

# TGB2000A, GPS Baseband Chip Receiver

## Overview

- GPS baseband, and navigation S/W
- High accuracy with adaptive processing against a variety of signal level and variation
- Integrated signal processing with navigation S/W against multipath environments
- Resource sharing techniques and configurable architecture
- Low power structure and managements
- Matured proprietary CDM technology



## Features

- **High Performance GPS Navigation**
  - Adaptive operation for high sensitivity and dynamics
  - Advanced tracking loop and filter techniques against multipath environments
  - Patented fast acquisition architecture
  - SBAS support
  - Real-time navigation
- **Multiple Environments Support**
  - Stationary, land vehicle, high dynamic airborne and military area
- **Multiple Environments Support**
  - NMEA & TGB protocol
  - Satellites and PVT information
  - Customer configuration and masks
  - Test and monitoring
- **A-GPS Support**
  - Fast position acquirement with aiding information
- **Architecture Highlights**
  - Stand-alone GPS architecture
  - ARM processor embedded
  - BBR and RTC for hot start and navigation parameters storage
  - Various peripherals with 2 UARTs, 2 I2Cs, 2 SPIs, 2 general purpose timers, 1 watchdog timer, 1PPS, interrupt controller, and 10 GPIOs
  - Optional external memory (Flash or SRAM) I/F for special purpose applications

## Specifications

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| <ul style="list-style-type: none"> <li>• <b>Position Accuracy</b> <ul style="list-style-type: none"> <li>• Autonomous CEP &lt; 2m</li> <li>• SBAS &lt; 1.5m</li> </ul> </li> <li>• <b>TTFF<sup>2</sup></b> <ul style="list-style-type: none"> <li>• Hot &lt; 1s</li> <li>• Cold &lt; 30s</li> <li>• Aiding &lt; 1s</li> </ul> </li> <li>• <b>Sensitivity</b> <ul style="list-style-type: none"> <li>• Acquisition -145dBm</li> <li>• Navigation -158dBm</li> <li>• Tracking -162dBm</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <b>Receiver</b> <ul style="list-style-type: none"> <li>• Tracking signal L1 C/A, SBAS</li> <li>• Channels 57</li> <li>• Max update rate 2 Hz</li> <li>• Protocol support NMEA, TGB binary</li> </ul> </li> <li>• <b>Power</b> <ul style="list-style-type: none"> <li>• Autonomous Power TBD mW</li> <li>• Power save TBD mW</li> <li>• Sleep 10 uA</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <b>Size</b> <ul style="list-style-type: none"> <li>• Package type LQFP</li> <li>• Package dimension 23x23 mm<sup>2</sup></li> </ul> </li> <li>• <b>Operating Condition</b> <ul style="list-style-type: none"> <li>• Temp. range -40 ~ 85 °C</li> </ul> </li> </ul> |
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## Interface

- GPS RF front-end chip interface
- RF clock : 16.368MHz or 16.367667MHz
- RTC clock : XTAL 32.768KHz
- External interface : UART, SPI, I2C, GPIO, EMI