



## GSync II



**GSync II Model 402**

The GSync® II is the 2U high version of the popular and versatile GSync® and provides 8 Option Module slots. It is available with either an Ovenized Quartz or a Rubidium Atomic oscillator, as well as Civil or Military (SAASM) GPS receiver options. In addition, the GSync II can receive external inputs to provide internal frequency synchronization to the accuracy of the external source.

A wide variety of Option Modules (100+) allows the GSync II to be configured to meet any Time and Frequency need with Low Phase Noise sine wave, T1/E1, Time Codes (IRIG), NTP and other formats. See the Modules section of the website for more information about available Option Modules. Additional I/O slots can be utilized by configuring a slaved GSync II Time and Frequency Distribution system.

For Monitor and Control functions there is an RS-232 communications port on the rear panel chassis, a front panel keypad and display as well as optional Ethernet plug-in modules providing Telnet, SNMP and Network Time Protocol. Zyfer Monitor provides complete remote control, including system status, setup, alarm logging and user management over a standard TCP/IP connection.

### System Features:

- ▶ **8 I/O Module Slots**  
100+ Hot-Swappable Option Modules
- ▶ **GPS Receiver:**  
Civil C/A (L1) or Military SAASM
- ▶ **User Interface:**  
Standard RS-232  
Optional Ethernet I/O (Telnet, SNMP, NTP)  
Keypad, LCD display
- ▶ **Remote Access Utility:**  
Zyfer™ Monitor
- ▶ **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

8 Hot-Swappable Option Module Slots

Power Supply  
AC or DC

FEI-Zyfer, Inc.

7321 Lincoln Way Garden Grove CA 92841

Toll-free 888-886-7465

E-mail: [sales@fei-zyfer.com](mailto:sales@fei-zyfer.com)

[www.fei-zyfer.com](http://www.fei-zyfer.com)

## GSync II Specifications

### Output Specifications (a)

Frequency Accuracy:

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

Time Accuracy: - to UTC, for calibrated units (c)

	Rubidium Osc.	Quartz Osc.
Locked to GPS	< 50ns Peak	< 50ns Peak
Holdover (b)	< 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	< -105dBc/Hz
10Hz	< -105dBc/Hz	< -130dBc/Hz
100Hz	< -125dBc/Hz	< -143dBc/Hz
1000Hz	< -135dBc/Hz	< -153dBc/Hz

### Power Options

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

### 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 & 1227.6MHz (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:	134 mm (5.25") (3U)
Width:	448 mm (17.65") (19" EIA Rack)
Depth:	381 mm (15.0") including connectors
Weight:	25 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:	-60 to 9000m

### Input/Output (Rear Panel)

Standard GPS Receiver

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

SAASM GPS Receiver (e)

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  
Keyload Interface - DS-102 (Red & Black-key) (g)  
Hot Start connector (optional) (g)

### Certifications



### Notes:

- (a) After 2 hours of GPS locked operation, fixed antenna location, antenna delays entered.
- (b) After 48 hours of continuous operation.
- (c)  $2\sigma$  (95.5% probability).
- (d) Detailed specifications for various output modules: See "Option Module User's Manual 385-8003".

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[www.fei-zyfer.com](http://www.fei-zyfer.com)

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