

# Frequency and Timing

## Embedded Atomic Oscillators


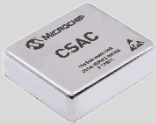

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## Embedded Atomic Oscillators

Advanced research, cutting-edge engineering and packaging, superior manufacturing and integrated software design all result in embedded atomic oscillators that deliver exceptional performance and unsurpassed accuracy, stability and reliability in the most challenging environments. Combining low drift rates, excellent short-term stability and frequency stability during temperature changes, these oscillators maintain precise frequency and time during extended periods of holdover during GNSS outages or for applications where GPS is inherently unavailable.

Microchip's embedded atomic oscillators are board-mountable and are ideal for portable, battery-powered applications where available power is limited and accurate frequency is required quickly after power-on. With built-in 1 PPS disciplining capability, these solutions deliver atomic clock accuracy combined with low size, weight and power and are ideal for a variety of commercial, industrial, space and defense applications where performance and ruggedness count.

Product	Product Photo	Product Features
<a href="#">SA45s CSAC</a> Chip Scale Atomic Clock		<ul style="list-style-type: none"> <li>• &lt; 120mW power consumption</li> <li>• &lt; 17cm<sup>3</sup> volume</li> <li>• 35g weight</li> <li>• 3e-10 short term stability @ Tau=1s</li> <li>• ±5.0E-11 accuracy at shipment</li> <li>• -10°C to +70°C Operating Temperature</li> <li>• Low Noise version (<a href="#">LN-CSAC</a>)</li> </ul>
<a href="#">SA65 CSAC</a> Chip Scale Atomic Clock		<ul style="list-style-type: none"> <li>• &lt; 120mW power consumption</li> <li>• &lt; 17cm<sup>3</sup> volume</li> <li>• Wide temperature range -40°C to +80°C</li> <li>• 1PPS output and 1PPS input for synchronization</li> <li>• 10 MHz CMOS-compatible output</li> <li>• Short term stability (Allan Deviation) of <math>3.0 \times 10^{-10}</math> at t=1 sec</li> </ul>
<a href="#">MAC-SA5X</a> Miniature Atomic Clock		<ul style="list-style-type: none"> <li>• Sub-microsecond holdover for 48 hour missions</li> <li>• Drift rate &lt; <math>5 \times 10^{-11}</math> Hz/Hz/mo (SA55)</li> <li>• Operating temperature -40°C to +75°C</li> <li>• 1PPS output and input for easy calibration/synchronization</li> <li>• Small size: 2 x 2 x 0.7 inches</li> </ul>

## Support

Microchip is committed to supporting its customers in developing products faster and more efficiently. We maintain a worldwide network of field applications engineers and technical support ready to provide product and system assistance. For more information, please visit [www.microchip.com](http://www.microchip.com):

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