Does Airplane Mode Turn Off Location? A Detailed Explanation

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By Vipin PG | Published July 1, 2022 | Updated January 4, 2026 | Format: Article | 3 min read

In brief

Airplane Mode, a standard feature in smartphones and other portable devices, is designed to disable all wireless communication signals. When enabled, it turns off:.

Airplane Mode, a standard feature in smartphones and other portable devices, is designed to disable all wireless communication signals. When enabled, it turns off:

- Cellular networks (2G, 3G, 4G, 5G)
- Wi-Fi connectivity
- Bluetooth connections
- Near Field Communication (NFC)
- Other radio transmitters

The primary reason for Airplane Mode is to comply with airline regulations and minimize potential interference with aircraft communication systems. However, many users assume that enabling Airplane Mode also disables location services, which is not entirely accurate.

Does Airplane Mode Disable GPS and Location Services?

Contrary to common belief, Airplane Mode does not turn off GPS (Global Positioning System). GPS is a receive-only technology that does not require an active internet or network connection. Here's why:

- GPS operates independently by receiving signals from satellites.
- Since GPS does not transmit data, Airplane Mode does not restrict its functionality.
- You can still use GPS-based applications, such as offline maps, even in Airplane Mode.

However, while GPS remains functional, other location-tracking methods-such as Assisted GPS (A-GPS), Wi-Fi positioning, and cellular triangulation-are disabled because they require internet or cellular network access.

Platform-Specific Behavior

- iOS Devices: Starting from iOS 8.3, Apple allows GPS to function in Airplane Mode. Older versions might disable it.
- Android Devices: Most Android smartphones keep GPS active in Airplane Mode, but some manufacturers might implement different restrictions.
- Windows and Linux Devices: If using external GPS receivers, these may remain active unless manually turned off.

How to Test Location Services in Airplane Mode

To verify whether GPS works on your device in Airplane Mode, follow these steps:

1. Enable Airplane Mode : Turn it on from your device settings.

2. Use a GPS-based app : Open an offline maps application (e.g., Google Maps, Apple Maps).
3. Observe Location Accuracy : If your position updates, GPS is still functioning.
4. Change Your Position : Move to another location and see if the GPS adjusts accordingly.
This confirms that GPS works independently of mobile networks and Wi-Fi.

How to Completely Disable Location Tracking

If your goal is complete privacy, follow these steps:

For iOS:

- Navigate to Settings > Privacy & Security > Location Services .
- Toggle off Location Services .
- Optionally, enable Airplane Mode for extra privacy.

For Android:

- Go to Settings > Location .
- Turn off the Location toggle.
- Enable Airplane Mode for additional security.

Using GPS While in Airplane Mode

If you want to use GPS while keeping Airplane Mode enabled:

- Enable Airplane Mode first : This turns off all transmitting radios.
- Manually turn on Wi-Fi or Bluetooth if needed : Airlines now allow in-flight Wi-Fi usage.
- Use offline maps : Download maps before traveling.
- Understand limitations : Without internet, real-time updates or location sharing features won’t work.

Privacy Concerns and Preventive Measures

Many users activate Airplane Mode to prevent location tracking, but to ensure full privacy:

- Disable Location History in Google or Apple services.
- Check app permissions for location access.
- Use Faraday bags or signal-blocking cases for additional protection.
- Consider using location-spoofing apps if needed.

Common Myths and Misconceptions

1: Airplane Mode Turns Off GPS Completely

Only location-tracking methods requiring the internet (A-GPS, Wi-Fi positioning) are disabled. GPS itself remains functional.

2: Airplane Mode Ensures Complete Privacy

While it prevents real-time location sharing, location history and stored data can still be accessed later.

3: GPS Needs an Internet Connection to Work

GPS is satellite-based and does not need an internet connection, though A-GPS improves accuracy using network data.

Use Cases for GPS in Airplane Mode

- Navigation During Flights : You can track flight progress using GPS with offline maps.
- Hiking or Traveling in Remote Areas : GPS works without cellular networks, making it useful for offline navigation.
- Privacy Protection : Disabling location services while in Airplane Mode ensures better control over personal data.

Conclusion

Airplane Mode primarily disables communication networks but does not turn off GPS. Understanding the differences between GPS and internet-based location tracking helps in managing privacy settings effectively. If complete location tracking prevention is required, manually disabling location services is necessary.

References

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