SPAN® UIMU-LCI

TACTICAL GRADE, LOW NOISE IMU DELIVERS 3D POSITION, VELOCITY AND ATTITUDE SOLUTION AS PART OF SPAN TECHNOLOGY

SPAN: WORLD-LEADING GNSS+INS TECHNOLOGY
Synchronous Position, Attitude and Navigation (SPAN) technology brings together two different but complementary technologies: Global Navigation Satellite System (GNSS) positioning and inertial navigation. The absolute accuracy of GNSS positioning and the stability of Inertial Measurement Unit (IMU) gyro and accelerometer measurements are tightly coupled to provide an exceptional 3D navigation solution that is stable and continuously available, even through periods when satellite signals are blocked.

UIMU-LCI OVERVIEW
The UIMU-LCI is a tactical grade IMU from Northrop-Grumman Litef GMBH. The custom NovAtel mechanical enclosure and software interface of the IMU integrates easily into a NovAtel SPAN enabled GNSS+INS receiver such as the FlexPak6™ or ProPak6™. IMU measurements are sent from the UIMU-LCI to the GNSS+INS receiver where a blended GNSS+INS position, velocity and attitude solution is generated at up to 200 Hz.

ADVANTAGES OF UIMU-LCI
The low noise and stable biases of the accelerometer and gyro sensors mean that the IMU is well suited for ground or airborne survey applications or general positioning and navigation in locations where standard GNSS receivers are not sufficient. The IMU is manufactured in Germany.

IMPROVE SPAN LCI ACCURACY
Take advantage of NovAtel CORRECT™ to receive your choice of accuracy and performance, from decimetre to RTK-level positioning. For more demanding applications, Inertial Explorer® post-processing software from our Waypoint® Product Group can be used to post-process SPAN LCI data and offers the highest level of accuracy with the system.

BENEFITS
+ Tactical grade IMU performance
+ Easy integration with NovAtel’s SPAN capable GNSS+INS receivers

FEATURES
+ Closed-loop fiber optic gyros
+ Micromechanical accelerometers
+ 200 Hz data rate
+ SPAN INS functionality

If you require more information about our SPAN products, visit www.novatel.com/span
**UIMU-LCI**

**SPAN SYSTEM PERFORMANCE**

**Horizontal Position Accuracy (RMS)**
- Single point L1/L2: 1.2 m
- SBAS: 0.6 m
- DGPS: 0.4 m
- NovAtel CORRECT™
  - TERRASTAR-D: 6 cm
  - Veripos Apex: 6 cm
  - RT-2: 1 cm + 1 ppm

**IMU PERFORMANCE**

**Gyroscope Performance**
- Input range: ±800 deg/sec
- Rate bias: <1.0 deg/hr
- Rate scale factor: 100 ppm (typical)
- Angular random walk: <0.05 deg/v/hr

**Accelerometer Performance**
- Range: ±40 g
- Scale factor: 250 ppm (typical)
- Bias: <1.0 mg

**PHYSICAL AND ELECTRICAL**

**Dimensions**
- 168 x 195 x 146 mm

**Weight**
- 4.25 kg

**Power**
- Power consumption: 16 W (typical)
- Input voltage: +12 to +28 V

**Connectors**
- MIL-C-38999-III, 22 pin

**ENVIRONMENTAL**

**Temperature**
- Operating: -40ºC to +60ºC
- Storage: -40ºC to +71ºC

**Humidity**
- 95% non-condensing

**Random Vibe**
- MIL-STD 810F 10 g RMS

**Shock**
- MIL-STD 810F 30 g RMS

**MTBF**
- >45,000 hrs

**Waterproof**
- IEC 60529 IPX7

**Dust**
- IEC 60529 IP6X

**OPTIONAL ACCESSORIES**
- Inertial Explorer post-processing software

**PERFORMANCE DURING GNSS OUTAGES**

<table>
<thead>
<tr>
<th>Outage Duration</th>
<th>Positioning Mode</th>
<th>POSITION ERROR (M)</th>
<th>VELOCITY ERROR (M/S)</th>
<th>ATTITUDE ERROR (DEGREES)</th>
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<tr>
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<td></td>
<td>Horizontal</td>
<td>Vertical</td>
<td>Horizontal</td>
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<tr>
<td>0 s</td>
<td>RTK10</td>
<td>0.020</td>
<td>0.050</td>
<td>0.020</td>
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<td>SP</td>
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<td>0.600</td>
<td>0.020</td>
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<td>PP11</td>
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<td>0.022</td>
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<tr>
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<td>SP</td>
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<td>1.170</td>
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<td>PP11</td>
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<td>0.010</td>
</tr>
<tr>
<td>60 s</td>
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<tr>
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<td>SP</td>
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<tr>
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<td>PP11</td>
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<td>0.030</td>
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</table>

1. Typical values. Performance specifications subject to GPS system characteristics, US DOD operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources.
2. GPS only.
3. An OEM628, OEM638, FlexPack6 or ProPak6 receiver is required for TERRASTAR-D or Veripos Apex2.
4. TERRASTAR-D subscriptions are available from NovAtel.
5. Veripos Apex marine subscriptions are available directly from Veripos.


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