

## **CONEXANT Jupiter LP GPS Receiver TU30-D160**

Conexant's Jupiter Low Power (LP) Global Positioning System (GPS) receiver is a single-board, 12 parallel-channel receiver engine intended as a component for an Original Equipment Manufacturer (OEM) product. The Jupiter LP features built-in power management algorithms and operates from 3.3 V, making it ideal for battery operated applications.

The receiver continuously tracks all satellites in view, thus providing accurate satellite positioning data. It is designed for high performance and maximum flexibility in a wide range of OEM configurations including handhelds, panel mounts, sensors, and in-vehicle automotive products. The Jupiter LP receiver is available in two configurations, with a straight OSX or a right angle OSX RF connector.

The highly integrated digital receiver uses the Zodiac chipset composed of two custom Conexant devices: the Gemini/Pisces Monopac™ and the Scorpio Digital Signal Processor (DSP). These two custom chips, together with suitable memory devices and a minimum of external components, form a complete low-power, high-performance GPS receiver solution for OEMs.

The Jupiter LP receiver decodes and processes signals from all visible GPS satellites. These satellites, in various orbits around the Earth, broadcast radio frequency (RF) ranging codes and navigation data messages. The receiver uses all available signals to produce a highly accurate and robust navigation solution that can be used in a wide variety of end product applications.

The Jupiter LP, as shown in Figures is packaged on a miniature printed circuit board intended for harsh industrial applications. The receiver requires conditioned DC power and a GPS signal from a passive or active antenna.

The all-in-view tracking of the Jupiter LP receiver provides robust performance in applications that require high vehicle dynamics and in applications that operate in areas of high signal blockage such as dense urban centers. The receiver continuously tracks all visible GPS satellites and uses all the measurements to produce an overdetermined, smoothed navigation solution.

This solution is relatively immune to the position jumps induced by blockage that can occur in receivers with fewer channels.

## **Features**

- OEM product development is fully supported through applications engineering
- One of the smallest, most compact GPS receiver footprints measuring 2.800" x 1.600" x 0.442" (approximately 71 x 41 x 11 mm)
- Twelve parallel satellite tracking channels for fast acquisition and reacquisition
- Support for true NMEA-0183 data protocol
- Direct, differential RTCM SC-104 data capability to dramatically improve positioning accuracy (in both Conexant binary and NMEA host modes)
- Enhanced algorithms provide superior navigation performance in "urban canyon" and foliage environments
- Adaptive threshold-based signal detection for improved reception of weak signals
- Static navigation enhancements to minimize wander due to Selective Availability (SA)
- Compatible with passive antennas for lowest total system cost or active antennas for installation flexibility
- Maximum navigation accuracy achievable with the Standard Positioning Service (SPS)
- Enhanced Time-To-First-Fix (TTFF) upon power-up when in a "Keep-Alive" power condition before start
- Meets rigid shock and vibration requirements
- Automatic Altitude Hold Mode from Three-Dimensional to Two-Dimensional navigation
- Automatic cold start acquisition process (when no initialization data is entered by the user)
- Maximum operational flexibility and configurability via user commands over the host serial port
- Ability to accept externally supplied initialization data over the host serial port
- User selectable satellites
- User selectable visible satellite mask angle
- Straight or right angle OSX subminiature, snap-on, coaxial RF jack receptacle
- Standard 2x10 pin-field I/O connector
- Operation/storage over an extended temperature range (-40°C to +85°C)