

DATA SHEET	NR7000-OG-100
REVISION	A
DATE	112024

NR7000-OG *pico*POD

100 MHz GNSS-Locked OCXO 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 10 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 OCXO at -130dBc/Hz@1000Hz provides a holdover stability of ±100 ppb/year.

Low Power Consumption

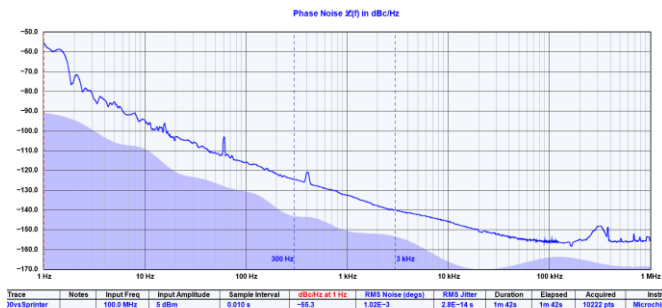
Steady state power < 2 W. With a single 5V input, the *pico*POD provides active antenna power at 3.5V (35mA).

High Sensitivity GNSS Receiver

The 72 channel high-sensitivity, high-performance positioning engine with real time kinematic (RTK) technology. to meet the needs of unmanned vehicles and other machine control applications requiring accurate guidance.

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.



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Technical Specifications

10 MHz sine	8 ±2 dBm ,50 Ohm - SMA
Harmonics	Less than -30 dBc
Locked stability (AD)	<~E-12 after 1000 seconds
First year frequency stability	±100 ppb (long-term unlocked)
Temperature stability	±300 ppb (unlocked)
Yearly aging	±100ppb (unlocked)
Phase noise	
	-60 dBc/Hz @ 1Hz
	-95 dBc/Hz @ 10 Hz
	-115 dBc/Hz @ 100Hz
	-130 dBc/Hz @ 1000Hz
	-145 dBc/Hz @ 10kHz
	-150 dBc/Hz @ 100kHz
PPS	
Amplitude for 1PPS	3.3 Vdc CMOS
Accuracy	1σ10 ns Max accuracy < 40 ns
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: 9600, 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	

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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 200 MHz master oscillator locked to 10 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

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