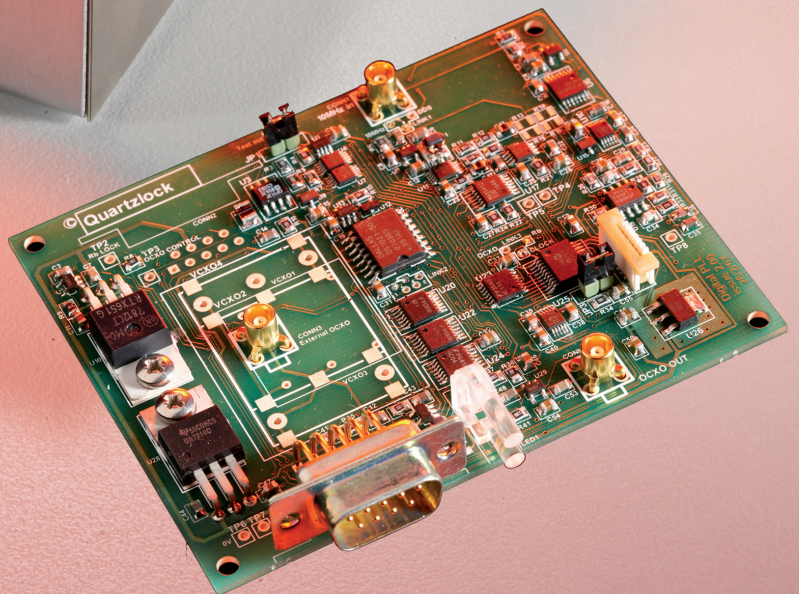


**Quartzlock** A10-Y

# Ultra Low Noise Rubidium Oscillator



Uses Quartzlock  
Digital PLL DDS  
Clean-up Loop  
technology



-173 dBc/Hz noise floor

## STANDARD SPECIFICATIONS

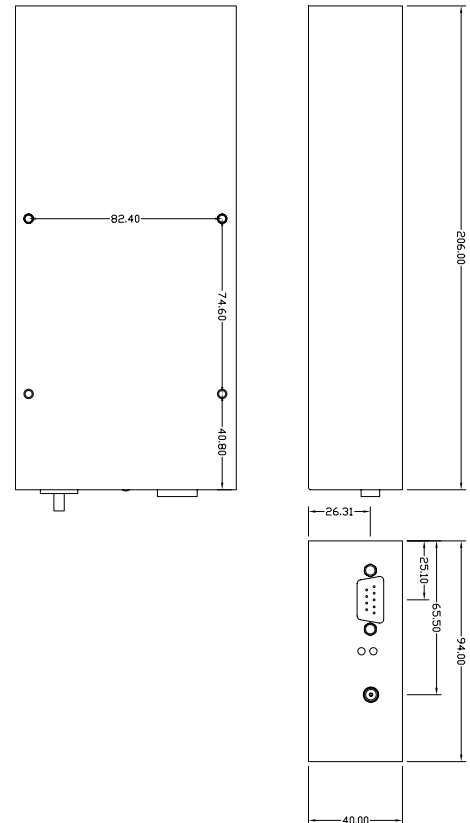
<b>Output</b>	10MHz, +7dBm into 50Ω, 0.5VRMS	
<b>Adjustment</b>	Mechanical Range 2x10 <sup>-9</sup> min Electrical Range 2x10 <sup>-9</sup> min Control Voltage 0 ~ 5V Factory Setting ±5x10 <sup>-11</sup>	
<b>Frequency Stability</b>	<b>Low Noise</b>	<b>Ultra Low Noise</b>
100ms	<1x10 <sup>-12</sup>	x10 <sup>-13</sup>
1s	<1x10 <sup>-12</sup>	x10 <sup>-13</sup>
10s	<1x10 <sup>-12</sup>	x10 <sup>-13</sup>
100s	4x10 <sup>-13</sup>	<4x10 <sup>-13</sup>
1day	x10 <sup>-12</sup>	x10 <sup>-13</sup>
<b>Aging</b>	<b>Low Noise</b>	<b>Ultra Low Noise</b>
1 day	1x10 <sup>-12</sup>	x10 <sup>-13</sup>
1 month	4x10 <sup>-11</sup>	4x10 <sup>-11</sup>
1 year	5x10 <sup>-10</sup>	5x10 <sup>-10</sup>
<b>Phase Noise dBc/Hz</b>	<b>Low Noise</b>	<b>Ultra Low Noise</b>
1Hz	-110	-115
10Hz	-139	-148
100Hz	-157	-158
1kHz	-162	-165
10kHz	-168	-170
100kHz	-170	-173
<b>Harmonics</b>	<40dBc	
<b>Spurious</b>	<80dBc	
<b>Warm time to 1x10<sup>-9</sup></b>	5min	
<b>Retrace</b> after 24h off & 1h on, same temp	<3x10 <sup>-11</sup>	
<b>Power Supply</b>	Power at steady state at 25°C 13W @ 24V (22~30Vdc) @ 25°C, Max 2A Freq offset over output voltage range <2x10 <sup>-11</sup>	
<b>Temperature</b>	Operating -20°C ~ +50°C (option to +65°C output maintained – not to full spec) Storage -40°C ~ +70°C Freq offset over operating temperature range <3x10 <sup>-10</sup>	
<b>Magnetic Field</b>	Sensitivity <2x10 <sup>-11</sup> /Gauss Atmospheric Pressure -60m ~ 4000m <1x10 <sup>-13</sup> /mbar Approx MTBF, Stationary	
<b>Mechanical</b>	40x94x206mm, 1000g approx 1.6"x3.7"x8.1", 35oz approx	

## PIN CONNECTIONS

**C1:** 'D' 9 Pin Male  
**C2:** SMA RF Output

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.

## OUTLINE DRAWING



<b>LOCK INDICATOR</b>	on	not locked
	off	locked, low phase error
	short flash every second:	locked, high phase error
	long flash, short flash	no processor clock

**INTERFACE** 9.6kbaud, RS232, PC compatible, Windows front end program

**INTERFACE CODES** see separate document

**OPTIONS** Alternate output frequencies from 1MHz to 40MHz

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