REV	DATE	REVISION RECORD	DWN	AUTH
-	08-20-15	Initial Release	Liz	
A	09-05-16	dimensions	Liz	

OUTPUT

Frequency
10 MHz

Sine
+13 dBm ±2 dB into 50 ohms

STABILITY

Aging
$\pm 5 \times 10^{-8}$ per year, Year 1
$\pm 2 \times 10^{-8}$ per year, Year 2
$\pm 1 \times 10^{-8}$ per year, thereafter

Phase Noise L(f)
Static, Sine Output

1 Hz	-110 dBc/Hz
10 Hz	-140 dBc/Hz
100 Hz	-155 dBc/Hz
1 kHz	-160 dBc/Hz
10 kHz	-165 dBc/Hz
100 kHz	-170 dBc/Hz

Short-Term Stability (constant °C)
<5e-10, 1 Second

G-Sensitivity
<1e-11 per axis from 2 Hz to 300 Hz

Temperature Stability, typical
$< \pm 1 \times 10^{-8}$, +26° to +41°C (Ref +33°C)
Normal operating temp, +33°C

Harmonics,
-30 dBc

Spurious
-90 dBc

Load Sensitivity, typical
±10e-9 for 5% change

Line Sensitivity, typical
±10e-9 for 5% change

MECHANICAL

Dimensions
4.5 x 4.5 x 0.9", with brackets, TBD

Connectors
SMA for RF
Male DB 9 Connector for DC

Packaging
Machined Aluminum enclosure

Weight
0.8 LBS, typical

POWER REQUIREMENTS

Warm-Up Power
≤ 8 Watts for 10 minutes, typical

Total Steady-State Power
6 Watts, typical

Supply Voltage
+12 VDC +-5%

ADJUSTMENT

Electrical Tuning Sensitivity
$>\pm 6 \times 10^{-7}$ min, 0 to +10 VDC,

Electrical Tuning Bandwidth
>100 Hz, Lock below 1 Hz for best performance under vibration

OTHER

Vibration Profile

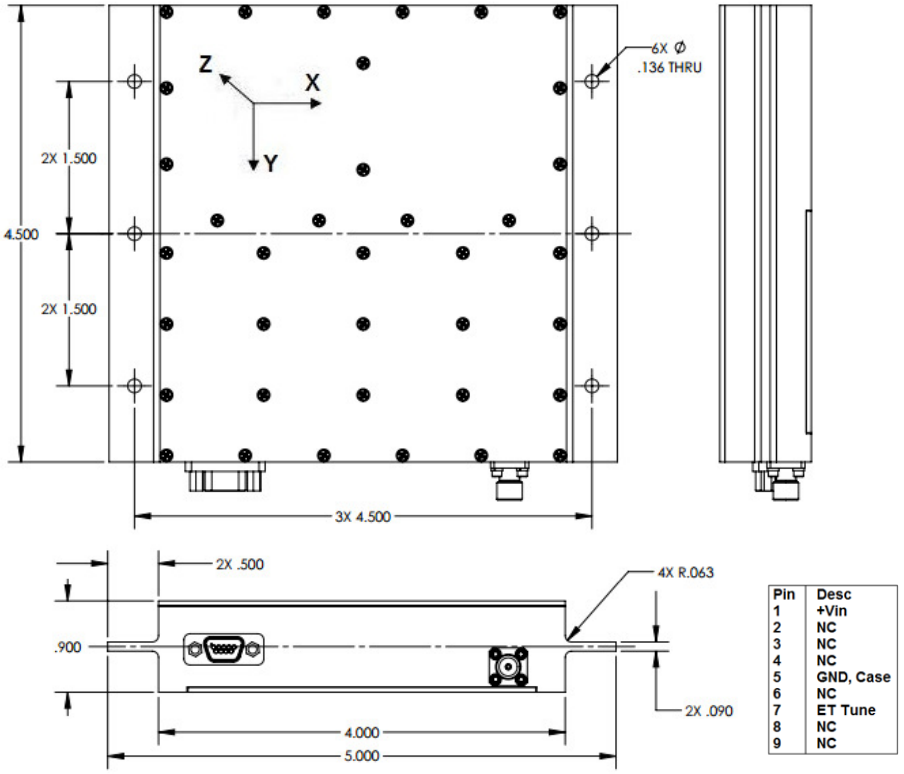
Vibe Freq Hz	(g^2/Hz) 0.52 grms
2	.001
4	.001
4	.0018
60	. 0018
70	.0001
200	. 0001
210	1e-5
10,000	1e-6

Design
Vibration isolation/compensation system for best noise under vibration
Utilizes Bootstrap Technology

Test Data
- Output Level
- Phase Noise
- G-sensitivity in 3 axes
- Temperature Stability
- Short-Term 1 second
- Harmonics, Subs, Products, Spurs
- Power – Warm-up and Total

CRYSTAL

Type
Very low-g sensitivity
10 MHz SC



Pin	Desc
1	+Vin
2	NC
3	NC
4	NC
5	GND, Case
6	NC
7	ET Tune
8	NC
9	NC

Wenzel Associates, Inc.
Austin, Texas

Title:
10 MHz Bootstrap Low Vibration Oscillator

P/N:	Rev:	Date:	Drawn:	Ref:
501-29427	A	09-05-16		

Tolerances: (except as noted) Dimensions are in inches	0.XX Dec:	0.XXX Dec:	FSCM:	Page 1 of 1
	±0.030"	±0.010"	62821	