Troubleshooting GPS Issues

GPS is a system to estimate location on Earth by using signals from a set of orbiting satellites. The GPS system includes the chip in your Android device as well as the satellites above the Earth.

- Examples of GPS issues
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Firstly: Make Sure MapRunF is the most Recent Version

If you have this automatically switched on then you should be on the most recent version of the MapRunF app.

However it is worth checking this is the case. You can do this manually by following the steps below:

1. Open the Google Play Store app .

2. Tap Menu ≡ › **My apps and games**.

3. Apps with an update available are labelled 'Update'.

4. Tap **Update**.

Examples of GPS Issues

If you experience any of the following, your activity may report a different distance than you actually travelled and, unfortunately, it will not be possible for us to "fill in" the missing data or modify the existing data. Thankfully, there is more that can be done to prevent bad GPS data from being recorded than there is to repair it. Please refer to the troubleshooting steps listed in this article to prevent similar issues in the future.

- GPS drift: The GPS track deviates from the road. You may see that the track generally follows the shape of the road but with much less precision.
- Lost GPS signal: If the GPS signal is lost and sometime later re-acquired the pre- and post-signal-loss points will be treated just like any other two points (although more time has elapsed between them) and connected with a straight line.
- GPS bounce: A 'jumpy' GPS track can cause your activity to report more distance than you actually travelled since each 'zig' and 'zag' of your GPS track has to be accounted for with a straight line connecting them.

Achieving Good Initial GPS Lock

To achieve fast start-up and high-accuracy position estimates, you should provide:

- A clear view of a large portion of the sky. Any obstructions between the phone and the sky can adversely affect signal strength. A big tree is an obvious obstacle, but even a pocket or a backpack can cause problems for the very low-strength signals.

- Time to tune in to the signals from the satellites. To improve signal acquisition time, keep the device in one place and make sure the device's data communications are enabled. This allows the phone's GPS to get hints about its approximate location. Even with a perfectly clear sky, it can take a few minutes before a lock can be established in some situations.

Steps to Take When Investigating GPS Issues on Android Devices

- Turn the phone off/on.
- Turn GPS off/on.
- Be sure MapRunF is allowed to use your location. Settings > Apps > MapRunF > Permissions > Toggle Location ON. Be sure that you've allowed MapRunF to use GPS in the background.
- Disable any battery saver settings including Power Saving Mode, Battery Management, Optimization or any third-party apps.

More information on specific devices running Android 10 or higher:

- HTC: Settings > Power > Battery optimization > Not optimized > All apps > MapRunF > Don't optimize > Done.
- Huawei:
- Turn Energy Settings to Normal and add MapRunF to "Protected Apps."
- Settings > Apps > Advanced > Ignore optimizations > Allowed > All apps > MapRunF > Allow.
- LG: Settings > Battery & power saving > Battery usage > Ignore optimizations > turn ON for MapRunF.
- Motorola: Settings > Battery > select the menu in the upper right-hand corner > Battery optimization > Not optimized > All Apps > MapRunF > Don't Optimize.
- OnePlus (using OxygenOS Settings): Settings > Battery > Battery optimization > select menu at the top > switch to All apps list > MapRunF > Don't optimize.
- Samsung: Settings > Apps > select the menu in the upper right-hand corner > Special access > Optimize battery usage > All apps > Toggle OFF for MapRunF.
- Sony: Settings > Battery > select the menu in the upper right-hand corner > Battery optimization > Apps > MapRunF.
- Xiaomi (MIUI OS):
- Settings > Additional Settings > Battery & performance > Manage apps battery usage > apps > MapRunF.
- Settings > Additional Settings > Privacy > Location > ensure you are using High Accuracy for Location Mode and allowing location access.
- Check that your location settings are set to High accuracy. Settings > Connections > Location > Locating method > High accuracy.
- Perform an "AGPS reset" by installing the App GPS Status & Toolbox, then in that app, go to Menu > Manage A-GPS State > Reset.

Final Steps

Try using the MapRunF app to record for 10 minutes, letting it search for signals with a wide-open view of the sky, and keeping it completely immobile. If this does not produce useful location estimates, determine if GPS works in other apps. It's best to use another fitness tracker app and not

a navigation app like Google Maps, Waze or Apple Maps. Navigation apps use cell towers to snap your position to known roads and trails which can give the illusion that your GPS is working perfectly. MapRunF and many other fitness apps do not do this and just use GPS to position you. Because of this, you may notice MapRunF is having a hard time locating you but other navigation apps aren't.

Try running one of the free apps that present detailed GPS operating information. "GPS Status" is a free app that can reset your GPS and download fresh A-GPS data., You should see it eventually reporting 5 or more satellites acquired, and an overall accuracy range of fewer than 30 meters if everything is working properly.

Variable Performance

Even if your device is in the same place and the same setting as before, it may behave differently from one day to the next. Typically, the device needs to receive signals from about 5 satellites to get an accurate estimate of its position. With the changing position of the satellites, changing weather patterns, and the changing nature of the Earth's outer atmosphere, there are enough parts of the GPS system outside of your direct control and observation that it is difficult to make conclusions about what specifically is causing inconsistent performance. We recommend you try repeatedly before making a judgment about the best ways to work with your device's GPS in your settings.

How to fix GPS recording issues on Huawei phones?

Usually, battery saving settings on Huawei phones are the cause of most GPS troubles. These settings can force quit the GPS at any time, which means that the MapRunF app cannot continue to record your activity. Try these tips when recording with a Huawei phone:

- Check that you're running the latest updates of both the MapRunF app and your Android device.
- Next, be sure to add MapRunF as a 'protected app' in your phone's settings and disable or ignore any energy optimizations or battery saving modes.
- An option suggested by some online is to prevent auto-lock of the MapRunF record screen. Leaving the screen on for the duration of the recording may prevent the phone from shutting the GPS off.