M-E80-X-YY-X-X –100.000 MHz Rev. A
Phase-Locked Low Noise Clean-up Module in Europack

Product Data Sheet

Features

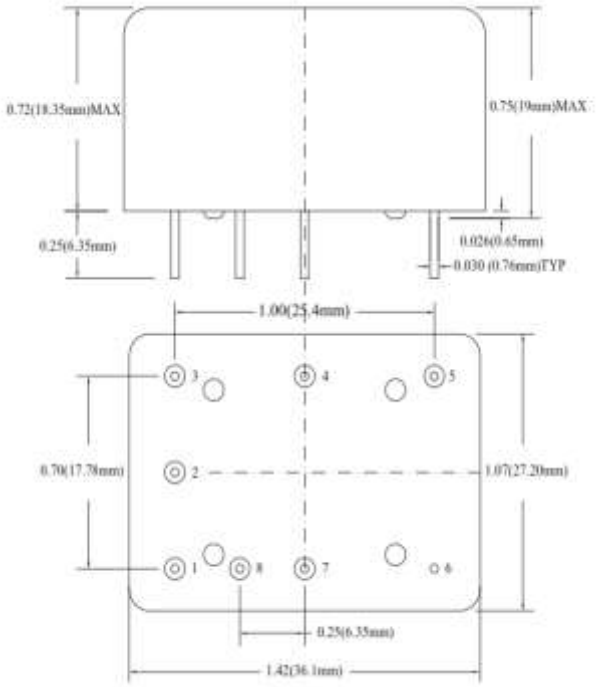
- **Low Phase Noise**
- **Very Compact Package**

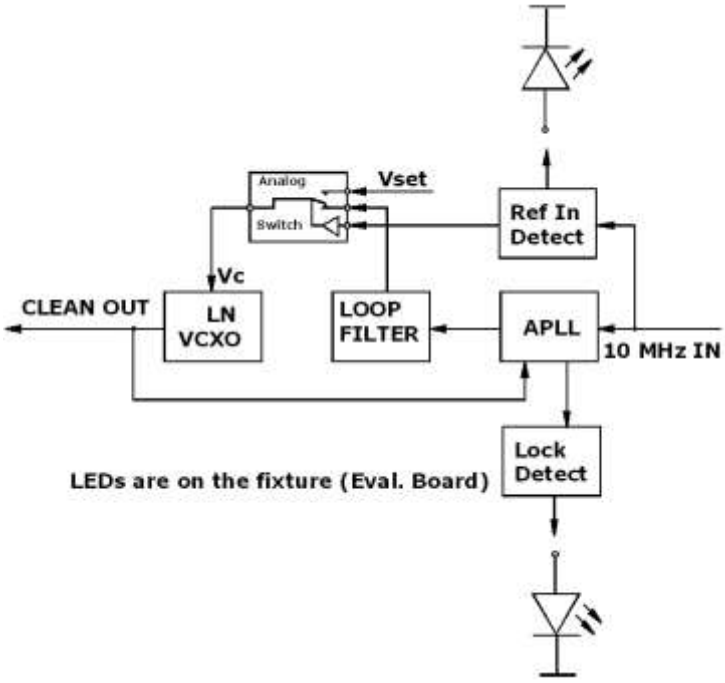
Applications

- **Significantly improves Phase Noise of incoming signal with 100 MHz Output**
- **COTS/Dual use**

Pinout

Pin #1 – 10 MHz Input
Pin #2 – Vref OUT
Pin #3 – Vcc
Pin #4 – Lock Detect
Pin #5 – RF OUT
Pin #6 – Case, GND
Pin #7 – Input Signal Detect
Pin #8 – Vset IN.





NEL FREQUENCY CONTROLS, INC.

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M-E80-X-YY-X-X –100.000 MHz

Rev. A

Specifications:

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
Absolute Maximum Ratings							
Input Break Down Voltage	Vcc		-0.5		5.5	V	Vcc = 5 V
Operating Temp.	To		-40		85	°C	
Storage temper.	Ts		-40		85	°C	
Electrical High Frequency							
Input Frequency	Fin			10.000		MHz	
Output Frequency	Fout			100.000		MHz	
Frequency Capture Range (APR)	ΔF/F	Over All			±5,000	ppb	
Allan Deviation		.01s to 0.1s		1E-10			At 1 s is input dpendent
Frequency stability	ΔF/F	Locked	Equal to incoming signal				
Recommended MAX Input SSB Phase Noise	£(Δf)	10 Hz 100 Hz 1 KHz 10 KHz 100 KHz			-80 -110 -130 -140 -140	dBc/Hz	At 10.000 MHz
Input signal		CMOS	2			Vpk-pk	Code T
		Sine Wave	0		15	dBm	Code S
Output SSB Phase Noise Floor	£(Δf)	10Hz 100Hz 1KHz 10KHz 100KHz		-95 -125 -155 -170 -173		dBc/Hz	Cannot improve beyond listed values
G-sensitivity		worst direction			±0.5	ppb/G	
Input Voltage	Vcc	Code 0	4.75	5.0	5.25	V	
Power consumption	P			100		mW	
Spectral Purity		Spurious from ref Spurious Harmonics		-70 -35	-50 -80 -30	dBc	10 MHz and multiples Output Code S
Load	Internally AC coupled 50 Ohm (Sinewave) 10K Ohm//15pf (CMOS/TTL)						
Lock Time				1		minute	
Output Power	Pout	Into 50 Ohm	10	12		dBm	Output Code S
Logic 1 (CMOS)	Voh		3.0			V	Output Code T
Logic 0 (CMOS)	Vol				0.3	V	Output Code T
Duty Cycle			45/55		55/45	%	Output Code T
Rise/Fall Time	Tr/Tf			2	3	ns	Output Code T
Preset Voltage	Vset			2.25		V	Can be externally adjusted by LN Potentiometer 10 KOhm between Vref and GND
Lock Detect			Logic "1"				Can drive LED
Input Detect			Logic "1"				Can drive LED

All parameters for output frequency 100 MHz

Environmental and Mechanical

Operating temp. range	0°C to 70°C Standard, Other options – see chart below
Mechanical Shock	Per MIL-STD-202, 30G, 11ms , survival
Vibration	Per MIL-STD-202, 5G to 2000 Hz, Survival

All parameters, unless otherwise specified, are at nominal conditions, ie: T=25°C, Nominal Vcc & Nominal

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M-E80-X-YY-X-X–100.000 MHz

Rev. A

Creating a Part Number

M - **E8** **0** - **X** - **YY** - **X** - **X** **100.000** **MHz**

Module

Package Code
Europack, 8pin

Environmental

Code	Specification
L	Contains a level of lead that is in excess of RoHS directive and is not designed for reflow
R	RoHS compliant, not designed for reflow

Input

Code	Specification
S	Sinewave
T	CMOS/TTL

Supply Voltage

Code	Specification
0	5 V TYP

Output

Code	Specification
S	Sinewave
T	CMOS/TTL

Temperature Range

Code	In 5ºC steps **
First letter	Lowest temperature from A = -40ºC
Second letter	Highest temperature to Z = 85ºC
Examples	
IS	0°C to 50°C
GU	-10°C to 60°C
EW	-20°C to 70°C

****Temperature Code Table**

Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C
A	-40	**F**	-15	**K**	10	**P**	35	**U**	60	**Z**	85
B	-35	**G**	-10	**L**	15	**Q**	40	**V**	65		
C	-30	**H**	-5	**M**	20	**R**	45	**W**	70		
D	-25	**I**	0	**N**	25	**S**	50	**X**	75		
E	-20	**J**	5	**O**	30	**T**	55	**Y**	80		

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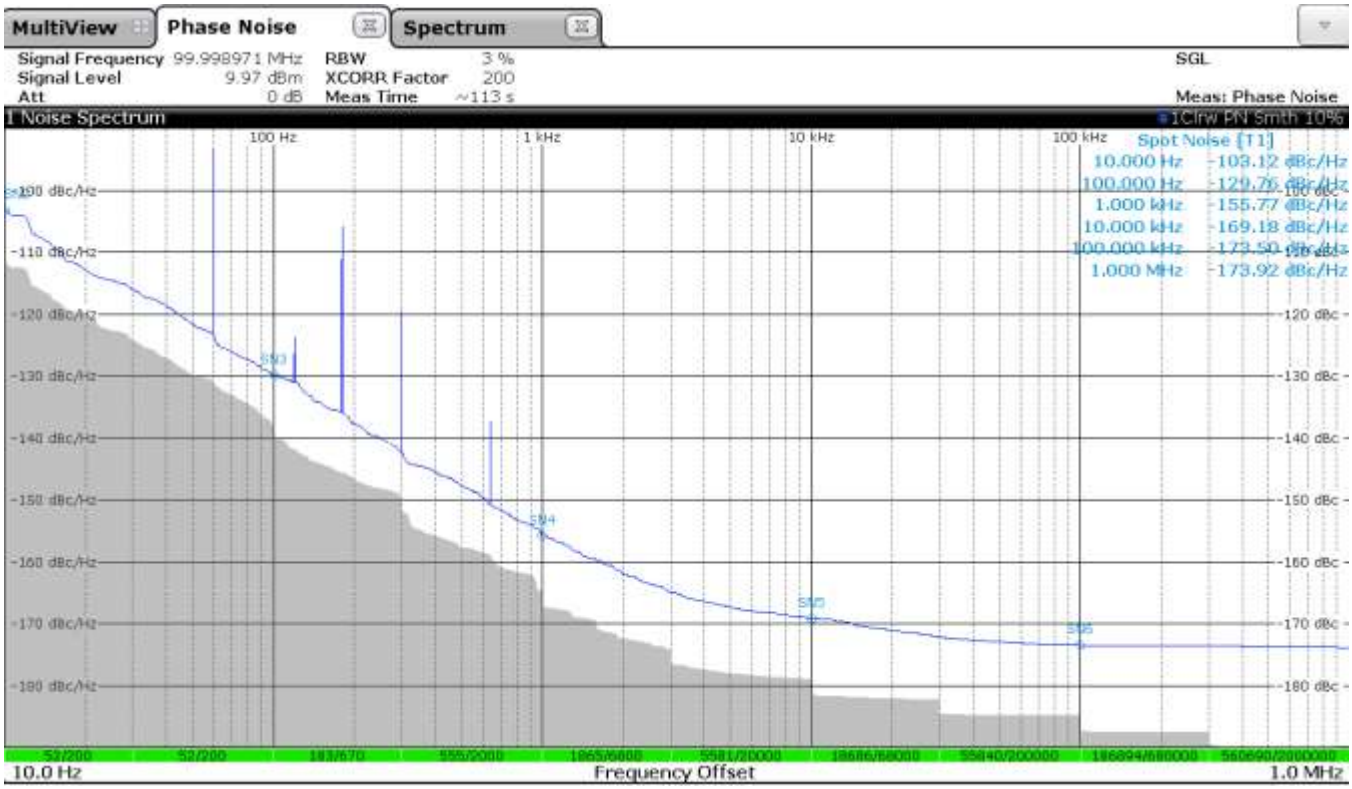

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