

MEITRACK MVT600 User Guide



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2 Product Overview

The MVT600 is a high-end GPS vehicle tracker supporting GPS, GSM, and GPRS functions. It can connect to a variety of peripherals, such as the camera, handset, LCD display, LED display, and RFID reader. This ensures high expansion.

The MVT600 applies to specialized vehicle scheduling businesses and supports real-time monitoring and protection of logistics, taxis, and buses.

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 alarm

3.1.2 Anti-Theft

- SOS alarm
- GPS antenna cut-off alarm
- External power supply cut-off alarm
- GPS blind spot alarm
- Low power alarm
- Remote vehicle fuel/power cut-off alarm
- Towing alarm
- Engine or vehicle door status alarm
- Geo-fence

3.1.3 Optional Accessory Function

Accessory	Function
A53 resistive voltage-output mode fuel sensor	High and low fuel alarms
A52 digital temperature sensor + A61 sensor box	High and low temperature alarms
A21 LCD display	Information scheduling
Handset	Listen-in or two-way calling
Camera	Take photos.
RFID reader	Swipe the RFID card to start the engine.
LED display	Play advertisements.
Loudspeaker and microphone	Listen-in or two-way calling

3.1.4 Other Functions

- SMS/GPRS (TCP/UDP) communication (Meitrack protocol)
- Built-in 8 MB chip for recording driving routes
- Built-in standby battery
- Mileage report
- Support for Over-the-Air (OTA)
- Smart power-saving mode

3.2 Specifications

Item	Specifications
Dimension	103 mm x 98 mm x 32 mm
Weight	220g
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 10 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
Memory	8 MB byte
Sensor	3D acceleration sensor (for vibration, wake-up, and towing alarms)
GSM frequency band	GSM 850/900/1800/1900 MHz
GPS sensitivity	-161 dB
Positioning accuracy	10m
I/O port	3 inputs (2 negative inputs and 1 positive input) 1 analog detection input 1 fuel sensor detection input

	1 digital temperature sensor detection input 3 outputs 4 RS232 ports 1 Wiegand port
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4 MVT600 and Accessories

MVT600 and standard accessories:



MVT600 with a built-in battery



GPS antenna



GSM antenna



I/O cable + SOS button



USB cable



CD

Optional accessories:



Camera (at most two cameras)



Handset



RFID reader



A21 LCD display (dialing and SMS display)



A53 fuel sensor

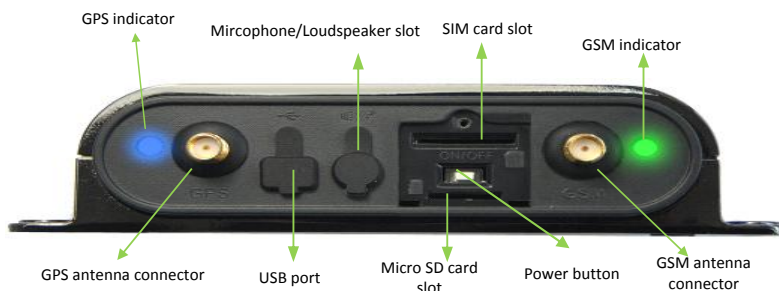


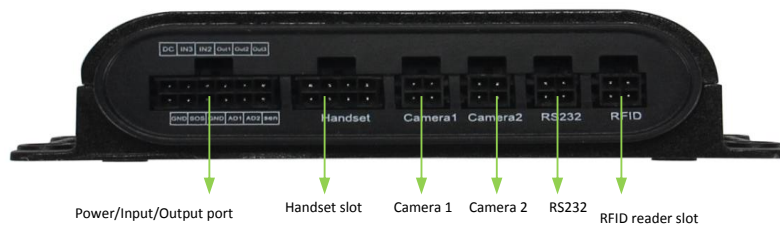
A52 digital temperature sensor + A61 sensor box (at most eight temperature sensors)



LED display

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 MVT600 has subscribed the caller ID service if you want to use your authorized phone number to dial the MVT600.
- Power off the MVT600 before installing the SIM card.

To install the SIM card, perform the following operations:

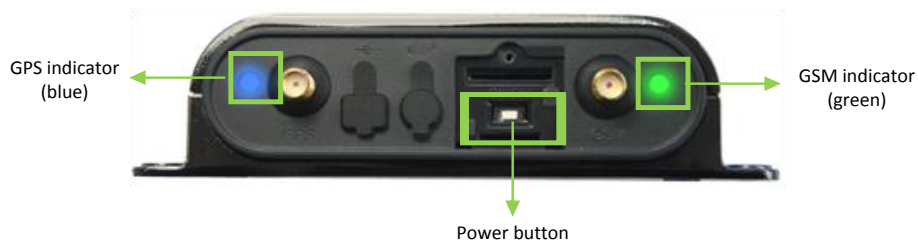
1. Loosen the screw, and remove the cover.
2. Insert the SIM card to the slot. Ensure that the card chip faces up to the Printed Circuit Board (PCB).
3. (Optional) Insert the TF card if a camera is used.
4. Close the cover, and tighten the screw.



6.2 Charging

When you use the MVT600 for the first time, connect the MVT600 GND (-Black) and Power (+Red) wires to 12 V or 24 V external power supply for charging. Ensure that the MVT600 is charged at least three hours. Eight hours are recommended. The MVT600 can be installed on a vehicle only after it is configured and tested.

6.3 Indicator



To start the MVT600, press and hold down the power button for 3s to 5s, or connect the MVT600 to external power supply (11 V to 36 V).

GPS Indicator (Blue)	
Steady on	One button is pressed or one input is activated.
Blink (every 0.1s)	The MVT600 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 MVT600 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 Configured on a Computer

This section describes how to use MEITRACK Manager to configure the MVT600 on a computer.

Procedure:

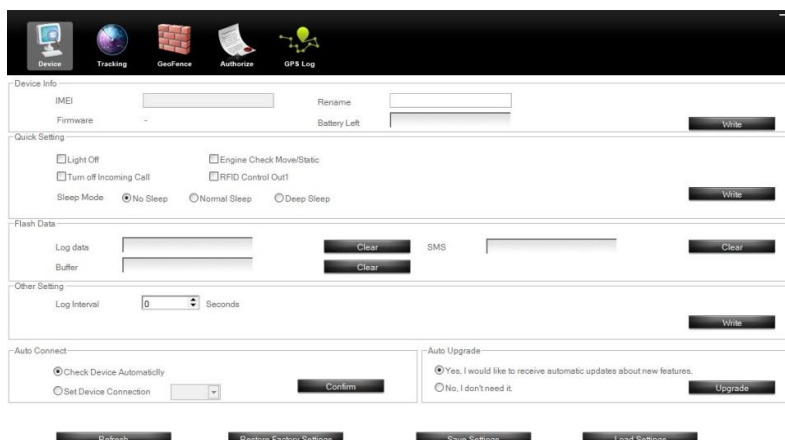
1. Install the USB driver and MEITRACK Manager.
2. Connect the MVT600 to a PC by using a USB cable.



3. Run MEITRACK Manager. The following dialog box is displayed:



MEITRACK Manager will automatically detect the device, and the **Device** tab page for default parameters is displayed.



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

6.5 Location Tracking

6.5.1 Tracking on a Mobile Phone

Call or send an SMS command (**0000,A00**) to the MVT600 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,061314 10:36,V,26,0Km/h,96%,http://maps.meigps.com/?lat=22.513781&lng=114.057183

The following table describes the SMS format:

Parameter	Description	Remarks
Now	Indicates the current location.	SMS header: indicates the alarm type.
061314 10:36	Indicates the date and time in MMDDYY hh:mm format.	None
V	The GPS is invalid.	A = Valid

		V = Invalid
26	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.
0Km/h	Indicates the speed.	Unit: km/h
96%	Indicates the remaining battery power.	None
http://maps.meigps.com/?lat=22.513781&lng=114.057183	This is a map link. Latitude: 22.513781 Longitude: 114.057183	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 MVT600 on a mobile phone or on a computer by using Meitrack Manager. For details, see section 6.4 "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 6.4 "Configured on a Computer."
2. The MVT600 can be configured by SMS commands with a correct password. After an authorized phone number is set, only the authorized phone number can receive the preset SMS report.

6.5.2 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

6.5.3 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 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*.

7 MS02 Tracking System

- 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.
- Visit ms02.trackingmate.com, and enter the user name and password. Contact us if you have no account or forget the password.
- Go to the map, and choose **Manage > Admin**.
- Select a user, and click **Add a New Device**.



Login



User ID:

Password:

☐ Save Password ☐ Auto Login



- 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**.

Add a New Device

Device ID:

Password:

Device Name:

SIM Number:

Model:

Select a picture: 

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

Status **Alarm** **Updates**

Device Name: Fix: Speed:

GPS Time: Latitude: Others:

Received Time: Longitude:

Journey(Km): Run Time:

Location:

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

8 Installing the MVT600

8.1 Installing an I/O Cable

The I/O cable is a 12-pin cable, including the power, analog input, digital temperature sensor input, and negative/positive input and output.



1 Power (+)	3 Input 3 (+)	5 Input 2 (-)	7 Output 1	9 Output 2	11 Output 3
2 GND (-)	4 Input 1 (-)	6 GND (-)	8 AD Input 1	10 Fuel sensor	12 Digital temperature sensor

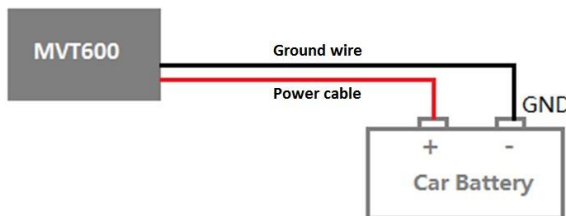
Pin Number	Color	Description
1 (Power +)	Red	Positive electrode of the power input, connected to the positive electrode of the vehicle storage battery. Input voltage: 11 V to 36 V. 12 V is recommended.
2 (GND)	Black	Ground wire, connected to the negative electrode of the vehicle storage battery or to the negative terminal.
3 (Input3)	White	Digital input 3, positive triggering Detect the vehicle ACC status. Connects to a door triggering signal cable to detect vehicle door status. (Most Europe and American cars are positive edge-triggered.)
4 (Input 1)	White	Digital input 1, negative triggering (SOS button by default)
5 (Input 2)	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.)
6 (GND)	Black	Ground wire It can be used as a ground wire connected to an analog sensor.
7 (Output 1)	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: 500 mA Connects to an external relay to remotely cut off the vehicle fuel cable or engine power supply.
8 (AD Input 1)	Blue	Analog input 1 with 12-bit resolution and valid voltage 0–6 V Connects to an external sensor, such as the fuel sensor.
9 (Output2)	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: 500 mA Connects to an external relay to remotely cut off the vehicle fuel cable or engine power supply.
10 (Fuel sensor input)	Blue	Analog input 2 with 12-bit resolution and valid voltage 0–6.6V The AD cable is connected to the white plug. The cable is connected to the A53 fuel sensor by default.
11 (Output 3)	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: 500 mA Connects to an external relay to remotely cut off the vehicle fuel cable or engine power supply.
12 (Digital)	Blue	TTL3.3V level

temperature sensor input)		Connects to the A52 digital temperature sensor by default by using the A61 sensor box. Note: The DC or AC voltage that is greater than 3.3 V is allowed. Otherwise, the device may be damaged.
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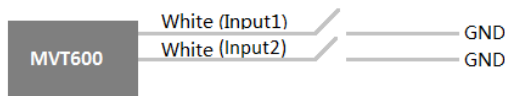
8.2 Installation/Connection Diagram

8.2.1 Power Cable/Ground Wire (PIN1, PIN2)

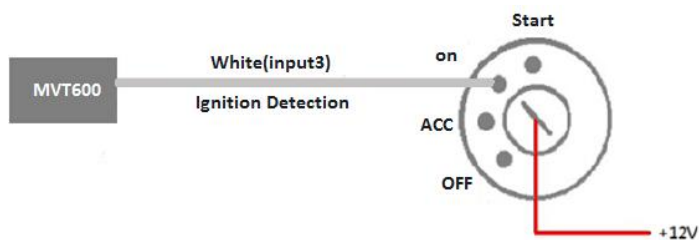
Connect the power cable (red) and ground wire (black) to the positive and negative electrodes of the vehicle battery respectively.



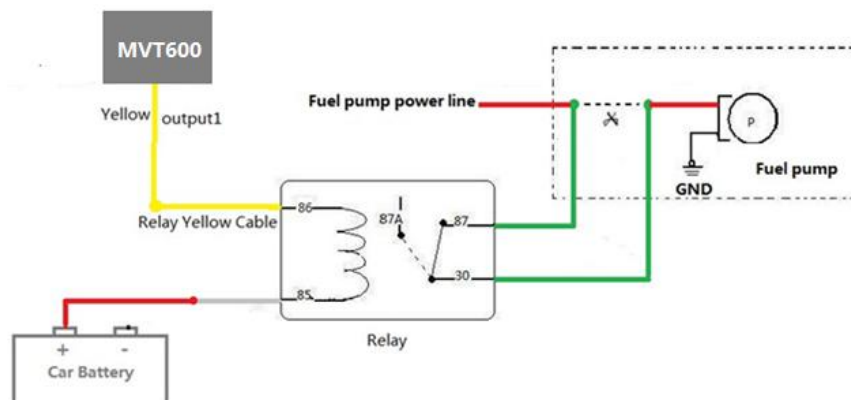
8.2.2 Checking Vehicle Door Status and Trunk Status (PIN4/5, Negative Triggering)



8.2.3 Checking Engine Status (PIN3, Positive Triggering)



8.2.4 Fuel and Power Cut-off (PIN7/9/11)



8.2.5 Sensor Input (PIN8/PIN10/PIN12)

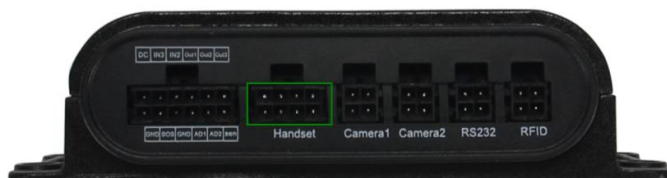
For the PIN8 analog input 1, a sensor whose output voltage ranges from 0 V to 6.6 V can be installed. The analog voltage calculation formula is as follows:

$$\text{Voltage} = (\text{AD} \times 3.3 \times 2) / 4096$$

PIN10 is connected to the A53 fuel sensor by default. In this way, the formula does not need to be added on the platform. For details about the sensor installation and platform functions, see the *A53 Fuel Sensor User Guide*.

PIN12 is connected to the A61+A52 temperature sensor. For details about the sensor installation and platform functions, see the *Temperature Sensor User Guide*.

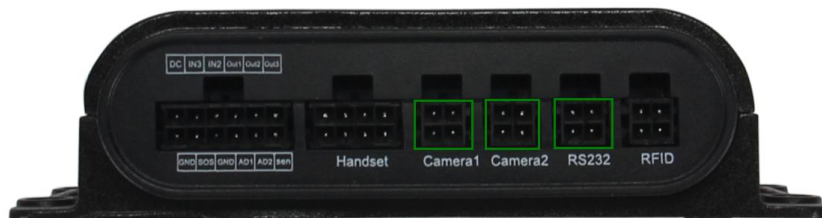
8.2.6 Installing the Handset (RS232 Port)



Pin Number	Color	Description
1	Red	Power output Output voltage: 5 V
2	Black	Ground wire
3	Orange	RS232 TX (MVT600 RX)
4	Yellow	RS232 RX (MVT600 TX)
5	Blue	Positive electrode of the microphone
6	Green	Negative electrode of the microphone
7	Purple	Positive electrode of the loudspeaker
8	White	Negative electrode of the loudspeaker

Note: The RS232 port supports peripherals, such as the A21 LCD display and LED display. For details about peripheral functions, see the A21 LCD display or LED display user guide.

8.2.7 Installing a Camera (RS232 Port)



Camera 1 RS232 Port		
Pin Number	Color	Description
1	Red	Power output Output voltage: 5 V
2	Black	Ground wire
3	Yellow	The camera sends data to the MVT600 through the RS232 port.
4	Green	The MVT600 sends data to the camera through the RS232 port.

Camera 2 RS232 Port		
Pin Number	Color	Description
1	Red	Power output Output voltage: 5 V
2	Black	Ground wire
3	Yellow	The camera sends data to the MVT600 through the RS232 port.
4	Green	The MVT600 sends data to the camera through the RS232 port.

Camera 3 RS232 Port or GPS Data Port		
Pin Number	Color	Description
1	Red	Power output Output voltage: 5 V
2	Black	Ground wire
3	Yellow	The camera sends data to the MVT600 through the RS232 port.
4	Green	The MVT600 sends data to the camera through the RS232 port.

Note: A Micro SD card is required if you have installed a camera. Otherwise, you cannot take photos.

8.2.8 Installing the Micro SD Card

If you want to use the camera function, you must install a Micro SD card (TF card). All photos that you take are stored in the card. If you take a photo in an instant, the photo will be uploaded to the server immediately. Other non-instant photos must be uploaded the server by using GPRS commands.

Insert the card to the Micro SD card slot under the power button. Ensure that the card side with metal is upwards.



8.2.9 Installing the RFID Reader (Start the Engine)



Pin Number	Color	Description
1	Red	Power output Output voltage: 5 V
2	Black	Ground wire
3	Green	Wiegand data 0
4	Yellow	Wiegand data 1
Remarks: The MVT600 RFID reader is not compatible with the T1 RFID reader. The T1 RFID reader is an RS232 port. For details about an RFID reader, see the RFID user guide.		

8.3 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 metals.

8.4 Mounting the MVT600

Tighten the four screws shown in the following figure.



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