

# POS AVX 210

## KEY FEATURES

Cost effective and high-performance  
Direct Georeferencing solution for  
improved efficiency and high accuracy of  
mapping with small and medium format  
digital cameras and low altitude LiDAR  
sensors

Reduce/eliminate GCP's  
Reduce Sidelap

Compact and rugged enclosure with  
survey-grade multi-frequency GNSS  
receiver and MEMS inertial components

Applanix IN-Fusion™ GNSS-Inertial and  
SmartCal™ compensation technology  
for superior position and orientation  
performance

Compatible with TrackAir Flight  
Management System (NanoTrack)

Supported by POSpac MMS  
industry leading software for Direct  
Georeferencing of airborne mapping  
sensors

RTK position combined with high-  
accuracy orientation

## POS AVX 210 GNSS-INERTIAL SOLUTION FOR EFFICIENT, HIGH-ACCURACY MAPPING

The Applanix 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. The single rugged enclosure contains a precision GNSS receiver and inertial sensor components, logging capability, interface for mapping sensors and TrackAir Flight Management System. The POS AVX 210 is fully supported by POSpacMMS, powerful GNSS/Inertial processing software featuring the advanced Applanix SmartBase™ and Applanix In-Fusion™ technology for increased productivity.

Performance You Can Trust

capture everything. precisely.



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## TECHNICAL SPECIFICATIONS

- Advanced Applanix IN-Fusion™ GNSS-Inertial integration technology
- Solid-state MEMS inertial sensors with Applanix SmartCal™ compensation technology
- Advanced Trimble GNSS survey technology
- 336 Channels
  - GPS: L1 C/A, L2C, L2E, L5
  - GLONASS: L1 C/A, L2 C/A, L3 CDMA
  - BeiDou: B1, B2
  - Galileo<sup>1</sup>: E1, E5A, E5B, E5AltBOC
  - QZSS: L1 C/A, L1 SAIF, L2C, L5
  - SBAS: L1 C/A, L5
- High precision multiple correlator for GNSS pseudorange measurements
- Unfiltered, unsmoothed pseudorange measurements data for low noise, low multipath error, low time domain correlation and high dynamic response
- Very low noise GNSS carrier phase measurements with <1 mm precision in a 1 Hz bandwidth
- Proven Trimble low elevation tracking technology
- 100Hz real-time position and orientation output
- IMU data rate 200 Hz
- Navigation output format: ASCII (NMEA-0183), Binary (Trimble GSOF)
- Supported Reference input: CMR, CMR+, sCMRx, RTCM 2.1, 2.2, 2.3, 3.0, 3.1
- Support for POSpac MMS post-processing software (sold separately)
- No export permit required

## LAN INPUT/OUTPUT

All Ethernet functions are supported through dedicated IP address (Static or DNS) simultaneously.

TCP/IP and UDP ASCII and Binary data streaming (Time tag, PPS sync, status, position, attitude, velocity, track and speed, dynamics, performance metrics, GNSS data)

HTTP Web based Control software (GUI) for easy system configuration and low rate display. Support for all common browsers (IE, Safari, Mozilla, Google Chrome, Firefox)

LOGGING:  
 Internal Logging 6 GByte Flash memory  
 External Logging USB 2.0 Device port  
 Parameters Time tag, status, position, attitude, velocity, track and speed, dynamics, performance metrics, raw IMU data (200 Hz), raw GNSS data (5 Hz).

## SERIAL INPUT/OUTPUT

### 2 x RS232 ports

Parameters ASCII and Binary data streaming (Time tag, PPS sync, status, position, attitude, velocity, track and speed, dynamics, performance metrics, GNSS data), reference input (CMR, CMR+, sCMRx, RTCM), configuration messages. *Specifications subject to change without notice.*

### Other I/O

PPS(pulse-per-second) Time Sync Pulse output  
 Event Input (2) Two time mark of external event.

## PERFORMANCE SPECIFICATIONS<sup>2</sup> (RMS ERROR)

### Airborne

	SPS	DGPS	RTK <sup>4</sup>	Post-Processed <sup>5</sup>
Position (m)	1.5 - 3.0	0.5 - 2.0	0.02 - 0.05	0.02 - 0.05
Velocity (m/s)	0.05	0.05	0.02	0.015
Roll & Pitch (deg)	0.04	0.03	0.03	0.025
True Heading <sup>3</sup> (deg)	0.30	0.28	0.18	0.080

## PHYSICAL CHARACTERISTICS

### Board Set

Size ..... 149 L x 93 W x 43 H mm (nominal)  
 Weight ..... 0.66 kg  
 Power ..... Wide range input 8-28 V DC, typical power consumption of 3.5W at room temperature  
 Connectors ..... I/O: DA26  
 Antenna: TNC (Female)  
 GNSSAntenna LNA Power Input: AV39 included

## ENVIRONMENTAL CHARACTERISTICS

Temperature: ..... -40 deg C to +75 deg C (Operational)  
 ..... -55 deg C to +85 deg C (Storage)  
 Measurement Range: ..... +/- 6g<sup>6</sup>, +/- 300 dps  
 Mechanical Shock: ..... +/- 75g Survival  
 Operating Humidity: ..... 5% to 95% R.H. non-condensing at +60 deg C  
 Maximum Operating Limits ..... 515 m/sec  
 18,000 m  
 IP rating: ..... IP67

<sup>1</sup> Developed under a License of the European Union and the European Space Agency

<sup>2</sup> Typical performance. Actual results are dependent upon satellite configuration, atmospheric conditions and other environmental effects

<sup>3</sup> Typical survey mission profile, max RMS error. Heading error will increase for low speed rotor applications and when hovering.

<sup>4</sup> Requires base station and radio link, sold separately

<sup>5</sup> Post-Processed with POSpac MMS

<sup>6</sup> Sensor bandwidth (-3 dB amplitude) ~ 50 Hz