



# u-TRAQ autoPro GPS Vehicle Tracking System

Product # 1020-PRO

## **User's Guide**

Installation and Operating Instructions

*u-TRAQ*<sup>™</sup> *autoPRO*  
by **Uplink**

## Table of Contents

Before Installing	2
GPS Fundamentals	3
Checking the Contents of the Box	3
Tools Needed For Installation	4
Cable Interface	4
Installing and Mounting the autoPRO Unit	5
12 VDC Power Connection	5
Ground Connection	5
Switched 12 Volt Connection	5
Testing the autoPRO Unit	6
Troubleshooting	7

## Before Installing

Prior to the installation process, thoroughly review and adhere to the following items.

- Use only a Digital or Analog Volt Meter - DO NOT USE TEST LIGHT!
- Check for possible installation locations for the GPS unit prior to permanent installation.
- ALWAYS LOOK BEFORE DRILLING. Make sure that the installation process does not cause damage to any vehicle hose, electrical loom, or cause physical damage to the vehicle.
- Make note of the unit serial number prior to installation.
- Prior to working on any part of the dashboard (instrument cluster, center console, glove box, etc.), remove the negative and positive terminal from the battery to deactivate the sensors for the airbags. Refer to the Owner's Manual and to a Shop Manual for the vehicle for specific instructions in the temporary deactivation process.
- DO NOT place objects, including communication equipment, in the area over the airbag or near the airbag deployment area.
- Refer to the Owners Manual and to a Shop Manual of the vehicle for specific information related to the electrical wiring, interior disassembly, and any other mechanical aspects of the vehicle.

## GPS Fundamentals

There is a minimum of 24 operational GPS satellites at all times. The satellites, operated by the U.S. Air Force, orbit the earth every of 12 hours. Each GPS satellite transmits data that indicates its location and the current time. All GPS satellites synchronize operations so that these repeating signals are transmitted at the same instant. The signals, moving at the speed of light, arrive at a GPS receiver at slightly different times because some satellites are farther away than others. The distance to the GPS satellites can be determined by determining the amount of time it takes for their signals to reach the receiver. When the receiver determines the distance to at least four GPS satellites, it can by triangulation, calculate its position in three dimensions.

To ensure the GPS unit receives enough satellite signals at an acceptable signal strength, it must be mounted so that it has a clear view of the sky. In hidden locations, such as under the dash, a clear view can be challenging. In these locations, it is important to keep any metal interference as far as possible from the top portion of the GPS unit so that the most accurate position can be calculated.

While GPS data collection has improved in ease and speed, some obstacles remain. Solid or dense objects can block GPS signals. Wet trees with heavy branches and leaves can mask or attenuate GPS signals. Mountains and buildings can block satellite transmission. Multipath signals can corrupt GPS data. Multipath is a reflected signal from some nearby objects. The resulting propagation delay can affect measurement accuracy. GPS electronics advancements have reduced the multipath threat but GPS field operators and users should be aware of obvious multipath environments.

## Checking the Contents of the Box

The contents of the box containing the autoPRO unit are shown below:

MODEL	CONTENTS
autoPRO-1	autoPRO Unit Cable Harness with Fuse and Relay

**WARNING** *It is highly recommended that a Digital Multimeter be used when probing electrical systems in the vehicle to prevent damage to factory components.*

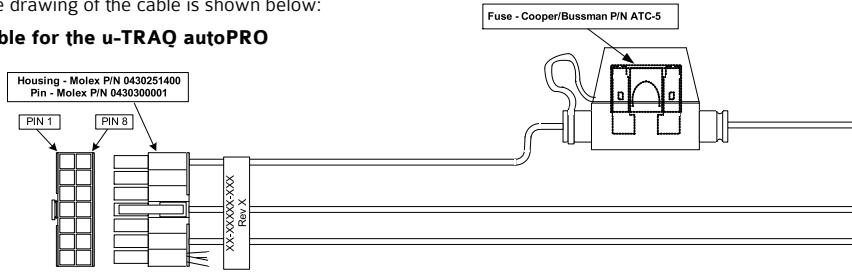
## Tools Needed for Installation

- Metric and standard socket set
- Wire strippers
- Digital Multimeter
- Screwdriver set
- Pliers
- Electrical tape
- Side cutters, wire cutters
- Terminal crimpers
- Flashlight

## Cable Interface

The drawing of the cable is shown below:

### Cable for the u-TRAQ autoPRO



The pin out for the cable is listed below:

PIN	FUNCTION	WIRE COLOR
1	NC	
2	NC	
3	NC	
4	Ground	Black
5	NC	
6	Output 1	Not used at this time
7	Ignition (Input 1)	Yellow
8	Main Power Input	Red with Fuse Holder
9	NC	
10	NC	
11	NC	
12	NC	
13	NC	
14	Input 2	Not used at this time

## Installing and Mounting the GPS Unit

The best location for a stealth installation is beneath the front dash behind the radio or instrument cluster. The GPS and GSM antennas are internally located within the u-TRAQ autoPRO unit. The unit must be mounted with the label facing the bottom of the vehicle. The GPS antenna is located on the side opposite of the label. The u-TRAQ autoPRO unit will work best if it has a clear view of the sky and as much of the horizon as possible. Any metallic objects between the GPS unit and the satellites will degrade the signal and reduce the overall performance.

The u-TRAQ autoPRO unit can be installed in any type of vehicle. The unit should be mounted so it will not be exposed to damage from people or objects. The GPS unit has tie strap slots. Use nylon tie straps to firmly mount the u-TRAQ autoPRO unit.

**WARNING** The body of the car or any other metal structure can affect the accuracy of the GPS signals and prevent normal operation. Location of the GPS unit is critical to the operation.

### Installation Safety & Warnings:

- Do not install the unit where it may hinder the function of safety devices such as an air-bag. Doing so may prevent the air-bag from functioning properly in the event of an accident.
- The installation and use suggestions contained in this manual are subject to any restrictions or limitations that may be imposed by applicable law- purchaser should check applicable law for any restrictions or limitations before installing and/ or operating this product.
- Failure to follow these safety instructions and warnings may result in personal injury or death.

### 12-VDC Power Connection (Red Wire)

Locate the Red wire found on the connector supplied with the u-TRAQ autoPRO unit. The red wire must be connected to a constant 12-volt source from the vehicle to power the u-TRAQ autoPRO unit. It's important that the 12 volt power source maintains 12 volts at all times.

### Ground Connection (Black Wire)

Locate the Black wire found on the connector supplied with the u-TRAQ autoPRO unit. The black wire must be connected to a solid chassis ground uninhibited by paint or plastics. It is important that you do not use any floating grounds from the vehicles electrical system. Always connect the ground directly to the chassis body and secure with a factory bolt or aftermarket screw.

### Switched 12 Volt Connection (Yellow Wire)

Locate the yellow wire found on the connector supplied with the u-TRAQ autoPRO unit. The Yellow wire must be connected to a switched 12-volt source from the vehicle. This connection is used to monitor the engines on/off state. It's important that the switched 12-volt source drops to (0) zero with the ignition off and restores the switched 12 volts with ignition on.

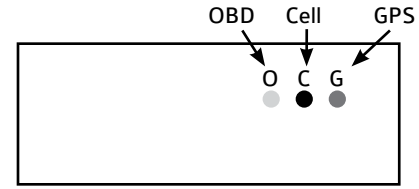
## Testing the u-TRAQ autoPRO Unit

Prior to the initial powering of the unit, move the vehicle outside, so that the GPS receiver can receive signals from the GPS satellites.

Upon initial power up of the u-TRAQ autoPRO unit, observe the LEDs located on the front side of the unit to determine if the unit is powered on. If the LED is not flashing, check the power connections. The status of the LEDs is below:

### Status LED Definitions

MODE	STATE	OBD LED	CELL LED	GPS LED
Initial Power Up	GSM Unregistered (searching)	Not Applicable	Fast Blink – On, 0.5 sec Off, 0.5 sec	ON (Solid), No GPS fix
Active, NO GPS Fix	Ignition ON	Not Applicable	Slow Blink – On, 2.7 sec OFF, 0.3sec	ON, Solid
Active, with GPS Fix	Ignition ON	Not Applicable	Slow Blink – On, 2.7 sec OFF, 0.3sec	ON, Blinking (number of blinks is the number of satellites acquired)
Trip Upload (immediately after Ignition is off)	Ignition OFF	Not Applicable	Slow Blink – On, 2.7 sec OFF, 0.3sec	ON, Solid (after 30 sec from Ignition OFF)
Sleep	Ignition OFF	Not Applicable	Slow Blink – On, 2.7 sec OFF, 0.3sec	ON, Solid



u-TRAQ autoPRO LED Location and Function

After the unit has been powered for 10 minutes, the unit will send in a “power-up” message that will include position.

If no GPS fix has been acquired by the time the tests are complete, verify that the unit is installed correctly, there is no metallic structure blocking the GPS signal from the unit, and that the vehicle is outside. Call in and retest the verification of position.

## Troubleshooting

SYMPTOM	CAUSES
Unit Does Not Power-up	Power is not connected to the unit. With a Digital Volt Meter, measure the voltage at the input to the unit. A positive voltage should be measured on the + terminal of the unit when measuring between the + terminal and the - terminal or chassis ground. This voltage should also measure 12 VDC. Correct the wiring to assure the correct polarity and the correct voltage level.
Unit Does Not Find Cellular Service	The unit is not receiving the local cellular system. The main cause of this is poor signal strength due to shielding. Move the vehicle outside the building and re-apply power to the unit.
Unit Does Not Receive a GPS Signal	The cause is that the GPS receiver is not locking into the satellites. The main cause is due to the receiver not receiving the signal from the satellites. Make sure that the unit's label is facing towards the bottom of the vehicle. If it is, then move the vehicle outside of any building/garage to allow the internal GPS antenna in the unit to have a clear view of the sky.

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**GPS Vehicle Tracking System**  
**Product # 1020-PRO**

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Dated 06/23/2009

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Guide 00-25580-278 (rev 1.09)

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### **No Warranty – Services**

ALL SERVICES ASSOCIATED WITH UPLINK DEVICES INCLUDING, WITHOUT LIMITATION, NETWORK CONNECTIONS ENABLED BY UPLINK, ARE PROVIDED STRICTLY AS-IS, WITHOUT WARRANTY OF ANY KIND INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, NON-OBSOLESCENCE, NON-INTERRUPTION, AND FREEDOM FROM ERROR.

Other terms and conditions and limitations of liability apply as set forth in the applicable contractual agreement with Uplink.

### **FCC & Industry Canada Regulatory Compliance**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 installed 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 technician for help.

### **FCC RF Exposure Information**

**Caution:** Maintain a separation distance of at least 20 cm (8 inches) is normally maintained between the transmitter's antenna and the body of the user or nearby persons. The Modem is not designed for or intended to be used in portable applications within 20 cm. (8 inches) of the body of the user.