UniTraQ International Corp.

GSM/GPRS/GPS

VT-1052G

Data Sheet

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2F., No.136, Ziqiang S. Rd., Zhubei City, Hsinchu County 30264, Taiwan (R.O.C.)
TEL : 886-3-6578491   FAX : 886-3-6578492

MADE IN TAIWAN

Version History

Date	Version	Description of change	Author
2011-04-11	1.0	Original	John
2011-05-18	1.1	Add g-sensor feature;modify com port and I/O	John
2011-06-22	1.2	Modify Features	Wooden

Content

1. Introduction

VT-1052G is a versatile and economical platform for mobile positioning applications. It integrates UniTraQ GPS module with Quad-band GSM and powerful microcontroller all onto a single board. It is enclosed in a solid casing for easy installation.

VT-1052G provides reliable Real Time vehicle GPS positions anytime anywhere in the world, with the correct position and status of vehicles from remote locations on 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-1052G system.

The VT-1052G system can transmit NMEA message to 24-hrs Control Center for monitoring through SMS, GPRS. Control center sets command by sending commands for monitoring through GSM system. Taking advantage of Java machine, it is easy for users to design their own applications. The VT-1052G also supports many powerful functions, such as USB host, WiFi optional interface, to extend the system integrations externally.

2. Features

- Supports Quad-band GSM (GSM850/EGSM900/DCS1800/PCS1900 MHz) operation
- Java platform MIDP_2.0 virtual machine for easy and fast application development
- GPRS multi-slot class 10 and mobile station class B
- Supports TCP/UDP
- Real-time vehicle status monitoring
- Management capability through SMS, GPRS
- Supports speaker and microphone interface
- 3 Bi-directional digital IO ports and 3 Analogue ports
- 1 RS232 interface with DB9 connector for Java program updating
- Additional 2 RS232 interfaces for data communication with external devices
- 1 USB host interface for USB device connection
- Power supply and low battery detection acknowledge
- Support sleeping mode
- 4 LED indicators for Power,Battery Charging, Mobile, GPS status
- Built in Tri-axial G-sensor to report motion or accident sensing, sensitivity range ±4G
- 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. Java program functions

- Data logger in flash mode
- Up to 5 SMS numbers for emergency report
- Self Geofence and out of range alert
- Speed detection
- GPS reporting internal user programmable
- System status report(IO, power ,battery)
- Security administration
- OTAP function
- Data re-send function

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5. Electrical Specifications

5.1 General Specifications

Parameter	Specification
Platform	Java, MIDP 2.0
Power Supply	9~40 VDC
Power Consumption	Sleeping mode : 20 mA(Typical)
	GPRS class 10 : 150mA(Ave)
Firmware Upgrade	RS232 interface, by the air interface
Function Setting	RS232 interface, by the air interface
SIM card type	1.8V, 3V
LED Status Indicator	Power, Battery charging, Mobile ,GPS
Serial port interface	1 RS232 interface for Menu interface and configurations
	2 RS232 optional for data communications
	USB host interface
I/O Ports	3 Bi-directional digital IO and 3 Analogue ports input (~12V)

5.2 GPRS/GSM Specifications

Parameter	Specification
Frequency	Quad band GSM/GPRS 850 /900 /1800 /1900MHz
Output Power	Class 4(2W) for EGSM 850 and 900
	Class 1(1W) for GSM 1800 and 1900
Protocol support	TCP/UDP
GPRS Multi-slot	Class 10
GPRS Mobil station	Class B
Coding scheme	CS1,CS2,CS3,CS4
PBCCH support	Yes
USSD support	Yes
Downlink/ Uplink max.	85.6Kbps/42.8 kbps(GPRS)

5.3 GPS Specifications

Parameter	Specification
Protocol	NMEA 0183 Ver3.01
Receiver channels / Fixing method	50 channels all in view
Acquisition sensitivity	-144 dBm
Tracking sensitivity	-160 dBm
Receiver frequency	1575.42MHz L1 C/A Code

Accuracy
  (1)Position
  (2)Datum
	
	2.5m CEP
	WGS-84 (Default)

Time To First Fix
  (1)Cold start
  (2)Warm start
  (3)Hot start
	
	29 Sec(typ)
	29 Sec(typ)
	1 Sec(typ)

Dynamic condition	4G (39.2m/sec^2)
Interface	UART
Operational Limits (1) Altitude (2) velocity	 < 50,000m < 500m/s
Bit rate	9600 bps
Start bit	1 bit
Stop bit	1 bit
Data bit	8 bit
Parity	None
Output sentences	GGA, GLL, GSA, GSV, RMC, VTG, TXT
Refresh time	1 sec (Max.:4Hz)

6.   RS232 Interface

VT-1052G offers RS232 interface and RS232 meets the requirements of TIA/EIA-232-F. The RS232 interface can be extend to three physical RS232 ports. Three RS232 ports are designed for using as a DCE to connect to other devices, such as RFID reader, CAN bus reader, and Barcode reader. The port B on the UniTraQ's Com port extended cable is primarily designed for debugging, downloading and setting functions. It is not available during Java run time.

7. Antenna Interface

7.1 GPRS/GSM Antenna Connector

VT-1052G offers a SMA type connector which must be connected to an external active antenna.

7.2 GPS Antenna Connector

VT-1052G offers a SMA type connector which must be connected to an external active antenna. The connector receives RF signal input and antenna power supply.

8. USB Interface

The VT-1052G system provides one USB 2.0 Host interface with mini USB 5 pin plug header. It can connect external USB devices (e.g. USB Reader) or outside storage device for downloading data.

9. LED Indicator

9.1 Main Power /Backup Battery Charger Indicator

1.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

2.For the Backup Battery Charger through **red** LED, detailed information is shown in the following table.

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

9.2 GPS Status Indicator

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

LED mode	Operation status
On	GPS fixed
Off	Tracking satellite

## 9.3   GSM/GPRS Status Indicator

For the HSDPA/GPRS/GSM status indicator through **green** LED, detailed the information is shown in the following table.

LED mode	Operation status
Off	GSM/GPRS is not running
64 ms On / 3000 ms Off	Logged to network (monitoring control channels and user interactions). No call in progress.
64 ms On / 300 ms Off Flashing	Indicates GPRS data transfer.
64 ms On / 800 ms Off	GPRS does not find the network

10. External Connection

10.1   8 PIN connector

Pin	Signal	Type	Description
1	Digital_ I/O1	I/O	Bi-directional I/O
2	Digital_ I/O 2	I/O	Bi-directional I/O
3	GND	GND	GND
4	Vcc	Vcc	Connection to car ACC (9~40 VDC)
5	Digital_ I/O 3	I/O	Bi-directional I/O
6	Analogue_ In 1	I/O	Analogue Input
7	Analogue_ In 2	I/O	Analogue Input
8	Analogue_ In 3	I/O	Analogue Input
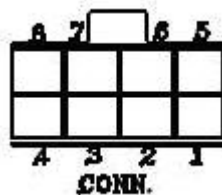
Front view of External Connector

10.2 Mini USB connector

Pin	Signal	Description
1	VBUS	Power
2	D-	USB 2.0 differential pairs
3	D+	
4	ID	not connected
5	GND	Bi-directional I/O
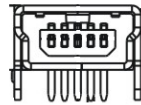
Front view of Mini USB Connector

10.3 Phone Jack

Accept an earphone/Microphone Combination with a remote transmission/reception function for hands free operation. The phone jack is 2.5mm diameter type.
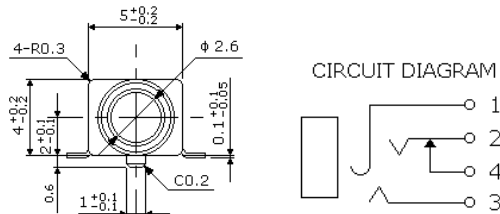
11. Mechanical specification

Parameter	Specification
Dimension	10.5 mm(L) X62.5 mm(W) X 28 mm(H)
Weight	180g

12. Environment specification

Parameter		Specification
Temperature	Operating	-20°C to +60°C
	storage	-40°C to +80°C

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Email　　support@unitraq.com
Website　www.unitraq.com