7321 Lincoln Way Garden Grove, CA 92841 tel 888-886-7465

NanoSync II®

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 Nano-Sync II® is ideal for CDMA, TDMA, GSM, TDOA, WiMAX, WLL and other telecom and geo-location application technologies.

The FEI-Zyfer 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:** 1 x 10MHz Port 1 x 1PPS Port
- **Flash Memory**
- **User Interface:** Standard RS-232
- **Power Options:** 12 VDC & 15 VDC

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7321 Lincoln Way Garden Grove CA 92841
Toll-free 888-886-7465 E-mail: sales@fei-zyfer.com www.fei-zyfer.com

NanoSync II® Specifications

Output Specifications

10 MHz Output:	Sine wave
Connector:	(1) SMA Female
Amplitude:	13 ± 2dBm into 50Ω
Harmonics:	≤ -70 dBc
Spurious Level: ≤ -80dBc, 2MHz to 2GHz; ≤ -70dBc, < 2MHz	
Frequency Accuracy:	
Locked to GPS:	≤ 1E-12 (24 hr. average)
Holdover: Δ f/f (a)	
3E-10	8 hours (± 10%)
4.5E-10	8 hours over full temp. range
Short Term Stability (Allan Deviation):	
1 sec	1E-11
10 sec	2E-11
100 sec	2E-11

Phase Noise (dBc/Hz):	Standard OCXO:	Optional High Stability OCXO (d)
1 Hz:	≤ -90	≤ -90
10 Hz:	≤ -120	≤ -120
100 Hz:	≤ -130	≤ -140
1 kHz:	≤ -140	≤ -145
10 kHz to 1 MHz:	≤ -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: Δ t/t (a)	
3µs	8 hours (at constant temperature)
13µs	8 hours over full temp. range

Control Port

Signal Levels:	RS-232C
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:	-60 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:	12.5W 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

Certifications

RoHS Compliant

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.

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