FEATURES

- **OCXO (Oven Controlled Crystal Oscillator)**
- **Highly integrated small size, low power, to fit in the most demanding form factor requirements**
- **Easy to use command and diagnostic set**
- **Outstanding performance based on NanoSync's ability to learn the characteristics of its oscillator and compensate for its predictable behavior.**
- **Available in both 12VDC and 15VDC power supply options**
- **Can be supplied with case or as a board-level product**

NanoSync II™

Model 380-510

OEM GPS Time & Frequency Engine

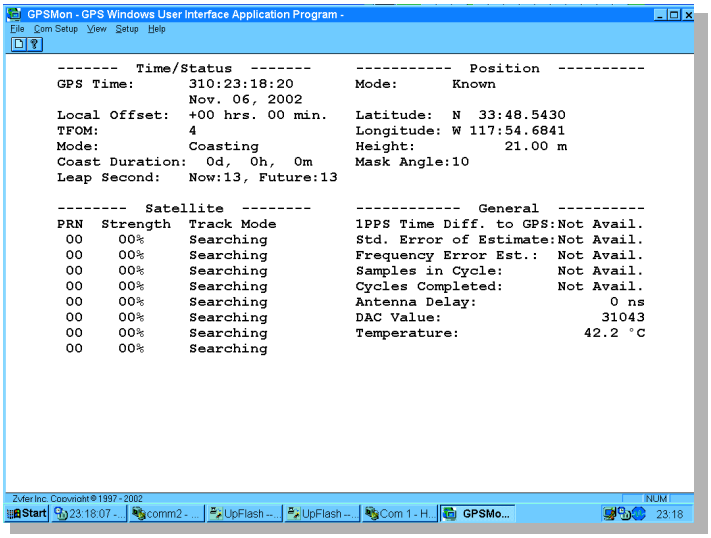
APPLICATIONS

- Wireless and wireline telecom sync requirements
- State and federal communications systems/simulcast
- Test equipment and instruments
- Specialized LAN and WAN sync requirements
- Satellite ground station equipment
- Power utility and public services
- Location-based services and E911

NanoSync II

The **NanoSync II** is an OEM Time & 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, and other telecom and geo-location application technologies.



GPSMon™ Diagnostic software for Windows®

FEI-Zyfer Inc.

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E-mail	*sales@fei-zyfer.com*

TÜV ESSEN

www.fei-zyfer.com

NANOSYNC II™

Physical

Height	1.25” (32 mm)
Width	4.30” (109 mm)
Depth	3.45” (88 mm)
Weight	0.70 lb. (0.33 kg) max

(Contact factory regarding dimensions and mounting details for the unenclosed model)

Environmental

Temperature	
Operating	–5° C to +55° C
Operating without case	–5° C to +60° C
Storage	–40° C to +85° C
Temperature rate of change	10° C/Hour (maximum)
Humidity	5% to 95% non-condensing
Operating Altitude	–60 m to 4000 m
Storage Altitude	–60 m to 9000 m

Input Power

Voltage	
Model 380-510-01	15 VDC ±10%[1]
Model 380-510-02	12 VDC ±5% regulated [2]
Power	
Warmup	12.5 W max
Steady State	5 W max @ 25°C
Input/Output Isolation	None, input return connected to chassis/signal ground

GPS Receiver

Type	8 Channel L1
Antenna Connector	SMB female

10 Mhz Output

Quantity	1
Connector	SMA

Frequency Accuracy with GPS [3]

Locked	≤1E-12 (24 hour average)
Hold-Over (without GPS)	
Over full temp. range	≤4.5E-10 over 8 hours
Temp Δ ±10°C	≤3E-10 over 8 hours

Short Term Stability, with or without GPS

(Allan Deviation)	<1E-11 (1 sec)
	<2E-11 (10 sec)
	<2E-11 (100 sec)
Wave Shape	Sinusoid
Amplitude	13 ± 2 dBm into 50 ohm
Harmonics	≤–70 dBc
Spurious level	≤–80 dBc, 2 MHz to 2 GHz
	≤–70 dBc, <2 MHz

Phase Noise (dBc/Hz), with or without GPS

1 Hz	≤–90
10 Hz	≤–120
100 Hz	≤–130
1 kHz	≤–140
10 kHz to 100kHz	≤–145

1 PPS Output

Quantity	1
Connector	SMA
Wave Shape	Pulse
Width	User programmable 10µs, 20µs, or 1ms to 999ms, default 2ms
Level	TTL into 50 ohms
Synchronization	Rising edge on-time

Time Accuracy with GPS [3]

Locked	25ns RMS, 100ns peak
Hold-Over (without GPS)	
Over full temp. range	13µs max over 8 hours
Temp Δ ±10°C	9µs max over 8 hours
Temp Δ ±3°C	≤100ns over 30 minutes

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

[1] No external regulation required

[2] 0.1V external regulation required

[3] After three days of locked operation with fixed antenna location, correct position, antenna cable delay entered.

OPTIONAL ACCESSORIES

- L1 Antenna Kit
- Antenna Cables

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FEI-Zyfer Inc.