POStrack tightly integrates the POS AV GNSS-Inertial direct georeferencing technology from Applanix with Flight Management System (FMS) software from Track’ Air, in one compact ruggedized system. Engineered as a single system, it is compact, convenient and easily installed in all types of aircraft. Flight Management features include: mission planning with full DEM support; pilot guidance; automatic stabilized mount control and automatic camera triggering at pre-planned intervals. POS AV features include in-air initialization, levelling of stabilized mounts, automatic drift correction, GNSS position translation using encoder data from stabilized mounts, and generation of exterior orientation of each image for the mapping process. These features significantly reduce the cost of airborne mapping by improving the efficiency of data collection and the map production process. In addition, because Applanix is a Trimble Company (NASDAQ: TRMB), POS AV is unique in the marketplace with its ability to receive the Trimble CenterPoint RTX Correction Service. Using RTX, POS AV delivers higher accuracy and speed, lower cost, more uptime and greater reliability.

POStrack puts you in control: various performance, price points and export control options allow you to build the right solution for your application and for your budget. And all POSttrack solutions utilize the highly productive POSPac Mobile Mapping Suite (MMS) software, featuring the Applanix IN-Fusion™ technology and Applanix SmartBase™ module. POSPac MMS enables airborne missions to be flown with higher reliability and in less time, saving fuel costs and reducing environmental impact.

PERFORMANCE SUMMARY

**POSttrack Absolute Accuracy1 (RMS)**

<table>
<thead>
<tr>
<th>POS AV</th>
<th>310</th>
<th>310</th>
<th>310</th>
<th>310</th>
<th>410</th>
<th>410</th>
<th>410</th>
<th>410</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SPS</td>
<td>RTX5</td>
<td>Post-</td>
<td>Smart</td>
<td>SPS</td>
<td>RTX5</td>
<td>Post-</td>
<td>Smart</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Processed4</td>
<td>Base</td>
<td></td>
<td></td>
<td>Processed4</td>
<td>Base</td>
</tr>
<tr>
<td>Position (m)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5 H</td>
<td>&lt;0.1 H</td>
<td>&lt;0.1 H</td>
<td>&lt;0.05 H</td>
<td>1.5 H</td>
<td>&lt;0.1 H</td>
<td>&lt;0.1 H</td>
<td>&lt;0.05 H</td>
<td></td>
</tr>
<tr>
<td>3 V</td>
<td>&lt;0.2 V</td>
<td>&lt;0.2 V</td>
<td>&lt;0.2 V</td>
<td>3 V</td>
<td>&lt;0.2 V</td>
<td>&lt;0.2 V</td>
<td>&lt;0.2 V</td>
<td></td>
</tr>
<tr>
<td>Velocity (m/s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.05</td>
<td>0.05</td>
<td>0.010</td>
<td>0.010</td>
<td>0.050</td>
<td>0.050</td>
<td>0.005</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Roll and Pitch (deg)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.03</td>
<td>0.02</td>
<td>0.015</td>
<td>0.015</td>
<td>0.020</td>
<td>0.015</td>
<td>0.008</td>
<td>0.008</td>
<td></td>
</tr>
<tr>
<td>True Heading2 (deg)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.10</td>
<td>0.08</td>
<td>0.035</td>
<td>0.035</td>
<td>0.080</td>
<td>0.040</td>
<td>0.020</td>
<td>0.020</td>
<td></td>
</tr>
</tbody>
</table>

**POSttrack Relative Accuracy**

<table>
<thead>
<tr>
<th>POS AV</th>
<th>310</th>
<th>410</th>
<th>510</th>
<th>610</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SPS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise (deg/sqrt(hr)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.15</td>
<td>&lt;0.1</td>
<td>0.02</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Drift (deg/hr)6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>0.5</td>
<td>0.1</td>
<td>&lt; 0.01</td>
<td></td>
</tr>
</tbody>
</table>

SYSTEM SPECIFICATIONS - Computer System

<table>
<thead>
<tr>
<th>Component</th>
<th>Dimensions (L x W x H) mm</th>
<th>Weight</th>
<th>Power</th>
<th>Temperature</th>
<th>Altitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSTrack V6</td>
<td>179 x 323 x 68</td>
<td>4.0 kg</td>
<td>18 – 34 Vdc, 110 W Max (incl IMU and Pilot Display)</td>
<td>-20 C to +55 C</td>
<td>0 to 7,820 m</td>
</tr>
<tr>
<td>Pilot Tablet</td>
<td>40 x 159 x 258</td>
<td>1.2 kg</td>
<td></td>
<td>-20 C to +50C</td>
<td>0 to 7,820 m</td>
</tr>
</tbody>
</table>

1 Typical performance. Actual results are dependent upon satellite configuration, atmospheric conditions and other environmental effects. POSttrack is not an approved aviation system, and under no circumstances should it be used as a stand alone means of navigating any aircraft. Customer assumes full responsibility for proper use and validity of flight plans.
2 Typical mission profile, max RMS error
3 Trimble RTX service, typical airborne results, subject to regional coverage and mission profile. Subscription sold separately.
4 With POSPac MMS, sold separately
5 May require local gravity model to achieve full accuracy
6 Attitude will drift at this rate up to a maximum error defined by absolute accuracy in table above.
**Inertial Measurement Unit (IMU)**

<table>
<thead>
<tr>
<th>Option</th>
<th>Type</th>
<th>AV Model</th>
<th>Temp (Operational)</th>
<th>Dimensions (LxWxH) mm</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMU-42⁷</td>
<td>POS AV 310</td>
<td>-20 C to +55 C</td>
<td>120 x 120 x 110 (in tophat, provided)</td>
<td>1.25 kg</td>
<td></td>
</tr>
<tr>
<td>IMU-7/IMU-8⁸</td>
<td>POS AV 410 / POS AV 510</td>
<td>-54 C to +71 C</td>
<td>95 x 95 x 107</td>
<td>1.0 kg</td>
<td></td>
</tr>
<tr>
<td>IMU-52⁹</td>
<td>POS AV 410</td>
<td>-20 C to +55 C</td>
<td>161 x 120 x 111</td>
<td>1.85</td>
<td></td>
</tr>
<tr>
<td>IMU-46⁹</td>
<td>POS AV 510</td>
<td>-20 C to +55 C</td>
<td>161 x 120 x 126</td>
<td>2.2 kg</td>
<td></td>
</tr>
<tr>
<td>IMU-57⁹</td>
<td>POS AV 610</td>
<td>-20 C to +55 C</td>
<td>179 x 126 x 127</td>
<td>2.6 kg</td>
<td></td>
</tr>
<tr>
<td>IMU-21⁹</td>
<td>POS AV 610</td>
<td>-40 C to +70 C</td>
<td>163 x 165 x 163</td>
<td>4.49 kg</td>
<td></td>
</tr>
</tbody>
</table>

7 Developed under the License of European Union and European Space Agency.

8 These IMUs require US government approvals for all exports, a Canadian export permit for all destinations outside the US, and may be subject to local export restrictions internationally. Contact your Applanix representative for further information.

9 These IMUs are exportable worldwide subject to statutory export declarations, and standard restrictions relating to certain international destinations. Contact your Applanix representative for further information.

---

**Global Navigation Satellite System (GNSS)**

- **GPS**: L1 C/A, L2C, L2E, L5
- **GLONASS**: L1 C/A, L1 P, L2 C/A, L2 P
- **Galileo**: L1 BOC, ESA, E5a, E5b, E5a/b/bc
- **QZSS**: L1 C/A, L1 SAIF, L1 L2F, L5
- **SBAS**: Simultaneous L1 C/A and L5
- **L-Band**: Omnistar/VBS, XR HP and G2, Trimble Centerpoint RTX
- **Beidou**: B1, B2

**Data Rate**
- 5 Hz (raw)

---

**I/O**

**Ethernet (100 base-T)**
- Parameters: Time tag, status, position, attitude, velocity, track and speed, dynamics, performance metrics, raw IMU data (at IMU rate), raw GNSS data.

**Display Port**
- Low rate (1 Hz) UDP protocol output

**Control Port**
- TCP/IP input for system commands

**Primary Port**
- Real-time (up to 200 Hz) TCP/IP protocol output

**Secondary Port**
- Buffered TCP/IP protocol output for data logging to external device

**Logging Parameters**
- Time tag, status, position, attitude, velocity, track and speed, dynamics, raw IMU data (at IMU rate), raw GNSS data.

**Media**
- External: Removable 4 Gbyte USB stick (2 supplied)
- Internal: Embedded 4 Gbyte memory for redundant logging

**RS232 NMEA ASCII Output**
- Position (SINCGA), Heading (SINHDT), Track and Speed (SINVGT), Statistics (SINGST). Rate Up to 50 Hz (user selectable).

**RS232 High Rate Binary Output**
- User selectable binary messages: Time, position, attitude, speed, track, PAV30 output, Yaw Drift Correction. Rate Up to 2000 Hz (user selectable).

**RS232 Input Interfaces**
- Gimbal encoder input, AUX GPS Input (RTK, NavCom Starfire, Omnistar HP), RTCM 104, DGPS Corrections Input. Rate 1 to 2000 Hz.

**Other I/O**
- 1PPS: 1 pulse-per-second Time Sync output, normally high, active low pulse.
- Event Input (6): Six time mark of external events. TTL pulses >1 msec width, max rate 100 Hz.

**SENSOR INTERFACES**

3-axis Mount:
- **Drift Correction**: T-AS (digital interface); PAW30 (RS232) (Requires POSOP); PAW80 (RS232) (Requires COMOP and IMUOP); GSM3000 (RS232); DSS Azimuth Mount (RS232); Z/I Mount (RS232)

- **Levelling Control**: PAW30 (RS232); PAW80 (RS232); GSM3000 (RS232); Z/I Mount (RS232)

- **Gimbal Encoder**: PAW30 (RS232); PAW80 (RS232); GSM3000 (RS232); Z/I Mount (RS232)

- **Stab. Control**: GSM3000 (RS232); PAW30 (RS232); PAW80 (RS232); T-AS (digital interface); Z/I Mount (RS232)

- **LiDAR**: ALS40/50; Riegli Q240/560/680

**Frame Camera**
- RC20/30; TOP RMK; LMK 1000; Vexcel UCD/LUX/UCL; Generic; DiMAC

**User Supplied Equipment**

- **PC** for POS Controller and Operator Client Software
- **Intel Graphics media accelerator** 500 or equivalent (minimum)
- **2 GB RAM, 32 GB HDD** (minimum)
- **Ethernet adapter** (RJ45 100 base T), USB Port
- **Windows 7**

**PC for Mission Planning and optional POSPac Post-processing**
- **Pentium 4 (32 bits) at 2 GHz or equivalent** (recommended minimum)
- **1 GB RAM, 100 GB Free disk space** (recommended minimum)
- **2 X USB 2.0 ports for security keys**
- **Internet Access** for installation, DEM download, optional SmartBase processing

**Windows 7**

**For more information on POSTrack simply scan the QR code with your mobile device to access our site.**

85 Leek Crescent Richmond Hill, ON Canada L4B 3B3 T: 1.905.709.4600 F: 1.905.709-6027 www.applanix.com

© 2013, Applanix, A Trimble Company. All rights reserved. Applanix and the Applanix logo are trademarks of Applanix Corporation registered in the Canadian Patent and Trademark Office and other countries. POSAV, POSTrack and POSPac are registered trademarks of Applanix Corporation. All other trademarks are the property of their respective owners.

August 2012