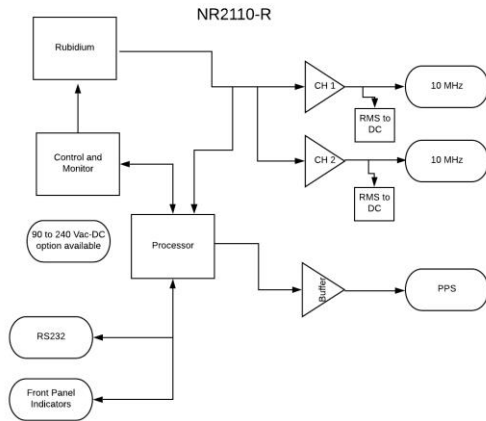


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# NR2110-R

## 10MHz Rubidium Frequency Reference, Dual Channel



Dual Channel 10 MHz Rubidium Reference

High-performance Rubidium 10 MHz frequency reference. Dual channel, fault and transient-protected with simulated PPS.

### Rubidium Stability

1 ppb/year

### Typical Phase Noise

Offset (Hz)	dBc / Hz
10	- 85
100	-115
1K	-135
10K	-140

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## Technical Specifications

<b>Output 10 MHz Sine</b>	10 MHz, 0.5 Vrms $\pm$ 0.1, into 50 Ohms, two channels, Sine
Harmonic Distortion	< -30 dBc
Yearly Aging	< $\pm$ 1 ppb
Connectors	BNC
<b>Output Simulated PPS</b>	200 ms pulse width, 50 Ohm load, 3.3 or 5 Volt CMOS
connector	BNC
<b>Remote interface &amp; control</b>	
Protocol	RS232 NMEA-0183
Connector	DB-9
Location	Rear panel
Protocol	Bit plus stop
Standard Baud Rates	Selectable 4800, 9600, 19200, 38400, 57600 or 115200 bps
<b>Rubidium Atomic</b>	
Accuracy at shipment	+/-5.0E-11
Warm-up time	<15 minutes
Time of lock	<2 minutes
Time to achieve accuracy	< $\pm$ 1E-9 < 20 minutes
Aging daily (after 30 days)	<1E-11
Aging - monthly	< $\pm$ 5E-11
Aging - yearly	< $\pm$ 1.0E-9
Temp Stability	<=0.4 ppb -10 to 50°C
<b>Stability: Allan Deviation</b>	
1s	<2E-10
10s	<4E-11
100s	<2E-11
<b>SSB phase noise for 10MHz</b>	
	Standard
1 Hz	<-60dBc
10Hz	<-85dBc
100Hz	<115dBc
1000Hz	<-135dBc
10000Hz	<-140dBc
<b>Indicator</b>	three LEDs - Oven/Lock, Fault, Alert
<b>Relay</b>	Solid State relay 50Volt , 50 mA

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## Environmental and Mechanical

Operating temperature	-10 to 50°C non-condensing
Storage temperature	-40 to 70°C
Height	1RU (~1.73)
Width	19 inches
Depth	12 inches
Weight	≈5.5lbs.
AC input	90 to 250 VAC, 50/60hz, less than 10 watts (DC power options available)

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