

## Swatch Group sets three world records with a Real Time Clock (RTC) by Micro Crystal

Biel/Bienne (Switzerland), May 04, 2017 - Three new world records from “Swiss Silicon Valley”. Micro Crystal, a company of the Swatch Group, is proud to announce a new Real Time Clock module whose minimized consumption, stability and size are unrivaled by any existing equivalent product.

This new Real Time clock module integrates an integrated circuit and a miniaturized tuning fork crystal in the same ultra-small vacuum-sealed ceramic package. The module, designed by Micro Crystal with the support of EM Microelectronic, a company of the Swatch Group, and the Swiss Center for Electronics and Microtechnology (CSEM), has established the following records:

- First of all, it is the highest accuracy Real Time Clock, reaching +/- 0.26 second/day over a temperature range of -40°C to 85°C. This stability is required particularly by applications in blooming markets such as outdoor security cameras and smart e-meters. Automotive entertainment systems are another typical application for the module.
- It has the lowest power consumption of any high-accuracy Real Time Clock, reaching 240 nanoampere, capable of running five years on a standard small button battery. Such low consumption is key for numerous Internet of Things (IoT) objects, which should be able to work for years without any battery changing.
- It is the smallest sized Real Time Clock module, with dimensions of 3.2 x 1.5 x 0.8 mm. The size is obviously also a key feature for portable IoT devices integrating multiple functions and applications.

This Real Time Clock module is produced using innovative packaging technology developed by Micro Crystal. This manufacturing technology perfectly matches the world of quartz crystals with the world of integrated circuits from Swatch Group sister companies Micro Crystal and EM Microelectronic. This makes such Real Time Clock modules virtually a plug and play technical solution for very easy integration into complex systems, allowing much less design effort for engineers.

A Real Time Clock module is essentially an electronic quartz watch in a chip, giving the year, month, day and time to any electronic system. The applications are very broad, for billions of electronic products that need to display the time.

This innovation demonstrates once again the technological innovativeness of the Swatch Group's companies, transferring their expertise in quartz design, low-power integrated circuit design and industrialized packaging technology from watch applications to IoT, consumer and industrial use.