

Specific request can be addressed to RAKON info@rakon.fr

Product Description

LNO 2000 B1 is a LN (Low Noise) OCVCSO (Oven Controlled, Voltage controlled, SAW Oscillator) at 2 GHz.

It is composed of a SAW oscillator at 500MHz fundamental frequency, followed by a frequency quadrupler.

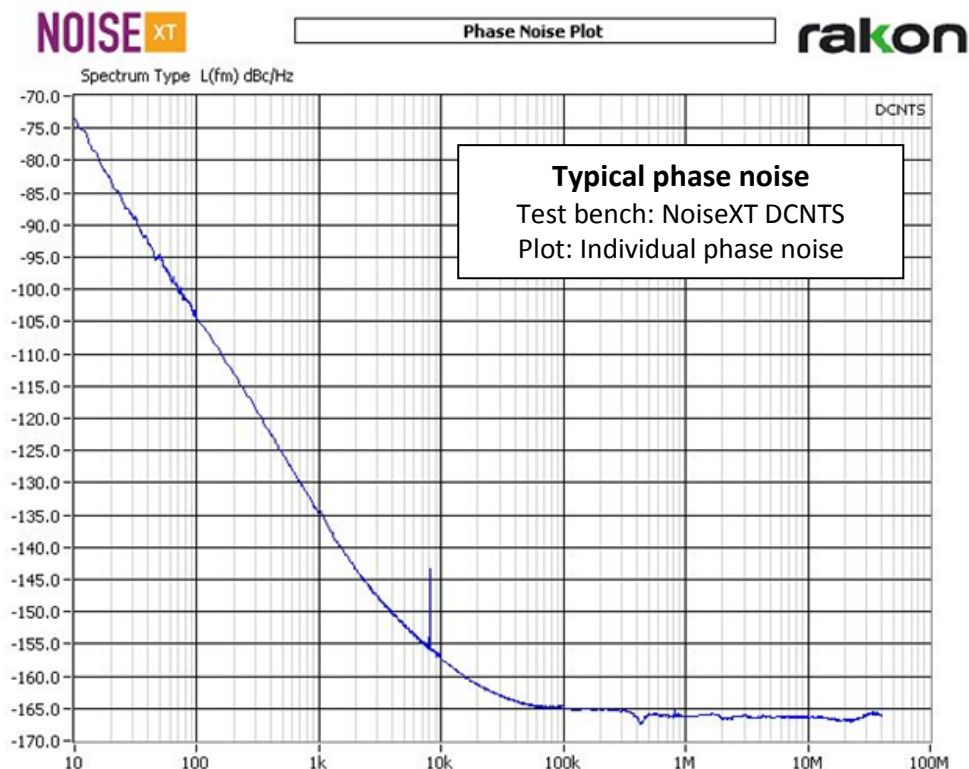
It is designed for lab environment (test equipment, shelter, ground based military equipment, etc.).

LNO 2000 B1 is available in a 95.25mm x 76.2mm x 23.27mm package.



Features

- - 135 dBc/Hz @ 1 kHz offset (typical 25°C)
- - 166 dBc/Hz noise floor (typical 25°C)
- Broadband jitter < 10 fs (offset frequencies from 10 kHz to 100 MHz)



Applications

- Instrumentation (test equipment, simulator)
- Ground based military equipment as per MIL-PRF-28800F, Class 3
- 2 GSPS clock for ADC up to 12 bits

Specifications

1.0 Environmental conditions

Line	Parameter	Test Condition	Value	Unit
1.1	Temperature range		0 to 50	°C
1.2	Storage temperature		-40 to 85	°C
1.3	Shock	As per MIL-PRF-28800F, Class 3, test equipment		
1.4	Vibration	As per MIL-PRF-28800F, Class 3, test equipment		

2.0 Electrical Interface

Line	Parameter	Test Condition	Value	Unit
2.1	Supply voltage	Pin 2	9.8 to 10.2	V
2.2	Load impedance	Pin 3	50	Ω
2.3	Control Voltage	Pin 4	2 to 7	V
2.4	Input impedance	Pin 4	10 min	k Ω

3.0 Performances

Line	Parameter	Test Condition	Value	Unit
3.1	Nominal frequency		2000	MHz
3.2	Frequency calibration	Initial calibration @ 25°C	± 0.5 max	ppm
3.3	Frequency stability over temperature		± 2 max	ppm
3.4	Long term stability	After 30 days of continuous operation	± 1 max	ppm/year
3.5	Power consumption	Warm-up	9 max	W
3.6	Power consumption	25°C (calm air)	4 max	W
3.7	Warm-up time	± 1 ppm with reference to frequency reached after 1 hour of continuous operation at 25°C	5 max	minutes
3.8	Frequency tuning	Monotone & positive slope	± 4 min	ppm
3.9	Slope		1.5 to 3	ppm/V
3.10	Output waveform	Sine wave into 50 Ω load	10 $\pm$ 1	dBm

Single Side Band Phase Noise (PN)

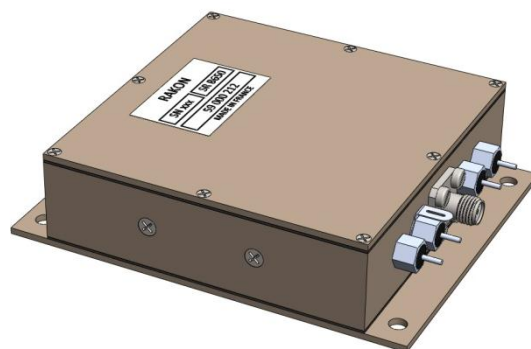
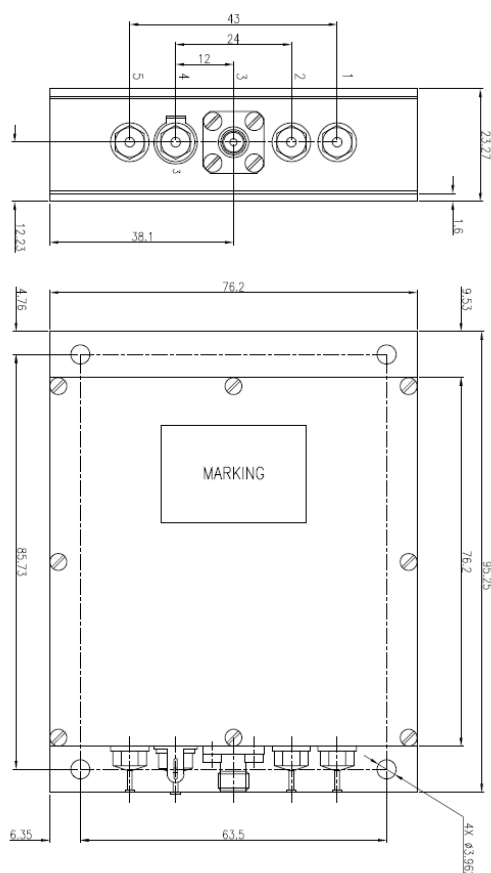
3.11	PN power density @ 1kHz offset		< -130	dBc/Hz
3.12	PN power density @ 10kHz offset		< -150	dBc/Hz
3.13	PN power density @ 1MHz offset		< -160	dBc/Hz
3.14	Harmonic distortion	All 500MHz harmonics except 4th	-30 max	dBc
3.15	Spurious	Non-harmonics	-80 max	dBc

Time Jitter (calculating from PN)

3.16	Full offset range	From 10 Hz to 100 MHz	< 200	fs
3.17	Broadband	From 10 kHz to 100 MHz	< 10	fs

4.0 Mechanical features

Outline in mm



5.0 Pin description

Line	Pin number	Name	Description
5.1	1	-	Not to be connected
5.2	2	Supply voltage	Input supply (+)
5.3	3	Frequency output	Output signal
5.4	4	Control voltage	Input voltage control
5.5	Ground lug	Ground	Mechanical ground and (-) supply
5.6	5	-	Not to be connected