

GlobalTrak VERSA

203133-01

USER Manual

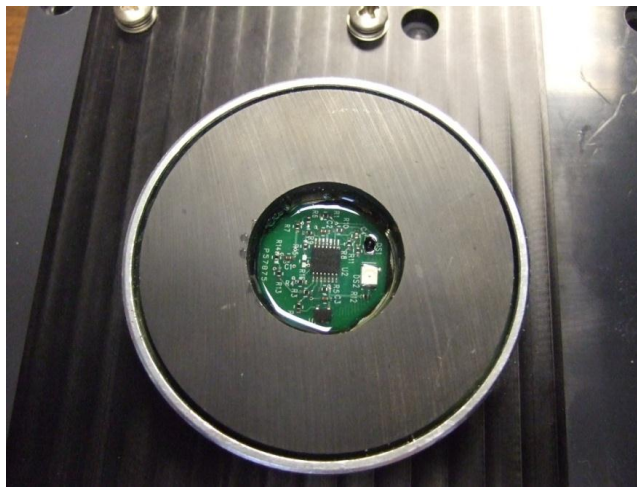
The VERSA is a GlobalTrak product designed to allow for easy implementation of global tracking with versatile sensor capability. The version is designed to mount internally to the door of a shipping container. The mounting allows for an sensing mechanism to determine when the container doors are opened. The unit consists of sensors measuring environmental quantities and allowing for control and data collection from other external sensors. The control and data collection is available via various hard wired interfaces as well as wirelessly via Zigbee. Versa also contains sensitive GPS capabilities to allow for determination of location. This VERSA module contains communications links for GSM and GlobalStar Satellite communication. Finally, the power for the unit is self-contained and supplied by a robust battery. Charging circuits for this battery are also included to allow for externally power operation.

Photos of the exterior and interior of the product are shown below. The only user accessible ports are the key switch which turns the unit on and off and a multi-pin connector for external power and user I/O. The bottom of the unit contains two magnets to attach it to a metal surface. One of the magnets



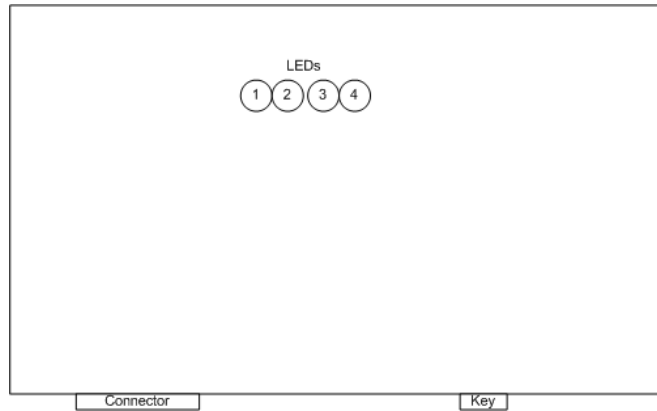
has an electronic circuit inside which senses tamper events.





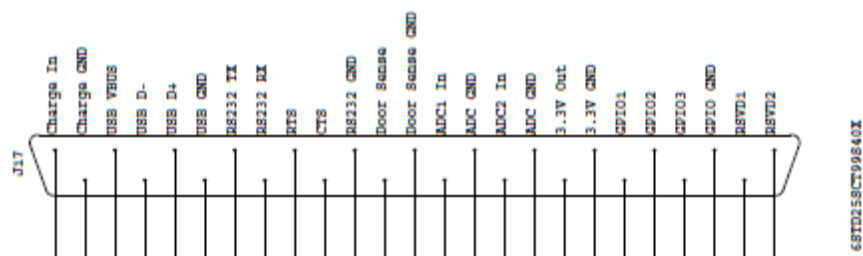
Operation

The Versa product is activated by turning the key in the key switch (see drawing below). Perpendicular to the long axis of the product is the OFF position and Parallel to the long axis is ON. Status of operations is indicated with the four LEDs (1-4 on drawing) located on the large top surface of the product. LED #1 indicates GSM activity, LED #2 indicates activity per blink code sequences, LED #3 indicates external battery charging, and LED #4 indicates USB connection engaged.



Operation consists of activating via the key switch. The device will initialize all of the sensors (including GPS) and establish communications via cell in order to send a status report. If the cell is unavailable a satellite message will be sent. This operation is repeated on a programmable interval. Between reporting activities, the Versa unit places itself in a low power state to conserve battery life. If a sensor that is monitored reports a change greater than a programmed threshold, a special report will be sent immediately. Zigbee is processed by the EM357 as a parallel processor (coordinator). Zigbee will establish communications with its own wireless network with preselected nodes and synchronize timing to allow both these nodes as well as the Versa Zigbee coordinator to enter a low power state between reporting activities. Communication is selected to be Cell or Satellite but not both. Zigbee communication is independent of the Cell and Satellite communication. GPS is active on an either a periodic basis (to collect location information for a report) or on a continuous basis.

External sensors and power can be connected by wire using the external Versa connector. Details of the connector interface are shown below. Available are a USB and a RS-232 interface as well as an analog/digital port and several GPIO ports. Finally there is a regulated power (+3.3V) which is limited to 30 milliamps of current.



Versa is designed to be mounted a metalized surface using the attached magnets. For proper operation of the satellite subsystem, the Versa unit must be mounted to allow the top surface to see the sky.

The reports generated by the Versa device are sent via either Cell or Satellite to a internet site which is accessible by the user. This site is known as the Information Management Bureau (IMB).

Life Expectancy (on a full charge):

16.8 Months at 24-hour reporting

42 Days at 30-minute reporting

21 Days at 15-minute reporting

7 Days at 5-minute reporting

Sensors

Temp: -40°C (-104°F) to +85°C (+185°F) Operating

Light: Light detection on dual surfaces

Vibration/Shock: 3-axis shock ± 18 , ± 6 , ± 3 g/axis, constant monitoring

Intrusion Detection: Advanced Sensor based on light, color, material

Motion Detection: Integral Motion sensor (Start/Stop). Independent of accelerometer

Mounting: Exterior Mount

Regulatory Notices (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not in-stalled and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

Changes or modifications not expressly approved by GlobalTrak could void the FCC authorization to operate this equipment.

This equipment complies with the FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and the human body. This transmitter must not be col-located or operating in conjunction with any other antenna or transmitter.