Extraordinary Low Phase Noise OCXO Reference Module

Data Sheet 1944B

Rev. -

High Frequency Reference OCXO Module in Aluminum Case

Product Data Sheet

Features

- **Extraordinary Low Phase Noise Featuring -173 dBc/Hz at 1 KHz offset (100 MHz Output)**
- **Internally Locked to Precision 10 MHz OCXO with Excellent Temperature Stability and Aging**
- **External Reference is Optional**
- **Optional 500 MHz Output (specified on PO)**

Applications

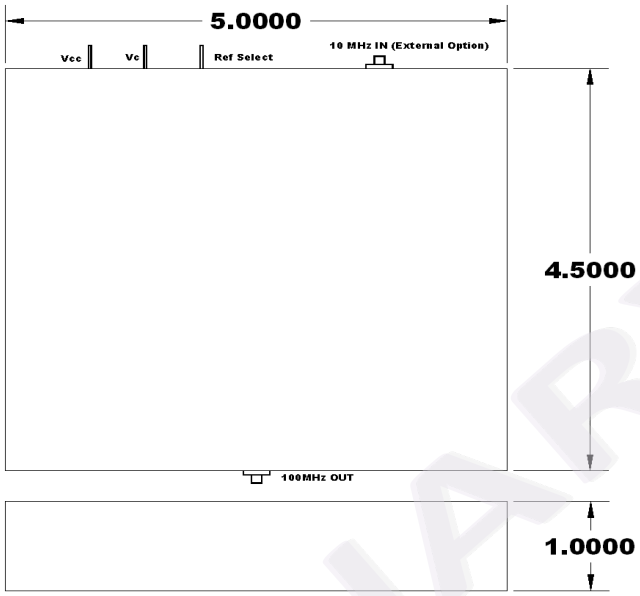
- **Radar**
- **Test and measurement**
- **Instrumentation**
- **COTS/Dual use**

Inputs

External 10 MHz IN SMA Female
Vcc – Feedthrough
Vc – Feedthrough
Reference select - Feedthrough

Output

RF OUT - SMA Female



Mechanical Dimensions, inches

NEL FREQUENCY CONTROLS, INC.

357 Beloit Street, Burlington, WI 53105 U.S.A. Phone 262/763-3591 FAX 262/763-2881

Email: nelsales@nelfc.com www.nelfc.com

Extraordinary Low Phase Noise OCXO Reference Module

Data Sheet 1944B

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
Absolute Maximum Ratings							
Input Break Down Voltage	Vcc		-0.5		6.5	V	
Storage temper.	Ts		-55		85	°C	
Control Voltage	Vc		-1		10	V	
Electrical (1)							
Frequency	F			100		MHz	
Frequency stability	ΔF/F	vs. Temp.		±5		ppb	See table below
		vs. Supply			1	ppb/5% change	
		Vs. load			1	ppb/5% change	
Aging		per day per first year 10 years		5E-10 5E-8	 0.3	 ppm	After 30 days of continuous operation
Allan Deviation		.01s to 1s		5E-13			
SSB Phase Noise	£(Δf)	10 Hz 100 Hz 1 KHz 10 KHz ≥100 KHz		-115 -145 -173 -185 -190		dBc/Hz	100 MHz
		10 Hz 100 Hz 1 KHz 10 KHz ≥100 KHz		-100 -130 -158 -165 -170			Optional 500 MHz output
Retrace		After 30 minutes		±10		ppb	
G-sensitivity		worst direction			±0.5	ppb/G	
Input Voltage	Vcc		4.9	5.0	5.5	V	
Power consumption	P	steady state, 25°C start-up		6.0 18	7.5 20	W	Still air
Spectral Purity		Output power Subharmonics Subharmonics Spurious Harmonics		20 -35 	 -80 -50 -80 -30	dBm dBc dBc 	 100 MHz output 500 MHz output Non-supply related
Load	50 Ohm (Internally AC-coupled)						
Warm-up time	τ	to 0.1ppm accuracy		5	8	minutes	During warm-up the output signal can be scrambled, jittery, and not usable altogether
Output Waveform	Sine-wave						
Control voltage	Vc		0 0		10.0 4.5	V	Slope option "L" Slope option "P"
Setability			4.5 2.0	5 2.25	5.5 2.5	V	Slope option "L" Slope option "P"
Pull range		from nominal F	±0.4			ppm	
Modulation Bandwidth	MBW		DC		0.1	Hz	Due to internal PLL loop bandwidth about 1 Hz
Absolute pull range	APR	Over all conditions	±0.1			ppm	
External Reference		Sine Wave	+7			dBm	
Reference select		Floating Logic "0"		Internal External			

All parameters for internal reference

Environmental and Mechanical

NEL FREQUENCY CONTROLS, INC.

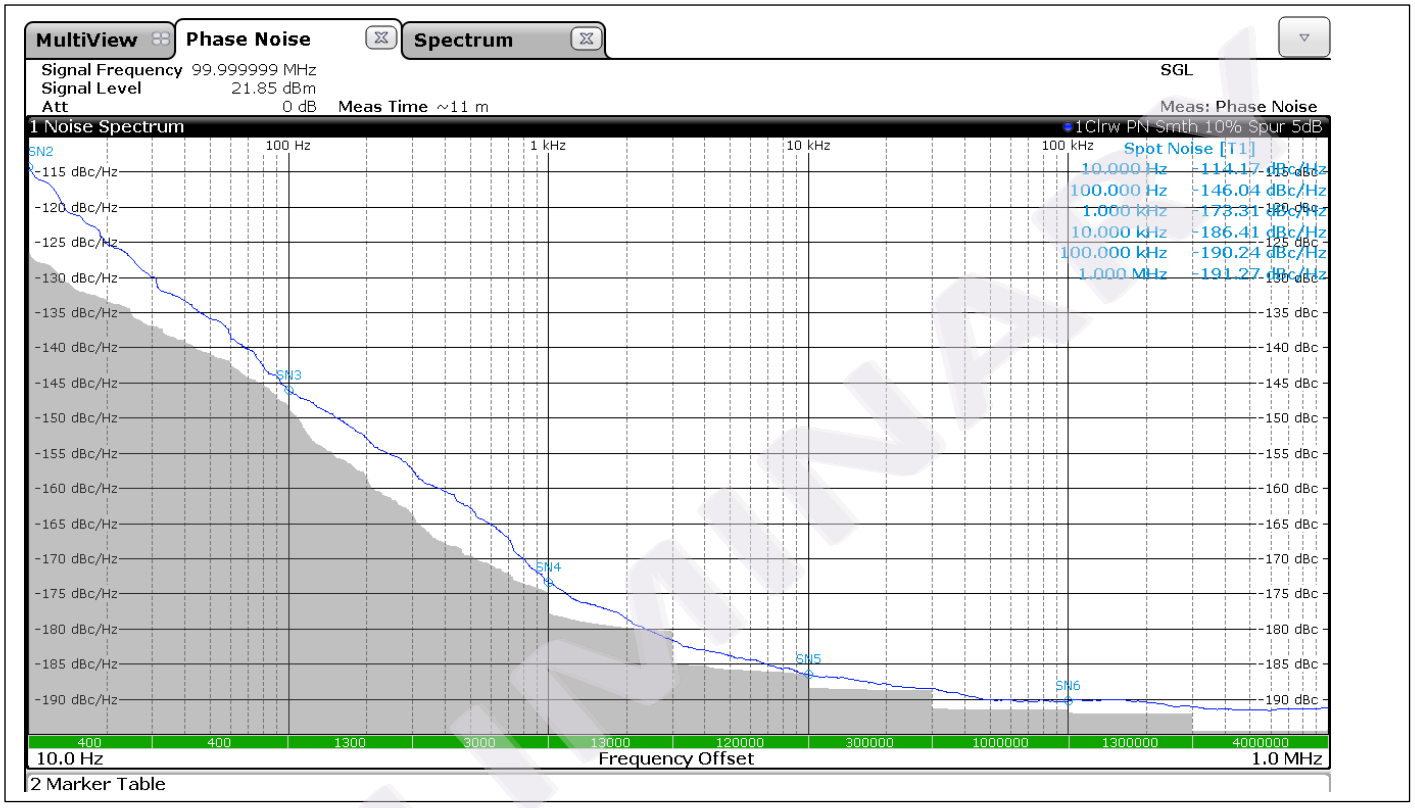
357 Beloit Street, Burlington, WI 53105 U.S.A. Phone 262/763-3591 FAX 262/763-2881

Email: nelsales@nelfc.com www.nelfc.com

Extraordinary Low Phase Noise OCXO Reference Module

Data Sheet 1944B

Operating temp. range	0 to 70°C Standard, Other options TBD
Mechanical Shock	Per MIL-STD-202, 30G, 11ms survival
Thermal Shock	Per MIL-STD_883, Method 1011, Condition A survival
Vibration	Per MIL-STD-202, 5G to 2000 Hz survival
Soldering Conditions	260°C for 10s Max leads only



NEL FREQUENCY CONTROLS, INC.

357 Beloit Street, Burlington, WI 53105 U.S.A. Phone 262/763-3591 FAX 262/763-2881

Email: nelsales@nelfc.com www.nelfc.com