Propeller PPK: How many AeroPoints does it take to get accurate results?

With the introduction of Propeller PPK, we wanted to answer some questions about our PPK workflow. One of the most common questions we get, especially from customers who own a 10 pack of AeroPoints already, is, do you need to use one or multiple AeroPoints for validation of survey data?

The answer is, you can do both.

With Propeller PPK, only one AeroPoint serves as a ground control point (GCP) instead of multiple AeroPoints, which are traditionally used to "pin" data to the ground and allow for accurate results.

When using this workflow with multiple AeroPoints, AeroPoints go from being GCPs to validation points on the ground. These are used to independently to check the PPK data against real points on the ground—giving you a true measure of data accuracy.

For more information on the difference between RTK, PPK, and GCPs, make sure to check out this guide, and we'll walk you through it.

Propeller PPK: One AeroPoint for validation

When purchasing Propeller PPK, you'll have the option of purchasing a single AeroPoint or a pack of five along with the drone.

If you choose the single AeroPoint option, you'll be ready to capture accurate data.

Fundamentally, you need only a single AeroPoint to get an accurate survey. Unlike a traditional survey based on GCPs,

a DJI Phantom 4 RTK drone can accurately record its position in flight, which can then be triangulated with the AeroPoint and the satellite data. It essentially turns every image taken into a GCP.

If only one AeroPoint is needed, why purchase five?

Improving accuracy on local grids

We know how important it is to support our customers when they're working with local coordinate systems.

If you're working on a local grid, we highly recommend using at least three AeroPoints for best results.

The first will act as the main ground control while the other two AeroPoints will let us correct any rotational or scale errors that might otherwise be invisible with a single AeroPoint.

Large sites and corridor flights

While a single AeroPoint allows you to collect accurate PPK data for an area of 150 acres, if your site is larger, you'll need to use another AeroPoint for every additional 50 acres of your survey area.

Likewise, linear or corridor missions also need multiple AeroPoints for accurate data due to their unique survey footprint.

For best results, we suggest placing an AeroPoint every 0.75mi (including the beginning and end of the corridor). Having six AeroPoints means you can accurately survey corridors up to 4mi long.

Deeper level of data validation

For workflows requiring independent validation, five GCPs can provide you with the validation you need.

We know some professionals prefer the certainty of having more points in order to ensure they can validate data through multiple GCPs.

When placing multiple AeroPoint for validation during your flight, Propeller will compare the data collected from all of them and automatically generate a survey quality report.

With it, you can ensure the data you've got is as accurate as you need it to be. Validating results like this can calm PPK skeptics and get you through a contractor dispute with less back and forth.

Backup for a "rainy day"

AeroPoints are designed to be industrial-grade. AeroPoints have survived being run over by massive pieces of construction equipment, but that said, they are not indestructible.

Like most electronic devices, if AeroPoints are submerged in water (like during a flood), the unit may fail if water gets through its seal.

Sometimes machinery does find a way to roll over and break an AeroPoint, and, strangely, we've lost a few units to cows, who find AeroPoints incredibly tasty.

Learn more about how to care for your AeroPoints in our quick guide here.

To find out more about how Propeller PPK can help you measure and manage your site

Learn more