

NS8001

Product Specification Benchtop or Rackmount Precision Time Server



GNSS Locked PTP Time server provides nanosecond time for the entire network. User selectable 3 channel timing outputs with options for 10MHz, PPS, or IRIG signals.

Key Features:

- PTP, NTP, Sync-E
- +/-50ns sync accuracy
- 100,000 transactions/second
- DC powered (12 Vdc)
- Compatible with Novus Network timing references
- PPS accuracy 5ns 1 sigma
- GNSS locked reference
- Supports Unicast, Multicast or Broadcast
- Benchtop or Rackmount hardware

Typical Applications:

- ITU Profiles: ITUG82651, ITUG82751, ITUG82752
- IEEE802.1AS-REV: including IEEE802.1CB tag handling
- Utility: including HSR and PRP tag handling
- 3 channels: 10 MHz Sine or PPS or IRIGB User selectable outputs



Technical Specifications

Reference Frequency Output	
10.0 MHz Sine	1 Vrms ± 0.2 , into 50 Ohms
Locked stability	5E-11
First year frequency stability	+/-40 ppb (unlocked)
Temperature stability	+/-100 ppb (unlocked)
10.0 MHz Phase Noise (dBc/Hz)	
1 Hz	-86
10 Hz	-116
100 Hz	-134
1 kHz	-145
10 kHz	-157
100 kHz	-159
PPS Output	
Amplitude	3.3 Vdc CMOS (5 Vdc option)
Accuracy	5ns 1 sigma
Pulse width	Programmable 1 to 500ms in 1 μ sec steps
Rise time	<5 ns
Load Impedance	50 Ohm
Connector	BNC

GNSS receiver	
Constellations	
GPS	L1C/A (1575.42 MHz), L2C (1227.60 MHz)
GLONASS	L1OF (1602 MHz + $k \cdot 562.5$ kHz, $k = -7, \dots, 5, 6$) L2OF (1246 MHz + $k \cdot 437.5$ kHz, $k = -7, \dots, 5, 6$)
Galileo	E1-B/C (1575.42 MHz), E5b (1207.140 MHz)
BeiDou	B1I (1561.098 MHz), B2I (1207.140 MHz)
Sensitivity (with Novus recommended antenna)	
Tracking	-167 dBm
Reacquisition	-160 dBm
Cold Start	-148 dBm
Hot Start	-157 dBm

Front panel Indicators and Control	
System status display	Channel status, system status - front panel display LCD color
5 button selector switches	Round momentary switch assembly, up, down, left, right, enter. Selects active display mode, system status.
Remote interface	
Rear Panel Serial Port	USB mini-B to serial interface for system status and system configuration 115200 baud default (n81, No flow control)
Network Connectivity	Ethernet: 10/100/1000mb RJ-45 Rear panel
Power	
DC input	+12VDC @ 2A AC to DC Adapter, 25W Power Supply (9 to 36V)



PRODUCT DATASHEET

NS8001

REVISION #:

2

DATE:

2-12-26

Environmental and Mechanical

Mechanical	
Height	1.77" (45mm) 1RU EIA 19" rack compatible
Width	7.97" (202.4mm)
Depth	8.0" (203.2mm)
Weight	3.0 lbs.
Environmental	
Operating temperature	-10 to 50°C
Storage temperature	-20 to 70°C
Humidity	0% - 90% RH non-condensing
Agency Certifications	UL / FCC Part 15
EU Compliance	RoHS, REACH, WEEE
EMC Compliance Emissions/Immunity	CISPR 32 Emissions CISPR 35 Immunity IEC 61000-4-2 ESD IEC 61000-4-3 Radiated IEC 61000-4-4 Transient/burst immunity IEC 61000-4-5 Surge immunity IEC 61000-4-6 Immunity to conducted
Safety	UL 62368-1

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Revision History

Rev.	Date	Nature of Changes	Approved By
1	December 15, 2025	Initial release.	Christian Cochran

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