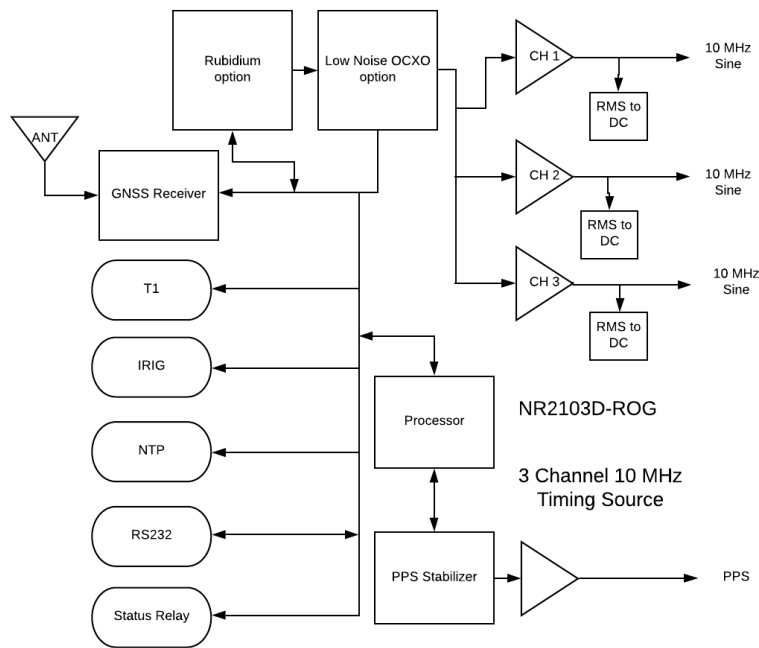


DATA SHEET	NR2103D-O/G
REVISION	A
DATE	091520

NR2103D-O-G GNSS Locked Timing Reference



Low Noise OCXO

Low phase noise and excellent holdover stability.

High Sensitivity GPS Receiver

The 26 channel GNSS receiver is a high correlator design that can perform very rapid sky searches for satellite signals even under very poor signal conditions.

Low Phase Noise (option)

Typical

Offset (Hz)	(dBc / Hz)
10	-115
100	-144
1k	-150
10k	-155

Rubidium for PPS Holdover

OCXO	<1 ms/day
Rb	<20 usec/day

A GNSS Locked precision frequency reference that supports a number of timing protocols: NTP, IRIG, T!-Clock. In addition to the timing protocols the unit offers three channels of 10 MHz, PPS and NMEA. The T1- Clock port is programmable port from .1 to 25 MHz. Rubidium and low noise options allow a customize fit for your application



DATA SHEET

NR2103D-O/G

REVISION

A

DATE

091520

Output	10 MHz, 0.5 Vrms ± 0.2 , into 50 Ohms, 3 channels, Sine
Harmonic Distortion	< -30 dBc
Yearly Aging	± 1 ppb
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 \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
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
IRIG-B (option)	
IRIG-B (Sine)	3Vpp 1kHz modulated sine (500Ω min termination impedance), 10/3 Mark to Space ratio, +/-35us relative to PPS
IRIG-B (DCLS)	5V or 3.3V unmodulated pulse (200Ω minimum termination impedance), +/-1us relative to PPS
T1 Clock (option)	
Terminal strip 3 pin	1.544 MHz 3 Vpp, Locked to GNSS ±10 ppb
	(Optional) 0.1MHz to 25MHz programable, Programmable pulse pattern
Rubidium Atomic (Optional)	
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	
1s	<3E-10
10s	<1E-10
100s	<3E-11
SSB Phase noise for 10Mhz	
	Standard
10Hz	<-85dBc
100Hz	<115dBc
1000Hz	<-135dBc
10000Hz	<-140 dBc



DATA SHEET	NR2103D-O/G
REVISION	A
DATE	091520

Main Power	
AC input	110 to 240 Vac
Frequency	47 to 63 Hz
Power	<10 W
DC power option	
Voltage	Options from ± 10 to 50 Vdc, configurable as primary or back-up
Warranty	2 year



Users manual	NR2310D-ROG
Revision #:	C
Date:	2/7/18

Environmental and Mechanical

Operating temperature	0 to 50°C non-condensing
Storage temperature	-40 to 70°C
Height	1RU (~1.73 inches)
Width	19.0 inches
Depth	13.0 inches
AC input	90 to 250 Vac, 50/60Hz, less than 10 watts

This document is copyright © October 20, 2018 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.