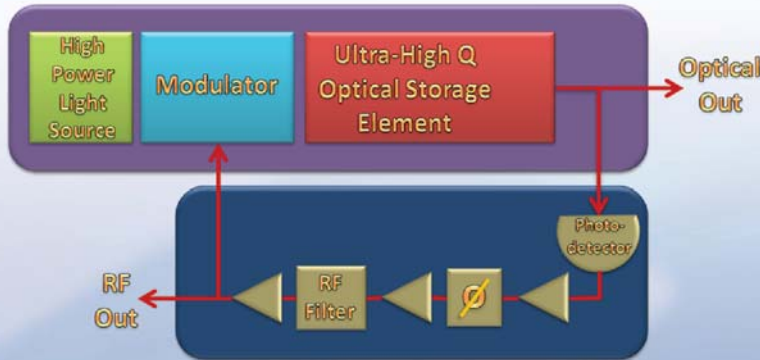


Advanced Opto-Electronic Oscillator (AOEO)

Ultra-Low Phase Noise Microwave Signal Source

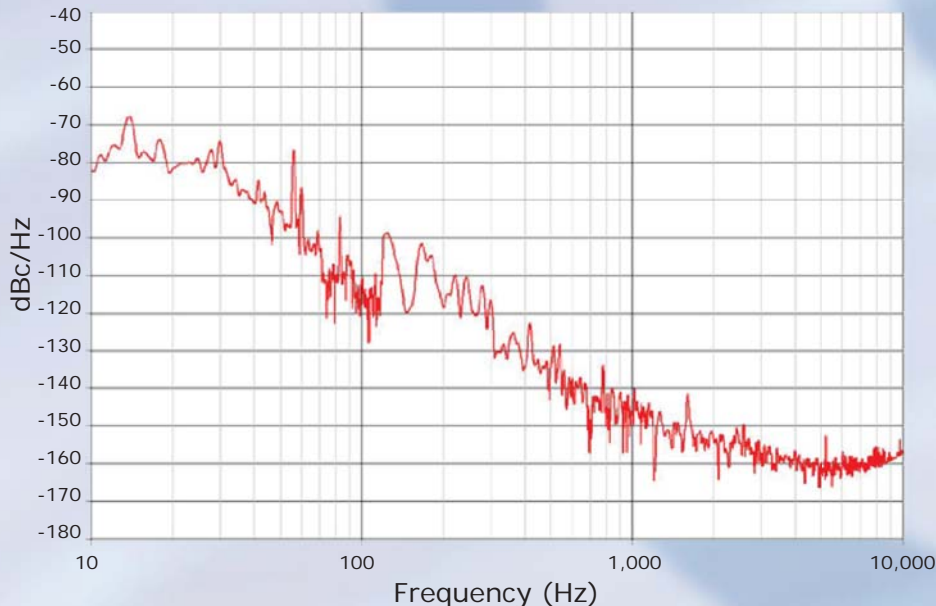
Unprecedented ultra-low close-in phase noise for signal sources required in high-frequency, high performance applications.



The unique design 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 or no penalty in phase noise performance.

Clean and precise phase noise measurements, enhanced military radar system visibility by several fold, increased channel capacity of communications systems by an order of magnitude, and high capacity, high frequency future wireless communications systems. This level of performance will enable manufacturers to retrofit current systems as well as architect capabilities to address new markets.

Free Running Phase Noise Plot
Advanced Opto-Electronic Oscillator - 10 GHz



Features

- Ultra-low Phase Noise/Jitter
- Frequency Scalability
- EMI Tolerant
- High Stability
- Electronic Fine Tuning
- Multiple Frequency Output Option
- Phase Locking Option
- Optical Output Option
- Internal or External Reference Option

Applications

- Instrumentation
- Phase Noise Measurement
- Test Equipment
- Radar Systems
- Satellite Communications
- Imaging
- Microwave Communications

Advanced Opto-Electronic Oscillator offers typical phase noise performance levels of -163 dBc/Hz at 10KHz offset from the carrier.

Available in 8 - 12 GHz
Consult Factory

Specifications

Parameters	Specification (Typ.)	Notes
Output Frequency	8 to 12 GHz	Fixed frequency; Contact factory for higher frequencies and for multiple frequencies
RF Output Power	+10 dBm (min)	
Phase Noise	- 75 dBc/Hz @ 10Hz - 115 dBc/Hz @ 100Hz - 145 dBc/Hz @ 1kHz - 163 dBc/Hz @ 10kHz -165 dBc/Hz @ 100kHz -170 dBc/Hz > 1MHz	
Harmonics	-40 dBc (max)	
Spurious	-75 dBc (max) -95 dBc Option	$f_{\text{offset}} > 1 \text{ KHz}$ $f_{\text{offset}} > 10 \text{ KHz}$
Fine Tuning Range	5 KHz	External low noise PLL may be used in conjunction
Stability	10^{-11} @ 1 Sec.	Allan Deviation at constant ambient
	0.005 ppm @ 1 hr.	At constant ambient
Operating Temperature Range	15° - 35° C	
Voltage Sources	+/-5 Vdc	
	+/-15 Vdc	
	+24 Vdc	
Package Size	19" Rack Mount	Length and height may vary depending on custom and optional features.
Output Connectors	RF out: SMA (F)	Customer may specify connector type
Options		
Optical Output - Power	0 dBm	FC/APC connector
PLL - Variable Loop Bandwidth	10 - 200 Hz	Phase locked operation with an external reference (not supplied) may degrade phase noise performance within the set loop bandwidth
Internal or External Reference	10 MHz or 100 MHz	Ref frequency requires to be integer divisible by the oscillator output frequency

For ordering or other inquiries contact:



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Pasadena, California 91107 USA : E sales@oewaves.com

NOTE: These specifications are subject to change without notice due to OEwaves ongoing development cycle. Unless otherwise noted, all specifications in this document are to be treated as "typical;" actual performance may vary contingent on operating environment. This product line is covered by one or more of the following U.S. patents: 5,723,856; 5,777,778; 5,204,640. **ITAR RESTRICTED:** This product is designated as a defense article under Category XI(c) of the USML and is subject to ITAR licensing requirements.