

µPOWER OSCILLATOR – SIT8021/1 MHz ~ 26 MHz/SMALL AND ECONOMICAL



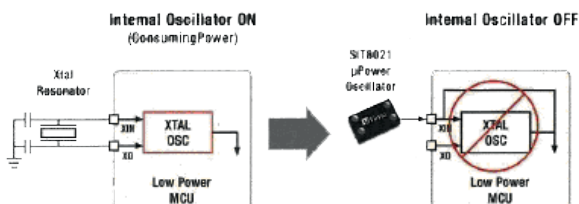
The new **µPower MEMS oscillators** from SiTime suitable for Wearable-, IoT and mobile market. The SiT8021 is the first product in this family, and clearly takes less power, is smaller and weighs less than conventional crystal oscillators.

The MEMS oscillator SiT8021 was voted by the readers of elektroniknet.de a Product of the Year 2016th:

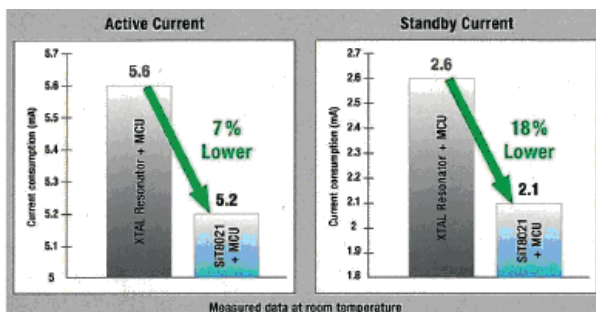
An optimized low-power frequency synthesizer and an analog circuit control the TempFlat MEMS resonator which is programmed at the factory to the desired frequency with a current consumption in the uA range. In power sensitive applications, a resonator MHz / quartz replaced by this µPower oscillators and the on-chip oscillator circuit to be switched off on the MCU or the SoC, whereby a significant power saving is achieved.

A further advantage of using a MEMS oscillator is its ability to drive multiple loads, which is not possible with a XTAL. When controlling more than one load (IC), the power consumption increases in the oscillator only slightly. When the clock generators may be omitted in the application (eg. as for MCU and audio DAC), this increases the energy savings in the system on.

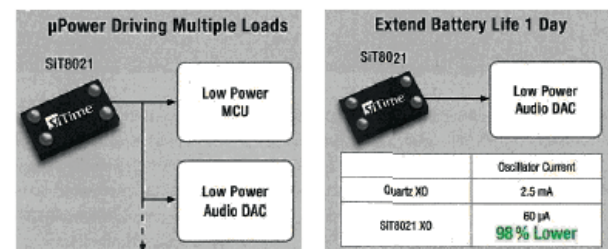
POWER SAVING BY SIT8021



The SiT8021 µPower oscillator is directly connected to the X-IN pin. This allows the internal on-chip XTAL OSC circuit bypass, resulting in power savings oscillator plus MCU by about 7% in the active and 18% in standby mode.



In a portable audio application example. requires the SiT8021 MEMS oscillator at 3.072 MHz only 60 µA compared with a quartz oscillator which is 2.5 to 3 mA, meaning power savings of 98%. These enormous savings extended battery life effectively by almost a whole day.



In addition to the low performance of µPower oscillator needs with its dimensions of 1,5 mm×0,8 mm less space on the board. This is an important benefit, because many applications with the demand for low power consumption must be accommodated even in smaller packages simultaneously.

THE SIT8021 DELIVERS THE FOLLOWING FEATURES AND BENEFITS AS COMPARED TO QUARTZ TECHNOLOGY.

- » 100 µA supply current , 90% power saving
- » Ultra small 1,5 mm×0,8 mm housing, 40% smaller
- » Weight of 1,28 mg, 70% lighter
- » Height of 0,55 mm, 45% thinner
- » 1 to 26 MHz to 6 decimal places accuracy
- » Operating temperature from -40°C to + 85°C
- » ±100 ppm frequency stability
- » 1,8V operation for battery powered applications
- » Unique, programmable output drive strength for best EMI or driving multiple loads
- » 30 times higher reliability with 114 Mio h MTBF (<1 FIT)
- » 30 times higher shock and vibration resistance