

DATA SHEET	NR4330-OG
REVISION	A
DATE	5-1-20

NR4330-OG

10 MHz GNSS-Locked Reference, OCXO Based, Secondary Synthesized Channel, Time Stamp, Stabilized PPS and optional LVDS



The NR4330-OG features extremely low frequency jitter despite being GNSS-locked. GNSS-locking brings a long-term stability to an OCXO that is difficult to match. Locking an OCXO to the GNSS presents its own set of problems. The timing information from the GNSS is burdened with all the noise one would expect from a RF link - multi-path, reflections etc. Long-term stability is enhanced frequently at the expense of “close-in” stability. Low frequency components from the RF link are introduced to the OCXO - often degrading the Allan Deviation of the OCXO. The NR4330-OG uses a unique crystal and proprietary control loop to minimize “close-in” degradation while securing long-term stability. Optional LVDS can be configured for PPS or 10 MHz.

Synthesized Secondary Channel

Provides a secondary frequency locked to GNSS.

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.

Ultra -Low P-P Frequency Jitter

Jitter < 1 ns locked performance of the holdover crystal multiple times per day. If GPS is lost, the unit uses the last best-known compensation.

Time Stamp

100 ns resolution @ 10 kHz rate

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Technical Specifications

10 MHz sine	13 ±2 dBm ,50 Ohm -MCX
Harmonics	Less than -30 dBc
Locked stability (AD)	<~E-11 after 1000 seconds
First year frequency stability	±50 ppb (unlocked)
Temperature stability	±10 ppb (unlocked)
Yearly aging	±50ppb (unlocked)
Secondary channel	1 Hz to 1 MHz GNSS-locked
Secondary duty cycle	45 to 55%
Time Stamp	100ns resolution with time stamp rate < 10 kHz
PPS	
Amplitude for 1PPS	3.3 Vdc CMOS (5 Vdc option)
Pulse width for 1PPS	Programmable 1 to 500ms in 1 ms steps
Rise time for 1PPS	<20 ns (faster edge available)
Connector	MMCX
Load Impedance	1000 Ohm
Remote interface & control	
Protocol	RS232 NMEA-0183 (available option 3.3 Vdc CMOS)
Connector	10 Pin header
Protocol	Bit plus stop
Standard Baud Rates	Selectable 4800, 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
	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

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Out of Band rejection	Fo±50MHz=60 dBc, Fo±60 MHz
DC current	<25 ma@3.5 Vdc
Receiver sensitivity	-155dBm (antenna power 3.5 Vdc less than 30 ma)
Connectors	MCX 10 MHz output
	MCX secondary output
	MMCX PPS 3.3 Vdc CMOS
	3 pin LVDS connector, +,-, gnd , mates with ON Shore OSTTJ0311530
NEMA Data	RS232 port- 38.4 kbaud (baud rate selectable)
Power Connector	2-pin power connector - power in. Mates with On Shore Tech OSTTJ0411530
Power	+5+-0.1 Vdc @ < 5 Watts (on ten pin header or 2 pin Molex)

Environmental and Mechanical

Operating temperature	0 to 50°C non-condensing (extended temperature range available)
Storage temperature	-40 to 70°C
Width	2.5"
Depth	5.0" (exclusive of connectors)
Height	1.13"
Weight	~8 oz

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