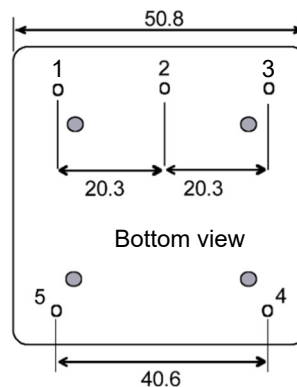
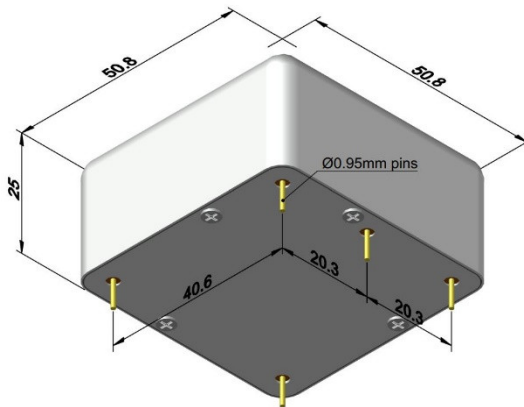


E10-MRX

The E10-MRX is a low cost rubidium oscillator is miniature atomic clock with excellent stability in 50 x 50mm package. This rubidium oscillator has 100 times less drift than OCXO's.

KEY FEATURES

- Frequency 10MHz
- Low phase noise
- Excellent short term stability
- Operating voltage: +5V, +12 to +18V
- 5×10^{-11} accuracy
- Temp stability available to 0.5ppb (-20°C to +60°C)
- 2" inch square package
- Sine wave or HCMOS

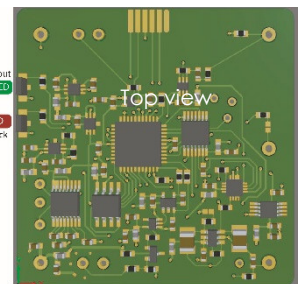
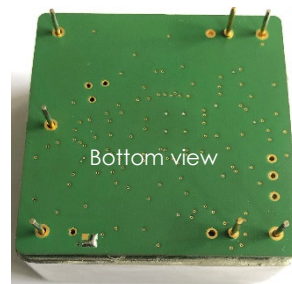


Pin	Function
1	Input frequency control
2	Lock monitor
3	Output signal
4	Ground
5	Power supply input

Optional E10-PPS locking module: The Quartzlock E10-PPS is designed using the digital phase lock loop system to discipline E10-MRX to 1PPS. The control algorithm used is designed to give optimum control results and the fastest possible acquisition from switch on. The Quartzlock E10-PPS is a board level product designed to lock a 10MHz rubidium to the 1PPS time mark signal generated from a GPS receiver, Cesium or Hydrogen maser. E10-PPS can generate stable 1PPS mark from the controlled rubidium.

Please contact sales to specify your requirement.

Option 95



Dimensions: 50x50mm

E10-MRX Specification

Outputs See options

10MHz +10dBm (± 2 dBm) sinewave into 50 Ohms
Options: HCMOS

Frequency Stability Allan Deviation

Gate time	Standard	Option A
$\tau = 1s$	5×10^{-11}	2×10^{-11}
$\tau = 10s$	2×10^{-11}	8×10^{-11}
$\tau = 100s$	7×10^{-11}	3×10^{-12}

Phase Noise (SSB)

10Hz	-95 dBc
100Hz	-125 dBc
1 kHz	-135 dBc
10KHz	-140 dBc

Harmonics

10MHz <-30dBc

Spurious

100 KHz BW <-70dBc

Aging (After 30 days)

Frequency	10MHz	Optional
Per day	5×10^{-12}	3×10^{-12}
Per Month	5×10^{-11}	3×10^{-11}
Per Year	5×10^{-10}	3×10^{-10}

Frequency accuracy

Accuracy at shipping $\pm 5 \times 10^{-11}$

Frequency retrace

After 1 hours of continues operation 3×10^{-11}

Frequency Adjustment

Electrical $\pm 2 \times 10^{-9}$ Positive slop, Control voltage 0 to +5V
Input impedance 10K Ohms

Warm up time

<6 minutes to lock at +25°C

7 minutes to $< 5 \times 10^{-10}$ at room temperature 25°C

Lock monitor output

Locked: Logic Low <0.5V
Unlocked: Logic High >4V

Included with shipment: Calibration certificate, Certificate of Conformance and 24 month warranty.

Environmental

Temperature :	Storage	-40°C +90°C
	Standard	-20°C +65°C < 0.3×10^{-9}
Temp stability :	Option E	-30°C +65°C < 0.5×10^{-9}
	Option F	-20°C +70°C < 0.5×10^{-9}
	Option G	-30°C +70°C < 0.5×10^{-9}

Relative humidity : 94% non-condensing

Magnetic Field sensitivity : 2×10^{-12} Gauss

Atmospheric pressure : -60m – 4000m 1×10^{-13} Per mbar

Approximate MTBF : 100,000 Hrs, Stationary

Dimensions without cover 50 x 50 x 25mm LWH
Weight <200gms

Power supply

DC power: +12 to +15V, +5V (optional)

Power consumption: 18W Max at start (25°C)
6W at steady state

Shock/Vibration

Mechanical Shock: IEC 60068-2-27, Test Ea: Acceleration of 50G peak amplitude for 11ms duration.

Vibration: IEC 60068-2-06, Test Fc: 10Hz-55Hz 1.5mm displacement, 55Hz-500Hz 10G acceleration.

EMI: Compliant to FCC Part 15, Class B.

Built-in options

Option 05: HCMOS

Option 06: +5V operating voltage

Option 18: Extended warranty to 3 years

Option 95: Add 1PPS locking module

Option 75: Low phase noise high stability [See E10-LN](#)

Contact us to configure this product to meet your requirement.

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