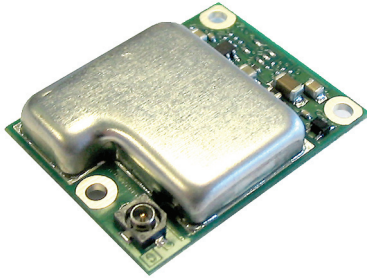


Jupiter Pico

12-channel GPS receiver module



Jupiter Pico combines all the features and performance of previous generation Jupiter receivers, at approximately one-quarter of the size. Pico enables system integrators to utilise the Zodiac 12-channel all-in-view navigation solutions in applications such as handheld devices, where size and power consumption are critical. Jupiter Pico is electrically compatible with all previous Jupiter designs and incorporates the same hardware and software interface, allowing legacy designs to be used. Protocols supported are Navman binary (compatible with Conexant and Rockwell binary) and selected NMEA-0183 messages.

Jupiter Pico is a small, versatile 3.3 V GPS solution designed for the most demanding applications. It is especially well suited for vehicle tracking in poor reception areas, such as dense urban environments. Flash memory (for field upgrades), improved immunity to jamming, option for active or passive antennas, highly accurate performance, and lower power consumption, combined with the small form factor make this a flexible GPS solution.

Jupiter Pico standard—suits most applications.

Jupiter Pico T (Timing)

Jupiter T is for stationary applications where synchronisation to UTC or GPS is needed with one PPS accuracy better than 25 ns.

Development kits

Available for any configuration of the Jupiter Pico, these kits contain everything required for the GPS system integrator: GPS antenna, AC and automotive power supplies, serial cables, DOS/Windows based interface software, and full documentation.

Features

- backward compatible with previous Jupiter hw/sw interface
- small size: 24.5 x 31.5 x 8.6 mm
- 2 MB of Flash memory
- state-of-the-art algorithms for optimised urban canyon tracking
- improved jamming immunity
- horizontal position accuracy of better than 2.8 m CEP without differential aiding
- on-chip LNA supports both active and passive antennas
- standard option with better than 100 ns timing accuracy
- precision timing version with better than 25 ns accuracy
- low power consumption: 85 mA; power management capability to reduce current consumption

Related products

Pico standard

- Development kit TU10-D007-361

Pico T

- Development kit TU10-D007-362

Related documents

- Data sheet LA010093 (timing)
- Development kit: Quick start guide LA010088
- Development kit: Guide LA010089
- Designer's guide MN002000
- Labmon application note LA010103

Product specifications

Receiver architecture

- 12-channel, L1 1575.42 MHz
- C/A code (1.023 MHz chip rate)
- code-plus-carrier tracking (carrier-aided tracking)
- velocity, up to 500 m/s
- acceleration, up to 5 G

Tracking capability

- 12 satellites simultaneously

Accuracy

- horizontal accuracy: better than 2.8 m (CEP), 4.9 m (2 dRMS)
- 3D accuracy: better than 5 m (SEP)
- DGPS accuracy: better than 1 m (CEP)
- time accuracy: better than 100 ns (absolute), 40 ns (1 sigma)

Acquisition/re-acquisition performance

- hot start: 24 seconds (with valid almanac, time, position and ephemeris)
- warm start: 45 seconds (with valid almanac, time and position)
- cold start: 120 seconds (with no information)

Antenna

- on-chip LNA for use with passive antenna
- active antenna powered through receiver (100 mA max at 12 VDC max)
- 18 dB of gain, +4, -8 recommended for active antenna

Datums

- 189 std datums, 5 user defined, default: WGS-84

Environmental

- operating temperature: -40°C to +85°C
- humidity: up to 95% non-condensing
- altitude: -305 m to 12 190 m

On-board filtering

- L1 -75 MHz, -7 dB
- L1 +50 MHz, -20 dB

Serial interfaces

- two serial ports available (1 for DGPS input)
- CMOS-level (3.3 VDC)
- programmable baud rates
- latitude, longitude, elevation, velocity, heading, time, satellite tracking status, command/control messages, raw data—Navman binary interface (compatible with Conexant/Rockwell binary interface)
- selected NMEA-0183 messages

Electrical

Primary power

- 3.15 to 3.45 VDC

Power consumption

- 280 mW at 3.3 VDC

Backup power (SRAM and RTC)

- 2.5 to 3.4 VDC

Backup power consumption

- 5 μ W (max) at 3.3 VDC

Physical

- dimensions: 24.5 x 31.5 x 8.6 mm
- weight: 6.35 g

Connectors

- data/power: 20 pin (2 x 10) Hirose DF12-20DS-81
- antenna: Hirose HFL

Ordering information

- TU36-D100-001 Jupiter Pico standard
- TU36-D400-001 Jupiter Pico T

For more information, to order, or to discuss your GPS solution requirements, contact your local distributor or Navman OEM.

Navman OEM
Web: www.navman.com/oem
Email: oem@navman.com

Your Navman OEM distributor: