OPUS IIIez™ is eRide’s latest generation of GPS technology, defining Satellite Navigation to new performance heights.

Engineered as a complete solution highly integrated architecture, OPUS IIIez™ provides unparalleled performance by combining a hardware measurement platform with powerful navigation software running on an embedded controller. It delivers fast, accurate positioning, velocity and timing (PVT) data ideal for wireless applications and handheld system in challenging locations like indoor environments and deep urban canyons.

This chipset includes the ePV3600 OPUS IIIez™ Baseband IC and the ePR3036 Prelude III™ RF Receiver IC.

The navigation software runs on an embedded MCU, resulting in a GPS/A-GPS solution that offers a small footprint, low power consumption, and real cost savings. ePV3600 baseband employs novel decoding algorithms, effectively achieving 44,000 correlators. Taking measurement data through a single input from the RF receiver, it supplies position, velocity and timing data through a simple serial interface and set of commands. ePR3036 combines an LNA with an image-reject mixer/RF-AMP, a bandpass filter, an AGC, and a fully integrated VCO/PLL.

FEATURES

Versatile: 32 channel receiver/baseband processor chip set operates in Autonomous and Assisted-GPS mode and 2 Channel Real Time Differential GPS with SBAS

Ultra-high sensitivity: -161 dBm sensitivity in both acquisition and tracking ensures position fix continuity indoors, outdoors and in urban canyons

Fast: < 1 sec TTFF ensures user satisfaction

Highly accurate: 2.5m outdoors, 10 m indoors typical, live-sky measurements

Low power: 90 mW power consumption while tracking indoor, with intelligent power management to extend battery life in handheld products

Simple, low cost: Highly integrated solution, single rail supply. Position, speed, time, and aiding data over bidirectional industry standard NMEA interface

Easy integration: Connects to application via serial port

Miniature size: Total footprint supports miniaturized designs

Flexible: Supports embedded ROM and/or external Flash mode

The Opus IIIez™ chipset is a highly integrated solution, with on-chip MCU, ROM, and navigation software, so it facilitates system power system integration, reduces time to market, and lowers costs. eRide has the tools and the engineering support team it takes to get your new GPS-equipped products up and running and off to market, quickly and efficiently.
32 Channel GPS/AGPS and 2 Channel SBAS Receiver Chip Set

**SPECIFICATIONS**

**Receiver Type:**
- L1, C/A Code
- 32 Channel Acquisition
- 12 Channel Tracking
- 2 Channel capable SBAS (EGNOS, WAAS and MSAS)

**Maximum Update Rate:** 1 Hz

**Position Accuracy:**
- Outdoors: 2.5m, 50% CEP, open sky
- Indoors: 10m, 50% CEP

**Start-up Times:**
- Hot Start: Outdoors: 1 sec typ, Indoors: < 15 sec typ
- Warm Start: 33 sec typ @-135 dBm
- Cold Start: 34 sec typ @-135 dBm

**Sensitivity:**
- Acquisition, Reacquisition & Tracking: -161 dBm, variable update rate

**Supply Voltage:**
- ePR3036: 3.0V +/-10%
- ePV3600: 2.7V - 3.6V single rail, or 2.7 - 3.6 and 1.8/1.0V +/- 10% ext.

**Power Consumption:**
- Deep Sleep/RTC Mode: 20 µW
- Search Mode: 94 mW
- Track Mode: Outdoors 70 mW
- Indoors 90 mW

**Operating Temperature:**
- -40°C to + 85°C

**Package:**
- ePV3600 Baseband IC: 7.0 x 7.0 x 1.2 mm, TFBGA
- ePV3600 Baseband IC: 3.4 x 3.4 mm Solder Bump
- ePR3036 RF Receiver IC: 5.0 x 5.0 x 0.75 mm, QFN
- ePR3036 RF Receiver IC: 2.6 x 2.6 mm Solder Bump

**Aiding:**
- Message based, though bidirectional NMEA serial port (requires mobile network access)

**EMBEDDED MICROCONTROLLER**

- **Embedded Processor:** ARM/7TDMI-S®
- **CPU Load:** 5 - 9 MIPS
- **RAM:** 160 KB
- **ROM:** 384 KB
- **I/F:** 2 UART’s, SPI, I2C, 8 GPIO’s

**OPUS IIIez™**

ePV3600 ePR3036

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