

HI-Q® 40-110 GHz VCO offers unrivaled low phase noise and wide frequency tuning range in its class.



The unique design of the OEwaves HI-Q® VCO is based on photonic generation of spectrally pure signals at millimeter wave frequencies with **phase noise that is independent of output frequency**. This is accomplished with patented technology of semiconductor lasers injection locked to ultrahigh quality factor (Q) crystalline optical whispering gallery mode resonators.

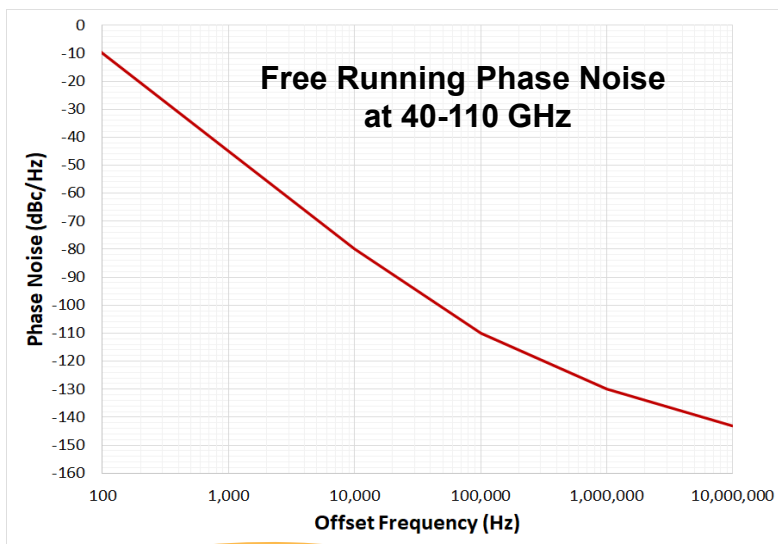
The high performance VCO allows enhanced radar system visibility, stable clocking, increased channel capacity for communication systems, data links, and high capacity and high frequency next generation 5G and 6G wireless systems. This level of performance in enables new capabilities in legacy and new systems for a variety of terrestrial, airborne, and military and commercial space applications. Optional remote fiber optic output is available.

## FEATURES:

- Available at any frequency from Ka-band to W-band
- Wide-band tunability up to a decade
- Low Phase Noise/Jitter
- Low Spurious Content
- Small Form Factor
- High Frequency Scalability
- EMI Tolerant
- Low Vibration/Acceleration Sensitivity
- Integrated Driver/Controller
- USB or RS-232 Control Interface
- Lockable to External Reference
- Optional Remote Fiber Optic Output

## APPLICATIONS:

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



## SPECIFICATIONS

Tunable Output Frequency	Any band from 40 – 110 GHz	Consult factory for extended range
Accuracy	±100 MHz	Free running
Tuning Ports	Coarse 40 – 110 GHz Fine ±100 MHz	Slow tuning 1 GHz/s Fast tuning 100 kHz/ns Consult factory for more tuning options
Repeatability	100 MHz	At constant temperature
RF Output Power	-8 dBm	Consult factory for other levels
SSB Phase Noise	-10 dBc/Hz @ 100 Hz -45 dBc/Hz @ 1 kHz -80 dBc/Hz @ 10 kHz -110 dBc/Hz @ 100 kHz -130 dBc/Hz @ 1 MHz -145 dBc/Hz @ 10 MHz	Free Running Consult factory for better performance
Timing Jitter – RMS	20 fs (10 kHz to 100 MHz)	Free running Consult factory for jitter < 20 fs
Spurious	-80 dBc	
Operating Temperature Range	+20°C to +40°C	
Power Consumption	6 W	@ 25°C
Package Size	10.2 × 9.8 × 3.5 in	Consult factory for smaller package
Package Weight	1.5 lbs	With driver electronics

## OPTIONS

Extended Temperature Range	-40 °C to +85 °C	
Locking Circuit	Frequency locking	Internal or external 100MHz reference
Remote Fiber Optic Output		

**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.



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