

Description

- The IQRB-2 low noise rubidium oscillator is a sub-miniature atomic oscillator combined with 'active noise filter' technology. This rubidium oscillator has 100 times less drift than OCXOs and with short term stability of 0.002ppb/s at 100s this rubidium oscillator provides significant improvements in performance over other rubidium components.
- Model IQRB-2
- Model Issue number 3

Frequency Parameters

- Frequency 10.0MHz
- Frequency Tolerance $\pm 0.05\text{ppb}$
- Tolerance Condition @ 25°C
- Frequency Stability $\pm 0.30\text{ppb}$
- Operating Temperature Range -30.00 to 65.00°C
- Short Term Stability (AVAR):
 - 1s 0.002ppb max
 - 10s 0.005ppb max
 - 100s 0.002ppb max
 - 1hr 0.006ppb max
- Ageing:
 - Day $\pm 0.003\text{ppb}$ max
 - Month $\pm 0.04\text{ppb}$ max
- Magnetic Field Sensitivity (Gauss): $\pm 0.02\text{ppb}$ max
- Retrace: $\pm 0.02\text{ppb}$ typ

Electrical Parameters

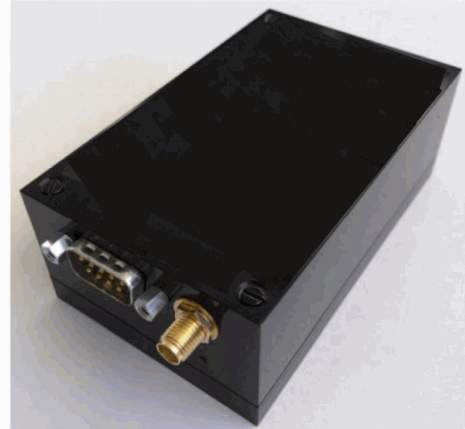
- Supply Voltage 12.0V
- Note: The device will operate over the Supply Voltage Range 12V to 15V.
- Input Power (@ 25°C): 6W @ 12V, 1.7A max.
- Warm Up Time: 5mins typ to lock @ 25°C.
- Lock Monitor: Pin 1 is high (5V) when out of lock and low (0V) when locked.

Frequency Adjustment

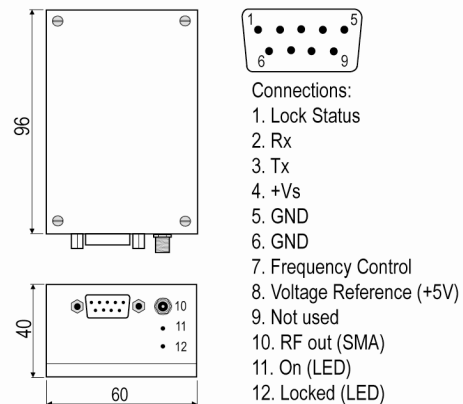
- Pulling $\pm 2\text{ppb}$ max
- Control Voltage 2.5V $\pm 2.5\text{V}$
- Input Impedance 10k Ω min
- Note: The oscillator will detect if no control voltage is applied to Pin 7 and will automatically set the control voltage internally to 2.5V.

Output Details

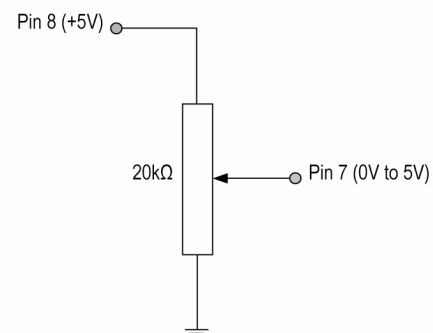
- Output Compatibility Sine
- Drive Capability 50 Ω
- Output Level: +7dBm $\pm 2\text{dBm}$
- Output Connector Type: SMA
- Rx and Tx connections for RS232 communication of the status of the oscillator.



Outline (mm)



Frequency Control & Voltage Reference Circuit



Sales Office Contact Details:

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USA: +1.760.318.2824

Email: info@iqdfrequencyproducts.com
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Noise Parameters

- Phase Noise (typ):
 - 113dBc/Hz @ 1Hz
 - 138dBc/Hz @ 10Hz
 - 152dBc/Hz @ 100Hz
 - 155dBc/Hz @ 1kHz
 - 158dBc/Hz @ 10kHz
- Harmonics: -30dBc max
- Spurious: -80dBc max

Environmental Parameters

- Storage Temperature Range: -40 to 85°C
- 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.
- Atmospheric Pressure: -60m to 4000m: 1×10^{-3} mbar max
- EMI: Compliant to FCC Part 15, Class B.

Manufacturing Details

- MTBF (Stationary): Approx 100000hrs

Compliance

- RoHS Status (2011/65/EU) Compliant
- REACH Status Non-Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Bulk Bulk pack
Pack Size: 1
- *Alternative packing option available*

Technical Notes

- *RoHS Compliance: 6/6*

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