

Low Noise Rubidium Oscillator Module

- Low phase noise -113dBc/Hz @ 1Hz
- Lower power operation
- Ageing 5×10^{-10} /year

The E10-LN Low Noise Rubidium Oscillator Module is a sub miniature atomic clock combined with 'active noise filter' technology. This rubidium oscillator has 100x less drift than OCXO's. With short term stability of $2 \times 10^{-12}/s$ @ 100s this rubidium oscillator provides significant improvement in performance over other rubidium components.

Dimensions	
Length	95.5mm
Width	60mm
Height	37mm



Features

- 10MHz output
- 95.5 x 60 x 37mm standard size
- 91 x 55 x 30mm (Option A)
- -112dBc/Hz@1Hz phase noise
- 5×10^{-11} accuracy
- $2 \times 10^{-12}/s@100s$

Benefits

- Low noise and higher stability in customers product
- Atomic accuracy
- 100 x less drift than OCXOs
- Lower power consumption

Applications

- Where sizes are restricted this 'breakthrough' low noise rubidium oscillator will enable new applications
- LTE
- Extended holdover for CDMA, WiMAX and LTE base stations
- Higher stability and low phase noise communication and surveillance applications

Specification	E10-LN
Type	Rb OEM
Output	
Frequency	10MHz
Level	+7dBm $\pm$ 2dBm 50 Ω
Number of output	1
Connector	SMA
Accuracy at Shipment	$\pm$ 5.00E-11
Frequency Stability	
1s	$\leq$ 2.00E-12
10s	$\leq$ 5.00E-12
100s	$\leq$ 2.00E-12
1 Hour	$\leq$ 6.00E-12
Aging	
1 Day	$\leq$ 5.00E-12
1 Month	$\leq$ 5.00E-11
Phase Noise dBc/Hz in 1Hz BW	
	Option 1 Option 2
1Hz	-110dBc/Hz -113dBc/Hz
10Hz	-134dBc/Hz -138dBc/Hz
100Hz	-150dBc/Hz -152dBc/Hz
1kHz	-155dBc/Hz -155dBc/Hz
10KHz	-158dBc/Hz -158dBc/Hz
Harmonics	<-30dBc
Spurious	<80dBc
Start Up (Warm) Time	5 Minutes
Retrace	$\pm$ 3.00E-11
Adjustment	
Electrical	2.00E-09 Max
Control Voltage	0 ~ 5Vdc
Factory Setting	5.00E-11
Power Supply	
DC Minimum	+12V
DC Maximum	+15V
Power Consumption @ 25°C	
Warm Up	22W Max
Stabilized	6W
Temperature	
Operating	-20°C to +60°C
Storage	-40°C to +85°C
Humidity	90% (Non Condensing)
Frequency stability over operating temperature range	3.00E-10 (-20°C to +60°C)
Magnetic Field	
Sensitivity (Guass)	$\pm$ 2.00E-11
Atmospheric Pressure (mbar)	1.00E-13
Approx MTBF Stationary	100000 hours
Mechanical	
Dimension (Standard)	95.5 x 60 x 37mm LWH
Dimension (Option A)	91 x 55 x 30mm LWH

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