

GPS/GSM/GPRS Unit for fleet management

FEATURES

- Quad Band GSM/GPRS engine
- Built-in GPS & GPRS antenna
- SuperSense GPS sensitivity
- Assisted GPS ready
- Ultra-low power consumption
- Multi-polygon area
- High performance communication Protocol
- Multiple cell-ID geofencing
- Field configurable
- Compact design
- Three-wire installation
- Splashproof after installation
- No external power required
- Maintenance-free
- RoHS-compliant

APPLICATIONS

The TRX-300 is specially designed for fleet management applications:

- Vehicle fleet monitoring
- Vehicle displacement optimization
- and more



DESCRIPTION

The **TRAXLOGIX** TRX-300 tracking base unit provides a cost-effective, high-performance fleet-management solution. The product is designed as a stand-alone unit. Energy is supplied by the vehicle's battery; an internal battery backup is also provided. The product enclosure contains a GPS receiver, a GSM/GPRS engine, and a microcontroller. Installation requires no tools or special skills and takes only a few minutes. GSM and GPS antennas are fully integrated into the enclosure, reducing installation time even more. Using a full-featured duplex communication protocol, the product becomes a versatile communicative platform, allowing field setup programming, geofencing configuration, and real-time vehicle tracking. The GPS time to first fix can be greatly reduced by using the assisted GPS commands.

All **TRAXLOGIX** tracking products are designed to communicate in duplex with a centralized dedicated server through a highly efficient communication protocol.

HOW IT WORK

The **TRAXLOGIX** TRX-300 tracking base unit provides a full-featured fleet-management solution. The product can be remotely configured to record the vehicle's GPS position at regular intervals or be tracked in real-time. All GPS positions recorded in the log memory can be automatically sent to the communication server at a predetermined time of the day, providing a fully automated fleet-management solution. The product can also be configured to check whether the vehicle is in a pre-defined permitted geographical area. An alarm message can be sent to the communication server should the vehicle be outside this area.

PRODUCT INSTALLATION

The **TRAXLOGIX** TRX-300 tracking base unit is installed in the vehicle. Only three wires need to be connected: two for the power supply and one to detect the status of the contact key. After the product has been installed in the vehicle, it will automatically start, and the GSM engine will connect to the network. In order to activate the product in the server database, a number provided with the instruction manual needs to be dialed. The operator will introduce the required details, and the server will activate the product.

GPS RECEIVER

Information on the geographic position of the vehicle is provided by a highly sensitive, 16-channel GPS receiver coupled with a passive ceramic patch antenna. SuperSense technology

allow enhanced indoor tracking, thanks to the high sensitivity of the receiver. Time to first fix can also be dramatically reduced if needed. In this case an approximate position is first estimated using geofencing through the cell IDs of the GSM network. Then the data are sent to a dedicated server. A data file is then formatted and resent to the GPS receiver of the product.

LED INDICATION

The **TRAXLOGIX** TRX-300 tracking base unit provides a visual indication of the product's status and battery condition through a tri-color LED.

FIELD CONFIGURATION

The **TRAXLOGIX** TRX-300 tracking base unit can be configured and reconfigured by the communication server after the product has been installed in the vehicle.

GSM-GPRS ENGINE

The **TRAXLOGIX** TRX-300 tracking base unit contains a quad-band GSM/GPRS engine covering the following frequencies : 850, 900, 1800, and 1900 Mhz. The module has been approved by the FTA, GCF, PTCRB and the FCC. Communication can be achieved using GPRS class 10, SMS, and MMS data transfer. An internal SIM card socket is included in the product enclosure.

MICROCONTROLLER

The **TRAXLOGIX** TRX-300 tracking base unit uses a 64-pin high-performance, 8-bit flash microcontroller. Program memory space can be increased for additional software source code if required for custom applications.

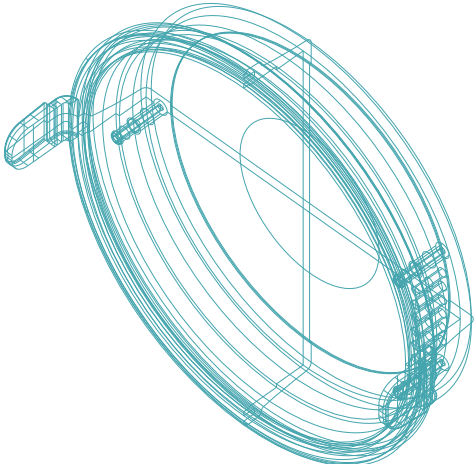
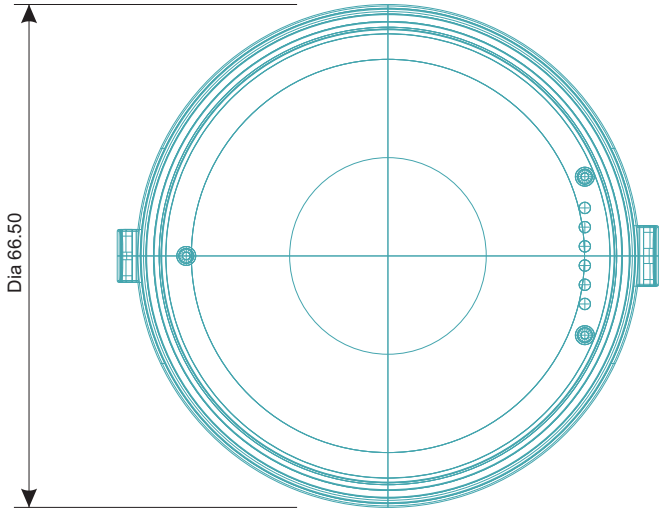
MULTI-POLYGON AREA

The multi-polygon area function provides the ability to check whether the vehicle is in a pre-defined geographical area. Up to 64 areas, each containing up to 4 position points, can be stored in the nonvolatile memory of the product. The position of the vehicle can be ascertained using GPS or GSM Cell ID. If the position is located outside one of the predefined areas, a text message is sent to the communication server, allowing further action to be taken. Every time the product is awakened, the analysis will be performed. The software embedded in the microcontroller will automatically calculate the position.

MEMORY LOG

The **TRAXLOGIX** TRX-300 tracking base unit can be configured to record the following parameters in the log memory: GPS data (latitude, north/south indicator, longitude, east/west indicator, signal quality, date, time, satellites used, altitude, speed, HDOP), GSM data (cell-ID, date, time), and temperature parameters. Please consult the datasheets of the available battery packs for memory capacity.

MECHANICAL



All dimensions are in millimeters

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS	VALUE	UNIT
Nominal Supply Voltage:	3.6	Volt
Power consumption during Communication:	2200 max (During Tx Burst)	mA
Power consumption in Sleep Mode:	65	μ A
Power consumption in Standby Mode	4.7 (Connected to GSM network)	mA

ENVIRONMENTAL CHARACTERISTICS

CHARACTERISTICS	VALUE	UNIT
Storage temperature range:	-20 to +85	$^{\circ}$ C
Normal operating temperature range:	-15 to +75 (see NOTE1)	$^{\circ}$ C
Extended operating temperature range:	-20 to +80 (see NOTE2)	$^{\circ}$ C
Long damp heat operating conditions:	Tested at +60 $^{\circ}$ C,95% RH,500 hours	
Short damp heat storage & transportation conditions:	Tested at +40 $^{\circ}$ C,95% RH,90 hours	

NOTE1: Inside this normal range, the GSM engine inside the Product guarantee full compliance with GSM standards. Certification tests reports applies to the GSM engine operating in this interval.

NOTE 2: Inside this extended range, the operability is guaranteed. However, there is not a full certification test report in this range. Practically, TRAXLOGIX performs non regression tests in this range in order to ensure that the GSM engine inside the Product can attach to the network and handle a data transfer. Some performances may remain under the normal GSM expectation (sensitivity reception level 1 or 2 dB lower, TX emitting power slightly weaker).

The specifications in this document are subject to change at TRAXLOGIX's discretion. TRAXLOGIX assumes no responsibility for any claims or damages arising out of the use of this document, or from the use of products and services mentioned in this document, including but not limited to claims or damages based on infringement of patents, copyrights or other intellectual property rights. TRAXLOGIX makes no warranties, either expressed or implied with respect to the information and specifications contained in this document. TRAXLOGIX does not support any applications in connection with active weapon systems, ammunition, life support and aircraft. Performance characteristics listed in this document are estimates only and do not constitute a warranty or guarantee of product performance. The copying, distribution and utilization of this document as well as the communication of its contents to others without expressed authorization is prohibited. Offenders will be held liable for the payment of damages. All rights reserved, in particular the right to carry out patent, utility model and ornamental design registrations. Copyright©2006, TRAXLOGIX