WARNING:

DEVICES:

The application relies solely on GPS. Therefore, you do not need a device that has cell reception or even an active cell subscription service. With no cell service, connect to WiFi to install the app and updates. If your dropzone can’t afford to buy a device, we recommend asking the community if anyone has an old phone laying around!

WARNING: Not all devices have been tested so it is imperative to validate the app is working properly on your device. See ‘Validating the App’ section for more information.

Below is a list of potentially compatible devices:

Compatible Phones

Just about any modern smartphone will work since they all have real GPS. It does not need active cell subscription/service.

Compatible Tablets

Not many tablets have real GPS capability (GPS (US), GLONASS (Russia), Galileo (EU), BeiDou (China)). Below is a list of tablets that have not been tested but should, in theory, work properly.

iPad’s with Cellular capability (Wifi-Only iPads will NOT work.)

Google Nexus 9

Samsung Galaxy Tab E Lite

Samsung Galaxy Tab A

Hongtao Tablet

ZONKO Black Tablet

Winsing MTK6580

ZONKO K105

Winsing WSTB101I

Asus MeMO Pad 7

Dragon Touch K10

Google Nexus 7

Azpen A1040

Simbans TangoTab

NeuTab 7

Fusion5

Proscan 10-Inch

Garmin GLO

If you are having issues with GPS reception or update rate, a potentially option is the Garmin GLO. It is a plug-in device to give more accurate GPS location to any phone or tablet. It also gives you the ability to mount the Garmin GLO GPS receiver in a window for better reception and place the phone or tablet in a separate location for better viewing by all skydivers on the plane. The Garmin GLO has not been tested with the app but it sounds promising.

VALIDATING THE APP:

WARNING: It is IMPERATIVE that you check the specific device and app are working properly before implementing in your plane(s).

The device model, your location, any surrounding enclosures (the plane), and other factors can affect the proper functioning of the app. Below are GUIDELINES for validating everything is working properly:

First download and install an app called ‘GPS Test’ (or another similar app, there are several) to check GPS functionality of the device you have chosen. In most cases, the app will show a 3D fix, 10+ satellites in use, an AVG SNR of 16+ and a location accuracy of < 30 ft. If it meets all of these, that is a good start.

Next, using the speed functionality (there is a setting to change units to kts), ride along in the plane and compare the speed displayed in the GPS Test app to the plane’s GPS ground speed. The values may lag by a few seconds and be off by a few knots. This is normal based on the update frequency of the devices and difference in algorithms they use. Off by how much exactly? Unfortunately, we don’t have a hard and fast rule. A general rule would be ideally +/- 1 knot during consistent flight. However, +/- 2 knots would be equal to the 5 knot increments that most exit separation charts display. Banking, turning, accelerating, and de-accelerating will increase the gap and lag for longer. Luckily, not much of that is happening during jump-run and the plane’s GPS (which we normally use to determine ground speed and exit separation) is subject to these draw-backs also. Ultimately, it is up to YOU as the dropzone/plane owner to determine if the values are accurate enough.

Finally, we want to perform the same test we just did but using the ExitCount app. Don’t forget to change the settings to the appropriate units and set the separation distance. In addition to checking speed, do a gut check that the calculated seconds of separation matches your exit separation chart based on the separation distance you have chosen and entered in the app. Keep in mind that ExitCount aires on the side of safety and always rounds the seconds UP. See “Calculations” section for more detailed info. Below is a chart for common separation distances (1000’ & 1500’):

Graphical user interface, table

Description automatically generated

CALCULATIONS

ExitCount uses the following mathematical formulas to calculate speed and exit separation in seconds based on chosen units in settings.

Speed

Raw GPS Speed (m/s) x 1.944 = Ground Speed in Knots

Raw GPS Speed (m/s) x 2.237 = Ground Speed in MPH

Raw GPS Speed (m/s) x 3.6 = Ground Speed in KPH

Separation

ROUNDUP( Separation Distance (ft) / ( Raw GPS Speed (m/s) x 3.28 ) ) = Seconds of Separation

ROUNDUP( Separation Distance (m) / ( Raw GPS Speed (m/s) ) ) = Seconds of Separation

INSTALLING DEVICE IN PLANE:

It is YOUR responsibility to consult the appropriate personnel before installing any devices in your plane. In general, if devices are not installed permanently (e.g. Velcro, removable mount) and do not tap into any other functional plane equipment (e.g. onboard power), the “installation” will not need to be certified. However, this is case-by-case. Again, consult your mechanic, installer, owner, FAA/TSO representative, or any other appropriate personnel.

POWER / CHARGING:

Any portable phone charging bank is a simple way to keep your device charged without having to tap into the plane’s power. We recommend having a few so you can swap them as needed without removing the display device.

SAFETY FEATURES:

Seconds of Separation is always rounded UP

Display goes blank within 2 seconds of loss of GPS reception

Seconds of Separation displays a max of “>99” in red

App uses fastest GPS update rate available from device

KEY DESIGN FEATURES:

Limited customization for simplicity and consistency from DZ to DZ

Ability to change units

Ability to choose separation distance

Ability to display messages on screen: