

rakon Low Noise Oscillator series

LNO 1000 B1

OCSO @ 1000 MHz

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

Product Description

LNO 1000 B1 is a LN (Low Noise) OCVCSO (Oven Controlled, Voltage controlled, SAW Oscillator) at 1000 MHz.

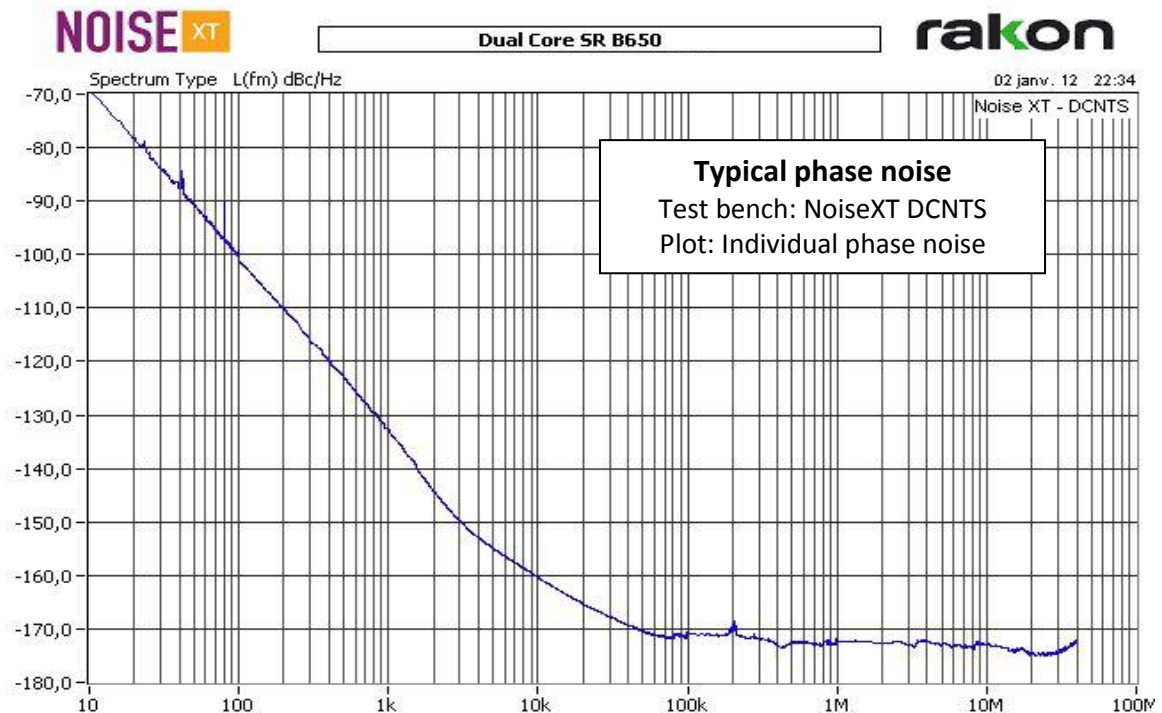
It is designed for lab environment (test equipment, shelter, ground based military equipment, etc.).

LNO 1000 B1 is available in a 95.25mm x 76.2mm x 23.27mm package.



Features

- - 130 dBc/Hz @ 1 kHz offset (typical)
- < - 170 dBc/Hz noise floor (typical)
- Broadband jitter < 5 fs (offset frequencies from 10 kHz to 40 MHz)



Applications

- Instrumentation (test equipment, simulator)
- Ground based military equipment as per MIL-PRF-28800F, Class 3
- 1 GPS clock for ADC up to 16 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	11.8 to 12.2	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	kΩ

3.0 Performances

Line	Parameter	Test Condition	Value	Unit
3.1	Nominal frequency		1000	MHz
3.2	Frequency calibration	Initial calibration @ 25°C	±0.5 max	ppm
3.3	Frequency stability over temperature		±1 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)	4.2 max	W
3.7	Warm-up time	±1ppm with reference to frequency reached after 1 hour of continuous operation at 25°C	5 max	minutes
3.8	Frequency tuning	Monotone & positive slope	±3 min	ppm
3.9	Slope		1.5 to 3	ppm/V
3.10	Output waveform	Sine wave into 50Ω load	5 to 7	dBm

Single Side Band Phase Noise (PN)

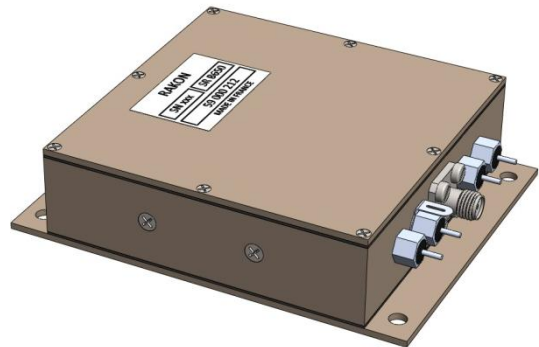
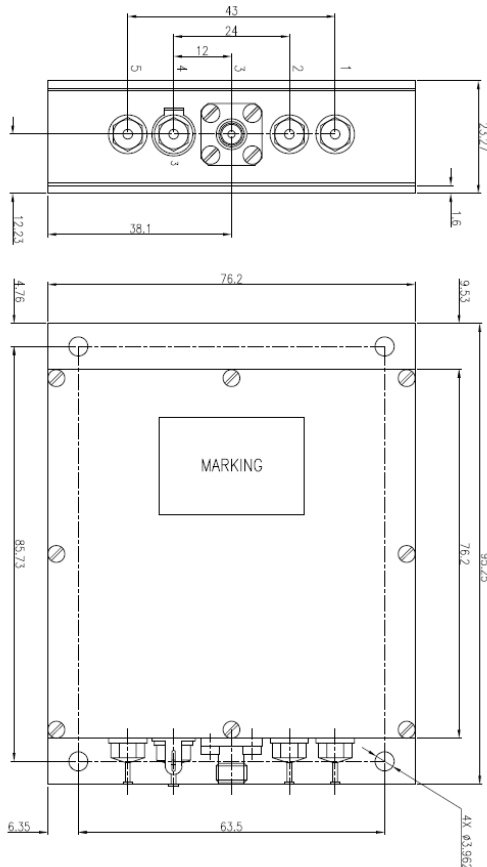
3.11	PN power density @ 1kHz offset		-130	dBc/Hz
3.12	PN power density @ 10kHz offset	Typical value at 25°C.	-158	dBc/Hz
3.13	PN power density @ 1MHz offset		< -170	dBc/Hz
3.14	Harmonic distortion	Second and third harmonics	-30 max	dBc
3.15	Harmonic distortion	Non-harmonics	-80 max	dBc

Time Jitter (calculating from PN)

3.16	Full offset range	From 10 Hz to 40 MHz	< 200	fs
3.17	Broadband	From 10 kHz to 40 MHz	< 5	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