

Motion Gestures Mobile App Guide

What is Motion Gestures?

Motion Gestures lets the user launch favorite apps, and quickly adjust settings automatically, using simple and easy to remember gestures. It has useful built-in features and it is also a platform for streamlining all kinds of every day tasks.

The Motion Gestures project has two goals:

Goal 1: Replace Everyday Tools

- ▶ A mobile device should not only be able to replace real-life tools like cameras, flashlights, and tape recorders, it should be as easy to operate as any of these tools, using simple gestures and button presses that quickly become second nature. As often as possible, the user should be able to carry out real-world tasks without needing to look at the screen.

Goal 2: Automate Settings

- ▶ As mobile device users move through their day, using their phone or tablet to get things done, they should not have to constantly fiddle with device settings like screen brightness and connectivity. At the same time, the user should always be “in the loop” when adjustments are made automatically, so that they have ultimate control over their device. By using a motion gesture to fix settings, the user can tell the device what settings need to be adjusted, and when, without needing to specify exactly how.

Features

- ▶ Launch the Camera with a simple gesture
- ▶ Launch a flashlight with a simple gesture
- ▶ Automatically adjust screen brightness every time the screen turns on
- ▶ Automatically connect to the strongest wireless network using a simple gesture
- ▶ Silence the ringer using a simple gesture
- ▶ A flexible architecture that supports adding new features, including features developed by third parties

How to use it, part 1

Motion detection is performed by an always-on background service. As a user, you activate the service, and turn on the hardware sensors that are used to recognize gestures, using a simple activation sequence: turning the screen off and then on again with the power button.

Understanding the design

This method is used because it ensures that gesture detection only activates when the user requests it, and it allows the always running service to consume very little power. Sensors are only turned on when they are needed.

How to use it, part 2

Gestures are performed by orienting the device into one of the known positions before activating the sensors. Four gestures (Portrait, Landscape, Tap-in and Tap-out) are supported in the current version of Motion Gestures.

Motion Gestures Mobile App Guide Part 2: Detailed Description

Gestures and default features

Hold the device in one of the orientations below and then activate motion detect to trigger the corresponding feature.

Portrait

Turn on the flashlight

Landscape

Launch the camera application

Tap-in (screen pointing up)

Wireless check-in

Tap-out (screen pointing down)

Silence the ringer

Screen on

Set the screen brightness

Notes on screen lock

- ▶ *Settings > Security > Power button instantly locks* should be off, otherwise the screen will lock every time the user tries to activate gesture detect.
- ▶ If you prefer to leave instant lock on, activation will still work as long as you unlock the screen quickly enough (within 5 seconds).
- ▶ Motion Gestures has an alternate activation method (a button in the notification tray).
- ▶ Motion Gestures can lock the screen for you.
- ▶ Locking the screen also locks Motion Gestures; this prevents pocket gestures.

Notes on brightness

- ▶ In typical use, you won't need to trigger auto-brightness manually, because it runs every time the screen turns on.
- ▶ It can however be triggered manually by turning the screen off, counting to two, and then turning the screen on again.
- ▶ Each time auto-brightness runs, you have the opportunity to fine tune the brightness and optionally modify the response curve by saving your changes.
- ▶ Auto brightness refines the response curve by assuming that during the hours from midnight to 5:00 AM, the human eye is dark-adjusted and will prefer ultra-low brightness. This setting can be varied on an hourly basis.

Notes on wireless check-in

- ▶ Wireless check-in never connects to an unknown network. To use a network with this feature, first connect to it manually at least once.
- ▶ Since wireless check-in decides which known network to connect to by analyzing signal strength, it works best when an access point is nearby (if the device is placed directly on top of a router, it will also be in the right orientation).
- ▶ If every known network has a weak signal at the current location, the default behavior is to switch off the wireless radio. This saves energy, and if you have a cellular connection it improves connectivity by ignoring weak or unreliable wireless networks in favor of cellular data (there is a setting to control this feature).

Q: Can the persistent notification be turned off?

A: Only by exiting the service. Do this by running the main app and clicking the on/off button in the main tab. The technical reason for this design choice is that background services without persistent notifications are more likely to be stopped by the operating system.

Q: What happens when the service is stopped?

A: The service will try to notify you when it can no longer detect motion gestures (this can happen when Android stops the service because the device is low on resources): a chime will sound, and the notification will display an explanatory message. Clicking the message will launch the main app and restart the service.

Q: What happens when the device is powered off?

A: Motion Gestures will restart automatically the next time the device powers on.