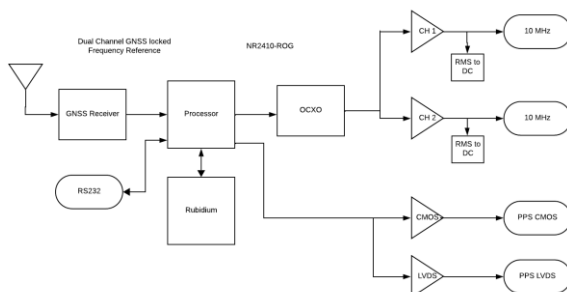


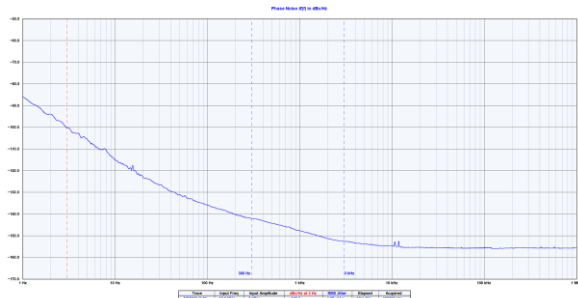
NR2410-ROG

10MHz, Low Noise, Dual Channel, GNSS Locked, Rubidium Reference



Phase Noise

Offset Frequency (Hz)	Typical (dBc / Hz)
10	-115
100	-135
1K	-145
10k	-155



High Performance reference featuring the low phase noise of an OCXO, holdover performance of Rubidium and long-term stability of GNSS locking. PPS output at CMOS levels can drive 50 Ohm load. PPS also present as LVDS on the rear panel. NMEA data available on serial port.

Technical Specifications

Output	10 MHz, 1.0 Vrms ± 0.2 , into 50 Ohms, two channels, Sine
Harmonic Distortion	< -30 dBc
Connectors	BNC
PPS	
Amplitude for 1PPS	3.3 Vdc CMOS (5 Vdc option)
Pulse width for 1PPS	Programmable 1 to 500ms in 1 usec steps
Rise time for 1PPS	<2 ns
Connector	BNC
Load Impedance	50 Ohm
LVDS	Three pin connector on rear (Phoenix 1757255, mates with 1757022)
Location	rear
GNSS receiver	GPS L1 C/A, GLONASS L1OF, QZSS L1 C/A, SBAS L1 C/A (Ready): Galileo E1B/E1C, QZSS L1S
Channels	26 channels (GPS, GLONASS, QZSS, SBAS)
Sensitivity	
GPS	Tracking: -161 dBm
	Hot Start: -161 dBm
	Warm Start: -147 dBm
	Cold Start: -147 dBm
	Reacquisition: -161 dBm
GLONASS	
	Tracking: -157 dBm
	Hot Start: -157 dBm
	Warm Start: -143 dBm
	Cold Start: -143 dBm
	Reacquisition: -157 dBm
	With Novus recommended antenna
Antenna with LNA	
Antenna power	3.5 Vdc, < 35 ma (on center conductor) (factory configurable to 5 Vdc)
Frequency	1574-1607 MHz
Nominal Gain	2 dBic
Amplifier gain	26 dB
Noise Figure	< 2.0 dB
Out of Band rejection	Fo \pm 50MHz=60 dBc, Fo \pm 60 MHz
DC current	<25 ma@3.5 Vdc

Remote interface & control		
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	
Rubidium Atomic		
Accuracy at shipment	+/-1.0E-10	
Warm-up time	<15 minutes	
Time of lock	<5 min -130 dBm	
Time to achieve accuracy	<±1E-9<20 minutes	
Aging - monthly	<±5E-11	
Stability: Allan Deviation		
1s	<3E-10	
10s	<1E-10	
100s	<3E-11	
SSB Phase noise for 10Mhz		
	Standard	
10Hz	<-115dBc	
100Hz	<135dBc	
1000Hz	<-145dBc	
10000Hz	<-155dBc	

Environmental and Mechanical

Operating temperature	0 to 50C non-condensing	
Storage temperature	-40 to 70C	
Height	1.5 inches	
Width	7.0 inches	
Depth	7.5 inches	
AC input	90 to 250 VAC, 50/60hz, less than 10 watts power adapter	
Weight	≈1.5lbs	

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