

| | |
|------------|-----------|
| DATA SHEET | NR4330-OG |
| REVISION | B |
| DATE | 4-6-21 |

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

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 |
| Time Stamp | |
| Input | 3.3 Vdc CMOS 1000 Ohm load Stamps to 100 ns resolution. |
| Secondary channel | |
| Output | 3.3 Vdc CMOS 1000 Ohm load 16 bit matching counter allows frequencies from sub-Hertz to 10 MHz |
| 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 |

| | |
|------------|-----------|
| DATA SHEET | NR4330-OG |
| REVISION | B |
| DATE | 4-6-21 |

| | | |
|-------------------------|---|--|
| | 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 | |
| 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 | |

This document is copyright © April 6, 2021 Novus Power Products LLC. All rights reserved. This document is provided for information purposes only; contents are subject to change without notice. It is not warranted to be error-free, nor subject to any other warranties or conditions including implied warranties and conditions of merchantability or fitness for a particular purpose.