

DATA SHEET	NR7000-OG
REVISION	B
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NR7000-OG *pico*POD

10 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 -155dBc/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 26 channel high-sensitivity, high-accuracy multi-GNSS receiver supports TRAIM, GPS, GLONASS, QZSS, SBAS, active anti-jamming and advanced multipath mitigation functions.

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	
	-90 dBc/Hz @ 1Hz
	-120 dBc/Hz @ 10 Hz
	-135 dBc/Hz @ 100Hz
	-145 dBc/Hz @ 1000Hz
	-155 dBc/Hz @ 10kHz
	-160 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	
	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

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	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±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 -#4-40 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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