

NR7000-OG *pico*POD-N

10 MHz GNSS-Locked Reference with NMEA and PPS for use in dynamic environments



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. Output options are 0.5Vrms 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 MEMS at -140dBc/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 ize multiple constellations simultaneously and provide outstanding positioning accuracy in scenarios where urban canyon or weak signals are involved.

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	0.5+/-0.1Vrms, 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	±100 ppb (unlocked)
Acceleration Sensitivity	0.07ppb/g
Yearly aging	±100ppb (unlocked)
Phase noise	
	-80 dBc/Hz @ 1Hz
	-110 dBc/Hz @ 10 Hz
	-130 dBc/Hz @ 100Hz
	-140 dBc/Hz @ 1000Hz
	-155 dBc/Hz @ 10kHz
	-155 dBc/Hz @ 100kHz
PPS	
Amplitude for 1PPS	3.3 Vdc CMOS
Accuracy	30ns RMS, 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 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+/-0.2Vdc, < 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 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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