FEI-Zyfer

GPS Time and Frequency Systems

GPStarplus®

Designed, Manufactured, and Supported in the USA

System Features:

- **Accuracy:** Within 100 ns of UTC
- **Oscillator Options:** Ovenized Quartz Rubidium Atomic
- **Simultaneous Outputs:** 1, 5, 10 MHz
- **Time Code Output:** IRIG A, B, or G Simultaneous DC Shift and modulated
- **Event Time Trigger**
- **Event Time Tag**

GPStar*plus* Model 565

GPStar*plus*® is a fully featured, off-the-shelf, compact time and frequency system providing a new level of price and performance. It provides accuracy within 100 nanoseconds of UTC (Coordinated Universal Time). GPStar*plus* tracks up to eight satellites at a time. When used as a frequency standard, GPStar*plus* can provide 1E-12 frequency accuracy.

GPStar*plus* is packaged in a 19" rack mount chassis that is only 1.75" high. The control and operation interface is provided via RS-232 or a front panel key pad. A 2-line by 40-character backlit LCD display reports time and date, as well as informing the user if time is locked, how many satellites are being received, and other status information. The standard power supply operates from 100 - 240 VAC at 50 - 60 Hz.

Rear Panel View

AC Power Supply

Event Trigger, Time Tag, 1 PPS
Time Code, Frequency Outputs

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GPStar*plus*® Specifications

Output Specifications (a)

1 PPS Output, Qty 1, BNC Connector:	
Wave Shape:	Pulse
Pulse Width:	2 ms
Level:	TTL into 50Ω
Synchronization:	Rising edge on-time
Accuracy, Time locked:	100 ns referenced to UTC
Coasting, Rubidium Osc:	4.3 µs per day
Coasting, Quartz Osc.	10 µs per day
Jitter:	1 ns

Event Trigger Output, Qty 1, BNC Connector:	
Wave Shape:	Pulse
Level:	TTL into 50Ω
Start Time:	To 1 year, 100 ns resolution

Time Tag Input, Qty 1, BNC Connector:	
Input Signal:	0 to +5V into 10kΩ
Input Pulse Width:	100 ns min.
Dwell Time:	2 ms between events
Buffer Size:	500
Tag Rate:	500/second maximum

Rate Output, Qty 2, BNC Connectors:	
1, 10, 100 PPS: 1, 10, 100 KPPS; 1, 5, 10 MPPS and others	
Wave Shape:	Pulse
Level:	TTL into 50Ω
On Time Edge:	Rising or falling, selectable

AC Time Code, Qty 1, BNC Connector:	
Signal Type:	Modulated sine wave
Code Format:	IRIG A, B, or G; user selectable
Level:	3V p-p into 50Ω

DC Time Code, Qty 1, BNC Connector:	
Signal Type:	DC Shift
Code Format:	Same as selected AC time code
Level:	TTL into 50Ω

Power Options

AC Power:	100 - 240 VAC, 50/60 Hz, 50W max.
DC Power:	Contact Factory

Output Specifications, cont.

Frequency Outputs, Qty 3, BNC Connectors		
Wave Shape:	Sinusoid	
Amplitude:	12 dBm +/- 0.5 dBm into 50Ω	
Frequency:	1, 5, 10 MHz, user selectable	
Harmonic Distortion:	-40 dBc (typical)	
Non-Harmonic Distortion:	-70 dBc (typical)	
Accuracy:	Rubidium Osc.	Quartz Osc.
Time Locked:	1E-12	1E-12
Coasting (per day):	2E-11	5E-10
Short-Term Stability (1-100 SEC):	5E-11	3E-10

Phase Noise (dBc/Hz, typical):	
1 Hz:	-80 dBc/Hz
10 Hz:	-100 dBc/Hz
100 Hz:	-105 dBc/Hz
1 kHz to 100 kHz:	-115 dBc/Hz

I/O Control Port/TOD Output:	
Connector:	DA-15
Signal Levels:	RS-232
I/O Control:	9600, 19200, 38400 Baud
TOD:	9600 Baud
Protocol:	1 Start bit, 8 Data bits, 1 Stop bit, No Parity

Standard GPS Receiver - Civil C/A Code

12 Channel L1 - TNC Female Connector

Chassis Dimensions

Height:	44 mm (1.75") (1U)
Width:	438 mm (17.25") (19" EIA Rack)
Depth:	310 mm (12.2") including connectors
Weight:	7.2 lbs. (max.)

Environmental

Operating Temperature:	0°C to 55°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

Notes:

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

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

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