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# Automatic vehicle locator Model: VT-750 Java platform



# **Data Sheet**

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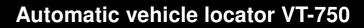
MADE IN TAIWAN



# Automatic vehicle locator VT-750

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# VT-750 Automatic vehicle locator

#### 1. Introductions

VT-750 is a versatile and economical platform for mobile positioning applications. It integrates UniTraQ GPS module, Cinterion TC65i Quad-band 850/900/1800/1900GSM/GPRS communication engine and computer processing power all onto a single board.

It is enclosed in a solid casing for easy installation. VT-750 provides reliable Real Time vehicle GPS positions anytime anywhere in the world, providing the correct position and status of vehicles from remote locations onto computer displayed maps. Benefits such as increased fleet efficiency, improved public and driver safety, better emergency response time, enhanced fleet control, and good public relations are all realized through the proper implementation of VT-750 system.

The VT-750 system takes advantage of JAVA machine to transmit NMEA message to 24-hrs Control Center by Packet-Switch for monitoring through either GPRS or SMS massage system. Control center sets command by sending SMS for monitoring through GSM system or Internet access.



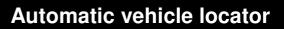
# Automatic vehicle locator VT-750

#### 2. Features

- Supports Quad band
  850/900/1800/1900 MHZ operation
- ◆ JAVA platform
- Java IMP\_2.0 virtual machine for easy and fast application development
- GPRS multi-slot class 12 and mobile station class B
- Integrated TCP/IP stacks
- SMS transfer via GSM/GPRS
- Remote control via SMS
- Real-time GPS tracking
- Real-time vehicle status monitoring
- Dual data communication capability through GPRS and SMS
- Supports speaker and microphone interface
- 6 Bi-directional digital IO ports with voltage protected up to 40V
- RS232 interface with DB9 connector for Java program updating
- Power supply and low battery detection acknowledge
- 4 LED indicators for power, battery charger in progress, GSM/GPRS and GPS status
- Built-in 1100mAh Recharge battery

# 3. Applications

- Security (cash carrier vehicle and police vehicle)
- Commercial vehicle monitor and driver performance monitor
- Fleet management
- Logistics
- Rental car monitoring and theft recovery
- Emergency (ambulance and fire engine)
- Hazardous waste management





# 4. Optional java program

- Data logger in flash mode ۵
- Up to 5 SMS numbers for emergency report
- Self geofence and out of range alert
- Speed detection ٠
- OTA firmware upgrading ٠
- GPS reporting internal user programmable
  System status report(IO,power,battery)
- Security administration

## 5. Ordering Information

#### VT750-112

| Designator | function                  | Symbol | Description                                 |
|------------|---------------------------|--------|---|
|            | Type of digital IO1       | А      | digital IO1 as general purpose IO           |
|            |                           | в      | GPIO1 can be used to control watchdog timer |
| 1          |                           |        | (reserved)                                  |
|            |                           |        | More details information refers to VT750    |
|            |                           |        | software development guide                  |
|            | Type of GPS enable method | 0      | GPS enabled by GPIO5                        |
|            |                           |        | More details information refers to VT750    |
|            |                           |        | software development guide                  |
| 2          |                           | 1      | GPS enabled by hardware (reserved)          |
|            |                           |        | More details information refers to VT750    |
|            |                           |        | software development guide                  |



# 6. Electrical Specifications

# 6.1 General Specifications

| Parameter             | specification  |  |
|-----------------------|--|--|
| Platform              | Java, J2ME profile IMP 2.0, 400KB RAM, 1.7MB flash             |  |
| Power Supply 9~60 VDC |  |  |
|                       | Power down 50uA  |  |
| Power Consumption     | Sleep mode 3mA   |  |
|                       | GPRS class 12(Ave) 600mA                                       |  |
| Firmware Upgrade      | RS232 interface or by the air interface                        |  |
| Function Setting      | RS232 interface or by the air interface                        |  |
| SIM card type         | 1.8V, 3V   |  |
| LED Status Indicator  | Main Power/ Battery charge in progress/GPRS/GPS                |  |
| Serial port interface | RS232 interface with DB9 connector                             |  |
| Digital GPIO          | 6 Bi-directional digital IO ports with voltage protected up to |  |
|                       | 40V  |  |

# 6.2 GPRS/GSM Specifications

| Parameter          | specification                             |  |
|--------------------|---|--|
| Frequency          | Quad band 850MHz/900MHz/1800MHz/ 1900MHz/ |  |
| Dutaut Dawar       | Class 4(2W) for EGSM 850 and 900          |  |
| Output Power       | Class 1(1W) for GSM 1800 and 1900         |  |
| Protocol support   | TCP/UDP/HTTP/FTP/SMTP/POP3/PPP            |  |
| GPRS Multi-slot    | Class 12                                  |  |
| GPRS Mobil station | Class B                                   |  |
| Coding scheme      | CS1,CS2,CS3,CS4                           |  |
| PBCCH support      | Yes                                       |  |
| USSD support       | Yes                                       |  |
| DownLoad/UpLoad    | 85.6Kbps/21.4Kbps                         |  |



# 6.3 GPS Specifications

| Parameter                         | specification                |
|-----------------------------------|------------------------------|
| Transmission data                 | NMEA 0183 Ver3.01            |
| Receiver channels / Fixing method | 65 channels                  |
| Acquisition sensitivity           | -137 dBm                     |
| Tracking sensitivity              | -158 dBm                     |
| Receiver frequency                | 1575.42MHz L1 C/A Code       |
| Accuracy                          |                              |
| (1)Position                       | 5m CEP                       |
| (2)Datum                          | WGS-84                       |
| Time To First Fix                 |                              |
| (1)Cold start                     | 45Sec(typ)                   |
| (2)Warm start                     | 35Sec(typ)                   |
| (3)Hot start                      | 1Sec(typ)                    |
| Dynamic condition                 | 4G (39.2m/sec <sup>2</sup> ) |
| Interface                         | UART                         |
| Operational Limits                |                              |
| (1) Altitude                      | < 18,000m                    |
| (2) velocity                      | < 500m/s                     |
| Bit rate                          | 4800 bps                     |
| Start bit                         | 1 bit                        |
| Stop bit                          | 1 bit                        |
| Data bit                          | 8 bit                        |
| Parity                            | None                         |
| Output sentences                  | GPGGA/GPGSA/GPGSV/GPRMC      |
| Refresh time                      | 1Sec                         |



# 7. RS232 Interface

VT-750 offers RS232 interface and RS232 meets the requirements of TIA/EIA-232-F. RS232 interface is a command and data interface which allows users to download Java firmware and set functions.

# 8. Antenna Interface

#### 8.1 GPRS/GSM Antenna Connector

VT-750 offers a SMA type connector which must be connected to an external passive antenna.

#### 8.2 GPS Antenna Connector

VT-750 offers a SMA type connector which must be connected to an external active antenna. The connector receives RF signal input and antenna power supply.

## 9. LED Indicator

#### 9.1 Main Power Indicator

For the Main Power Indicator through green LED, detailed information is shown in the following table.

| LED mode | Operation status |  |
|----------|------------------|--|
| On       | Main power on    |  |
| Off      | Main power off   |  |

#### 9.2 Backup Battery Charger Indicator

For the Main Power Indicator through green LED, detailed information is shown in the following table.

| LED mode | Operation status                  |
|----------|-----------------------------------|
| On       | Backup battery charge in progress |
| Off      | Backup battery charge complete    |



# 9.3 GPS Status Indicator

For the GPS status indicator through red LED, detailed information is shown in the following table.

| LED mode            | Operation status    |
|---------------------|---------------------|
| 2 sec On /2 sec Off | Searching satellite |
| 1 sec On /1 sec Off | Tracking satellite  |

# 9.4 GPRS/GSM Status Indicator

For the GPRS/GSM status indicator through yellow LED, detailed the information is shown in the following table. This part can be modified, please read the TC65i AT Command Set.

| LED mode                          | Operation status  |
|-----------------------------------|---|
| Off                               | GPRS/GSM is off   |
| 600 ms On / 600ms Off             | No SIM card inserted or no PIN entered, or network search |
|                                   | in progress, or ongoing user authentication, or network   |
|                                   | login in progress.  |
| 75 ms On / 3 s Off                | Logged to network (monitoring control channels and user   |
|                                   | interactions). No call in progress.                       |
| 75 ms on / 75 ms Off / 75 ms On / | One or more GPRS contexts activated.                      |
| 3 s Off                           |   |
| Flashing                          | Indicates GPRS data transfer: When a GPRS transfer is in  |
|                                   | progress, the LED goes on within 1 second after data      |
|                                   | packets were exchanged. Flash duration is approximately   |
|                                   | 0.5 s.  |
| On                                | Depending on type of call:                                |
|                                   | Voice call: Connected to remote party.                    |
|                                   | Data call: Connected to remote party or exchange of       |
|                                   | parameters while setting up or disconnecting a call.      |



# 10. Mechanical specification

| Parameter | Specification                   |
|-----------|---------------------------------|
| Dimension | 85 mm(L) X62.5 mm(W) X 28 mm(H) |
| Weight    | 110g                            |

# **11. Environment specification**

| Parameter   |           | Specification  |
|-------------|-----------|----------------|
| Tomporatura | Operating | -20 ℃ to +60 ℃ |
| Temperature | storage   | -40 ℃ to +80 ℃ |



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