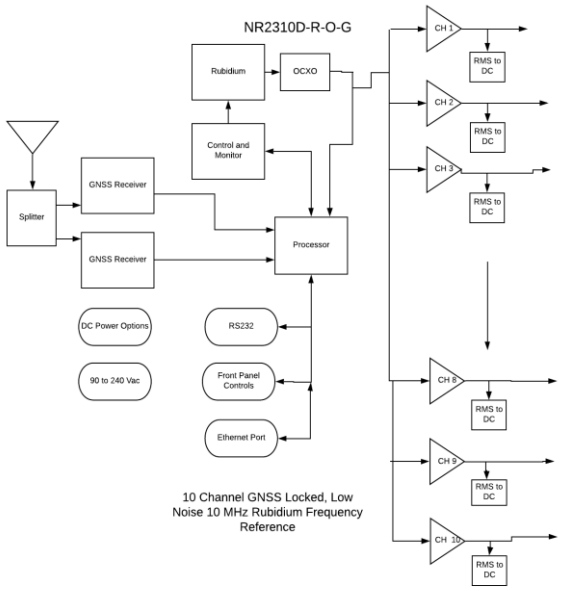
Company Datasheet #	NR2310DROG
Revision #:	C
Date:	041922

NR2310D-R-O-G

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



Networking

SNMP option

Phase Noise

Offset Frequency (Hz)	Typical (dBc / Hz)
10	-125
100	-140
1K	-145
10k	-150

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	<10 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	+/-5.0E-11
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	<3E-10
10s	<1E-10
100s	<3E-11
SSB Phase noise for 10Mhz	
	Standard
10Hz	<-125dBc
100Hz	<140dBc
1000Hz	<-145dBc
10000Hz	<-150dBc

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