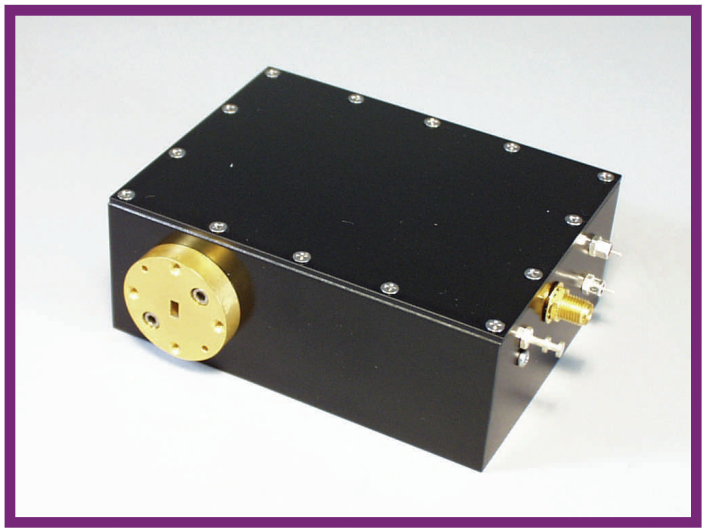
957 Series Phase-Locked Oscillators



Features

- Several Stability Options
- High Power Models Available
- Several Spectral Purity Options
- Available from 18.0 to 140.0 GHz
- Miniaturized Lightweight Assembly

Ordering Information

957 ___ / ___ / ___

Specify Power Output in mW
(005, 010, 025, 050, 100, 200)

Specify Crystal Reference Options
1: External
2: Standard Stability Internal Oscillator
3: High stability Internal Oscillator
4: Super Stability Internal Oscillator
5: Low Phase-Noise Internal Oscillator
6: 10 MHz External

Specify RF Band Designator
(K, A, B, U, V, E, W, F)

Please specify center frequency at time of order.

Description 957 Series Oscillators

Mi-Wave's **957 series miniature phase-locked source provides a high-stability, spectrally pure millimeter wave signal. To ensure high performance, a low noise, high-Q varactor-tuned oscillator is phase-locked to a precision crystal reference. Through the use of state-of-the-art millimeter wave component integration and beam-lead diode technology, the RF portion has been drastically reduced in size over conventional waveguide methods. The sophisticated millimeter wave components of the 957 series source, coupled with the advanced electronic design of the loop system, enable high performance to be achieved with miniaturized packaging. A variety of options are possible in the selection of the crystal reference. Crystals are available that offer low noise, superior aging, and improved temperature stability.** ***Mi-Wave*** **will assist in the selection of the appropriate crystal. When an output frequency in excess of approximately 50 GHz is required, an additional stage is used for the 957 series. This stage consists of a doubler or tripler for output frequencies in the 60 to 140 GHz range. In addition, the multiplier stage may have to be followed with an injection-locked Gunn oscillator depending on the power level required at these frequencies.** ***Mi-Wave*** **will provide any additional stages necessary to produce the specified output frequency and power level.**

Applications

The 957 series miniature phase-locked source is ideally suited for applications demanding low noise and high stability in a compact design. Typical applications for phase-locked oscillators include frequency synthesizers, frequency upconverters, monopulse transmit/receive systems, FM CW radar systems, and low noise local oscillators for millimeter wave mixers.

The 957 series PLO can also be used in applications requiring laboratory bench type millimeter wave source either as a single oscillator or in a multiple configuration to provide frequency selection.

Mi-Wave
Millimeter Wave Products Inc.
www.miwv.com
2200 Tall Pines Drive, Suite 100
Largo, FL 33771
Tel. (727) 536-0033 Fax. (727) 536-0012
E: sales@miwv.com

957 Series Phase-Locked Oscillators

Technical Specifications

Model Number	957K	957A	957B	957U	957V	957E	957W	957F
Frequency Band (GHz)	18.0-26.5	26.5-40.0	33.0-50.0	40.0-60.0	50.0-75.0	60.0-90.0	75.0-110.0	90.0-140.0
Waveguide	WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10	WR-8
Power Output (mW)	10 50 100 200	10 50 100 200	10 50 100	10 50 100	10 25 50	10 25 50	10 25 40	5 10
Waveguide Flange (MIL-F3922/Equivalent)	UG-595/U (54-001)	UG-599/U (54-001)	719 (-)	720 (-)	UG-385/U (678-078)	UG-387/U (678-009)	UG-387/u-M (678-010)	UG-387/U-M (-)

Performance Specifications

		Aging/Year
Operating Temperature	0º C to +50º C	
Frequency Stability (internal reference)	0ºC to +50º C	
Standard Stability	± 3 x 10-6	± 5 x 10-6
High Stability	± 1 x 10-8	± 3 x 10-6
Super Stability	± 2 x 10-9	± 3 x 10-7
Low Phase Noise	± 1 x 10-8	± 3 x 10-6
Harmonic Suppression	-30 dBc (Min.)	
Non-Harmonic Spurious Response	-40 dBc (Min.)	
Power Stability	± 1.0 dB	
Load VSWR	2:1 (Max.)	
External Reference Signal		
Frequency (determined by required output frequency)	90-120 MHz	
Input Power	10 dBm (Min.)	
DC Power[1]	+ 15 V	
Weight (external reference)	8 ounces (Max.) 0.7 kg (Max.)	
Dimensions[1]		
External Reference (K-band)	4.0” L x 3.0” W x 1.57” H	
External Reference (other bands)	4.0” L x 3.0” W x 1.57” H	
Internal Reference (standard crystal)	Consult Mi-Wave	
Internal Reference (high stability)	Consult Mi-Wave	

1. For output frequencies greater than approximately 60 GHz, an external doubler or tripler must be used which alters the physical size requirements. For higher power levels at these frequencies, an injection-locked Gunn oscillator may be necessary, thus requiring an additional DC power supply. Gunn oscillator bias voltage may vary from 3 to 7 vdc depending on operating frequency.

Mi-Wave
Millimeter Wave Products, Inc.
www.miwv.com
Tel. (727) 536-0033 Fax. (727) 536-0012
E: sales@miwv.com