



# OPUS III

32 Channel GPS/AGPS Receiver Chipset

**OPUS III** is eRide's latest generation of GPS Technology, defining Satellite Navigation to new performance heights.

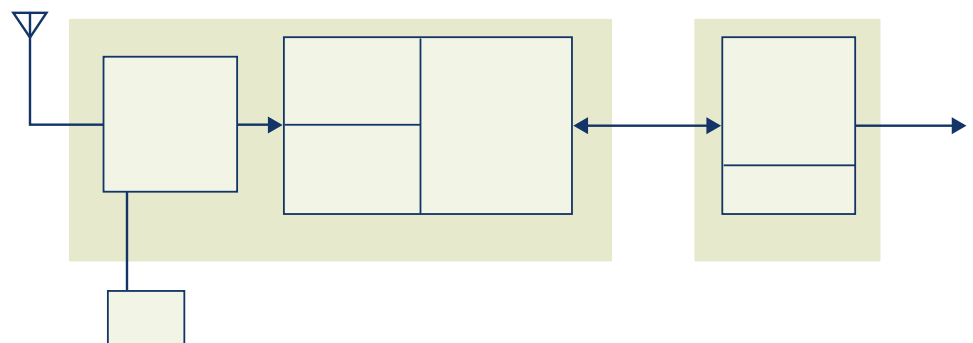
Engineered as a cost efficient host-based architecture, **OPUS III** provides unparalleled performance by combining a hardware measurement platform (MP) with a powerful navigation software running on a host microprocessor. The solution delivers fast, accurate positioning data ideal for wireless applications and handheld system in challenging locations like indoor environments and deep urban canyons

This MP chipset includes the **OPUS III Baseband IC** and the **Prelude III RF Receiver IC**. The Navigation software leverages the resources of the host CPU, resulting in a GPS solution that offers less redundancy, lower power consumption, and unparalleled cost savings.

The **OPUS III** baseband employs novel decoding algorithms, effectively achieving 44,000 correlators. Taking measurement data through a single input from the **Prelude III**, it supplies satellite measurement data to the host processor via a simple UART interface. **Prelude III's** optimized noise performance enables the use of passive and printed antennas without the need for an extra LNA.

## FEATURES

- Versatile:** 32 Channel receiver/baseband processor chipset operates in Autonomous and Assisted-GPS mode and 2 Channel Real Time Differential GPS with SBAS
- Ultra-high Sensitivity:** -161 dBm sensitivity in acquisition and tracking ensures position fix continuity indoors, outdoors and in urban canyons
- Fast:** < 1 sec TTFF ensures user satisfaction
- Highly Accurate:** 2.5 m outdoors, 10 m indoors typical, live-sky measurements
- Low Power:** 75 mW power consumption while tracking, with intelligent power management to extend battery life in handheld products
- Simple, Low Cost:** Host based: leverages resources of host CPU and memory  
Navigation software runs in background, requires under 7 MIPS
- Easy Integration:** Connects to host processor via serial port
- Miniature Size:** 13 x 17 mm total footprint supports miniaturized designs
- Scalable:** Navigation software and drivers easily matched to host system bandwidth availability



The **OPUS III** chipset is a hosted solution, so it reduces system power consumption, eliminates redundant resources, and lowers costs. eRide has the tools and the engineering team support it takes to get your new GPS-equipped products up and running and off to market, quickly and efficiently.

# OPUS III

ePR3036Q  
eOP3100Q

## 32 Channel GPS/AGPS and 2 Channel SBAS Receiver Chipset

### SPECIFICATIONS

<b>Receiver Type:</b>	L1, C/A Code 32 Channel Acquisition 12 Channel Tracking 2 Channel capable SBAS (EGNOS, WAAS and MSAS)
<b>Maximum Update Rate:</b>	1 Hz
<b>Position Accuracy:</b>	Outdoors: 2.5 m, 50% CEP, Open Sky Indoors: 10 m, 50% CEP
<b>Start-up Times:</b>	Hot Start:       Outdoors: < 1 sec Typ,   Indoors: < 20 sec Typ Warm Start:     34 sec Typ @ -135 dBm Cold Start:     35 sec Typ @ -135 dBm
<b>Sensitivity:</b>	Acquisition, Reacquisition & Tracking: -161 dBm, variable update rate -155 dBm, 1 sec update rate
<b>Supply Voltage:</b>	OPUS III, Core: 1.2 V, I/O: 3.3 V +/- 10% Prelude III: 3.0 V +/- 10%
<b>Power Consumption:</b>	Deep Sleep Mode: < 1 mW Search Mode: 130 mW Track Mode, Outdoors: 75 mW Track Mode, Indoors: 120 mW
<b>Operating Temperature:</b>	-30°C to +85°C
<b>Package &amp; Ordering:</b>	P/N: ePR3036Q, RF Receiver IC: 5.0 x 5.0 x 0.75 mm, QFN28 P/N: eOP3100Q, Baseband Processor: 7.0 x 7.0 x 0.8 mm, QFN48

### HOST ENVIRONMENT

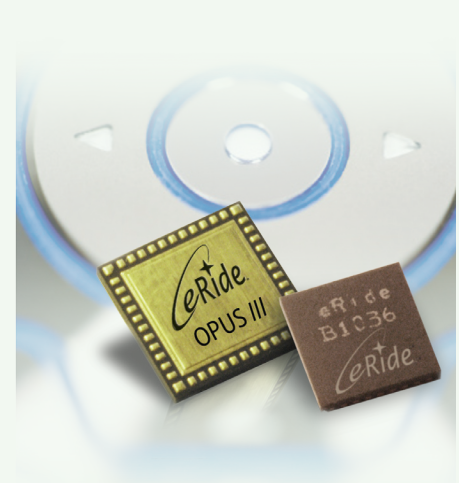
<b>Host CPU Load:</b>	7 MIPS
<b>RAM:</b>	128 KB Max.
<b>ROM/Flash:</b>	256 KB Max.
<b>Host Processor:</b>	ARM, Strong ARM, Pentium, SH, Motorola, NEC, Samsung
<b>Host OS:</b>	Single thread, OS independent

### DATASHEETS AND EVALUATION KITS AVAILABLE

**eRide, Inc.** is a fabless semiconductor company that develops advanced satellite navigation solutions. *eRide* products help fuse wireless technology with the internet, enabling the rollout of mobile commerce and location-based services. Our products are designed to be easily integrated and scalable, and to help ensure end-user satisfaction and loyalty. They include ultra-sensitive GPS chipsets, as well as navigation and server software.

1. Open Sky: All visible satellites with received power at -140 dBm or higher.  
2. Indoors: All visible satellites with power levels at -153 dBm or lower

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The OPUS III baseband chip (eOP3100Q) is housed in a 7.0 x 7.0 x 0.8 mm QFN48 package. The Prelude III RF chip (ePR3036Q) is housed in a 5.0 x 5.0 x 0.75 mm QFN28 package. Together with eRide's navigation software, they offer a complete GPS/AGPS solution.



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