

# MT3339

## Overview

### Features

## Overview

MediaTek MT3339 is an All-in-One GPS system on a chip (SoC). Suitable for a wide range of mobile, automotive, timing, personal tracker, digital camera and industrial applications, MT3339 features high tracking sensitivity for enhanced performance in dense urban environments.

### Key features

- Supports GPS, QZSS, SBAS
- -165dBm tracking sensitivity
- 3mA extremely low continuous-tracking power consumption
- MediaTek AlwaysLocate™ technology for reduced power consumption

 [MT3339 Product Brief \(/en/download/MT3339\)](/en/download/MT3339)  [Datasheet \(/en/download/CnBlnIuh\)](/en/download/CnBlnIuh)

MT3339 requires just nine passive external components, and is pin-compatible with MediaTek MT3337 and MT3333 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 MT3339 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

- 22 tracking / 66 acquisition-channel GPS receiver
- Supports up to 210 PRN channels
- Supports multi-GNSS including QZSS, SBAS ranging

### 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 LDO

- Supports WAAS/EGNOS/MSAS/GAGAN
- 12 multi-tone active interference cancellers (with ISSCC2011 award)
- RTCM ready
- Indoor and outdoor multi-path detection and compensation
- Supports FCC E911 compliance and AGPS
- Maximum fixed update rate up to 10 Hz

## ARM7EJ-S CPU

- Up to 98 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 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:  $\pm 2.0$  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

## Built-in reset controller

- No external reset control IC needed

## Internal real-time clock (RTC)

- 32.768KHz  $\pm 20$  ppm crystal
- 1.2 volts RTC output
- Supports external pin to wake up MT3339

## Serial interface

- 3 UARTs
- SPI/I2C
- GPIO interface (up to 16 pins)

## NMEA

- NMEA 0183 standard V3.01 and backward compliance
- Supports 219 different data

## Sensitivities

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

## Positioning Accuracy

- Without Aiding: 3.0m 2D-RMS
- DGPS: 2.5m

## Power consumption (GPS+GLONASS)

- Acquisition: 25 mW
- Tracking: 18 mW
- AlwaysLocate™: 3 mW

## Slim hardware design

- 52 mm<sup>2</sup> solution footprint with all software features inside
- 9 passive external components

## Compatibility

- Pin-to-pin compatible with MT3337/MT3333

**/overview)**

**(https://en.forum.labs.mediatek.com)**

**labs (/en/about/labs)**

**Blog (/en/blog)**

**Contact us (/en/about/contact)**

LinkIt 7697 (/en/platform  
/linkit-7697)

LinkIt Smart 7688 (/en/platform  
/linkit-smart-7688)

LinkIt One (/en/platform  
/linkit-one)

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

<https://www.youtube.com/channel/UC1n...>

<https://www.linkedin.com/company/mediatek>

MediaTek.com

(https://www.mediatek.com)

Privacy policy

(https://www.mediatek.com/privacy-  
policy)

Legal notice

(/en/legal/notice)

© 2016 MediaTek Inc. All  
Rights Reserved.