

Company Datasheet #	NP3001
Revision #:	B
Date:	05162020

NP3001

Portable PPS/Frequency Reference with NMEA Simulator



KEY FEATURES

GPS Locked, low noise OCXO, 10 MHz frequency reference locked to a 26 channel multi-satellite system receiver provides fast TTFF. Unit produces 10 MHz, PPS, NMEA with a simulated NMEA and PPS when no GPS signal is available. A master NMEA and PPS input allow synchronization with an external source across multiple units. Auto calibration maintains output stability in an intermittent GPS environment. Battery provides in excess of 8 hours of use. Unit can be powered from an external 12 Vdc source.

Typical Phase Noise - 10MHz Sine

Offset Frequency (Hz)	Typical (dBc / Hz)
10	-120
100	-130
1K	-140

PRODUCT HIGHLIGHTS

NMEA/PPS Simulator

OCXO derived PPS maintains accuracy, while providing simulated or holdover NMEA data. Selects from three timing sources: Master In, GPS, or Simulator. Priority is selectable, with automatic switching based on priority.

Auto-Calibration

GPS derived compensation coefficients stored for application when GPS lost. Effectively eliminate long-term drift and mechanical shock offsets.

Multi-Satellite System Receiver

The 26 channel high-sensitivity, high-accuracy Timing Multi-GNSS receiver. Supports TRAIM and various position modes, allowing accurate and robust 1PPS synchronized to UTC time.

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Technical Specifications

10MHz Sine	1.0 Vrms, 50 Ohm - BNC
Harmonics	Less than -30 dBc
Locked Stability	<~E-11 after 100 seconds
First Year Frequency Stability	±50 ppb (long-term unlocked)
Temp Stability	±10 ppb
Yearly Aging	±30ppb
Receiver Sensitivity	-155dBm
GNSS receiver	GPS L1 C/A, GLONASS L1OF, QZSS L1 C/A, SBAS L1 C/A
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
Out of Band rejection	Fo±50MHz=60 dBc, Fo±60 MHz
DC current	<25 ma@3.5 Vdc
Accuracy-Auto cal (24 hrs)	<2E-11
Remote interface & control	
Protocol	RS232 NMEA-0183
Connector	DB-9
Location	Rear panel
Protocol	Bit plus stop
Standard Baud Rates	Selectable 4800, 9600, 19200, 38400, 57600 or 115200 bps

