Orange	Analog input and negative trigger input multiplexing.
5	OUT1	Brown	Digital output1, Open drain, 150 mA max, with latch circuit
6	OUT2	Green	Digital output2, Open drain, 150 mA max, with latch circuit
7	1W Data	Yellow	Data for 1 wire
8	1W VDD	Blue	VDD for one wire

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

AVT80 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 8V 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. Ignition Detection

Table 1. Electrical Characteristics of Ignition Detection

Logical Status	Electrical Characteristics
Active	8V to 90V
Inactive	open

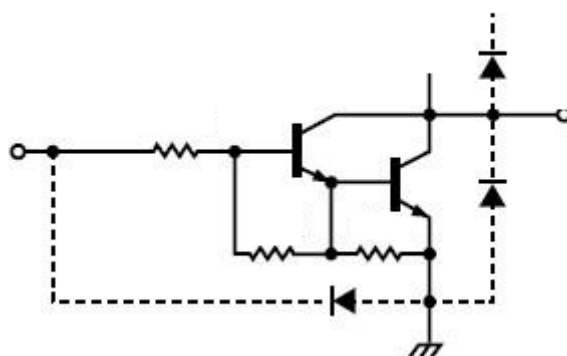
IGN (PIN3) is used for ignition detection. It is strongly recommended to connect this pin to ignition key “RUN” position as shown above.

An alternative to connecting to the ignition switch is to find a non-permanent power source that is

only available when the vehicle is running, for example, the power source for the FM radio. IGN signal can be configured to start transmitting information to the backend server when ignition is on, and enter the power saving mode when ignition is off.

2.6. Digital Outputs

There is a digital output on AVT80. 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 2. Electrical Characteristics of Digital Outputs

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

2.7. 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	Slow flashing

	lower than 3.7V.	
	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.

2.8. G-Sensor Direction


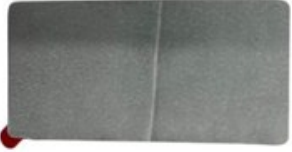
AVT80 has an internal 6-axis accelerometer and gyroscope sensor supporting driving behavior monitoring, crash detection and motion detection. The following shows the directions of the motion sensor:

Motion Sensor Direction



2.9. Product Parts List

Table 3. Parts List

Name	Picture
AVT80 Locator	
3M Backing Sticker	
Case Screw 4pcs	