

MEITRACK MVT380 User Guide



Change History

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2 Product Overview

The MVT380, an anti-theft vehicle tracker, is specially designed for high-end vehicles to implement real-time monitoring and provide protection with GPS/GSM/GPRS functions and high stability. The device applies for vehicle tracking and fleet management. It has the following functions:

- Remote listen-in
- Two-way calling
- Geo-fence alarm
- Speeding alarm
- Polygon geo-fence alarm
- Towing alarm

It has a built-in 8 MB storage chip, which supports automatic storage of GPRS data packets when no GSM signal exists and supports automatic data packet sending after GSM signal recovery.

3 Product Function and Specifications

3.1 Product Function

3.1.1 Location Tracking

- GPS + GSM dual-module tracking
- Real-time location query
- Track by time interval
- Track by distance
- Track on a mobile phone
- Speeding alarm
- Direction change report

3.1.2 Anti-Theft

- SOS alarm
- GPS antenna cut-off alarm
- External power cut-off alarm

- GPS blind spot alarm
- Remote vehicle fuel/power cut-off alarm
- Engine or vehicle door status alarm
- Towing alarm
- Geo-fence alarm

3.1.3 Other Functions

- SMS/GPRS (TCP/UDP) communication (Meitrack protocol)
- Built-in 8 MB chip for recording driving routes
- Mileage report
- Low power alarm
- Support for Over-the-Air (OTA)
- Avoiding static drift by checking the engine

3.1.4 Optional Accessory Function

Accessory	Function
Microphone and loudspeaker	Remote listen-in and two-way calling

3.2 Specifications

Item	Specifications
Dimension	105 mm x 65 mm x 26 mm
Weight	190g
Input voltage	DC 11 V to 36 V/1.5 A
Standby battery	850 mAh/3.7 V
Power consumption	65 mA standby current
Operating temperature	-20°C to 55°C
Humidity	5% to 95%
Working hour	200 hours in power-saving mode and 12 hours in normal mode
Indicator	2 indicators showing GSM and GPS status
Button/Switch	1 SOS button (for sending SMSs or dialing) 1 power button
Storage	8 MB byte
Sensor	3D acceleration sensor
GSM frequency band	GSM 850/900/1800/1900 MHz
GPS sensitivity	-161 dB
Positioning accuracy	10m
I/O port	5 digital inputs (3 negative inputs and 2 positive inputs) 2 analog detection inputs 5 outputs 1 USB port 1 loudspeaker or microphone port

4 MVT380 and Accessories



MVT380 with a built-in battery



GPS antenna



GSM antenna



I/O cable + SOS button

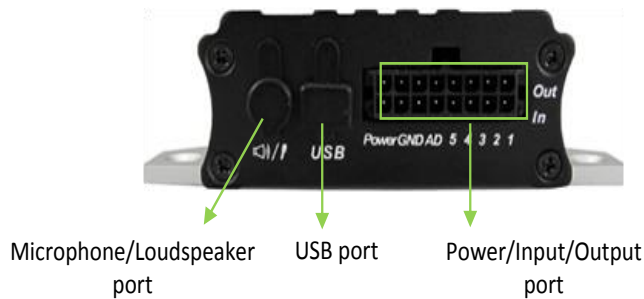
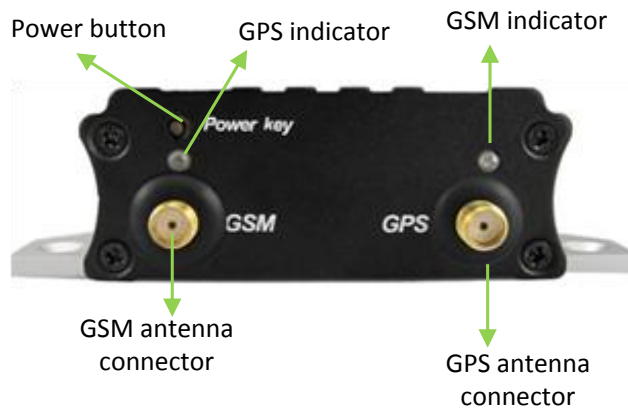


USB cable



CD

5 Appearance



6 First Use

6.1 Installing the SIM Card

Pay attention to the following items before installing the SIM card:

- Ensure that the SIM card has sufficient balance.
- Ensure that the phone card PIN lock has been closed.
- Ensure that the SIM card in the MVT380 has subscribed the caller ID service if you want to use your authorized phone number to dial the SIM card.
- Power off the MVT380 before installing the SIM card.

To install the SIM card, perform the following operations:

1. Loosen the screw, and remove the front cover of the MVT380.
2. Insert the SIM card to the slot. Ensure that the card chip is facing up to the Printed Circuit Board (PCB).
3. Close the cover, and tighten the screw.



6.2 Charging

When you use the MVT380 for the first time, connect the MVT380 GND (-Black) and Power (+Red) wires to 12 V or 24 V external power supply for charging. Ensure that the MVT380 is charged at least three hours. Eight hours are recommended.

The MVT380 can be installed on a vehicle only after it is configured and tested.

6.3 Indicator

Press and hold down the power button for 3s to 5s to start the MVT380.

GPS Indicator (Blue)	
Steady on	One button is pressed or one input is activated.
Blink (every 0.1s)	The MVT380 is being initialized or the battery power is low.
Blink (0.1s on and 2.9s off)	A GPS signal is received.
Blink (1s on and 2s off)	No GPS signal is received.
GSM Indicator (Green)	
Steady on	A call is coming in or a call is being made.
Blink (every 0.1s)	The MVT380 is being initialized.
Blink (0.1s on and 2.9s off)	A GSM signal is received.
Blink (1s on and 2s off)	No GSM signal is received.

6.4 Location Tracking

Call the MVT380 SIM card number. An SMS with a map link will be received.

Click the SMS link. The location will be displayed on Google Maps on your mobile phone.



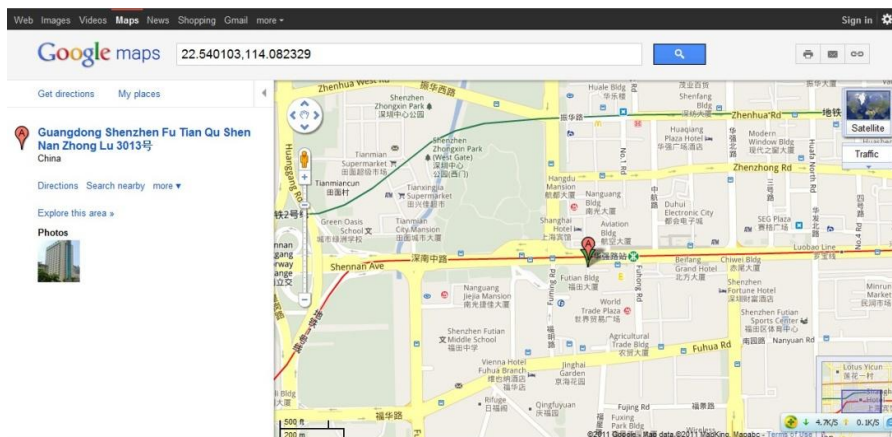
SMS example:

Now,110727 02:48,V,16,23Km/h,61%,http://maps.google.com/maps?f=q&hl=en&q=22.540103,114.082329

The following table describes the SMS format:

Parameter	Description	Remarks
Now	Indicates the current location.	SMS header: indicates the alarm type.
110727 02:48	Indicates the date and time in YYMMDD hh:mm format.	None
V	The GPS is invalid.	A = Valid V = Invalid
16	Indicates the GSM signal strength.	Value: 1–32 The larger the value is, the stronger the signal is. If the value is greater than 12, GPRS reaches the normal level.
23Km/h	Indicates the speed.	Unit: km/h
61%	Indicates the remaining battery power.	None
http://maps.google.com/maps?f=q&hl=en&q=22.540103,114.082329	This is a map link. Latitude: 22.540103 Longitude: 114.082329	None

If your mobile phone does not support HTTP, enter the latitude and longitude on Google Maps to query a location.



More SMS commands

You can configure the MVT380 on a mobile phone or on a computer by using Meitrack Manager. For details, see section 6.5 "Configured on a Computer."

Note:

1. The default password is 0000. You can change the password by using Meitrack Manager and SMS commands. For details, see section 6.5 "Configured on a Computer."
2. The MVT380 can be configured by SMS commands with a correct password. After an authorized phone number is set, only the authorized phone number can receive an SMS report.

6.4.1 Setting a Combined Function Phone Number – A71

SMS sending: 0000,A71,*Phone number 1,Phone number 2,Phone number 3*

SMS Responding: IMEI,A71,OK

Description:

A phone number has a maximum of 16 bytes. Phone numbers are empty by default.

Set phone number 1 to an SOS phone number. When the tracker is called by using the phone number, a location SMS, geo-fence alarm, and low power alarm are received.

If all combined function phone numbers need to be deleted, send **0000,A71**.

When the SOS button is pressed, the tracker dials phone numbers 1, 2, and 3 in sequence. The tracker stops dialing when a phone number responds.

Example: 0000,A71,13811111111,13822222222,13833333333

Responding: 353358017784062,A71,OK

6.4.2 Setting a Listen-in Phone Number – A72

SMS sending: 0000,A72,*Listen-in phone number 1,Listen-in phone number 2*

SMS Responding: IMEI,A72,OK

Description:

When the authorized listen-in phone number is used to dial the tracker, the tracker answers the call automatically and enters the listen-in state. In this way, the tracker makes no noise.

A maximum of two phone numbers can be set. One phone number has a maximum of 16 digits. Phone numbers are empty by default.

If no phone number is entered, remain commas and delete related phone numbers.

If all phone numbers need to be deleted, send **0000,A72**.

Example: 0000,A72,13844444444,13855555555

Responding: 353358017784062,A72,OK

6.4.3 Setting the Smart Sleep Mode – A73

SMS sending: 0000,A73,*Sleep level*

SMS Responding: IMEI,A73,OK

Description:

When the sleep level is **0** (default value), disable the sleep mode. When the sleep level is **1**, the tracker enters the general sleep mode. The GSM module always works, and the GPS module occasionally enters the sleep mode. The tracker works 25% longer in the general sleep mode than that in the normal working mode. The mode is not recommended for users who set the scheduled tracking in a short interval. In this way, the mode will affect trace integrity.

When the sleep level is **2**, the tracker enters the deep sleep mode. If the tracker is not activated (SOS, button changes, calling, incoming calls, SMSs, or vibration) after five minutes, the GPS module is stopped, and the GSM module enters the sleep mode. If the tracker is activated, the GPS and GSM modules are waken up.

Note: In any condition, you can use an SMS or a GPRS command to disable the sleep mode, and then the tracker exits the sleep mode and returns back to the normal working mode.

Example: 0000,A73,2

Responding: 353358017784062,A73,OK

For details about SMS commands, see the *MEITRACK SMS Protocol*.

6.5 Configured on a Computer

This section describes how to use MEITRACK Manager to configure the MVT380 on a computer.

Procedure:

1. Install the USB driver and MEITRACK Manager.
2. Connect the MVT380 to a PC with a USB cable.



3. Run MEITRACK Manager, and start the MVT380. Meitrack Manager will automatically detect the MVT380 port number and read MVT380 parameters.



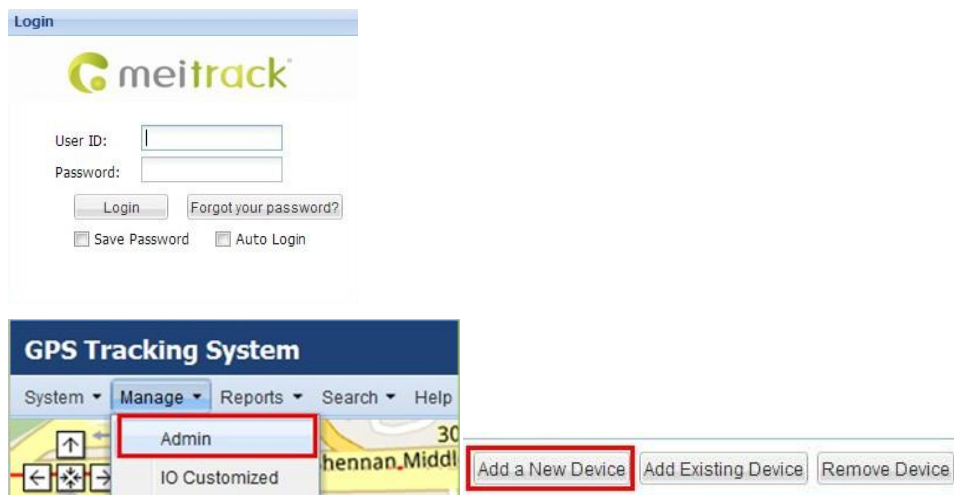
For details about MEITRACK Manager, see the *MEITRACK Manager User Guide*.

Note: The CD delivered with the tracker contains MEITRACK Manager. The software language will be automatically switched according to the operating system language. Press **Ctrl + L** to manually switch the language.

7 MS02 Tracking System

1. Configure parameters in any of the following ways:
 - Configured by SMS: Send SMS commands **0000,A21,1,67.203.13.26,8800,APN,APN username,APN password** and **0000,A12,6,0** to the tracker SIM card number.
 - Configured by Meitrack Manager: Connect the tracker to a PC, run Meitrack Manager to enter the main screen, and click the **Tracking** tab to set parameters.
2. Visit ms02.trackingmate.com, and enter the user name and password. Contact us if you have no account or forget the password.

3. Go to the map, and choose **Manage > Admin**.
4. Select a user, and click **Add a New Device**.



5. Obtain the tracker IMEI number from the packing or Meitrack Manager, register a device, set the parameters shown in the following figure, and then click **Save**.



6. Double-click a device in the panel on the right, and check whether data is updated in **Status**.

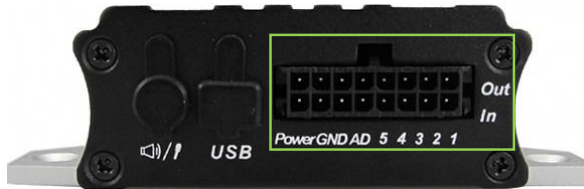


Note: For details about the MS02, see the *MEITRACK MS02 User Guide*.

8 Installing the MVT380

8.1 Installing an I/O Cable

The I/O cable is a 16-pin cable, including the power port, analog input port, positive input port, negative input port, and output port.



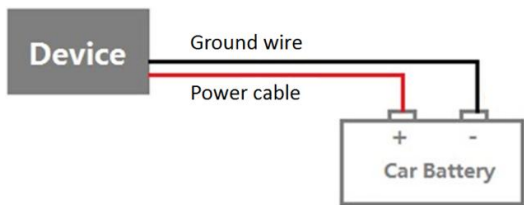
16 Power output (+)	15 GND out (-)	14 AD Input 2	13 Output 5	12 Output 4	11 Output 3	10 Output 2	9 Output 1
8 Power input (+)	7 GND in (-)	6 AD Input 1	5 Input 5 (+)	4 Input 4 (+)	3 Input 3 (-)	2 Input 2 (-)	1 Input 1 (-)

Pin Number	Color	Description
1 (IN1)	White	Digital input 1, negative triggering (SOS button by default)
2 (IN2)	White	Digital input 2 (negative triggering) Connects to a door triggering signal cable to detect vehicle door status. (Most Chinese, Korean, and Japanese cars are negative edge-triggered.)
3 (IN3)	White	Digital input 3 (negative triggering) Detect vehicle door status. (Most Chinese, Korean, and Japanese cars are negative edge-triggered.)
4 (IN4)	White	Digital input 4 (positive triggering) Detect the vehicle ACC status by default.
5 (IN5)	White	Digital input 5 (positive triggering) Connects to a door triggering signal cable to detect vehicle door status. (Most European and American cars are positive edge-triggered.)
6 (AD1)	Blue	Analog input 1 with 10-bit resolution and valid voltage of 0–6 V. Connects to an external sensor, such as the fuel sensor and temperature sensor.
7 (GND)	Black	Ground wire, connected to the negative electrode of the vehicle storage battery or to the negative terminal.
8 (POWER)	Red	Positive electrode of the power input, connected to the positive electrode of the vehicle storage battery. Input voltage: 11 V to 36 V. 12 V is recommended.
9 (OUT1)	Yellow	Output 1 Valid: low level (0 V) Invalid: open drain Maximum voltage for output open drain (invalid): 45 V Maximum current for output low voltage (valid): 500 mA Connects to an external relay to remotely cut off the vehicle fuel cable or engine

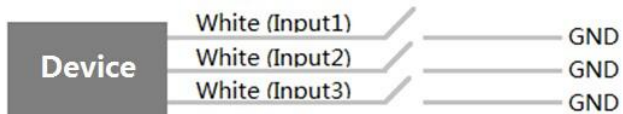
		power supply.
10 (OUT2)	Yellow	Output 2 Valid: low level (0 V) Invalid: open drain Maximum voltage for output open drain (invalid): 45 V Maximum current for output low voltage (valid): 500 mA Connects to an external relay to remotely cut off the vehicle fuel cable or engine power supply.
11 (OUT3)	Yellow	Output 3 Valid: low level (0 V) Invalid: open drain Maximum voltage for output open drain (invalid): 45 V Maximum current for output low voltage (valid): 500 mA Connects to an external relay to remotely cut off the vehicle fuel cable or engine power supply.
12 (OUT4)	Yellow	Output 4 Valid: low level (0 V) Invalid: open drain Maximum voltage for output open drain (invalid): 45 V Maximum current for output low voltage (valid): 500 mA Connects to an external relay to remotely cut off the vehicle fuel cable or engine power supply.
13 (OUT5)	Yellow	Output 5 Valid: low level (0 V) Invalid: open drain Maximum voltage for output open drain (invalid): 45 V Maximum current for output low voltage (valid): 500 mA Connects to an external relay to remotely cut off the vehicle fuel cable or engine power supply.
14 (AD2)	Blue	Analog input 2 with 10-bit resolution and valid voltage of 0–6 V. Connects to an external sensor, such as the fuel sensor and temperature sensor.
15 (GND)	Black	Ground wire It can be used as a ground wire connected to an analog sensor.
16 (POWER)	Red	Positive pole of the power output. The output voltage is equal to that of pin 8. Supplies power to an external device.

8.1.1 Power Cable/Ground Wire (PIN7, PIN8)

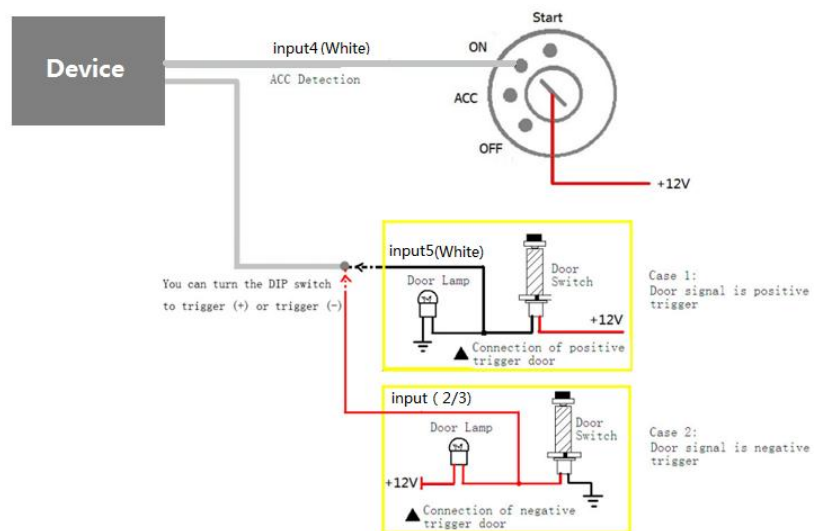
Connect the power cable (red) and ground wire (black) to the positive and negative electrodes of the vehicle battery respectively.



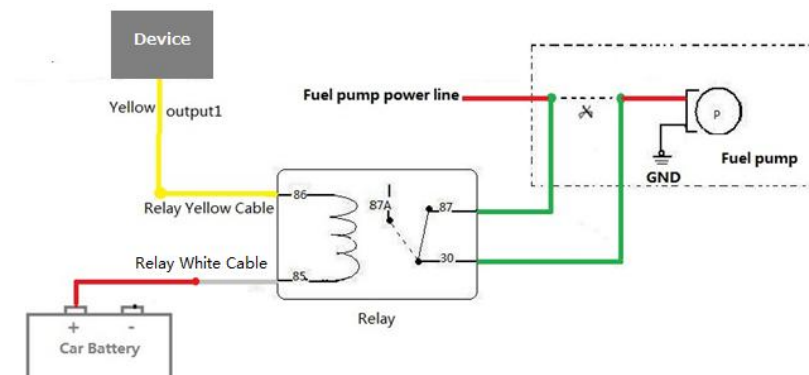
8.1.2 Digital Input (PIN1/PIN2/PIN3 Negative Triggering)



8.1.3 Digital Input (PIN4/PIN5 Positive Triggering)



8.1.4 Output Control (PIN9/PIN10/PIN11/PIN12/PIN13)



8.1.5 Analog Input (PIN6/PIN14)

8.1.5.1 Example – Detecting External Power Voltage

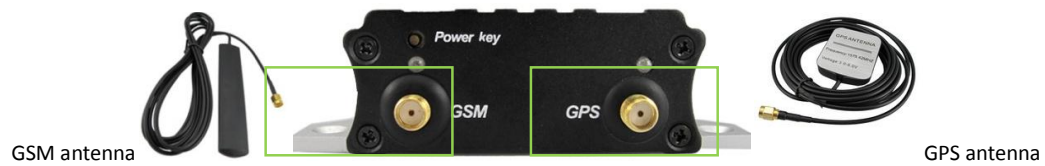
Input range: 0–6V

Voltage calculation formula: $\text{Input voltage} = (\text{AD} \times 6) / 1024$

$0x0377 \Rightarrow 887(\text{decimal}) \Rightarrow (887 \times 6) / 1024 = 5.1972 \text{ V (Voltage)}$

$0x02FB \Rightarrow 763(\text{decimal}) \Rightarrow (763 \times 6) / 1024 = 4.4707 \text{ V (Voltage)}$

8.2 Installing GPS and GSM Antennas

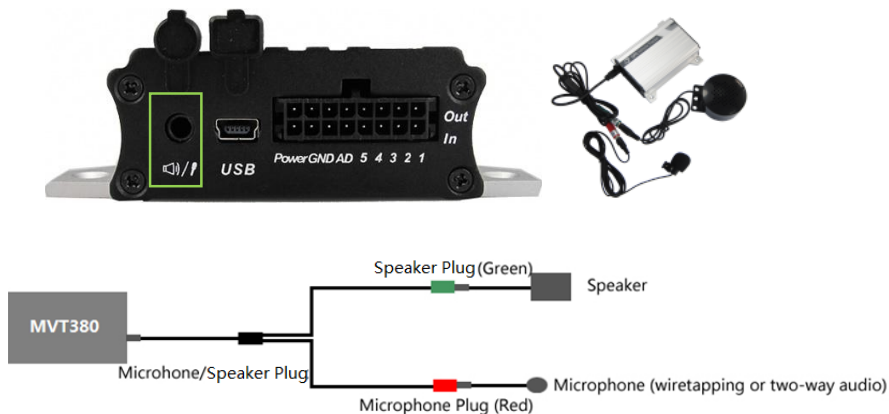


Connect the GSM antenna to the SMA connector which is labeled "GSM". The GSM antenna is non-directional, so you can hide it in any place of a vehicle.

Connect the GPS antenna to the connector which is labeled "GPS". It is recommended that the antenna is facing up to the sky and the antenna side with words is downwards. Secure the antenna by using double sided tapes.

Note: Do not install the GPS antenna at a place with metal.

8.3 (Optional) Installing the Microphone and Loudspeaker



8.4 Mounting the MVT380

Tighten the four screws shown in the following figure.



If you have any questions, do not hesitate to email us at info@meitrack.com.