

NR7000-OG-T *pico*POD

100 MHz GNSS-Locked Reference with NMEA and PPS



The NR7000 *pico*POD is a high-performance reference in an ultra-compact package that affords simple system integration.

The *pico*POD is just 2"x2"x0.9" and requires only a 5 Vdc source. Outputs are a 8 dBm sinewave or LVCMOS 100 MHz output, PPS at 3.3 Vdc, and NMEA at LVCMOS or RS232 levels. The *pico*POD can also lock to an external pulse or provide pulse timing.

A low phase noise MEMS at -132dBc/Hz@1000Hz plus low g- sensitivity

Low Power Consumption

Steady state power < 2 W. With a single 5V input, the *pico*POD provides active antenna power at 3.5V (35mA).

High Sensitivity GNSS Receiver

The 72 channel high-sensitivity receiver can track multiple constellations simultaneously and provide outstanding positioning accuracy in scenarios where urban canyon or weak signals are involved. F

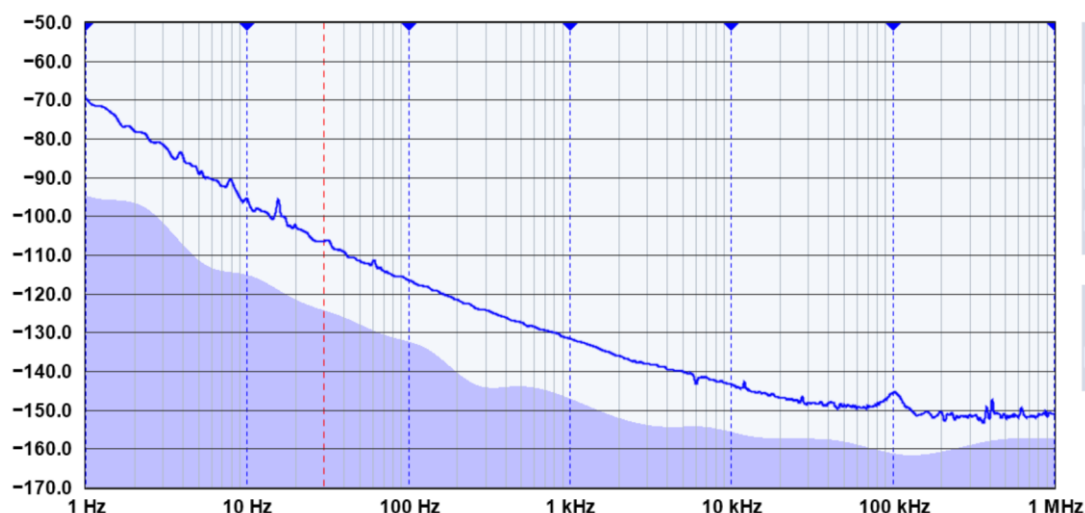
Auto Cal

The unit stores the temperature/time performance of the holdover crystal multiple times per day. If GPS is lost, the unit uses the last best-known compensation.

Technical Specifications

10 MHz sine	8 ±2 dBm ,50 Ohm - SMA
Locked stability (AD)	<~E-12 after 1000 seconds
First year frequency stability	±100 ppb (long-term unlocked)
Temperature stability	±100 ppb (unlocked)
Acceleration Sensitivity	0.07ppb/g
Yearly aging	±40ppb (unlocked)
Phase noise	
	-68 dBc/Hz @ 1Hz
	-96 dBc/Hz @ 10 Hz
	-117 dBc/Hz @ 100Hz
	-132 dBc/Hz @ 1000Hz
	-144 dBc/Hz @ 10kHz
	-152 dBc/Hz @ 100kHz
	-154 dBc/Hz @ 1MHz

Phase Noise $\mathcal{L}(f)$ in dBc/Hz



Noise Marker (Hz)	dBc/Hz
0.1 Hz	-47.1
1 Hz	-69.5
10 Hz	-95.4
100 Hz	-116.4
1 kHz	-131.5
10 kHz	-143.3
100 kHz	-145.4
1 MHz	-150.7

PM Spur Offset (Hz)	dBc
33360	-110.6
62280	-108.6

Trace	Notes	Input Freq	dBc/Hz at 30 Hz	Duration	Elapsed	Acquired	Instrument
NR7000-OG locked #1 FD		100.0 MHz	-106.4	5m 0s	5m 0s	30000 pts	Microchip 53100A

PPS

Amplitude for 1PPS	3.3 Vdc CMOS
Accuracy	1σ20 ns, Max accuracy < 60 ns (99%)
Pulse width for 1PPS	Programmable 1 to 500ms in 1 ms steps
Rise time for 1PPS	<2ns
Connector	10 Pin 0.1" (Samtec IPL1-105-01-L-D-RA-K)
Load Impedance	500 Ohm
Location	Side Connector
Remote interface & control	
Protocol	RS232 NMEA-0183

Connector	Side connector
Location	side panel
Protocol	Bit plus stop
Standard Baud Rates	Selectable: 19200, 38400, 57600 or 115200 bps
GNSS receiver	72-channel u-blox M8 engine GPS L1C/A, GLONASS L1OF, BeiDou B1I
Sensitivity	
GPS and GLONASS	Tracking: -160 dBm
	Hot Start: -157 dBm
	Cold Start: -148 dBm
	Reacquisition: -160 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
Secondary Channel	Derived from 70 MHz master oscillator locked to 100 MHz. Sub 1 Hz to 25 MHz. Contact factory for valid synthesis values.
	Output impedance is 200 Ohm.
Power	5 to 6 VDC Peak power < 3 watts, steady state < 2 watts
Power connector	On ten pin connector
Mounting	4 – M3.5x0.6 threaded mounting holes
Chassis	Aluminum

Environmental and Mechanical

Operating temperature	-20 to 50°C non-condensing (extended temperature range available)
Storage temperature	-40 to 70°C
Width	2"
Depth	2" (exclusive of connectors)
Height	0.9"
Weight	~3 oz

This document is copyright © 2026 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.