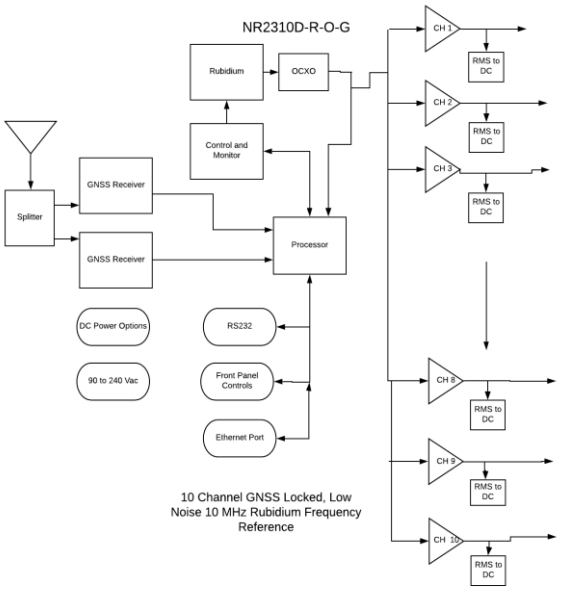
PRECISION TIMING PRODUCTS	**Company Datasheet #**	NR2310D-ROG
	Date:	260410

NR2310D-ROG

10MHz, Low Noise, 10 Channel, GNSS Locked, Rubidium Reference with Networking Capability





Networking

SNMP option

Phase Noise

Offset Frequency (Hz)
Typical (dBc / Hz)

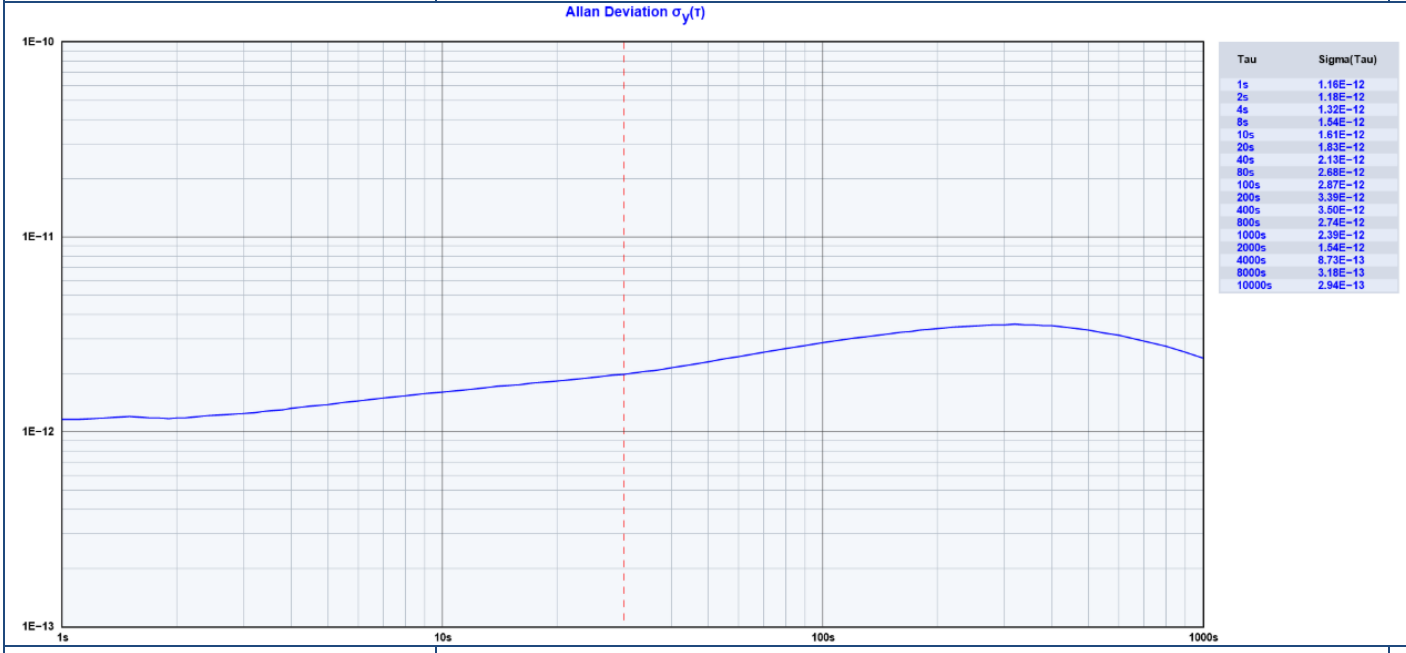
1Hz	-103
10Hz	-129
100Hz	-152
1kHz	-154
10kH	-157
100kHz	-158
1MHz	-158

High Performance reference featuring the low phase noise of an OCXO, holdover performance of Rubidium and long-term stability of GNSS locking. Dual-time base option continuously monitors timing performance. Networking affords remote control and monitoring via SNMP.

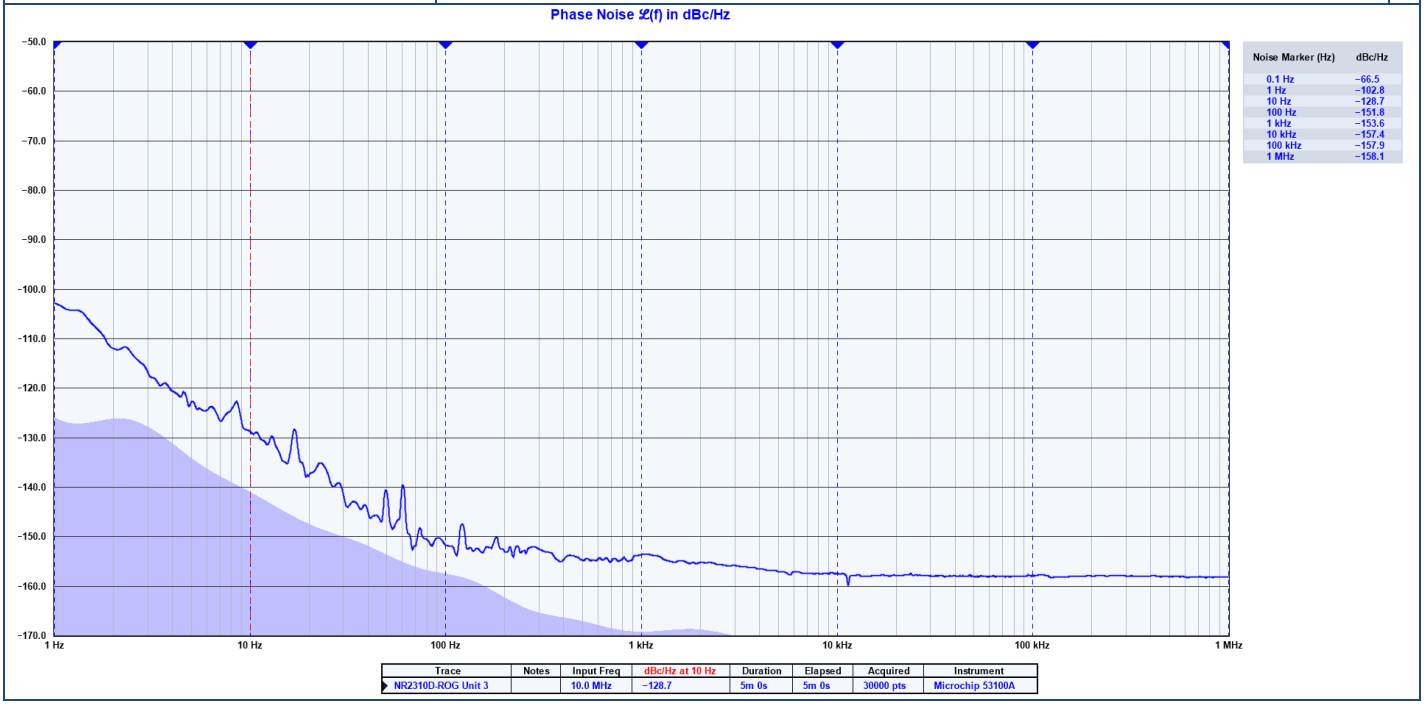
Technical Specifications

Output	10 MHz,1.0 Vrms ±0.2, into 50 Ohms, 10 channels, Sine	
Harmonic Distortion	< -30 dBc	
Connectors	Available with either BNC or SMA connectors	
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	<5 ns	
Connector	SMA	
Load Impedance	50 Ohm	
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±50MHz=60 dBc, Fo±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	
SNMP (option)		
Remote monitoring & control	Internet	
Parameters monitored Locally – present on remote interface for monitoring	Output amplitude, all power supplies, GNSS lock status, number of satellites, Built-In test status,	
Transaction/decodable commands	English format	
Single monitoring command	Updated every second	
Connector	RJ-45	
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	
Retrace	<±1E-10 after 1 hour	
Stability: Allan Deviation		
1s	<1.2E-12	
10s	<1.6E-12	
100s	<2.9E-12	
1000s	<2.4E-12	
10000s	<3.0E-13	



SSB Phase noise for 10Mhz	
	Standard dBc
0.1Hz	-66
1Hz	-103
10Hz	-129
100Hz	-152
1kHz	-154
10kHz	-157
100kHz	-158
1MHz	-158



Environmental and Mechanical

Operating temperature	0 to 50C non-condensing
Storage temperature	-40 to 70C
Height	1RU (~1.73)
Width	19 inch
Depth	12 inch
AC input	90 to 250 VAC, 50/60hz, less than 10 watts (DC power options available)
Weight	≈5.5lbs

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