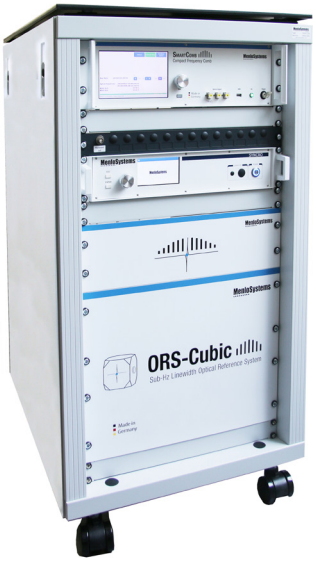
PMWG-1500

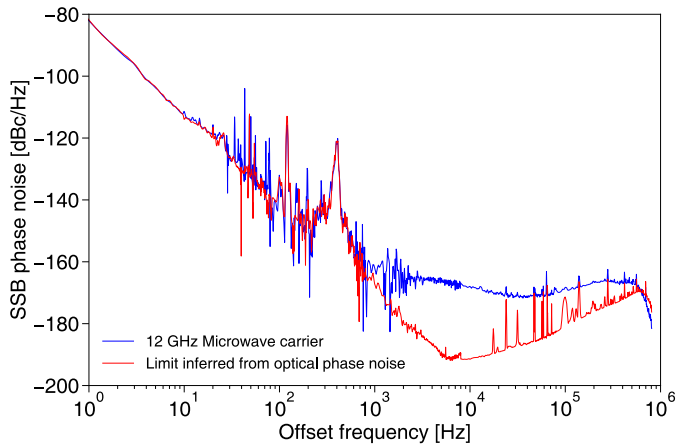
Photonic Microwave Generator

MenloSystems



Ultra-stable microwave sources are paramount for a broad range of applications, including precision metrology, deep space navigation, telecom and next generation wireless communication, as well as coherent radar. The idea to phase-coherently divide high-fidelity optical signals into the microwave domain was already envisioned in the very early stages of frequency comb technology.
In laboratory demonstrations the level of phase noise of these **photonic microwaves** has been proven to vastly exceed the performance of any other established technology. Menlo Systems is now providing a performance that significantly outperforms commercially available microwave oscillators. Combining our established ultra-stable optical reference systems (ORS-Cubic) and our state-of-the-art optical frequency combs (SmartComb), Menlo Systems offers an all-in-one solution for photonic microwave generation. An extension package for ultra-stable microwaves is also available for all optically referenced FC1500-250-ULN and FC1500-ULN^{plus} systems.

SINGLE SIDEBAND PHASE NOISE @12 GHZ, HIGH-END VARIANT



KEY SPECIFICATIONS

- All-in-one Photonic Microwave Generator
- Compact Rack Solution (1m, 19” rack)
- Up to 12 GHz Ultra-low Phase Noise Microwaves
- < -130 dBc/Hz at offset frequencies above 1 kHz

APPLICATIONS

- Doppler Radar
- 5G Wireless Communication
- Deep Space Navigation
- Radio Astronomy
- RF Tests and Measurements

OPTIONS

- Microwave Output at 2, 4, 6, 8, 10, 12 GHz
- Ultra-Stable RF Output at 5, 10, 100 MHz

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SPECIFICATIONS

	Carrier @ 12 GHz		Carrier @ 10 MHz
Offset freq. (Hz)	**PSD of SSB PN (dBc/Hz)**	**PSD of SSB PN (dBc/Hz) high-end**	**PSD of SSB PN (dBc/Hz)**
1	-85	-85	-127
10	-95	-110	-140
100	-110	-130	-150
1K	-130	-140	-160
10K	-140	<-150*	-160
100K	-150	<-150*	-160
1M	-150	<-150*	-160

such level can be seen as a measurement limitation

For an absolute phase noise assessment a dual heterodyne cross-correlation is required.

PSD: Power spectral density, SSB PN: Single sideband phase noise

For frequency stability specifications please see the Menlo Systems ORS-Cubic Datasheet
https://www.menlosystems.com/products/ultrastable-lasers/ors-cubic/

τ	ADEV @ 12 GHz	ADEV @ 10 MHz
1 s	$<2 \times 10^{-16}$	$<2 \times 10^{-14}$
10 s	$<5 \times 10^{-17}$	$<7 \times 10^{-15}$
100 s	$<2 \times 10^{-17}$	$<2 \times 10^{-15}$
1000 s	$<2 \times 10^{-18}$	$<7 \times 10^{-16}$

REQUIREMENTS

Operating Voltage	100/115/230 VAC
Line Frequency	50 to 60 Hz
Operating Temperature	22 ± 5 °C
Power Consumption	<300 W

ORDERING INFORMATION

Product Code	PMWG-1500

Please call for pricing. Specifications are subject to change without notice. Custom modifications are available, please inquire.

Laser Radiation
Class1 Laser Product
according to DIN EN 60825-1:2015-07

MenloSystems

Menlo Systems GmbH
T+49 89 189 166 0
sales@menlosystems.com

Menlo Systems, Inc.
T+1 973 300 4490
ussales@menlosystems.com

Thorlabs, Inc.
T+1 973 579 7227
sales@thorlabs.com