

# TRIMTRAC GSM/GPS Tracking Unit

## Covert Vehicle/Asset Monitoring, Tracking, Security and Recovery

### Frequently Asked Questions

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- Could someone just build the device using off-the-shelf components?

### Q: What is TRIMTRAC?

A: The TRIMTRAC is a new, low-cost tracking device for consumer automotive monitoring and recovery applications and services. It combines enhanced GPS autonomous positioning detection with GSM wireless communications reporting.

### Q: What are its major features and benefits?

A: The TRIMTRAC major features and benefits:

Features	Benefits
Integrated GPS and GSM using single CPU	Low cost, small footprint, low power consumption
Enhanced GPS sensitivity	The TRIMTRAC can determine position in places where traditional GPS does not work
Tri-band GSM 900/1800 MHz (DCS) and 1900 MHz (PCS)	Nearly ubiquitous coverage via the prevailing worldwide standard for wireless digital communications
Short Message Service (SMS) Support	Efficient, cost-effective data transmission
Complete end-user device including water resistant package and internal antennas	Eliminates installation and reduces costs
Self-powered using four AA batteries that last 90 days with typical usage	Eliminates installation and enables the device to work in places where power is unavailable
Optional Vehicle Adapter Module	Leverages external power; standby battery enables the device to continue working even if external power is disconnected
Multi-mode reporting capability	Enables the end-user to select the most optimum reporting method: motion detection, scheduled daily or weekly reports and criteria based queries for on-demand polling
The most versatile solution on the market	The rugged and modular design of TRIMTRAC combined with its GPS capabilities using GSM standards, and its multi-mode reporting capability enables a variety of applications in safety/security, as well as fleet management applications. No existing solution can boast such versatility and combine TRIMTRAC performance with such low costs of owner ship
Low cost	Significantly less expensive than comparable devices

**Q: What is unique about the TRIMTRAC?**

A: All of the TRIMTRAC functions are integrated on one printed circuit board. The functions share a central processor unit (CPU), enabling the TRIMTRAC low cost, small size, power conservation, and increased reliability.

**Q: Does the device only work outdoors?**

A: No. The TRIMTRAC supports enhanced GPS that enables it to often work in places where traditional GPS may not.

**Q: Does the device work inside a moving vehicle?**

A: The TRIMTRAC enhanced GPS sensitivity enables it to work reasonably well inside of a moving vehicle, even when it does not have a clear view of the sky. The device is usually able to obtain location fixes when it is inside packages, glove boxes, under seats and in some cases, car tailgates.

**Q: Does the TRIMTRAC require installation?**

A: No, the device consists of a self-contained package that includes all antennas and requires no external connections unless a vehicle adapter module is used.

**Q: What wireless network standards does TRIMTRAC support?**

A: The TRIMTRAC initially supports GSM (Global System for Mobile Communications). GSM is the standard for digital cellular communications in much of the world. In the United States, there are competing standards, including AMPS, CDMA and TDMA; however, GSM enjoys equal or better coverage compared to the other digital standards. As with the other digital standards, the TRIMTRAC GSM coverage is strongest in heavily populated areas and along interstate corridors. None of the digital standards are as pervasive as analog AMPS cellular signals, but analog is gradually being phased out in favor of digital standards. Over time, the TRIMTRAC may be enhanced to support other digital communication standards.

**Q: What geographic areas does the device cover?**

A: The TRIMTRAC will work wherever there is a GSM signal. In the United States, this is typically in major metropolitan areas and along interstate corridors.

**Q: Why does TRIMTRAC use GSM SMS instead of GPRS (General Packet Radio Service)?**

A: TRIMTRAC is intended for use in applications that require the periodic sending and receiving of relatively small amounts of data, with an emphasis on low power consumption by the device. GPRS is better suited for applications that involve real-time, two-way communication and the transfer of larger amounts of data (as might be required by an application such as high- end commercial fleet management, for example). GPRS has disadvantages relative to SMS for the uses for which TRIMTRAC is intended. In particular, GPRS' coverage area is not as extensive as SMS. It would also create a greater drain on the device's power, and would increase the cost of the device. SMS is a better fit than GPRS for the TRIMTRAC target applications, as it offers better coverage, improved power conservation, and minimizes the device's cost.

**Q: What kind of power does the device require?**

A: The TRIMTRAC uses 4 common AA alkaline batteries. For permanent vehicle installation, the device can be ordered with an optional Vehicle Adapter Module that enables it to tap into 12 Volt (DC) vehicle power. The Vehicle Adapter Module includes a standby rechargeable battery so that in the event that vehicle power is lost,

the TRIMTRAC can continue to report its position for a limited period of time.

**Q: How long do the batteries last?**

A: The TRIMTRAC four AA batteries are designed to last up to 90 days under typical operating conditions with good GPS signal strength and with up to 10 position fixes and reports per day.

**Q: What are the TRIMTRAC power requirements?**

A: The TRIMTRAC is a self-powered device that enables monitoring for situations where it is not possible or convenient to tap into external power. Because it integrates all of its functions on a single board using a common CPU, it conserves power more than alternative devices. Furthermore, it conserves power by reporting location only when the device is in motion or is polled for a current position. The TRIMTRAC automatically reports its battery power level with each position report so that an application using the device can remind the user when it is time to replace the batteries.

**Q: Can the TRIMTRAC use external power?**

A: Yes, via the optional Vehicle Adapter Module.

**Q: How durable is the TRIMTRAC?**

A: The device consists of a sturdy, water-resistant moulded plastic casing with all of the required antennas inside. It is designed to fully support the needs of consumer automotive monitoring and recovery applications and services.

**Q: Is the unit water proof.**

A: The TRIMTRAC has been test to international standards and has an IP rating of IP55. An IP number is often used when specifying the environmental protection afforded by enclosures around electronic equipment. These ratings refer to specific tests. The IP number is made up of two components as follows: IP44 The first number refers to the protection against solid objects and the second against liquids. The higher the number the better the protection. see below for a summary.

**IP Protection Number Summary**

**FIRST NUMBER**

- 0 No protection
- 1 Protected against solid objects up to 50mm eg accidental touch by hands
- 2 Protected against solid objects up to 12mm eg fingers
- 3 Protected against solid objects up to 2.5mm (tools and wires)
- 4 Protected against solid objects up to 1mm (small tools and wires)
- 5 Protected against dust, limited ingress (no harmful deposit)
- 6 Totally protected against dust

**SECOND NUMBER**

- 0 No protection
- 1 Protection against vertically falling drops of water eg condensation
- 2 Protection against direct sprays of water up to 15 degrees from vertical
- 3 Protection against direct sprays of water up to 60 degrees from vertical
- 4 Protection against water sprayed from all directions - limited ingress permitted
- 5 Protected against low pressure jets of water from all directions - limited ingress permitted
- 6 Protected against low pressure jets of water (use on ship decks) - limited ingress permitted
- 7 Protected against the effect of immersion between 15cm and 1m
- 8 Protected against long periods of immersion under pressure

**Q: How accurately is the device able to report location information?**

A: The TRIMTRAC position reports are typically accurate within approximately 20 feet horizontally and 35 feet vertically.

**Q: How frequently can the device report position?**

A: The default report frequency is approximately every 15 minutes while the device is in motion. The maximum update frequency is approximately 2 to 3 minutes depending upon how the TRIMTRAC is configured and environmental conditions such as GPS and GSM signal strength. However, it can also be programmed to send reports based on user-defined time ranges whether in motion or not.

**Q: How big is the TRIMTRAC and how much does it weigh?**

A: Its dimensions are 143.3 mm x 76.2 mm x 36.7 mm (5.78" x 2.99" x 1.44"). It weighs 205 grams (7.2 ounces) without batteries, or 300 grams (10.5 ounces) with 4 AA batteries.

**Q: Does anything need to be provided with the device?**

A: Yes, the TRIMTRAC requires an SMS capable SIM (Subscriber Identifier Module) card, similar to what is used in all cell phones, four AA batteries, and a wireless carrier. Each TRIMTRAC device needs to be commissioned once, using special software before its first use.

**Q: Can the device send an alert to a cell phone?**

A: The TRIMTRAC can send a SMS to any valid telephone number, including other cell phones. Alternately, any application that uses the TRIMTRAC as a remote sensor and tracking device could send an alert to a cell phone.

**Q: Could someone just build the device using off the shelf components?**

A: Although it is possible to build a TRIMTRAC-like device with similar capabilities using standard components, those functions would not be integrated at the CPU level without significant expense. This would result in higher cost and power usage, and less reliability. Moreover, the cost of acquiring access to all of the requisite technologies, particularly the GSM software, and performing all the certification testing, can be prohibitively expensive.