

Phone Tracker for KitKat (PTKK) and FlashBeacon



Preface . . .

Early production experience for these apps has shown that many people are having trouble getting the connection test between the two phones to work. To address this, the "Startup Guide" now appears here at the beginning of this document. Read the rest of the document then precisely follow this startup guide.

Startup Guide

1. If possible, get both your Android Phone and the Target Android Phone together at the same time. If that is not feasible, setup the target phone first.
2. Both phones must be turned on and awake. The Data Connection and GPS must be enabled on both phones. Easiest way to check this is to run the "Maps" application from Google on both phones. If it shows the proper location of the two phones with no errors, everything is on.
3. Make sure PTKK is installed on your Android Phone and FlashBeacon is installed on the target phone.
4. Run FlashBeacon on the target phone following the setup instructions later in this document.
5. Run PTKK on your Android phone following the setup instructions later in this document. Make sure the key is the same for both phones.

IMPORTANT NOTE: Step 4 must be done **BEFORE** step 5.

6. On the Settings page hit the "Test For Connection" button. A count down will begin. In about 10 seconds you should get a happy sound and see the button now says "Success!! Response Received." These messages are usually very quick but sometimes can take takes minutes instead of seconds. If the target phone is in a deep sleep or turned off it won't respond until it is awake.
7. If you got a failure on the above step, stop here and contact Gary@deanblakely.com. We can implement more advanced tools to detect your problem.

First made available on the Google Play Market Place in June of 2014, this app is the most technically sophisticated trip tracing program available on Android. The app is useful for people that have Android Phones who want to locate or track other Android Phones whether they are stationary or moving about. Unlike other Tracker apps, PTKK does not use unreliable SMS messaging that is incompatible with KitKat and Hangouts.

Two different apps are required to make the tracing work: (1) PTKK on your phone and (2) the FlashBeacon app on the target phone.

Install PTKK on your phone - install FlashBeacon on the phone you want to track. FlashBeacon is free and available on Google Play.

There are some cool things about this design:

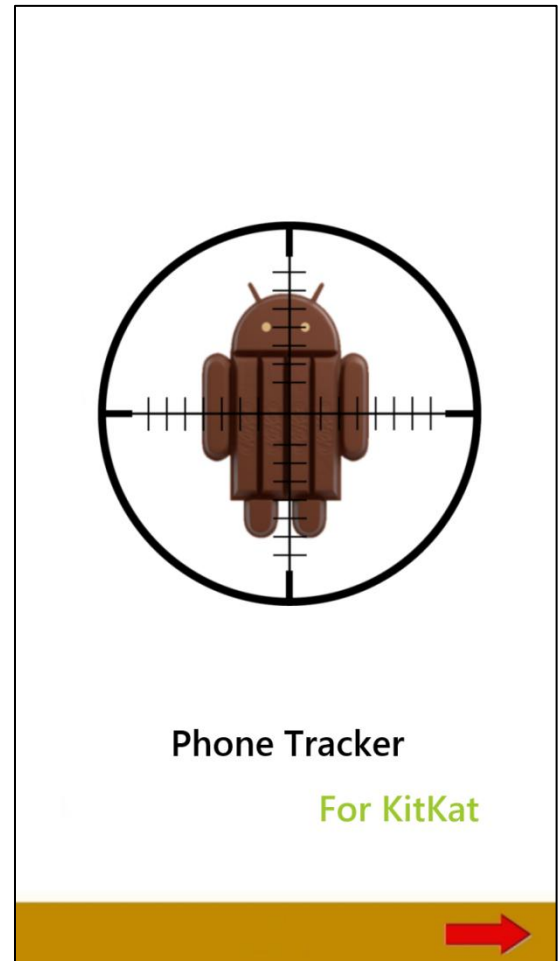
(1) FlashBeacon does not have to be running on the target phone, it just has to be installed on the target phone.

(2) the two phones talk directly to each other via Cloud Messaging using your carriers data link. Trips can optionally be recorded to a cloud server so that they can be viewed real time or historically from anywhere on the internet.

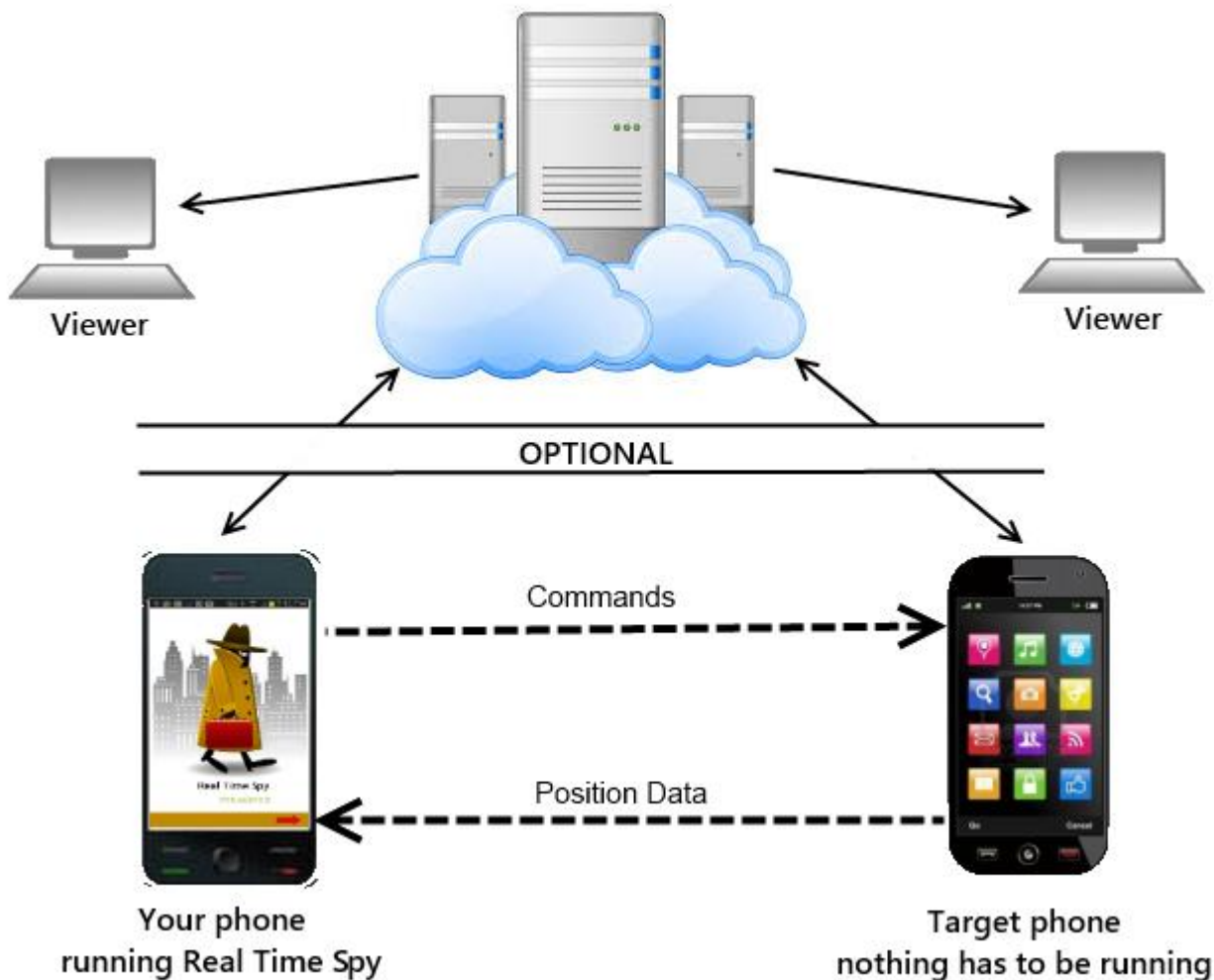
Your trip recording can be as public or private as you want it. You don't have to "record" the trip tracing, you can simply view it live and it goes away when it is stopped. If you do record the trip it is as secure as the password/name that you give it. You disclose that name to others or you can keep it confidential.

How it works

Once you launch the tracing, you can view the movement on your phone or view it on the internet real time as the trip is taking place. If you view it on your phone you can be moving about as well as the target phone. You are constantly provided the distance between you and the target phone. There is an optional proximity alarm that will sound if the two phones come within a given distance from each other.



You can also view recorded trips historically either on your phone or on the internet. If you provided a name for your trip and you entered your email address on the settings page, as soon as a trip ends, the trip is recorded to the Cloud Server and that trip will be transferred to your phone in a trip folder under the name you gave it.



Tracking Requires a Subscription

PTKK does both Locating and Tracking. The app is free and the Locate function is always free. However, the tracking function requires ongoing Cloud Server resources. Because of this, tracking is provided on a low cost monthly subscription basis. The first months subscription includes a ten day free trial. You can always cancel the subscription.

The FlashBeacon Program

FlashBeacon must be installed on the target phone. Most users of this app use it to locate family members. For instance if you have three children that you might want to locate, you only need one copy of PTKK on your phone plus the free FlashBeacon app on each of their phones.



FlashBeacon

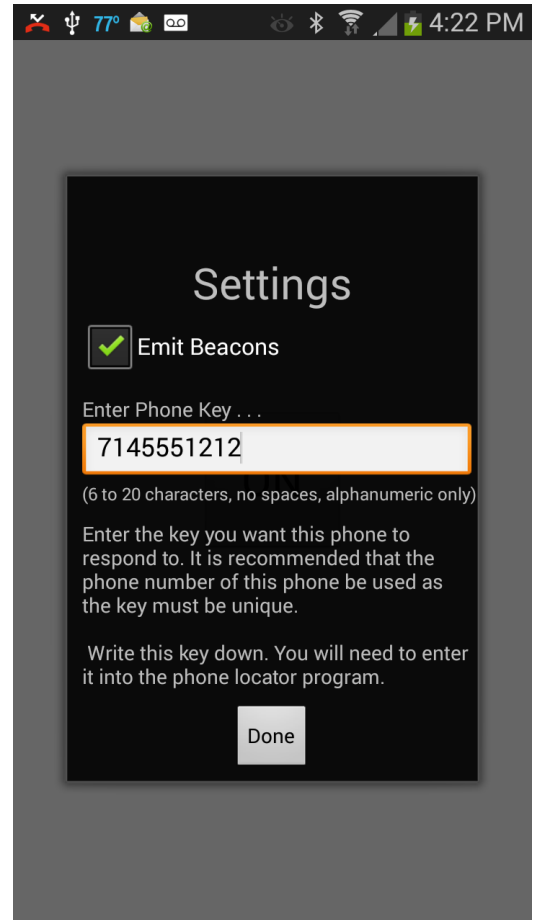
FlashBeacon behaves on the target phone as a flashlight app. If you run it on the target phone, you can use it as a flashlight to see around in the dark. It's icon, as you can see nearby, is a simple picture of a flashlight on a red background.

Setting up FlashBeacon . . .

For all of this to work, the two phones need to be given the same key. The key can be between 6 and 20 alphanumeric characters, case sensitive, and it must be unique. We recommend that the phone number of the target phone be used as the key.

IMPORTANT NOTE: FlashBeacon must be setup on the target phone **BEFORE** that same key is entered into PTKK.

To set the key run the FlashBeacon app. You will see a big ON button in the middle of the screen. If this ON button is tapped, the LED flash will come on. However if you tap and hold the ON button for more than 6 seconds, the Settings screen will appear and, on most phones, you will see the phone's phone number displayed suggesting that you use it as the key (but you can use whatever you want). Write this key down as you will need to enter the same key into PTKK. Hit the done button and you are done. You should never need to run FlashBeacon again (unless you need a flashlight).



The function of FlashBeacon is to communicate the target phone's position and movement to the phone running PTKK. FlashBeacon is actually functioning as a beacon launcher. The name FlashBeacon is not really fully descriptive of the app's function. So who are we trying to fool? We are trying to fool the thief, kidnapper, or other criminal type who might get possession of the phone. A flashlight app is non-threatening and they might not think to uninstall such a program particularly when they see that it works. If we called it "The Mole," they would certainly uninstall it before you had a chance to find your child.

The Emit Beacons checkbox allows the user of the target phone to turn off beacon launching at any time and re-enable it whenever desired.

How to use Phone Tracker for KitKat

PTKK uses a new metaphor called a Panorama interface and nothing could be simpler. You just slide horizontally to get to the various pages.

Settings Page

The key that was entered in FlashBeacon setup must be entered in the Key field at the top of the Settings page. This widget is actually a drop down combo box that can hold many keys for many phones.

Once FlashBeacon is installed on the target phone and you have entered the key in both phones, you can hit the "Test For Connection" button to ensure that the communication between Trip Analyzer and FlashBeacon is working. Response is usually a few seconds but can sometimes take a few minutes. . If this does not work, see the Startup Guide later in this document.

The Subscription button is used to purchase a Tracking subscription.

Next you can select the *Map Display Mode* you desire. PTKK uses Google Maps V2 services that supports four types of map presentation. The best way to see how this works is to play with it.

Minutes to Track choices for PTKK range from one to six hours. After that time has expired tracking ceases on the target phone. However, if you want to stop before the chosen duration you can hit the Stop button on the Tracking page.

You can save and recall trips on your phone and email past trips to your email address and then view them on Google Earth/Maps on your PC or MAC. If you use this feature you must put the email address here.

The *Measurement System* can be either imperial or metric when displaying your proximity to the target and when showing speeds and distances in the map pop-up boxes.

Settings

key of the target phone
7145551212

Test For Connection

Subscription Active

Select a Map Display Mode
Normal

Select Minutes to Track
60

Email Address for Send feature

Measurement System ...
 imperial metric

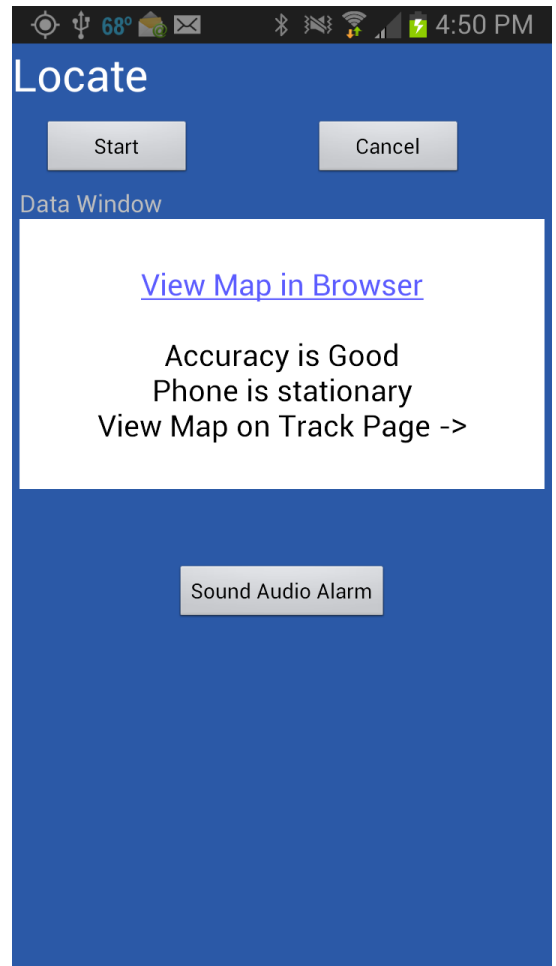
Proximity Settings ...
 Audio Proximity Alarm
Enter Proximity Radius in Miles. Use decimals for fractions of miles 1.25

PTKK has an optional Proximity Alarm that will sound when the distance between you and your target gets within a certain radius. Currently this is always set in miles or fractions of miles.

Locate Page

To simply locate a phone you swipe to the Locate page and hit the Start button. You get back a very accurate position along with speed and bearing of the phone if it is moving. The Flash takes a full minute to get the most accurate position possible before returning the position.

However, if the phone is just lost around the house then you can sound the audio alarm and a loud siren will go off so that you can locate the phone. This works even if the sound is turned off or down on the target phone.



Locate provides two viewing options . . .

External Browser:

You can view the location results on an external browser that uses Google Maps in the browser. The advantage of this option is that you can hit the directions button on the browser to get step-by-step directions on how to get to that place.

Track Page Map:

You can view the location on the Google Map on the Track page that provides a more fluid and flexible presentation of the Map. See the Map Gestures section that recaps the capabilities.

Track Page

When the Start button is hit, a message is sent to the target phone to begin tracking movement for the amount of time indicated on the Settings page.

Each red pin represents a "trip leg" that is determined by an algorithm representing a "meaningful piece of a trip." This path can be thought of as a "breadcrumb trail." If you tap a pin, you will get a pop-up box showing information about that trip leg. Together these data will show the timing of the trip. For instance, if the phone stopped somewhere you can tell that it stopped and for how long.



The PTKK icon represents the location of your phone and the distance to target is displayed in the heading. For instance this target phone has traveled 2.2 miles since recording began and is 1.2 miles (as the crow flies) from your location.

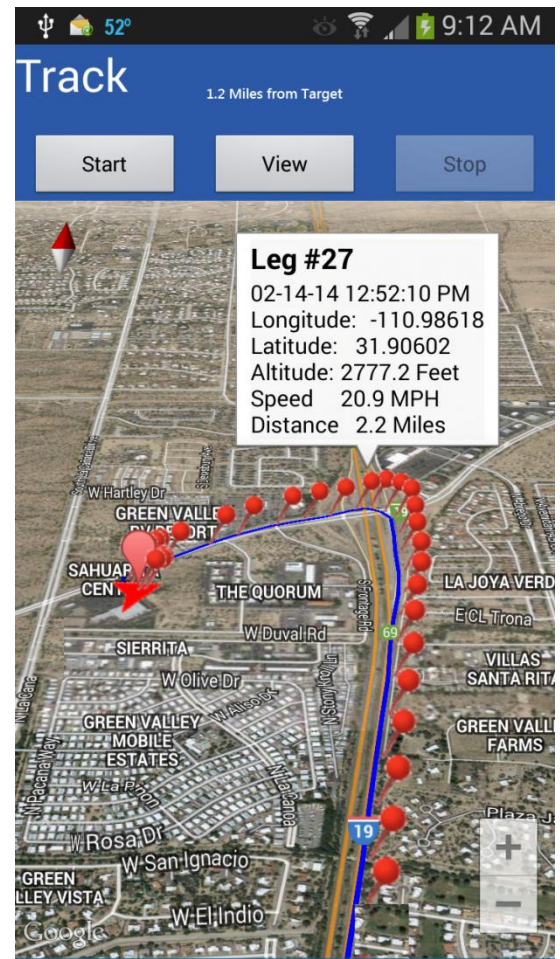
If you begin tracking a phone and you only get one pin, this means the phone is stationary. You won't get a second pin until the phone moves a minimum distance.

Both your phone and the target phone may be stationary or moving. Proximity is continually computed as either phone moves about.

If the target phone begins tracking and then enters an area where no internet is available, it continues to track and saves the trip legs internally if it can't transmit them. When the phone again enters an area covered by the internet, it will then "burst" all the saved up trip legs to PTKK.

If you want to stop the tracking process before the recording time elapses, you can hit the Stop button and the phone will be told to stop tracking. This will save battery power on the target phone.

You can start tracking a phone, then end PTKK; FlashBeacon will continue to track the target phone. Later, you can start up PTKK again and hit the View button and resume viewing the progress of the target phone's movement.

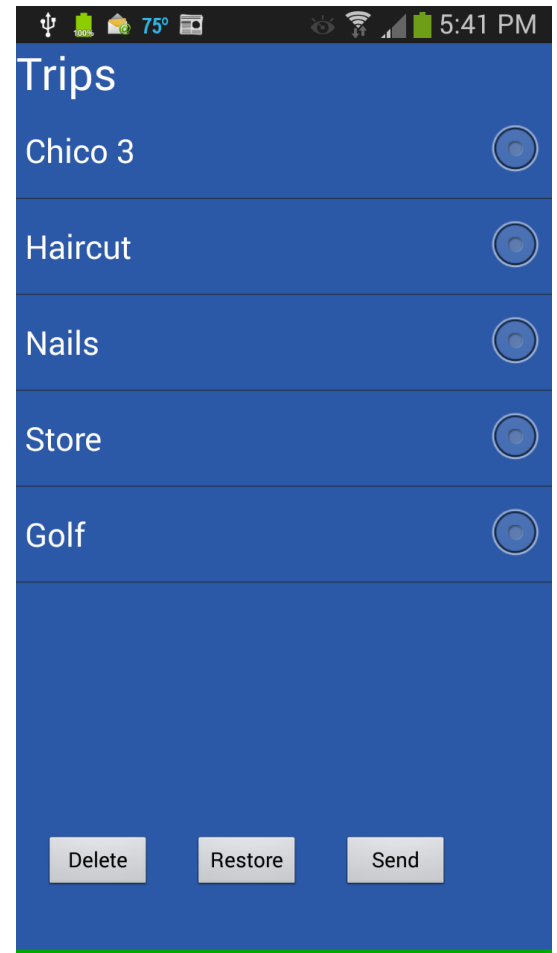


Trip Management

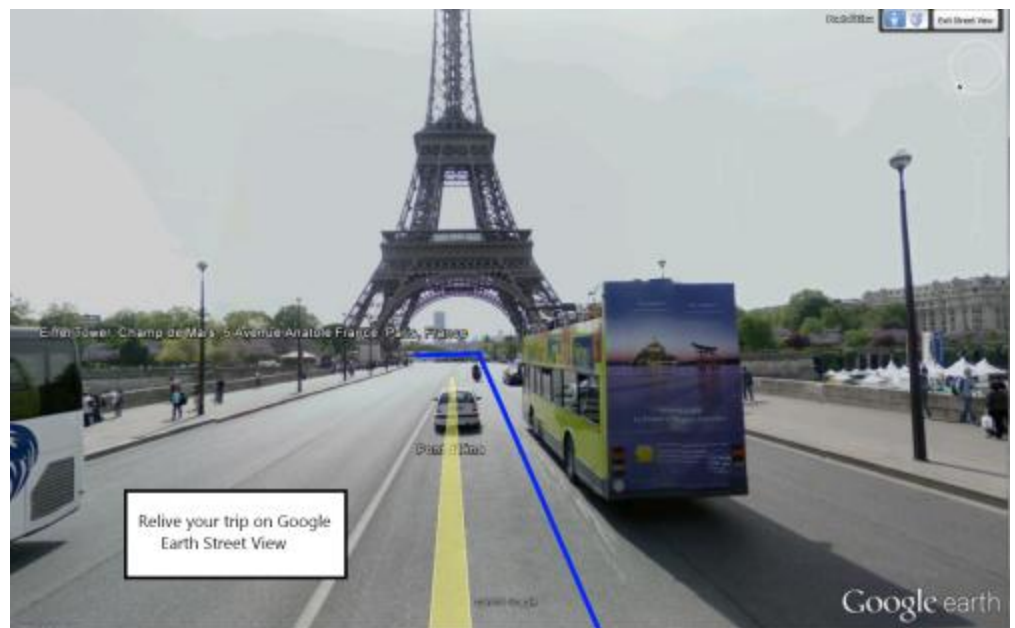
When tracking is started, the tracking can be given a Trip Name. When the tracking is completed it is stored on a cloud server. Each time the app is ran, it checks the server for completed trips and any trips not already transferred to the phone are then transferred where they appear on the Trips Page.

In addition to deleting the trips from the phone, trips can be restored to the map page for historical viewing.

If an email address was entered in the Settings page the trip can be emailed to your PC or MAC. The email contains trip statistics, a link for viewing in Bing Maps and Google Maps, and attached is a KML file for viewing the trip in Google Earth.



Viewing a trip in Google Earth can present a different detail than following it on the phone particularly when the area is available in Streetside view. The blue line shows the exact path traveled by the target phone.



Viewing trips with the web viewer

In addition to viewing trips real time or historically on the phone, trips can also be viewed, real time or historically, on the web by going to <http://www.deanblakely.com/view.aspx> and entering the "Key" for the trip into the viewer. If the trip was not given a specific Trip Name then the Key is exactly as it was entered in Settings. If the trip was given a name then the key is the Key + a colon + trip name. For instance 7145551212:disneyland.

If privacy is desired then the trip should be given a complex name that no one would guess making the Trip Name more like a password.



The trips typically remain on the cloud servers for up to 30 Days so if trip details are desired beyond that, the trip should be emailed to your PC or MAC.

Map Gestures

PTKK supports a rich set of gestures allowing you to manipulate the map . . .

Zoom

- Hit the plus or minus buttons on the map.
- Double tap to zoom in
- Two finger tap to zoom out
- Two finger pinch/stretch
- One finger zooming by double tapping but not releasing on the second tap then sliding the finger up or down the screen.

Scroll

Drag the map around with one finger.

Tilt

Place two fingers on the map and move them up or down.

Rotate

Place two fingers on the map and apply a rotate motion.



What if it doesn't work?

There are thousands of users using our tracking technology with 99.9% success but PTKK is a sophisticated app and there are some issues with GPS tracking.

There could be some issues . . .

- The target phone could be turned off, the battery power could be too low, Data Enabling might be off, or it could be in Airplane Mode.
- The FlashBeacon may not be installed and Set up on the target phone.
- You could have entered the key wrong in one of the phones.

- PTKK and FlashBeacon use "Google Cloud Messaging" which uses ports 5228, 5229, and 5230. If the phones are behind a firewall these ports need to be opened to allow communication to work.

If you are having any problems getting it to work please proceed through the following Startup Guide to get it working:

Miscellaneous Issues

For those of you who like more data . . .

Timing Mismatch when both phones are moving . . .

During tracking when your phone is moving and the target phone is moving there is a slight timing mismatch. Your phone's location (the home icon) is plotted on the map instantaneously while there is an approximate 10 second delay in the position of the target phone. So, for instance, if you were closely following the target phone down a road at a constant speed, it might look as though you were actually ahead of the target phone.

How communication works . . .

Commands sent between the phone, which are very few, use Google Cloud Messaging (GCM). GCM is usually very quick but can sometimes be very slow. The heavy tracking communication is handled by DeanBlakely cloud servers.

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