

**Docket #:** S04-260

# **Swiss Cross Tuning Fork Resonator**

A novel design for a cross-shape micromechanical resonator that consists of an array of devices suited for integrated single chip frequency references, filter, and sensors. The sensing electrodes in the resonator are independently accessible, while providing fully differential driving and sensing mechanism. The invention provides a feasible and economic solution to decrease the motional resistance and to increase the output signal for fabricating a high frequency micromechanical resonator with enhanced linearity.

## **Applications**

- Integrated single chip frequency references, filters and sensors

## **Advantages**

- Lower motional resistance and higher output signal compared to current resonator
- Simple fabrication process
- Higher power handling capability
- Enhanced linearity performance of the resonator
- High quality factor

## **Patents**

- Published Application: [20070013464](#)
- Issued: [7,319,372 \(USA\)](#)

## **Innovators**

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