POS AVX 210: Frequently Asked Questions

1. What is POS AVX 210?

The POS AVX 210 is a GNSS-Inertial solution designed to reduce the cost and improve the efficiency of mapping with small and medium format cameras. It consists of a single rugged enclosure containing a precision GNSS receiver and micro-electro-mechanical-system (MEMS) inertial sensors calibrated with the Applanix SmartCal technology, coupled with on-board data logging capability and interfaces for mapping sensors and flight management systems. The POS AVX 210 is fully compatible with, and supported by, the POSPac MMS. It is also features a seamless integration with the NanoTrack FMS from Track'Air and the iXU series of medium format cameras from PhaseOne.

2. How does POS AVX 210 work?

POS AVX 210 with POSPac MMS delivers highly accurate Exterior Orientation data – reducing the requirement for ground control in assisted aerial triangulation of DSLR or medium-format photogrammetric imagery. For low-altitude lidar applications, POS AVX 210 provides the required precision and accuracy of direct georeferencing to enable users to generate point clouds for further refinement in adjustment software

3. Why has Applanix decided to develop the POS AVX 210?

With POS AVX 210, Applanix has answered a need in the marketplace for small, compact system that enables efficient data gathering from low-cost yet highly effective sensors. These include DSLR and medium format cameras, low altitude lidar systems and other systems. POS AVX 210 builds on the technological foundation of our established POS AV portfolio for large format sensors, and brings into play the innovations developed for our unmanned solutions. This combination of experience and innovation enables us to deliver a package that strikes the optimal balance between price and performance for this segment.

4. What is the NanoTrack FMS? What advantages does NanoTrack provide?

NanoTrack is a commercial flight management system designed for highly efficient survey flight operations from Track'air. It transforms any modern tablet/laptop computer into a powerful FMS system capable of controlling any sensor. Aircraft equipped with the POS AVX210 and NanoTrack will be able to fly missions with reduce sidelap between flight lines, and a greatly reduced requirement for ground control points; these advantages will reduce costs and improve the efficiency of both data collection and the production of finished data sets for end users.

5. Is Applanix selling the NanoTrack with the POS AVX 210?

No. Customers can purchase the NanoTrack directly from Track'air (www.trackair.com) configured to support their desired sensor.

6. What antenna should I use with the POS AVX 210?

The POS AVX 210 is supplied with an FAA certified aircraft antenna.

7. What are the most common sensors that can be integrated with the POS AVX 210?

The POS AVX 210 and NanoTrack is "plug and play" with the iXU series of cameras from PhaseOne, but can be easily integrated with other sensors. To use the system with an iXU the customer only needs to build their own mounting plate to rigidly hold the POS AVX 210 to the camera.

8. What are the options if I don't want to do my own integration?

For customers who don't wish to do their own integration we recommend contacting Lead'air (a Track'air Company, www.trackair.com). They can provide a complete turn-key solution using the POS AVX210 and various sensors, as well as options such as stabilized mount.

9. Does the POS AVX 210 support Gimbal encoder angle input?

The POS AVX 210 does not currently support direct Gimbal encoder angle input. This means if used on a stabilized mount the GNSS antenna should be mounted directly over the center of rotation, and Gimbal data should be recorded separately for processing in POSPac.

10. Is Installation and Training included with the POS AVX 210?

Yes. The standard POS AV installation and training support is included in the list price.

11. How is POS AVX 210 used to georeference imagery such as from the PhaseOne iXU cameras?

Data from the POS AVX 210 are post-processed through POSPac MMS to produce a highly accurate Differential GNSS-inertial solution that is then used to compute the Exterior Orientation (X,Y,Z, Omega, Phi, Kappa) of each image exactly at the time of the exposure. This data along with the images and the camera calibration are then processed in the POSPac MMS

Photogrammetry Tools module to perform Integrated Sensor Orientation (ISO) to produce a final adjusted EO. The Photogrammetry Tools module uses the EO from the POS AVX210, block photography, point matching and a sophisticated error model to automatically determine boresight and refine the EO over the block, all without GCP's. The adjusted EO is then used in 3rd party Photogrammetric SW such as InPHO OrthoMaster and DTMaster to produce the final map products.