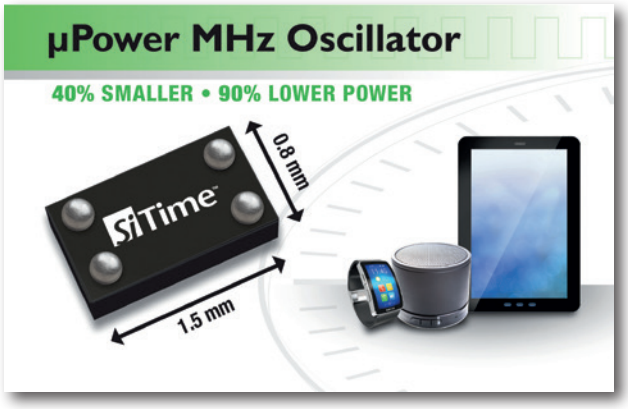
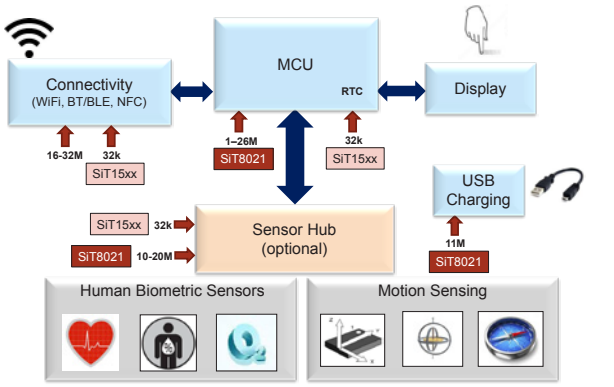
# WORLD'S SMALLEST, LOWEST POWER OSCILLATOR




**SiTime** sets new benchmarks in oscillator power, size and weight

## APPLICATIONS

A SiTime Oscillator for Every Block in Wearables and IoT




## FEATURES

- **90% lower power** than MHz quartz XO
- 1.5×0.8 mm CSP – **40% smaller** than quartz
- **70% lighter** than quartz
- < 5 MHz output in small packages (not available from quartz)
- Pricing is very competitive
- Shortest lead time and supply continuity
- Expands MEMS timing portfolio for wearables, mobile, IoT
- Silicon MEMS quality and reliability

The **SiT8021** is the first device in SiTime's new µPower family of ultra-low-power, ultra-small MHz oscillators targeted at wearables, IoT and mobile products.

The SiT8021 is primarily used to replace a quartz-based XO by offering 90% lower power consumption and 40% smaller footprint. The SiT8021 can also be used to replace an XTAL for size reduction. Wearable products use low frequency clocks which were not previously in very small sizes. The SiT8021 enables very small size at low frequencies ranging from 1 to 26 MHz.

To generate a MHz frequency from an oscillator, one can use a kHz reference or a MHz reference. The benefit of using a kHz reference is that it consumes much lower power. The SiT8021 uses a 524 kHz MEMS resonator and utilizes a highly optimized PLL to attain excellent performance.

The resonator in the SiT8021 based on TempFlat MEMS™ technology.

The SiT8021 is ideal for battery-operated products where low power and small size are absolutely critical. Examples include fitness bands, health monitoring devices, smart watches, tablets, portable audio players, portable speakers, and wireless IP cameras.

The SiT8021 comes in a CSP measuring 1.5×0.8 mm which is the industry's smallest oscillator package. Because the SiT8021 is composed of two all-silicon die mounted together, it can be integrated into a SIP module.

The SiT8021, at 1.28 mg, is 70% lighter than the lightest quartz-based oscillator. This gives designers of wearable devices a new way to reduce the overall product weight.

| FREQUENCY RANGE | FREQUENCY STABILITY | SUPPLY VOLTAGE | PACKAGE | ACTIVE CURRENT | RESUME TIME | OUTPUT | OPERATING TEMP. |
|---|---|---|---|---|---|---|---|
| 1 ... 26 MHz | 100 ppm | 1.8 V ±10% | 1.5 × 0.8 mm CSP | 60 µA @ 3.072 MHz | 5 ms | LVCMOS | -40°C ... +85°C |

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