brandywine communications

NFS220 PLUS Network Ready GPS Time and Frequency Standard



NFS220 PLUS Networked Frequency Standard

The NFS220 Plus is a precision time and frequency standard that uses the Global Positioning System (GPS). This unit is designed for use in WI-FI, Wi-Max, satellite communications, telecommunications and military communication applications.

This GPS frequency standard utilizes a high performance 16 channel GPS receiver with a high visibility time of year display. An automatic position-averaging feature enables the best use of GPS when operating in a fixed location.

The NFS220 Plus is fitted with an internal back up oscillator that is continuously calibrated to GPS using an advanced algorithm, providing optimal frequency control of the oscillator. This ensures that the highest time and frequency accuracy is maintained if no satellites can be tracked, and ensures an ultra stable, low noise frequency reference

The basic NFS220 Plus includes a precision OCXO frequency standard, while a Rubidium oscillator is also available to give a variety of price and performance options. An option with a low noise OCXO phase locked to a rubidium is also available, combining the low noise characteristic with the OCXO with the long term stability of a rubidium.

The NFS220 Plus provides "at a glance" status indication via front panel LED's as well as a large time, day and year display. This unit can be integrated with other management systems using Ethernet and serial ports.

The NFS220 Plus provides simple integration into military platforms by allowing synchronization from Have Quick time code, which is available on military SA-ASM GPS receivers such as the DAGR or PLGR. The NFS220 PLUS also generates Have Quick and 1PPS signals compatible with ICD-GPS-060.

The integrated Ethernet interface provides Network Time Protocol (NTP) synchronization of other connected computers.

In addition to NTP, the NFS220 Plus Ethernet interface contains a built in web server that allows the NFS220 PLUS to be controlled using a standard web browser such as Internet Explorer. Simple Network Management Protocol (SNMP) allows easy integration of the NFS220 PLUS with industry standard network management systems.

The NFS220 Plus provides three 1PPS time mark outputs. A unique feature allows precisely controlled delays to be inserted into these outputs to compensate for cable and other propagation delays. Compensation delay is independent for each output and has <1ns resolution.

FEATURES

- 16 Channel GPS Receiver or ICD-GPS-060 Have Quick/1PPS input references
- High Visibility Time of Year Display
- Choice of Disciplined Oscillator
- High Stability Time and Frequency outputs. 1U 19" rack mount
- Network Interface for remote management and NTP server
- Three 1PPS outputs with propagation delay compensation
- Multiple time code outputs (IRIG B, A, E, G)
- Four 10 MHz Sinewave outputs
- Have Quick time code
- Advanced Oscillator Control Algorithm

Serial time code outputs are provided to allow time synchronization to be distributed to computers, displays, and other equipment requiring precision time. Two outputs are dedicated to Have Quick time code. Two outputs (one modulated, one DC level shift) may be user selected from IRIG A, IRIG B, IRIG E, IRIG G.

Four low phase noise 10 MHz sine wave outputs from the disciplined oscillator are provided. Signal amplitude is software settable.

All outputs are provided with activity detectors. Loss of any output is indicated by means of a individual front panel alarm LED as well as through the network interface or a discrete alarm output.

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NFS220 PLUS SPECIFICATIONS

Warm Start simultaneously Autonomous Start <60 seconds Cold Start (Open Sky) Cold Start Requirement Automatic: No input of time or position required Position Accuracy 2.4 m horizontal, 5 m altitude with respect to WGS84 after 24 hour position averaging Timing Accuracy .100 ns. absolute UTC (tracking satellites) Std Deviation 15ns (OCXO) Timing Accuracy <15.sec/day (OCXO) (holdover mode, ± 5°C) <1.sec /day (Rb2) Frequency stability See tables below tracking satellites Oblion 1000 1000 10000 1000 1000 <th>Satellite Satellite Receiver</th> <th>Code</th> <th></th> <th colspan="5">GPS L₁ 1575.42 MHz C/A 1.023 MHz Parallel 16 Channel. All-in- view satellites tracked continuously and</th>	Satellite Satellite Receiver	Code		GPS L ₁ 1575.42 MHz C/A 1.023 MHz Parallel 16 Channel. All-in- view satellites tracked continuously and						
Cold Start Requirement Automatic: No input of time or position required Position Accuracy 2.4 m horizontal, 5 m altitude with respect to WGS84 after 24 hour position averaging Timing Accuracy .100 ns. absolute UTC (tracking satellites) Std Deviation 15ns (OCXO) Timing Accuracy <15 .sec/day (Rb2)					simultaneously <10 sec(Open Sky) <60 seconds Cold Start					
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Time Code	e 2 Output	
	Connector	DB9
	Code Type	IRIG A005, B005, E005,
		G005
	Selection	same as modulated code
	Levels	DC level Shift (0-5V)
Time Code	e 3,4 Output	
	Connector	BNC (1) DB9 (1)
	Code Type	Have Quick
		per ICD-GPS-060
	Levels	0-5V
Alarm Stati	US	Voltage free relay
		changeover contacts
Status Indi	icator LED's	Power
		Tracking Satellites
		Valid Time
		Holdover/12hr Holdover
		alarm
		Output Good/Fail (8 leds)
Environme	ental	
	Temperature	Instrument: -10 to +50 °C
		Antenna: -40 to +85 C
	Humidity	95% non condensing
	Power	85-265VAC 50/60Hz
	Optional	12VDC, 24VDC, -48VDC,
		125VDC
Display		Day of year through seconds
		.56" display characters
Dimension	s	19" rack mount
Dimonologi		1.75" (1U) height, 7 ^{1/2} " depth 17"
		Width, $3^{1/2}$ lb Nom.
Weight		11 lb. typical
EMC Emis	sion	To EN55022 as EN55024
	0011	FCC Part 15B, Class A
EMC Immu	inity	To EN 50082-1 as
	a ny	EN61000-4-2 ESD, IEC 801-
		3 HF Field, IEC 801-4 Burst
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