**The Smart Alternative to a GPS Chipset**

Trimble’s Condor family of GPS modules represents the smart alternative to GPS chipsets for many consumer and commercial positioning applications. Trimble offers Condor modules in multiple form factors and flexible interface options. The modules in the Condor family share several common characteristics: top-tier positioning performance, the best components, and the highest production quality standards.

On the surface, a chipset implementation may appear to be the optimal choice for a GPS positioning solution. However, GPS chipset implementations are fraught with risk, can delay time-to-market (TTM) and can have significant hidden costs beyond just the bill of material.

Chipset implementations typically require multiple design iterations to achieve maximum performance under all operating conditions. In the production environment, chipset implementations accrue costs associated with testing, yield, re-work and warranty.

Condor GPS modules help you bring innovative products to market faster to capture greater market share. As a completely qualified positioning solution with full warranty, Condor modules harbor none of the development risk or hidden costs associated with GPS chipset implementations.

Select a Condor GPS module and leverage Trimble’s 30+ years of experience in positioning solutions.

---

**KEY BENEFITS**

- Cost-competitive to chipset implementations with all costs considered.
- Lowers development risk, cost and time
- Custom form factors to suit specific integration requirements
- Shortens time-to-market for new navigation products

---

**CONDOR GPS MODULE FAMILY**

<table>
<thead>
<tr>
<th>Module</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1011</td>
<td>At 10 mm x 11 mm, the diminutive Condor C1011 packs powerful positioning performance in a size well-suited to portable navigation products.</td>
</tr>
<tr>
<td>C1722</td>
<td>The Condor C1722 is a full-featured module in the 17 mm x 22 mm form factor. It offers a USB interface, antenna open and short detection, and support for both passive and active antennas.</td>
</tr>
<tr>
<td>C1216</td>
<td>The Condor C1216 packs a lot of functionality into its 12 mm x 16 mm form factor.</td>
</tr>
<tr>
<td>C1919A</td>
<td>The Condor C1919 has the 19 mm x 19 mm SMT format common with the Copernicus II GPS modules from Trimble.</td>
</tr>
<tr>
<td>C2626</td>
<td>Continuing Trimble’s tradition of advancing technology while preserving our customer’s investment, the C2626 copies the popular Lassen IQ form factor.</td>
</tr>
</tbody>
</table>
The Condor GPS family includes multiple modules with different form factors and interface options. All the modules in the family offer tier positioning performance. The features and specifications listed below are typical for all Condor GPS modules in the family.

**KEY FEATURES**
- GPS L1 Frequency C/A code receiver
- NMEA output and input
- SBAS (WAAS, EGNOS, MSAS) capable
- aGPS capable
- Update rate up to 5 Hz
- PPS timing output
- Multiple form factors and interface options

**PERFORMANCE SPECIFICATIONS**
GPS performance statistics are clear view, stationary, autonomous (no aiding), 50% figures. Sensitivity based on signals measured at the antenna.

- **Accuracy**
  - Position: 2 m
  - Altitude: <3 m
  - PPS: ±25 ns
- **Acquisition**
  - Re-Acquisition: 2 s
  - Hot Start: 2 s
  - Warm Start: 35 s
  - Cold Start: 38 s
- **Sensitivity**
  - Tracking: -160 dBm
  - Acquisition: -146 dBm
- **Dynamics**
  - Acceleration: 2 g
  - Velocity: 515 m/s (COCOM Limit)

**ENVIRONMENTAL SPECIFICATIONS**
- **Temperature**
  - Operating: -40 °C to +85 °C
  - Storage: -40 °C to +105 °C
- **Humidity**
  - 5% to 95% non-condensing @ 60 °C
- **Vibration**
  - 5 Hz to 20 Hz... 0.008 g/Hz
  - 20 Hz to 100 Hz... 0.05 g/Hz
  - 100 Hz to 900 Hz... -3 dB/octave
- **Backup Power**
  - DC Levels... 3.0 V to 3.6 V
  - Consumption... 5 μA typical @ 20 °C

**PHYSICAL CHARACTERISTICS**
- **Dimensions**
  - C1011: 10 mm x 11 mm x 2 mm
  - C1216: 16 mm x 12.2 mm x 2.13 mm
  - C1722: 17 mm x 22.4 mm x 2.13 mm
  - C1919: 19 mm x 19 mm x 2.54 mm
  - C2626: 26 mm x 26 mm x 6 mm
- **Connectors**
  - C1011: 38-pin surface-mount LGA
  - C1216: 24-pin surface-mounted edge castellations
  - C1722: 28-pin surface-mounted edge castellations
  - C1919: 28-pin surface-mount edge castellations
  - C2626: 8-pin interface header

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>Model</th>
<th>Part Number</th>
<th>LNA</th>
<th>RTC</th>
<th>USB</th>
<th>Antenna Detection</th>
<th>Packaging Options</th>
<th>Starter Kit Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1011</td>
<td>68674-00</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>20-piece tray, 100-piece reel, 500-piece reel</td>
<td>70897-05</td>
</tr>
<tr>
<td>C1216</td>
<td>68676-10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>50-piece tray, 500-piece reel</td>
<td>N/A</td>
</tr>
<tr>
<td>C1722</td>
<td>68675-00</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>36-piece tray, 500-piece reel</td>
<td>N/A</td>
</tr>
<tr>
<td>C1919A</td>
<td>67650-10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>20-piece tray, 500-piece reel</td>
<td>70291-10</td>
</tr>
<tr>
<td>C1919C</td>
<td>67650-20</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>20-piece tray, 500-piece reel</td>
<td>70291-10</td>
</tr>
<tr>
<td>C2626</td>
<td>70896-00</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>250-piece box</td>
<td>70897-05</td>
</tr>
</tbody>
</table>

LNA: An onboard LNA compatible with both active and passive antenna implementations. RTC: Includes an onboard 32 kHz crystal for the RTC. Modules without an onboard crystal support either an off-board crystal or a connection to the host RTC crystal. Antenna Detection: Capable of reporting antenna faults (open or short conditions) when integrated with an active antenna.

**ELECTRICAL INTERFACE CHARACTERISTICS**

- **Serial Interface**
  - UART: 2.8 V TTL level
  - Baud Rate: 9600, 8-N-1
- **PPS Interface**
  - Level: 2.8 V TTL level
  - Pulse Width: Configurable 4 μs
- **Main Power**
  - DC Levels: 3.0 V to 3.6 V
  - Consumption: <37 mA typical @ 20 °C
- **Backup Power**
  - DC Levels: 2.0 V to 3.6 V
  - Consumption: 5 μA typical @ 20 °C

**Specifications subject to change without notice.**