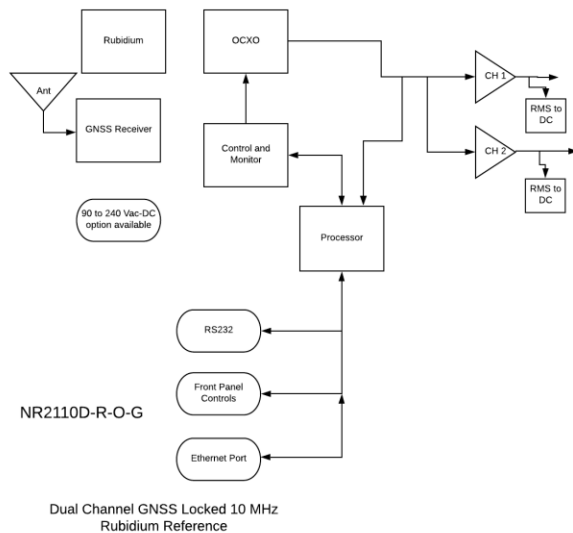


Company Datasheet #	NR2110DROG
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# NR2110D-R-O-G

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



### Networking

SNMP option

### Phase Noise

Offset Frequency (Hz)	Typical (dBc / Hz)
10	-130
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. Networking affords remote control and monitoring via SNMP.

## Technical Specifications

<b>Output</b>	10 MHz, 1.0 Vrms $\pm 0.2$ , into 50 Ohms, 10 channels, Sine
Harmonic Distortion	< -30 dBc
Yearly Aging	< $\pm 1$ ppb
Connectors	BNC
<b>PPS</b>	
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
<b>GNSS receiver</b>	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
<b>Antenna with LNA</b>	
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
<b>Remote interface &amp; control</b>	
Protocol	RS232 NMEA-0183
Connector	DB-9

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Location	Rear panel
Protocol	Bit plus stop
Standard Baud Rates	Selectable 4800, 9600, 19200, 38400, 57600 or 115200 bps
<b>SNMP (option)</b>	
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
<b>Rubidium Atomic</b>	
Accuracy at shipment	+/-5.0E-11
Warm-up time	<15 minutes
Time of lock	<5 min -130 dBm
Time to achieve accuracy	< $\pm 1E-9$ <20 minutes
Aging - monthly	< $\pm 5E-11$
Aging - yearly	< $\pm 1.0E-9$
Stability: Allan Deviation	
1s	<3E-10
10s	<1E-10
100s	<3E-11
SSB Phase noise for 10Mhz	
	Standard
10Hz	<-125dBc
100Hz	<155dBc
1000Hz	<-160dBc
10000Hz	<-160dBc

***Environmental and Mechanical***

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

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