



# Phase Locked Source

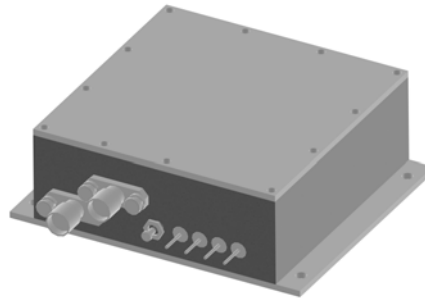
## PLS-9000-M10E

### Features

- Operating frequency:  
9 GHz
- Output Power (50 Ω Load):  
13 dBm Minimum
- Wide Operating  
Temperature Range: From  
0°C to 55 °C
- Low Phase Noise:  
-90 dBc @ 1 KHz
- External 10 MHz  
Reference
- 2.5 x 2.5 x 1.0 inches  
connectorized Package
- VCO based, low  
microphonic design

### Applications

- Communications,  
Instrumentation and  
Military
- X-band Phase Lock  
Source



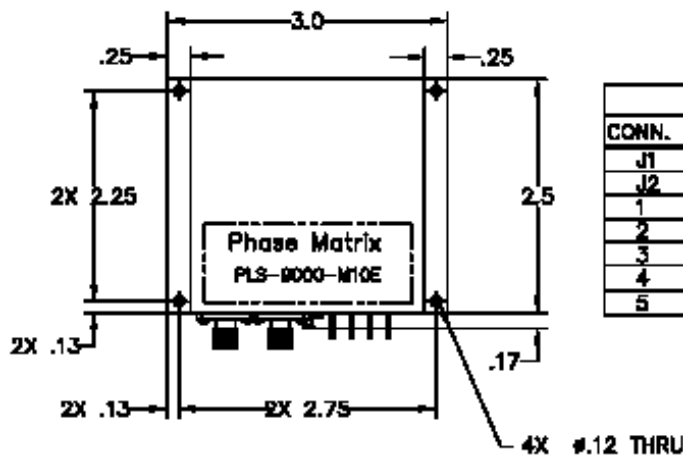
### General Description

Emerging applications of wireless technology require very high performance signal sources for use as Local oscillator in military and commercial communications.

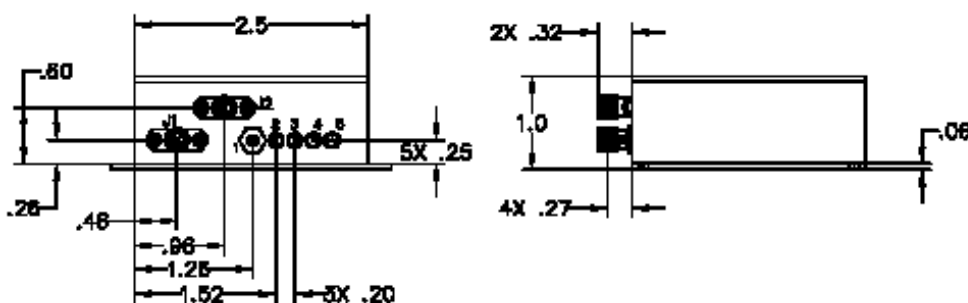
The PLS-9000-M10E provides a low noise Phase Locked Source at 9 GHz using an external reference of 10 MHz. A dual Phase Lock Loop using sampling mixer is used providing one of the lowest phase noise and spurious performance available in the industry.

A silicon bipolar transistor based Coaxial Resonator Oscillator is used as the primary source. A frequency doubler and an amplifier in the output provides the final frequency and the desired power output. Phase Locked Sources are available at any frequency from 1 to 50 GHz

### Package Mechanical Dimensions (Inches)



CONNECTION TABLE		
CONN.	FUNCTION	TYPE
J1	10MHz REF IN	SMA-FEMALE
J2	RF OUT	SMA-FEMALE
1	D/C GROUND	SOLDER TYP
2	+8V DC	FILTER SOLDER TYP
3	LOCK INDICATOR	FILTER SOLDER TYP
4	N/A	FILTER SOLDER TYP
5	N/A	FILTER SOLDER TYP



PLS-9000-M10E June 2005 Preliminary  
 Specification is subject to change without prior notification

### PLS-9000-M10E Absolute Maximum Ratings

Parameter	Units	Ratings
Positive Supply Voltage,	V	0 to +15
Operating Temperature	C°	-10 to +85
Storage Temperature	C°	-40 to +130

### PLS-1990-M10E Summary Characterization

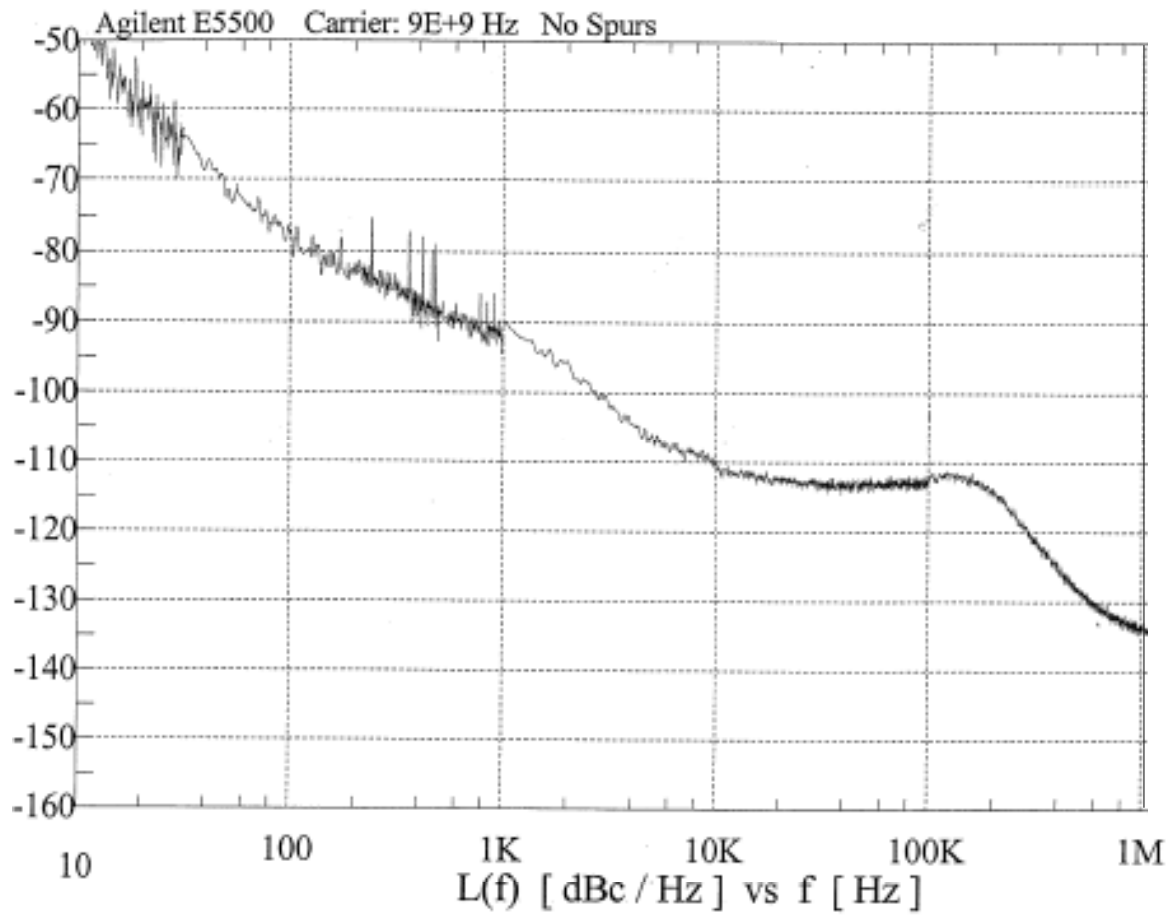
0° C to 55° C

Parameter	Units	Min	Typ	Max
Output Operating Frequency	GHz		9	
Output Power	dBm	13		17
Phase Noise				
100 Hz <sup>1</sup>	dBc		-	-
1 KHz	dBc		-90	-87
10 KHz	dBc		-110	-107
100 KHz	dBc		-110	-107
1 MHz	dBc		-135	-130
10 MHz	dBc		-140	-135
Harmonics (Below Carrier)	dB		-30	-20
Sub Harmonically Related Spurious	dBc		-40	-30
Spurious Output (Below Carrier)	dBc		-70	-65
External Input Reference <sup>2</sup>	MHz		10	
Input Reference Power	dBm	-3		+3
Lock Alarm (Locked)	TTL		High	
Positive Supply Voltage	V	8	9	10
Positive Supply Current	mA		670	700
Mechanical Dimension	in	2.50" x 2.50" x 1.00"		

**Notes:**

1. Phase Noise @ <1kHz will be dependent (20logN) on the ext. 10MHz reference source.
2. Internal Reference Source option available. Contact Factory.
3. Contact Factory for any changes in specifications.

### Phase Noise Plot for 9 GHz Phase Locked Source



### Part Number Ordering Information

<b>Part Number</b>
PLS-9000-M10E

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