

Company Datasheet #	NR-4400-T
Revision #:	D
Date:	050520

# NR4400-T-G

## GPS Locked Reference Module with TCXO Holdover

### KEY FEATURES



The signal source is a GPS driven, mixed-signal phase lock loop generating a 10MHz sine output from a temperature compensated voltage controlled crystal oscillator (TCXO). The output is a 0.4 Vrms sine. There is extensive built-in test that drives an LED and solid relay contacts for system integration. The unit also features an auto-calibration that compensates for long-term crystal drift provide years of precise performance. There is also a GPS lock status signal, PPS and serial port to provide access to NEMA time stamp data. To simplify use, there is only a single power supply voltage of 5 VDC (0.5 amp) required. All other required power voltages are developed internally.

### Product Highlights

- Compact easily integrated
- Single 5 VDC supply
- Auto Calibration
- Built-in Test status signal
- GPS lock status signal

### High Sensitivity GPS Receiver

26 channel high-sensitivity, high-accuracy Multi-GNSS receiver. Supports TRAIM, GPS, GLONASS, QZSS, SBAS, Active Anti-Jamming and Advanced Multipath Mitigation Functions.

### Low Phase Noise- 10 MHz Sine

Phase Noise -NR4400-T	
Offset	dBc/Hz
1 Hz	-50
10 Hz	-100
100 Hz	-120
1 kHz	-130
10 KHz	-140

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## Technical specifications

10MHz Sine	0.4 ±0.1 Vrms, 50 ohms- MCX-
Harmonics	Less than -30dB
First Year Frequency Stability	± 1 ppm (unlocked) @25 C
Temp Stability	±5 ppm (unlocked)
Accuracy-Auto cal (24 hrs)	10 MHz-<20ppb (does not include crystal drift if not GPS locked)
<b>PPS</b>	
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	<10 ns (faster edge available)
Connector	MMCX
Load Impedance	1000 Ohm
<b>Remote interface &amp; control</b>	
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
<b>GNSS receiver</b>	
Channels	GPS L1 C/A, GLONASS L1OF, QZSS L1 C/A, SBAS L1 C/A (Ready): Galileo E1B/E1C, QZSS L1S
Sensitivity	26 channels (GPS, GLONASS, QZSS, SBAS)
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
<b>Antenna with LNA</b>	
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

