SATELLITE TIMEKEEPING

In 2011, Citizen invented a unique timekeeping technology called “Satellite Wave”, which enables watches to receive time signals from orbiting GPS satellites to display precise time and date. With coverage across 40 UTC standard zones, watches with Satellite Wave technology ensure the most accurate time you will find in any conventional watch. “Satellite Wave” watches can receive a signal from GPS satellites orbiting 20,000 kilometers above the Earth, which is the fastest reception speed for GPS satellite watches.

FEATURES
Precise timekeeping anywhere in the world
Whether you trek through the desert, cruise the oceans or climb a snowy mountain, you never need to worry about having the correct time. Coverage in 40 time zones.

World’s fastest* satellite time reception at 3 seconds
Satellite Wave technology allows your watch to adjust to a new time zone with amazing speed and ease. Receiving a satellite signal in as quick as three seconds.

* As of March 2015 using a light-powered analog watch (according to research data by CITIZEN WATCH CO., LTD.)
SATELLITE TIMEKEEPING

TECHNOLOGIES

Satellite Timekeeping System
The Satellite Timekeeping System allows our watches to set the correct time and date by receiving time signals from GPS satellites orbiting 20,000 kilometers above the earth.

[Unique algorithm]
CITIZEN not only cares about accurate timekeeping, but also about watch usability. We have developed unique algorithms to make Satellite Wave the fastest* in the world when receiving data from GPS satellites, doing so in as little as three seconds. Our Satellite Timekeeping System takes only half the time to adjust compared with models we introduced in 2011 – a testimony of our continuous and tireless work to improve our products.

High-speed watch hands
Our watches contain the latest in high-speed motors for watch hands. CITIZEN’s efforts in this area of technology make the transition to the correct time stunningly beautiful and fast.

The technology has three functions designed to preemptively stop the watch hands from getting out of position and to correct them if they do. It plays a crucial, behind-the-scenes role in enabling Satellite Wave and Radio-Controlled watches to perform properly.

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**Antimagnetic function***
This function stops the hands from getting out of position when they are exposed to a magnetic field. Antimagnetic plates are positioned so as to protect the motor from magnetism while not interfering with the antenna’s ability to receive signals. In solving the paradoxical problem of how to simultaneously receive radio signals while shutting out magnetic fields, CITIZEN became the first watchmaker to develop an antimagnetic radio-controlled watch.

*It resists exposure to a direct current magnetic field of 4,800 A/m. (Basically that means that the watch is able to function normally even when within 5 centimeters of a device emitting a magnetic field.)

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**Impact detection function**
An integrated circuit detects external impacts to the watch and instantaneously applies the brake to the motor to prevent the watch hands from getting out of position.

- Watch experiences external impact.
- Integrated circuit detects the shock.
- Brake is applied to motor and hands are controlled.

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**Automatic hand correction function**
In the unlikely event of any deviation, this function automatically corrects the position of the hands. It checks the position of the hands regularly, confirms the degree of error, and returns the hands to the correct position.