

Quartzlock A10-Y

Ultra Low Noise Rubidium Oscillator

Uses Quartzlock Digital
PLL DDS Clean-up Loop
technology

10MHz -173 dBc/Hz noise floor
100MHz -180 dBc/Hz noise floor

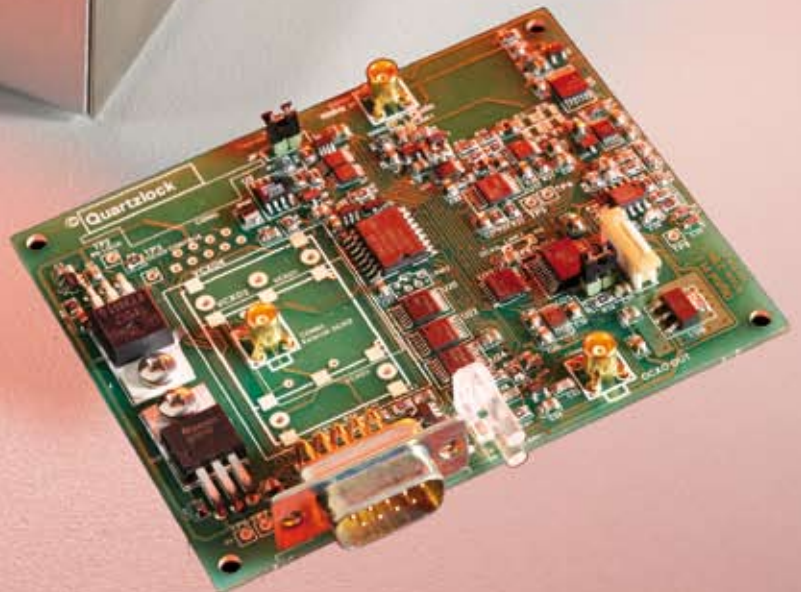


APPLICATIONS

Security, Low Noise Instrumentation Reference,
Radar, Navigation, RF & Microwave Test
Solution Reference, Secure Communications

BENEFITS

The use of ULN-Rb Oscillators enables: Weak
Signal Detection, Low Error Rates, Higher
Radar Sensitivity, Higher Definition in MRI
Imaging Systems



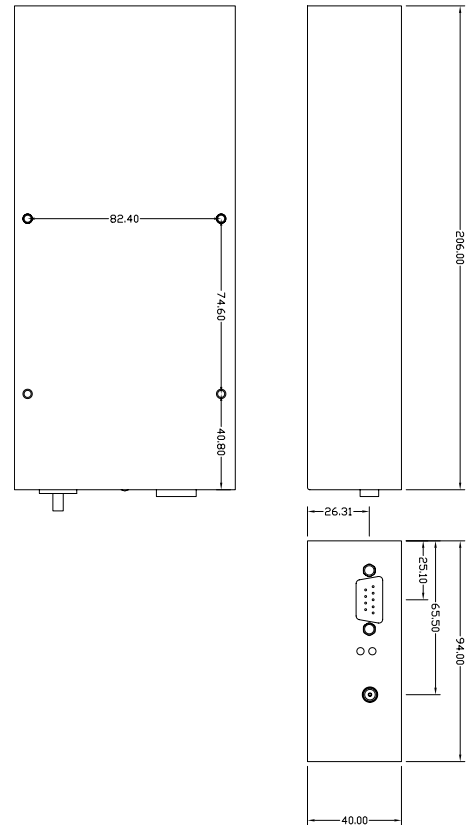
STANDARD SPECIFICATIONS This product replaces the HSRO

Output (100MHz ULN option)	10MHz, +7dBm into 50Ω, 0.5VRMS 1MHz to 40MHz output. Option 5MHz output (not using DDS). Option	
Adjustment Mechanical Range Electrical Range Control Voltage Factory Setting	2x10 ⁻⁹ min 2x10 ⁻⁹ min 0 ~ 5V ±5x10 ⁻¹¹	
Frequency Stability 100ms 1s 10s 100s 1day	Low Noise <1x10 ⁻¹² <1x10 ⁻¹² <1x10 ⁻¹² 4x10 ⁻¹³ x10 ⁻¹²	Ultra Low Noise x10 ⁻¹³ x10 ⁻¹³ x10 ⁻¹³ <4x10 ⁻¹³ x10 ⁻¹³
Aging 1 day 1 month 1 year	Low Noise 1x10 ⁻¹² 4x10 ⁻¹¹ 5x10 ⁻¹⁰	Ultra Low Noise x10 ⁻¹³ 4x10 ⁻¹¹ 5x10 ⁻¹⁰
Phase Noise dBc/Hz 1Hz 10Hz 100Hz 1kHz 10kHz 100kHz	Low Noise -110 -139 -157 -162 -168 -170	Ultra Low Noise -115 -148 -158 -165 -170 -173
Harmonics	<40dBc	
Spurious	<80dBc	
Warm time to 1x10⁻⁹	5min	
Retrace after 24h off & 1h on, same temp	<3x10 ⁻¹¹	
Power Supply Power at steady state at 25°C Freq offset over output voltage range	13W @ 24V (22~30Vdc) @ 25°C, Max 2A <2x10 ⁻¹¹	
Temperature Operating Storage Freq offset over operating temperature range	-20°C ~ +50°C -40°C ~ +70°C <3x10 ⁻¹⁰	
Magnetic Field Sensitivity Atmospheric Pressure Approx MTBF, Stationary	<2x10 ⁻¹¹ /Gauss -60m ~ 4000m <1x10 ⁻¹³ /mbar Approx MTBF, Stationary	
Mechanical	40x94x206mm, 1000g approx 1.6"x3.7"x8.1", 35oz approx	
Lock Indicator	on off short flash every second: long flash, short flash	not locked locked, low phase error locked, high phase error no processor clock
Interface	9.6kbaud, RS232, PC compatible, Windows front end program	
Interface Codes	see separate document	
Option 42	1MHz to 40MHz output. 5MHz output (not using DDS).	
Ask Quartzlock about new 100MHz Rb with -180dBc/Hz noise floor & options to +60° or 65°C output maintained – not to full spec		

PIN CONNECTIONS

- C1:** 'D' 9 Pin Male
C2: SMA RF Output
1. Lock
 2. GND
 3. GND
 4. Rx
 5. EXT control
 6. TX
 7. +24V
 8. VCXO monitor
 9. Lamp monitor

OUTLINE DRAWING



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