

# MT3333

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## Overview

### Features

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MediaTek MT3333 is an All-in-One, multi-GNSS (global navigation satellite system) system on a chip (SoC). It supports GPS, GLONASS, Beidou, Galileo, QZSS, and SBAS. Suitable for a wide range of mobile, automotive, timing, personal tracker, flying drone and industrial applications, MT3333 features high tracking sensitivity for enhanced performance in dense urban environments.

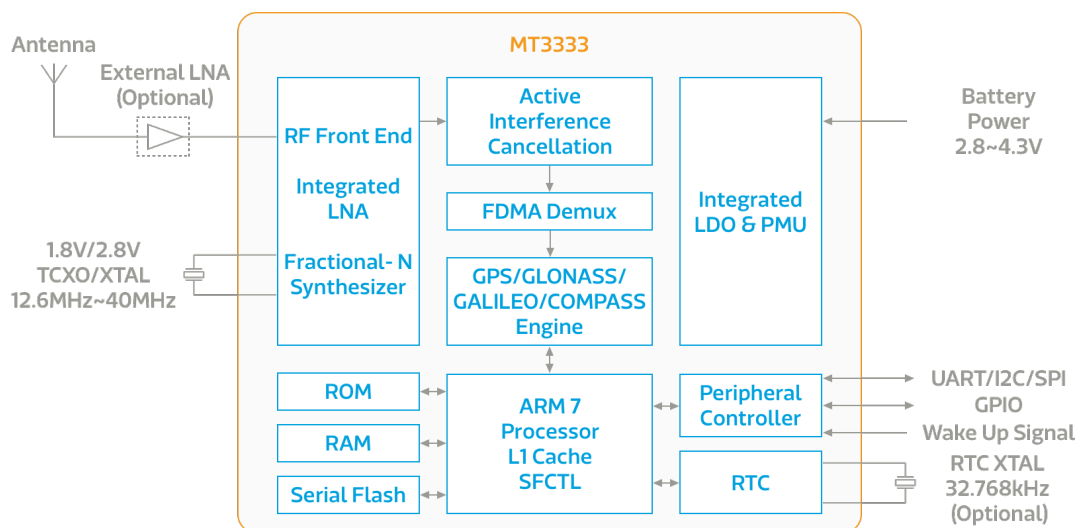
### Key features

- All-in-One multi-GNSS SoC
- GPS, GLONASS, Beidou, Galileo receiver
- SBAS, QZSS, DGPS(RTCM), and AGPS support
- -165dBm tracking sensitivity
- 5~19mA continuous-tracking power consumption
- MediaTek AlwaysLocate™ technology for reduced power consumption

 [MT3333 Product Brief \(/en/download/VT9qMakW\)](/en/download/VT9qMakW)  [MT3333 Datasheet \(/en/download/VT9qMakW\)](/en/download/VT9qMakW)

MT3333 requires just eight passive external components, and is pin-compatible with MediaTek MT3337 and MT3339 for a flexible way to develop multiple tiers of mobile device, while minimizing duplication in hardware development. With built-in LNA to reach total receiver chain NF to 2.2 dB, you can eliminate the external LNA. With its on-chip image-rejection mixer, the external SAW filter is also eliminated.

Combined with many advanced features including AlwaysLocate™, EASY™, HotStill™, EPO™ and logger functions, the MT3333 provides always-on position with minimal power consumption. These features are excellent for portable applications such as DSC, cellular phone, PMP, and gaming devices.



## Features

### Specifications

- GPS/GLONASS/GALILEO/BEIDOU receiver
- Supports multi-GNSS including QZSS and SBAS ranging
- Supports WAAS/ENGOS/MSAS/GAGAN
- 12 multi-tone active interference cancellers (with ISSCC2011 award)
- RTCM ready
- Indoor/outdoor multipath detection and compensation
- Supports FCC E911 compliance and A-GPS
- Maximum fixed update rate up to 10 Hz

### ARM7EJ-S CPU

- Up to 158 MHz processor clock
- Dynamic clock rate control

### Package

- VFBGA: 4.3 mm x 4.3 mm, 57 balls, 0.5 mm pitch

### Advanced software features

- AlwaysLocate™ advanced location

### Power scheme

- 1.8V SMPS built-in SoC
- Direct lithium battery connection (2.8V ~ 4.3V)
- Self build 1.1V RTC LDO, 1.1V core LDO, and 2.8V TCXO LSO

### Built-in reset controller

- No external reset control IC needed

### Internal real-time clock (RTC)

- 32.768KHz  $\pm 20$  ppm crystal
- 1.1 volts RTC output
- Supports external pin to wake up MT3333

### Serial interface

- 3 UARTs
- SPI/I2C
- GPIO interface (up to 15 pins)

### Sensitivities

- Acquisition: -148 dBm (cold) / -163 dBm(hot)
- Tracking: -165 dBm

awareness technology

- EPO™/HotStill™ orbit prediction
- EASY™ self-generated orbit prediction
- Supports logger function

## RF configuration

- SoC, integrated in single chip with CMOS process

## Reference oscillator

- TCXO Frequency 16.368 MHz, 12.6 ~ 40 MHz
- TCXO Frequency variation:  $\pm 2.5$  ppm
- Crystal Frequency: 26 MHz, 12.6 ~ 40.0 MHz
- Crystal Frequency accuracy:  $\pm 10$  ppm

## Pulse-per-second (PPS) GPS time reference

- Adjustable duty cycle
- Typical accuracy:  $\pm 10$  ns

## Power consumption (GPS+GLONASS)

- Acquisition: 37 mW
- Tracking: 27 mW
- AlwaysLocate™: 3.0 mW

## Slim hardware design

- 9 passive external components
- Single RF Front-End for Multi-GNSS frequency bands

## Compatibility

- Pin-to-pin compatible with MT3339/MT3337

### Platform > (/en/platform/overview)

[LinkIt 7697 \(/en/platform/linkit-7697\)](/en/platform/linkit-7697)

[LinkIt Smart 7688 \(/en/platform/linkit-smart-7688\)](/en/platform/linkit-smart-7688)

[LinkIt One \(/en/platform/linkit-one\)](/en/platform/linkit-one)

[MediaTek Cloud Sandbox \(/en/platform/mediatek-cloud-sandbox\)](/en/platform/mediatek-cloud-sandbox)

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