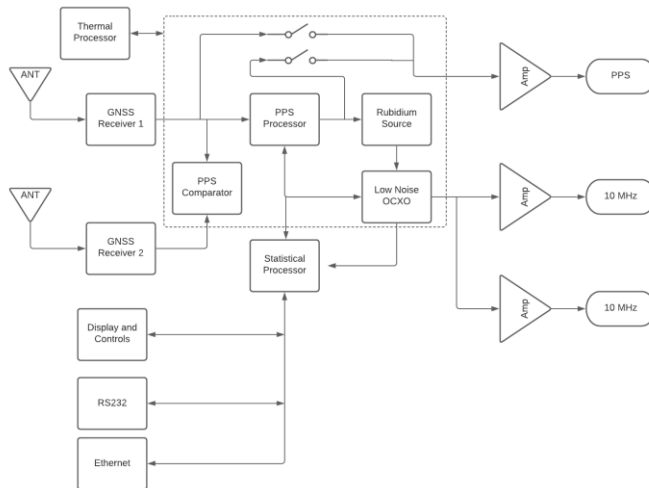


NR2110D-R-O-G-HS

**High Stability 10MHz, Low Noise, Dual Channel,
GNSS Locked, Rubidium Reference with
Networking Capability**



High performance reference offering low phase noise and outstanding stability. Dual GNSS receivers provide continuous equipment monitoring. Thermally isolated control loops prevents thermal drift. Low noise OCXO locked to GNSS locked reference achieves excellent phase noise. Local and remote control via RS232 or Internet access.

Allan Deviation

< E-13 @ 10,000 sec.,

Phase Noise

Offset Frequency (Hz)	Typical (dBc / Hz)
10	-135
100	-150
1K	-160

Technical Specifications

Output	10 MHz, 1.0 Vrms \pm 0.2, into 50 Ohms, two channels, Sine
Harmonic Distortion	< -30 dBc
Yearly Aging	< \pm 1 ppb (unlocked)
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	<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	Two or can be ordered with an internal splitter
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

Company Datasheet #	NR2110DROG
Revision #:	A
Date:	07012020

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
Aging - yearly	<±1.0E-9
Stability: Allan Deviation	After 24 hour warm up
1s	<3E-11
10s	<5E-12
100s	<5E-12
1000s	<2 E-12
SSB Phase noise for 10Mhz	
	Standard
10Hz	<-135 dBc
100Hz	<155 dBc
1000Hz	<-160dBc
10000Hz	<-160dBc
Display	OLED 4 line display



Company Datasheet #	NR2110DROG
Revision #:	A
Date:	07012020

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	

This document is copyright © October 23, 2020 Novus Power Products LLC. All rights reserved. This document is provided for information purposes only; contents are subject to change without notice. It is not warranted to be error-free, nor subject to any other warranties or conditions including implied warranties and conditions of merchantability or fitness for a particular purpose.