	DATA SHEET	NR7000-OG-T
	REVISION	C
	DATE	120425

NR7000-OG-T *pico*POD

10 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 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 canyor 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	
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	±40ppb (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	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 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