

## CONDOR GPS MODULE FAMILY

### 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

### 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.

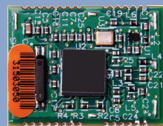
Chipset implementations typically require multiple design iterations to achieve maximum performance under all operating conditions. In the production environment, chipset implementations accrue costs associated with testing, yield, re-work and warranty.

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.



C1011

At 10 mm x 11 mm, the diminutive Condor C1011 packs powerful positioning performance in a size well-suited to portable navigation products.



C1722

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.



C1216

The Condor C1216 packs a lot of functionality into its 12 mm x 16 mm form factor.



C1919A

The Condor C1919 has the 19 mm x 19 mm SMT format common with the Copernicus II GPS modules from Trimble.



C2626

Continuing Trimble's tradition of advancing technology while preserving our customer's investment, the C2626 copies the popular Lassen iQ form factor.

# CONDOR GPS MODULE FAMILY

The Condor GPS family includes multiple modules with different form factors and interface options. All the modules in the family offer top 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.

Update Rate	1 Hz (default), up to 5 Hz
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)

## ELECTRICAL INTERFACE CHARACTERISTICS

Serial Interface	
UART	2.8 V TTL level
Protocol	NMEA
Messages	GGA, GSA, GSV, RMC (default)
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

## ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating	-40 °C to +85 °C
Storage	-55 °C to +105 °C
Humidity	5% to 95% non-condensing @ 60 °C
Vibration	
5 Hz to 20 Hz	0.008 g <sup>3</sup> /Hz
20 Hz to 100 Hz	0.05 g <sup>3</sup> /Hz
100 Hz to 900 Hz	-3 dB/octave

## 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-pad 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 H.FL antenna connector

## ORDERING INFORMATION

Model	Part Number	LNA	RTC	USB	Antenna Detection	Packaging Options			Starter Kit Part Number
C1011	68674-00					20-piece tray	100-piece reel	500-piece reel	70897-05
C1216	68676-10	✓	✓	✓	✓	50-piece tray	500-piece reel		N/A
C1722	68675-00	✓	✓	✓	✓	36-piece tray	500-piece reel		N/A
C1919A	67650-10	✓	✓			20-piece tray	100-piece reel	500-piece reel	70291-10
C1919B	67650-00	✓				20-piece tray	100-piece reel	500-piece reel	70291-10
C1919C	67650-20	✓	✓		✓	20-piece tray	100-piece reel	500-piece reel	70291-10
C2626	70896-00	✓	✓		✓	250-piece box			70897-05

**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.

**Starter Kit:** This kit includes all the tools necessary to test and evaluate the Condor GPS receiver, including: Condor GPS receiver in a rugged enclosure suitable for testing and data collection; a GPS antenna. Software Tool Kit is available from the Trimble Support page.

*Specifications subject to change without notice.*

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