

Ahmad Bahai (TI)



Our CTO, Ahmad Bahai, explains our breakthrough TI BAW resonator technology and how it paves the way for high-speed connectivity.

Every RF, mixed-signal and digital system needs a timing and clock subsystem to synchronize the generation and transportation of data. Data transfer rates in a wired network or on an FPGA board have risen from hundreds of megabits to hundreds of gigabits per second. Similarly, the data rate of wireless networks supported by communication standards such as Wi-Fi® and Bluetooth® low energy have grown exponentially.

Historically, a quartz crystal resonator has been used as a reference for time and frequency in electronic systems. Quartz resonator frequencies range from a few kHz to a few MHz.

Our disruptive new TI bulk acoustic wave (BAW) technology offers a much cleaner clock reference for wired and wireless communication systems. Resonating at much higher frequency – about 2.4 GHz – it can provide a cleaner reference for a radio system or high-performance clock distribution.

TI BAW resonator technology



[Learn more about TI BAW resonator technology](#)

TI BAW Technology:

- Is capable of generating an ultra-clean clock reference, which is essential for data transfers of hundreds of gigabits per second.
- Can be integrated into any type of TI chips that require a timing reference. Integrating the TI BAW-based frequency reference can significantly reduce the complexity and cost of designing an RF board with an external frequency reference.
- Wakes up fast. Many Internet of Things applications operate intermittently, which requires clocking systems to turn on quickly. TI BAW-based technology wakes up orders of magnitude faster than quartz-crystal-based clocks. This provides a power benefit for low duty-cycled operation.

Learn how [TI BAW technology accelerates big data on the information superhighway](#).

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