

**LOW-JITTER
MICROWAVE FREQUENCY
SOURCE**

LJO-1

Low-Jitter Microwave Frequency Source

FEATURES

- Output frequency from X- to Ku-band
- Ultra Low Phase noise and Timing Jitter at room temperature
- Electronic tuning
- Phase locking option
- Internal or external reference options
- Programmable phase and amplitude option

APPLICATIONS

- Instrumentation
- Phase noise measurements
- Test equipment
- Radar systems
- Imaging
- Satellite and digital communications

DESCRIPTION

The LJO-1 Low Jitter Frequency Source is a simple cavity-based oscillator that includes a very efficient noise cancellation mechanism, thus allowing extremely good performance at room temperature without the costs of a highly selective resonating device. The high carrier power coupled into the resonating cavity allows for a highly reduced timing jitter, a feature of interest for imaging and communication systems. The output frequency can range from X-band to Ku-band and can be extended to Ka-band and beyond with only minor performance degradation. The possibility to phase lock to a high quality crystal allows extremely good long term stability, preserving the excellent jitter properties. The programmable phase and amplitude option will include a DDS (Direct Digital Synthesizer) chip.

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SPECIFICATIONS

PARAMETER	CONDITIONS	TYPICAL	UNITS
Output Frequency		X- to Ku Band	
Output Power		+13	dBm
Phase Noise	100 Hz 1 000 Hz 10 000 Hz 100 000 Hz	-90 -120 -143 -163	dBc/Hz
Timing Jitter	Offset frequency range 100 Hz to 10 ⁶ Hz 1000 Hz to 10 ⁷ Hz	<1.5 < 0.5	fs
Electronic Tuning Range		>10	kHz
Reference Input Frequency		5, 10, 100	MHz
PLL bandwidth	without performance degradation inside the locking bandwidth	<100	Hz