



SuperGuard VT-05 Vehicle Tracking Device

The SuperGuard VT-05 Vehicle Tracker is a professional GPS tracking device designed for fleet management and commercial data centers, with customizable data upload over GPRS or SMS, and access of such data through Internet and mobile phone browsers.



- Compact size, with built in GSM and GPS antennas, easy and quick to install, saving costly installation time and fees.
- Data exchange between device and server is maintained over constant GPRS and Internet connection. All commands and configuration details can be sent either through GPRS or SMS. An SMS only mode is also available.
- Up to 5 authorized contact numbers can be configured to inquire vehicle location through 2-RING phone call or short message command. Alternately, you will be able to query device location and status over Internet Website or GPRS enabled cell phones at all times.
- You can setup and configure monitoring activities and alerts, using Control Base software or Tracking Web services via Internet Explorer or mobile on GPRS enabled cell phones.
- Tracking schedules, live tracking and parameters including trip information such as total travelled distance or trip distance in km can be configured according to your needs.
- You can define and load up to 4 restricted areas (Geo-Fence areas) to the device and setup maximum speed alert.
- The engine immobilizer allows you to disable the vehicle ignition according to specified trigger times through GPRS or SMS command.
- The device comes with one SOS Push Button designed for emergency alarms to be sent to server and contact numbers. It should be placed at a hidden place within reach of the driver on the dashboard.
- You can configure and activate three power saving modes according to ignition off time, no movement or no communication time.



System Diagram





Hardware Specifications

General

The unit utilizes GPS to receive time, date, longitude, latitude, speed, direction data; GPRS for data exchange with Control Base and GSM for communication and short messaging.

GSM

GSM/GPRS module	Sim340 Quadband GPRS module GSM 850 MHZ ; GSM 900 MHZ (2 watt) Class 4 GSM 1800 MHZ (1 watt) Class 1; GSM 1900 MHZ
GSM Antenna	Built-in

GPS

GPS module	Atheros based L1, C/A code receiver, 16 channels
Protocol	SuperGuard Protocol
GPS Antenna	Built-in
Accuracy	10m-20m
Update rate	Max 30sec. Configurable. Default setting 120 Second
Start time	Cold start: 44sec; Hot start: 3sec (Open Sky)
Speed/Accuracy	0.2 M/sec. (50%)
Acceleration	Max: 4g
Max Height	18,000 M
Sensitivity	-160 dBm
Datum Coordinate	WGS-84

Electrical

Operating Voltage	DC 9V ~ 24V
Standby Current	45~60mA (average)
Power Saving Current	3mA
Operating, Maximum	60 ~ 110mA, 2A
Spare Battery	3.7V 700 mA/h Operating time: 9h

Others

Operating temperature	-20 to +60
Dimensions	88 (119) x 58 x 30 mm



VT-05 Features and Function List

The VT-05 is a GPS positioning and tracking device with limited security and communication features. It uses continuous GSM/ GPRS connection to send locations and other relevant data to a dedicated Control Base server database, with the purpose to be able to access such data online over stand alone desktop software, Internet browser, mobile devices or per SMS.

With GPRS communication enabled, the VT-05 is designed to keep TCP connection to the Control Base over GPRS at all times. If GPRS is disconnected for any reason, the VT-05 will try to reengage the connection according to device configurations. This allows the Tracking System server to send commands over GPRS and receive responses at all times. If no connection is detected at the server side, the Control Base shall use SMS to send commands.

With GPRS communication disabled, the VT-05 will use SMS for all command responses.

1.1. Device, Control Base and Contact configurations

Function	Description
Device Initialization	Basic configuration package to initialize Control Base/ Center and GPRS communication, which includes Control Center number, device ID, GPRS dial up information and host IPs and ports
Setup of Contact Number list	You can configure a list of up to 5 contact numbers, authorized to receive SMS alarms and send commands for various device settings

1.2. Device Communication Maintenance

Function	Description
Reconnection request and Heartbeat function	You can request the device to reconnect to a specified Host IP and port and configure a heartbeat, in order to maintain a continuous GPRS session between device and server. If no other communication is active between device and server, when enabled, the device will send a heartbeat message to the server in the specified interval.
Message Queue	If data cannot be sent immediately over GPRS for any reason, the device will keep a message queue with data to be transmitted the next



	time GPRS and server connection can be established. The device memory can hold up to 500 data messages.
--	--

1.3. Device Hardware Settings and Input/ Output Configurations

Function	Description
Ignition status detection	Command to configure ignition on alerts. When enabled, the device will send one position each time the ignition is turned on and again when the ignition is turned off.
Customized Input detection	The VT-05 provides a user-defined Input which can be enabled and alarms configured accordingly. This Input could be used for an SOS emergency button. When enabled, pushing the SOS button will: <ul style="list-style-type: none"> - let the Device send last available GPS to Control Base - The Control Base sends text messages with location details and alarm notice to all contact numbers.
Customized Output trigger	You can configure the use of Outputs and trigger times. When enabled, the device outputs will function according to their settings. -
Power Alert triggers	You can enable and configure power alerts, including battery low alarm, main power cut and power on alert

1.4. Tracking – Send Positions, Collect and Configure Update Schedules

Function	Description
2-RING Call (4-10 sec)	Hanging up after 2 rings during a call placed from one of the Contact Numbers: <ul style="list-style-type: none"> - lets the Device send last available GPS position and number of the inquiring Contact to Control Base - The Control Base sends text message with location details and security status to the inquiring Contact number.



	This feature allows users to inquire for location details simply through 2-RING call.
Single Position Request	You can retrieve the current GPS position from the device through SMS
Tracking Schedule	You can configure an unlimited tracking schedule and parameters, such as minimum travelled distance in order to report GPS position data to the server.

1.5. GPS – Based Device Configurations and Alarm Settings

Function	Description
Odometer function	You can configure a GPS based distance calculation to reset to zero when ignition is turned on (for trip distance calculation), or continue counting travelled meters indefinitely. Each position data packet sent from the device to the Control Base will include the current trip distance or total distance in meters.
High-Speed Alert	You can enable high speed alerts and configure its parameters, such as upper and lower speed thresholds.
Geo-fence Function	You can configure up to 4 Geo-fences and enable or disable the Geo-fence alarm function.

1.7. Power Saving Mode Configurations

Function	Description
Automatic Power Saving	You can enable and configure power management and saving mode for device operation. There are three subsequent power modes: 1. Operational: no power saving mode is implemented, all peripherals are powered, GPS module and GSM module are both turned on and GPRS session keeps connected 2. Idle Mode: GPS module will be turned off, while GSM module is



	<p>still operational and GPRS session keeps connected. The device will return to operational mode if either GPRS command or SMS or voice call is received, and if either shock (movement) is detected, ignition is turned on or SOS button is been pressed.</p> <p>3. Sleep Mode: Both GPS and GSM modules are turned off and GPRS session is disconnected. The device will only return to operational mode if either shock (movement) is detected, ignition is turned on or SOS button is been pressed.</p> <p>You can configure Power saving mode to come into effect according to ignition off time, no movement or no communication time. You also can configure wake-up times from Idle and Sleep modes.</p>

1.8. Device Diagnostic and Firmware Upgrade

Function	Description
Hardware and I/O Queries	You can query GSM module version, device model and firmware version as well as using RS232 to query all implemented device configurations.
Firmware upgrade over the air or through RS232 connection	The device firmware can be upgraded OTA, by defining a specified host IP and Port, as well as over RS232 connection.

The device is able to include the following status information in position updates to the server.

- GPS position and current device status (including GPS date and time, long/lat, altitude, odometer readings, HDOP and satellite count, RTC date and time)
- Power On Alert (Device has been powered on from a non-powered state)
- Main Power Failure (Main power source, such as vehicle battery falls below a minimum voltage or gets disconnected)
- Battery Low (Vehicle battery gets low)
- Main Power Restored (Main power source is reconnected)



YIELD TECHNOLOGY CO., LTD.



<http://www.110110.info>

No Matter where you go, *SuperGuard* Always with You..

- GPS Failure (GPS module is not responding)
- GPS Antenna Failure (GPS antenna is cut or disconnected)
- Ignition status (ignition has been turned on or off)
- Input status (such as SOS emergency alert)
- High speed alert (speed threshold has been passed and triggered an alert)
- High speed report (send complete trip data that includes high-speed violations)
- Geo-fence entered and exited