SiTime

80% Smaller Size
Ultra-low Power <1 µA
Most Accurate ±5 PPM
Drives Multiple Loads

Smallest 32 kHz Timing Device

2.0 x 1.2 mm   1.5 x 0.8 mm

SiTime

The SiT15xx family is the first MEMS-based kHz oscillators designed for mobile and wearable electronics such as handsets, tablets, activity trackers, smart watches, GPS modules and Internet of Things (IoT). Compared to legacy quartz products, SiTime's SiT15xx family in the CSP is up to 80% smaller with a 1.2 mm^2 total footprint.

Benefits

- Extend battery life
- Save board space
- Reduce BOM

Applications

- Mobile Phones
- Tablets
- Fitness bands
- Health and medical monitoring
- Wearables
- Portable audio
- Sport video cams
- Active stylus
- IoT devices
- Environmental sensors

Features

- World's smallest footprint: 1.5 mm x 0.8 mm CSP
  - No load caps
  - No Vdd bypass caps
- Ultra-low power consumption: < 1 uA
- Best frequency stability:
  - ±5 ppm over temp (SiT1552 TXCO)
  - 75 to 100 ppm over temp (SiT153x/SiT1630)
  - 5 to 10 ppm initial tolerance (SiT1552/SiT1532)
- Factory programmable freq: 1 Hz to 32 kHz (SiT1534)
- NanoDrive™ output option:
  - Minimizes output power
  - Directly interfaces to XTAL_OSC input
- XTAL replacement in 2.0 mm x 1.2 mm SMD
- Shock and drop resistance 10 k*g*

INSTANT SAMPLES   GREEN SOLUTIONS   LIFETIME WARRANTY

±5 PPM Accurate Clock Saves 30% BLE Power

TCXO 5 PPM | ON | SLEEP | ON

Quartz 200 PPM | ON | SLEEP | ON

Clock inaccuracy causes **Early ON(ΔT)** which causes **power penalty**
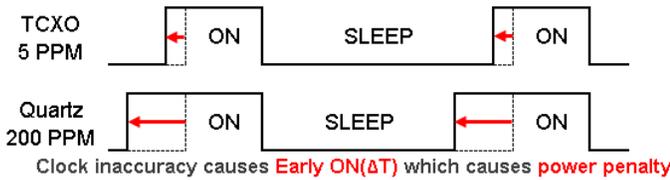
32kHz Sleep Clock Accurate Over Temp	2 second Sleep Time	20 second Sleep Time	50 second Sleep Time
	ON-Time Error Budget (ΔT)		
SiT1552 TXCO 5 ppm	0.01 ms	0.1 ms	0.25 ms
32kHz XTAL 200 ppm	0.4 ms	4.0 ms	10.0 ms

Average Current Consumption
Using 0 PPM Ideal Clock vs. 5 PPM TCXO vs. 200 PPM Quartz
0 PPM Ideal Clock — 5 PPM TCXO — 200 PPM Quartz

30% Lower than Quartz

Y-axis: Average Current Consumption (µA)
X-axis: Sleep Time (Seconds)
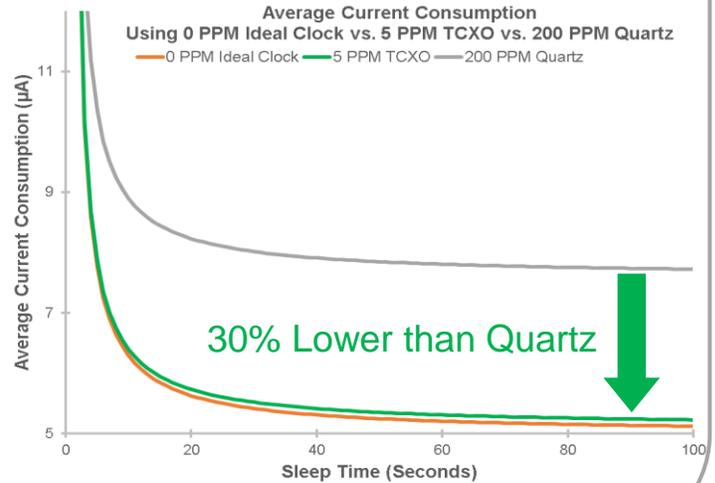
80% Smaller Footprint

SiT1532 XO
SiT1552 TCXO

1.5 mm x 0.8 mm
1.2 mm² total footprint

32kHz XTAL Resonator

A425L

2.0 x 1.2 mm + load caps
5.5mm total footprint

Reduce BOM - Drives Multiple Loads

SiT15xx → Low Power MCU

→ Blue Tooth Low-Energy (BLE)
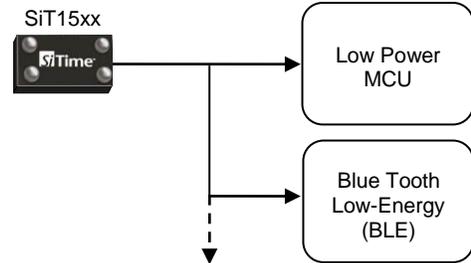
Device	Frequency	Temp. Range (°C)	Stability (PPM)	Package Size (mm)	Supply Voltage (V)
32 kHz µPower Oscillators					
SiT1532	32.768 kHz	-10 to 70 -40 to 85	10, 20 (room) 75, 100 (over temp)	1.5 x 0.8	1.2 to 3.63
SiT1533	32.768 kHz			2.0 x 1.2	1.2 to 3.63
SiT1534	1 Hz to 32.768 kHz			1.5 x 0.8 or 2.0 x 1.2	1.2 to 3.63
SiT1552 TXCO	32.768 kHz	0 to 70 -40 to 85	±5, ±10, ±20 (over temp)	1.5 x 0.8	1.5 to 3.63
MHz µPower Oscillator					
SiT8021	1 to 26 MHz	-40 to 85	±100 (over temp.)	1.5 x 0.8	1.8

Datasheet: http://www.sitime.com/products/32-khz-oscillators

Order samples: http://www.sitime.com/support/request-samples