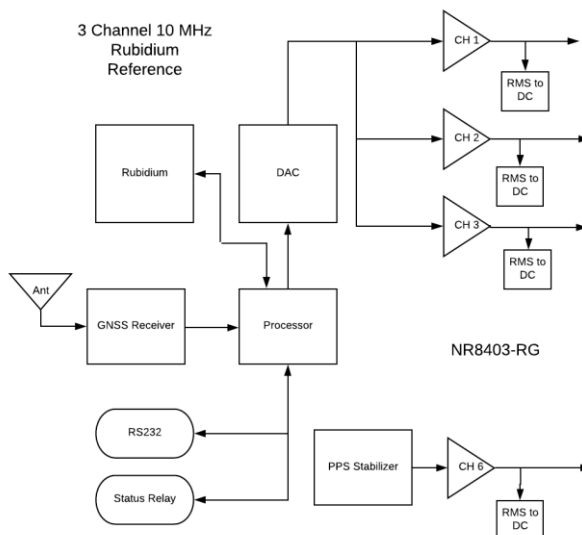


## NR8403-R

### Three Channel Rubidium Reference



### Rubidium Based Reference

Aging  $\leq \pm 5E-11$  Monthly

### Phase Noise

Offset Frequency (Hz)	Typical (dBc / Hz)
10	-95
100	-125
1K	-140
10K	-140

This reference brings exceptional stability in an economical package. There are three 10 MHz outputs plus a PPS and NMEA. External locking options allows the unit to be locked to an external PPS or 10 MHz reference. The unit is available as a 10 MHz reference or 50 MHz.

<b>Output</b>			10 MHz, 0.4 Vrms $\pm 0.1$ , into 50 Ohms
Accuracy at Shipment			$< \pm 1E-10$
Locked			$< 1E-11$
Harmonic Distortion			$< -30$ dBc
Power			DC options and AC power adapter available- $< 15$ W start, $< 10$ W steady state
Alert			20Vdc/Vac, 0.1 Amp relay contacts- relay closed for normal condition, BNC
Warm-up time			$< 15$ minutes
Time of lock			$< 5$ min $-130$ dBm
<b>Rubidium Atomic</b>			
Accuracy at shipment			$\pm 1.0E-10$
Warm-up time			$< 15$ minutes
Time of lock			$< 5$ min $-130$ dBm
Time to achieve accuracy			$< \pm 1E-9$ $< 20$ minutes
Aging - monthly			$< \pm 5E-11$
Retrace			$< \pm 1E-10$ after 1 hour
<b>SSB Phase noise for 10Mhz</b>			
		Standard	Low Noise Option
	10Hz	$< -95$	$< -110$ dBc
	100Hz	$< -125$	$< -150$ dBc
	1000Hz	$< -140$	$< -155$ dBc
	10000Hz	$\leq -145$	$< -160$ dBc
Harmonic		$< 40$ dBc	
Non-Harmonic		$< -80$ dBc	
<b>Simulated PPS</b>			
Amplitude for 1PPS			3.3 Vdc CMOS (5 Vdc option)
Pulse width for 1PPS			Programmable 1 to 500ms in 1 ms steps
Rise time for 1PPS			$< 5$ ns (faster edge available)
Connector			BNC
Load Impedance			50 Ohm
Location			rear

<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>Main Power</b>		
DC input	-60 to +60 in three ranges	
Power	<6 W ( steady state < 10 W)	
<b>Warranty</b>	1 year	

### *Environmental and Mechanical*

Operating Temperature	0 to 50°C non-condensing
Storage Temperature	-40 to 70°C
Height	1.58"
Width	6"
Depth	6" exclusive of connectors
Weight	1.5 lbs

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