



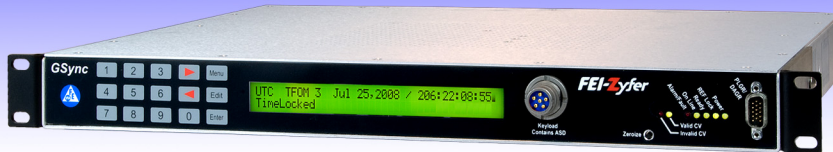
# FEI-Zyfer

## GPS Time and Frequency Systems

# GSync<sup>®</sup>



*Designed, Manufactured,  
and Supported in the USA*



### GSync Model 391

The GSync<sup>®</sup> is a compact 1U high, 19" rack mountable GPS Time and Frequency instrument based on the FEI-Zyfer CommSync II<sup>®</sup> Time and Frequency System. When space is at a premium and redundancy is not required, the modular design of the GSync offers a perfect solution.

The instrument allows for a multitude of frequency and timing outputs for various commercial and military applications. The instrument is available with either a civil L1-C/A signal or with a military L1/L2-P(Y) signal SAASM receiver, and uses most of the same plug-in modules used in the CommSync II. These include Low Phase Noise sine wave, T1/E1, Time Code, and NTP modules.

For Monitor and Control functions there is an RS-232 communications port on the rear panel, as well as an optional Ethernet plug-in module providing Telnet, SNMP, Network Time Protocol, and IEEE-1588 PTP v2.

### System Features:

- ▶ **4 I/O Module Slots:**  
200+ Hot-Swappable Option Modules
- ▶ **GPS Receiver:**  
Civil C/A or Military SAASM
- ▶ **User Interface:**  
Standard RS-232  
Optional Ethernet I/O (Telnet, SNMP, NTP, IEEE-1588 PTP v2)  
Keypad, LCD display
- ▶ **Windows GUI:**  
Zyfer Monitor<sup>™</sup>
- ▶ **Standard Outputs:**  
1PPS, 10 MHz
- ▶ **Certification:**  
All units can be certified to an in-house standard traceable to UTC.

### Rear Panel View



Antenna/Comm  
1PPS/10MHz

4 Hot-Swappable Option Module Slots

Power Supply  
AC or DC

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## GSync® Specifications

### Output Specifications (a)

Frequency Accuracy:

24 Hour Average	Rubidium Osc.	Quartz Osc.
Locked to GPS	< 1E-12	< 1E-12
Holdover (b) - first 24 hrs.	< 5E-11	< 1E-10

Time Accuracy: - to UTC, for calibrated units.

	Rubidium Osc.	Quartz Osc.
Locked to GPS	< 50ns Peak	< 50ns Peak
Holdover (b) - first 24 hrs.	< 3µs	< 7µs

Short-Term Stability (d) typical:

Allan Deviation	Rubidium Osc.	Quartz Osc.
1 sec	< 3E-11	< 1E-11
10 sec	< 1E-11	< 1E-11
100 sec	< 3E-12	< 1E-10

Phase Noise (d) typical:

	Standard	Low Noise 5MHz
1Hz	< -90dBc/Hz	< -100dBc/Hz
10Hz	< -105dBc/Hz	< -130dBc/Hz
100Hz	< -125dBc/Hz	< -150dBc/Hz
1kHz	< -135dBc/Hz	< -158dBc/Hz

### Power Options

Several Power Input options are available, including 115/230 VAC 50/60 Hz or 12-48 VDC.

### Input/Output Rear Panel

1PPS, 50Ω, TTL level, BNC, Ext. Sync Input  
RS-232 I/O connector  
10 MHz, 50Ω, TTL level, BNC connector  
1PPS, 50Ω, TTL level, BNC connector  
GPS Antenna, TNC connector

### Notes:

- After 2 hours of GPS locked operation, fixed antenna location, antenna delays entered.
- After 48 hours of continuous operation.
- 2σ (95.5% probability).
- Detailed specifications for various output modules: See "Option Module User's Manual 385-8003".
- The sale of SAASM receivers is restricted to users authorized by the U.S. Department of Defense.
- Dependent on the accuracy of initialization parameters from PLGR or DAGR handheld military GPS receivers, or other initialization devices.

### GPS Receiver Options

Standard GPS Receiver - Civil C/A Code

Type:	8 - 12 channel, independent tracking
Frequency:	1575.42MHz (L1)
Code:	C/A only
Acquisition Time:	Warm Start: < 2 minutes Cold Start: < 20 minutes

SAASM GPS Receiver (e) - Military P(Y) Code

Type:	12 channel, independent tracking
Frequency:	1575.42MHz & 1227.60MHz (L1 & L2)
Code:	C/A and P(Y)
Acquisition Time:	Warm Start: < 2 minutes Hot/Cold Start: see note (f)
Keyload Interface:	DS-102 (Red/Black-key capable)

### Chassis Dimensions

Height:	44 mm (1.75") (1U)
Width:	448 mm (17.65") (19" EIA Rack)
Depth:	381 mm (15.0") including connectors
Weight:	10 lbs. (max.)

### Environmental

Operating Temperature:	0°C to 50°C
Rate of Change:	10°C / Hour
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/Output Front Panel (SAASM only)

Keyload Interface - DS-102 (Red & Black-key)  
Hot Start connector  
Zeroize button



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

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