FEI-Zyfer

GPS Time and Frequency Systems

NanoSync II®

Designed, Manufactured, and Supported in the USA

NanoSync II Model 380

The NanoSync II® is an OEM Time and Frequency module designed specifically for the OEM who requires a high performance Time and Frequency system in a small and economical package.

With a design emphasis on synchronizing remote locations, the NanoSync II is ideal for CDMA, TDMA, GSM, TDOA, WiMAX, WLL, and other telecom and geo-location application technologies.

The NanoSync II has a long history of reliable operation. In case of temporary loss of GPS signals exceptional holdover performance assures continuous system operation. This is achieved through an algorithm that compensates for external temperature changes and aging of the internal OCXO. Status monitoring and control of the NanoSync II is provided via the RS-232 port.

The NanoSync II is also ideal for test equipment and instruments, specialized network synchronization equipment, satellite ground station equipment, Digital Terrestrial Radio and TV, or any application requiring precision time and frequency signals. Optional board-level form factor available.

System Features:

- **OCXO:** Extended Holdover Performance
- **Low Phase Noise:** Optional Configuration
- **Output Ports:** 10MHz, 1PPS
- **Flash Memory**
- **User Interface:** Standard RS-232
- **Power Options:** 12 VDC & 15 VDC

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NanoSync II® Specifications

Output Specifications

10 MHz Output:		
Waveform:	Sine wave	
Connector:	(1) SMA Female	
Amplitude:	13 ± 2dBm into 50Ω	
Harmonics:	≤ -70 dBc	
Spurious Level: ≤ -80dBc, 2MHz to 2GHz; ≤ -70dBc, < 2MHz		
10 MHz Frequency Accuracy:		
Locked to GPS:	≤ 1E-12 (24 hr. average)	
Holdover(a):		
3E-10:	8 hours (± 10°C)	
4.5E-10:	8 hours over full temp. range	
10 MHz Short-Term Stability (Allan Deviation):		
1 sec:	1E-11	
10 sec:	2E-11	
100 sec:	2E-11	
10 MHz Phase Noise (dBc/Hz):	Standard OCXO:	Low Phase Noise OCXO (d):
1 Hz:	≤ -90	≤ -90
10 Hz:	≤ -120	≤ -120
100 Hz:	≤ -130	≤ -140
1 kHz:	≤ -140	≤ -145
10 kHz:	≤ -145	≤ -150
1 PPS Output:		
Connector:	(1) SMA Female	
Drive Level:	TTL into 50Ω	
Pulse Width:	User selectable 10µs, 20µs, 1-999ms	
Synchronization:	Rising edge on-time	
Option:	1 pulse every even second (1 PP2S)	
Time Accuracy to UTC:		
Locked to GPS:	25ns RMS, 50ns peak (typical)	
Holdover(a):		
9µs:	8 hours (± 10°C)	
13µs:	8 hours over full temp. range	

Control Port

Signal Levels:	RS-232
Connector:	9-pin D-sub
Baud Rate:	19200 Fixed
Protocol:	1 Start Bit, 8 Data Bits, 1 Stop Bit, No Parity

GPS Receiver

Standard GPS Receiver - Civil C/A Code:

Type:	8 channel, L1
Frequency:	1575.42MHz (L1)
Antenna Connector:	SMB Female

Chassis Dimensions

Height:	32 mm (1.25")
Width:	109 mm (4.3")
Depth:	88 mm (3.45")
Weight:	.33 kg (.70 lbs.) maximum

Contact Factory regarding dimensions/mounting details for the unenclosed product.

Environmental

Operating Temperature:	-5°C to 55°C
Operating Temp. w/o case:	-5°C to 60°C
Rate of Change:	10°C / Hour maximum
Storage Temperature:	-40°C to +85°C
Relative Humidity:	5% to 95%, non-condensing
Altitude, Operating:	-60m to 4000m
Altitude, Storage:	-60m to 9000m

Input Power

Available with DC Power:	
Model 380-510-01:	15 VDC ± 10% (b)
Model 380-510-02:	12 VDC ± 5% (c)
Power Consumption:	
Warm-Up:	10W maximum
Steady State:	5W maximum @ 25°C
Input/Output Isolation:	None, input return connected to chassis/signal ground

Optional Accessories

GPS L1 Antenna Kit
Antenna Cable

Notes:

(a) After 72 hours of GPS locked operation, fixed antenna location, antenna delays entered.

(b) No external regulation required.

(c) 0.1V external regulation required.

(d) Only with 15 VDC version.

RoHS Compliant

FEI-Zyfer, Inc. is an ISO 9001 certified company.

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