The LN-100R embedded INS/GPS is the state-of-the-art replacement for all ARINC 561 inertial navigation systems (LTN-72 and Carousel IV).

**Overview**

The LN-100R is designed as a “Form, Fit, and Function” replacement for the commercial ARINC 561 inertial navigation systems. The unit is a specially packaged version of the highly successful LN-100G embedded GPS inertial system in mass production for multiple military applications for the US Government and other nations worldwide.

The LN-100R can be supplied with an embedded all-in-view GRAM-SAASM GPS system module, or it will operate with an external standalone GPS receiver. Originally developed for the US Navy P-3 INS replacement program (RINU), it has also been installed in the US Marine Corps C-130 aircraft, US Coast Guard C-130, and HU-25 aircraft.

A number of international P-3 operators have also elected to update their P-3 aircraft with the LN-100R.

Over 800 units have been delivered to date, with production rates as high as 50 per month.

The LN-100R reduces aircraft power consumption by one third and increases the MTBF by a factor of ten over the system being replaced.

The reduction in cost of ownership allows for an immediate return on acquisition cost and a full payback in less than five years.

The LN-100R is designed to fit in a standard ARINC 561 mount and can be installed in place of older systems with virtually no aircraft modifications.

**Mechanical Features**

- Fits in a standard ARINC mount with no modifications
- No change to rear DPX connectors. New front signal connectors and RF connector
- All modules accessible from the top
- Cooling air 4.0 pounds per minute at 50°C (nominal)
- Core LN-100G in front with missionized electronics in rear
- Four spare card slots; interconnect provision for a spare 128-pin I/O connector; and I/O section modularized for future growth
LN-100R Embedded INS/GPS

**LN-100R RINU Outline and Mounting**

**Mechanical Characteristics**

<table>
<thead>
<tr>
<th></th>
<th>LTN-72</th>
<th>P-3/C 130 RINU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>20.06 in. (50.95 cm)</td>
<td>20.06 in. (50.95 cm)</td>
</tr>
<tr>
<td>Width</td>
<td>10.15 in. (25.78 cm)</td>
<td>7.12 in. (18.08 cm)</td>
</tr>
<tr>
<td>Height</td>
<td>8.66 in. (21.97 cm)</td>
<td>7.12 in. (18.08 cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>59 lb (26.6 kg)</td>
<td>40.7 lb (measured) (18.3 kg)</td>
</tr>
<tr>
<td>Power</td>
<td>375W</td>
<td>95W dissipated</td>
</tr>
<tr>
<td>Spare Card Slots</td>
<td>Captive hardware</td>
<td>Captive hardware</td>
</tr>
<tr>
<td>LRU Removal</td>
<td>Captive hardware</td>
<td>Replaceable from front</td>
</tr>
<tr>
<td>GPS Battery Access</td>
<td>Replaceable from front</td>
<td>Replaceable from front</td>
</tr>
<tr>
<td>Parts Derating</td>
<td></td>
<td>Replaceable from front</td>
</tr>
</tbody>
</table>

**Operating Ranges**

- Acceleration: 16g all axes
- Attitude (all axes): Unlimited
- Roll, Pitch, Azimuth Rate: >400°/sec
- Roll, Pitch, Azimuth Acceleration: >1500°/sec²

**Outputs**

- Digital: ARINC 561/575 & 429
  2 dual Mil-Std-1553/4 RS-422
- Analog/Discrete: ARINC 561 compliant, plus additional heading outputs

**GPS Receiver**

- SPS or PPS receiver
- Antenna: IF or RF
- Operating Frequencies: L1/L2
- Anti-spoof/Enhanced Anti-jam: P(Y)
- Channels: 12
- Correlators/Channel: 10

**Power, Running**

- 95W - 115 Vac

**Cooling**

- Air-cooled

**Environmental Requirements**

- DO-160

**Power, Running**

- 95W - 115 Vac

**Cooling**

- Air-cooled

**Environmental Requirements**

- DO-160

**Navigation Processor**

- PowerPC™ 603

**Software**

- Ada language

**Maintenance**

- Two-level extensive BIT, no flightline test equipment required

**Calibration Interval**

- No scheduled calibration required

**Operational Service Life/MTBF**

- 20+ years/17,400 (AIC)