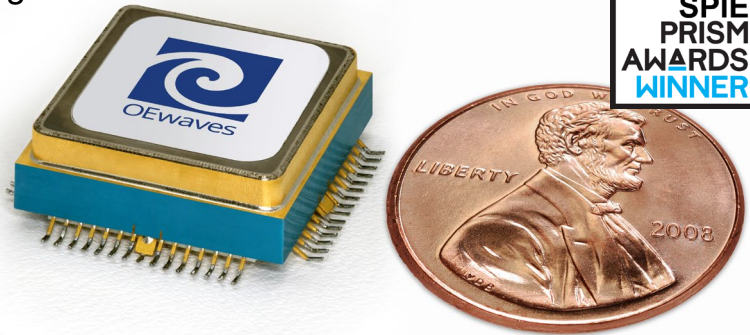


HI-Q<sup>®</sup> Nano Opto-Electronic Oscillator (Nano OEO) offers unprecedented low phase noise and low vibration and acceleration sensitivity in its class for signal sources.



The unique design of the HI-Q<sup>®</sup> Nano OEO is based on the photonic generation of spectrally pure signals at RF and millimeter wave frequencies that enable OEwaves' signal sources to scale to higher frequencies with little to no penalty in phase noise performance. This is accomplished through the patented technology of ultra-high quality factor (Q) crystalline whispering gallery mode (WGM) optical resonators.

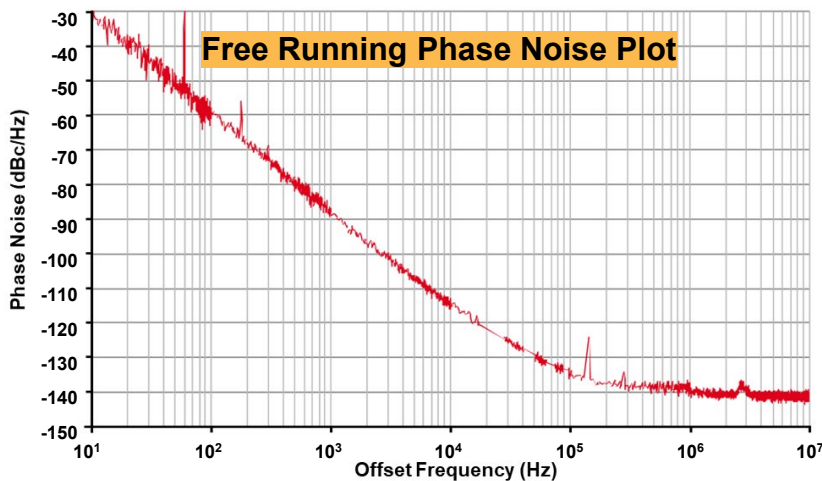
The high performance Nano OEO allows enhanced radar system visibility, stable clocking, increased channel capacity of communication systems and high capacity, high frequency next generation wireless communication systems. This level of performance, in a micro-chip form factor, enables new capabilities in legacy as well as new markets for a variety of terrestrial and airborne applications.

## FEATURES

- Low Phase Noise/Jitter
- Low Spurious Content
- Micro-Chip Form Factor
- Frequency Scalability
- EMI Tolerant
- High Stability
- Low Vibration/Acceleration Sensitivity

## APPLICATIONS

- Airborne Radar Systems
- Stable Clocking
- Test and Measurement
- Tele/Satellite Communication
- Wireless Networks
- Analog to Digital Conversion



HI-Q<sup>®</sup> Nano OEO offers phase noise performance better than -110 dBc/Hz at 10 kHz offset from the carrier.

# HI-Q<sup>®</sup> NANO OPTO-ELECTRONIC OSCILLATOR (NANO OEO)

OE3710

## SPECIFICATIONS

Fixed Output Frequency	28 – 36 GHz	Consult factory for extended range
Accuracy	100 MHz	
Repeatability	100 kHz	At constant temperature
RF Output Power	+5 dBm	Consult factory for other levels
SSB Phase Noise	-25 dBc/Hz @ 10 Hz -55dBc/Hz @ 100 Hz -85 dBc/Hz @ 1 kHz -110 dBc/Hz @ 10 kHz -130 dBc/Hz @ 100 kHz -135 dBc/Hz @ 1 MHz -135 dBc/Hz @ 10 MHz	Consult factory for higher performance
Output Return Loss	12 dB	
Timing Jitter – RMS	500 fs (100 Hz to 100 MHz)	Consult factory for jitter < 500 fs
Spurious	-80 dBc	
Short Term Stability	10 <sup>-9</sup> @ 1 s	Constant case temperature
Thermal Stability	< 1 ppm/°C	
Vibration / Acceleration Sensitivity	5 x 10 <sup>-11</sup> /g	
Operating Temperature Range	+10°C to +60°C	
Power Consumption	2.5 W	@ 25°C
Package Size	0.06 in <sup>3</sup>	Excluding driver electronics
Package Weight	0.2 oz	

## OPTION

Extended Temperature Range	-40 °C to +85 °C	
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**Note:** These specifications are subject to change without notice due to OEwaves ongoing development cycles. This product line is covered by one or more of the following U.S. patents: 5,723,856; 6,389,197; 6,488,861; 6,795,481; 6,798,947; 7,173,749; 7,248,763; 7,356,214; 7,440,651. Other patents pending.

**ITAR Restricted:** This product is designated as a defense article under Category XI(c) of the USML and is subject to ITAR licensing requirements.



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