

How to detect GPS trackers using the Protect 1207i

There are 2 methods to detect GPS trackers using the Protect 1207i:

1. To detect transmissions (uploads) going from the tracker to the mobile network GSM/3G when the vehicle is moving
2. To detect the reestablishment of the connection between the tracker and the network after the connection was lost

Method 1

The Protect 1207i can detect GPS trackers when they transmit their coordinates. Many trackers have a vibration sensor (G-sensor) and do not send coordinates when the car is not moving. The transmissions can be made with a pre-programmed interval, for example each 15 seconds, 1 minute or 15 minutes. It is also possible that a tracker uploads the collected coordinates under an external request and does not initiate transmissions by itself. Therefore Method 2 is better, although extra equipment is needed.

- A) Make sure your own mobile phones are off ('flight mode' on or power off) and there are no other phones in the car. If the car has its own GSM/3G phone or an anti-theft alarm system, it is necessary to deactivate the phone or alarm system by taking out its SIM card temporarily
- B) Position the Protect 1207i in a front part of the vehicle and start moving. If possible, select a route far away from highly populated cities (in the country) in order to avoid accidental measurements of GSM/3G signals from other peoples' mobile phones.
- C) Watch the GSM and 3G bargraphs on the Protect 1207i. Typical periodical increases might be a sign of the tracker sending signals to the network. As it was said above it is unknown what interval can be pre-programmed in the tracker, but it should be the same during the measurement. So, if you observe increases on the bargraph with a non-changing interval, it might be a sign of the presence of a tracker
- D) The vehicle should be moving during the measurements. For an 'express' variant 30 minutes of testing might be enough, for a 'deep seeking' drive for 1-2 hours while watching the detector.
- E) Repeat the procedure with the Protect 1207i placed in a rear part of the car as it is unknown in what part of the car the tracker might be hidden.

Method 2 (recommended)

This method is more reliable, since it helps to detect trackers even if they are programmed not to transmit the 'route' but to collect it in the memory for a future upload under request. This method detects the GSM/3G modules built into the trackers, forcing them to communicate with the network. To apply Method 2 it is necessary to have a portable GSM/3G jammer with an output power not less than 1W per range (GSM900, GSM1800, 3G – not less than 3W total). But a higher power will give more reliable results.

The mobile network consists of a number of LACsⁱ covering the territory. When the phone (or GSM/3G module in the

tracker) is changing the LAC, it re-registers in it (location update). The size of LAC may vary depending on the load on the mobile network, but typically if you drive through the city 10-15 km in one direction, you will enter another LAC.

- A) Turn on the GSM/3G jammer in your vehicle and make sure it is working - your own telephone should be jammed (sign 'no network')
- B) Turn off all the telephones which are in the car ('flight mode' on or power off). If the car has its own GSM/3G phone or an anti-theft alarm system, it is necessary to deactivate the phone or alarm system by taking out its SIM card temporarily
- C) Watch the Protect 1207i' bargraphs to check that the jammer is working (full level)
- D) Drive to another LAC (10-15 km away) and stop your car where no other phones can be present (i.e. not in a crowded place)
- E) While watching the Protect 1207i' bargraphs turn off the jammer. The levels on the bargraph should drop instantly. If after the decrease they again show impulses of 1-3 seconds duration, it means that there is a GSM/3G device nearby. Such increases are a sign of a tracker.
- F) To have a more reliable result you can repeat the procedure by returning to the initial place with the jammer again turned on but placed in another side of the vehicle, for example in the rear. When you arrive, place the 1207i in a rear part too before turning off the jammer.

Before testing your vehicle for trackers, you can check that you are using the correct point of measurements and there is another LAC in the area. Use your own phone, leave it turned on, drive with the jammer turned on, then turn off the jammer and check with the 1207 if your phone starts exchanging with the network (increase 1-3 seconds).

ⁱ Location Area Code (LAC) is used to identify different location areas. When the mobile station is moving and enters the new location area, it registers itself there in order to receive incoming calls.