Energy-efficient, autonomous timing circuit featuring time stamp, battery back-up, two alarms, and resolution up to 1/100 s.

KEY FEATURES

- Multiple operating modes
  - Clock (seconds to 99 years)
  - Stopwatch or elapsed-time counter (1/100 s to 999 999 h)
  - WatchDog in parallel
- Battery input voltage can be lower or higher than $V_{DD}$
- Meets UL requirements
- Time-stamp input, three time-stamp registers
- Two independent alarms
- Electronic frequency tuning via command
- Large clock operating voltage range (0.9 to 5.5 V)
- Ideal for battery-backed operation ($I_{DD} = \sim 0.27 \mu A$)
- 400 kHz two-line I²C-bus interface (at $V_{DD} = 1.8$ to 5.5 V)
- SO8, TSSOP8, TSSOP10, and tiny DFN2626 package

APPLICATIONS

- Printers, copiers
- Electronic metering
- TVs, Blu-Ray players, projectors, etc.
- White goods
- Digital cameras
- Accurate, high-duration timers
- Data loggers

The NXP PCF85263 is a CMOS real-time clock (RTC) and calendar, optimized for low power consumption, that switches automatically to battery power when main power is lost.

The PCF85263 can be configured as a stopwatch (or elapsed-time counter) with a resolution of up to 1/100 s. Three time stamps make it easy to register special events, and the device can also register tamper detection or time of battery switchover.

A sophisticated battery backup circuit improves power efficiency. The circuit makes it possible to use a battery with a nominal voltage that is higher or lower than the regular supply voltage. For example, in a system that uses a $V_{DD}$ of 2.5 V, a lithium battery of 3 V can be used as a backup.
The PCF85263 can be used to perform standard RTC functions, such as tracking the actual time and data or acting as a reference timer. To support power management, the PCF85263 can be used to wake the microcontroller from hibernation mode, and in systems that use a PLL, it can serve as a system reference clock for the PLL input. The PCF85263 can also be used as a WatchDog timer, or as an activation timer to start measurements or initiate other functions.

Interrupt selection: at every second, minute, or hour and up to two alarms on two independent outputs. The designer can choose between a permanent or a pulse interrupt signal or one interrupt and a time-stamp input.

For compensating the quartz frequency tolerance, a dedicated offset register can be programmed.

Full featured versions are available in TSSOP10 and leadless package DFN2626-10 package. Versions without time stamp pin are available in 8 pin packages SO8 and TSSOP8. All are equipped with an I²C Fast-Mode (FM) interface.

Versions in a leadless package and equipped with an SPI (PCF85263B) interface are available on request.

DEMO BOARD
The PCF85263 is supported by the demo board OM13510, equipped with battery backup and a jumper to select the RTC. The board is shipped ready to use, with a quartz. In order to start, connect the power supply and use the serial interface to initiate communications for setting the actual time.

*Released on request   ** RTC sister family with additional 64 Byte battery buffered RAM

<table>
<thead>
<tr>
<th>Product number</th>
<th>PCF85263AT</th>
<th>PCF85263ATT</th>
<th>PCF85263ATT1</th>
<th>PCF85263ATL</th>
<th>PCF85263B*</th>
<th>PCF85263 family**</th>
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