FEI-Zyfer

GPS Time and Frequency Systems

AccuSync II™

Designed, Manufactured, and Supported in the USA

AccuSync II Model 405
(shown with SAASM option)

The AccuSync II™ from FEI-Zyfer provides an unparalleled array of standard and user configurable options for customers requiring a cost effective, versatile GPS time and frequency reference in a compact, rack-mountable chassis.

The AccuSync II incorporates the latest developments in time and frequency technology including off the shelf support for IEEE-1588 Precision Time Protocol (PTPv1 and v2) and the latest civilian C/A and military SAASM GPS receivers.

The AccuSync II was developed to meet most needs for precise time and frequency references. The design incorporates support for the most common output requirements including 5 and 10MHz Low Phase Noise (LPN) frequency references, multiple time references (PTP, NTP, IRIG, Have Quick, TOD) and 1PPS reference outputs. Additionally, the AccuSync II provides user configurable options such as programmable DDS Frequency Synthesizer outputs, selectable IRIG output and multi-use 10/100 Ethernet ports. The system is configurable as a PTP Grandmaster or Slave unit for customers utilizing IEEE-1588.

In the event of GPS signal loss or lack other external disciplining source, the AccuSync II will continue to provide accurate time and frequency (holdover) using our standard high stability crystal oscillator (OCXO). For customers requiring extended holdover, a Rubidium (Rb) atomic clock oscillator is available.

As with all FEI-Zyfer products, the AccuSync II uses the latest FEI-Zyfer proprietary learning algorithm to compensate for external and internal environmental characteristics that affect accuracy, ensuring the most accurate GPS time and frequency reference available. All FEI-Zyfer products are calibrated to NIST standards and traceable to UTC.

Option	Description
# 1	Rubidium (Rb) Oscillator
# 2	SAASM Receiver (For Authorized Users Only)
# 3	48VDC Power Supply
# 4	24VDC Power Supply

Rear Panel View

1 PPS, 5 MHz, 10 MHz , PTTI, IRIG B, HAVEQUICK, TOD, DDS, ETHERNET

RS-232

Power Supply AC or DC

Standard Features

- 19” 1U Rack Mount Enclosure
- C/A GPS Receiver
- High Stability OCXO (Crystal) Oscillator
- AC Power Supply
- Remote Monitoring and Control Software (GUI)

Dual 10/100 Ethernet
- User Configurable
- IPv4 and IPv6
- NTP/SNTP
- PTP (IEEE-1588)
- SNMP, SSH, Telnet
- Remote control via included Zyfer GUI

Ext. Reference Input
- 1PPS
- PTP Slave

Frequency Outputs
- (6) 10MHz LPN BNC
- (4) 5MHz LPN BNC
- (2) 1 kHz to 50MHz Programmable

Reference Pulse Outputs
- Four 1PPS BNC

Dedicated Time Code Outputs
- Have Quick
- IRIG AM/DC
- PTTI
- BCD
- TOD (Time of Day)

System Control and Monitoring
- Easy to use GUI
- SNMP and Telnet
- Two RS-232 Serial
- System Status via Front Panel LEDs

Optional Features

- SAASM GB-GRAM
- High Stability Rubidium (Rb) Oscillator
- DC Power

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AccuSync II™ Specifications

Time, Frequency and Communication I/O

Qty	Description of Rear Panel Inputs / Outputs	Conn. Type	I/O
1	1 PPS External Reference	BNC	Input
4	1 PPS TTL into 50Ω	BNC	Output
6	10 MHz Sine Wave Output, 13 dBm	BNC	Output
4	5 MHz Sine Wave Output, 13 dBm	BNC	Output
2	DDS (Freq. Synthesizer) TTL Software programmable 1 kHz to 50 MHz (in 10 Hz steps)	BNC	Output
1	PTTI Port: BCD, Have Quick Time, 10 VDC 1 PPS and 1 PPM	DE-9S	Output
1	IRIG B Output, user selectable AM or DC Code	BNC	Output
1	Have Quick Output, user selectable Have Quick II, Have Quick PTTI, Extended Have Quick	BNC	Output
1	TOD, Serial I/O, RS-232 with Alarm Status pins	DE-9S	Output
	Communication and Control I/O		
2	10/100 Ethernet (NTP, PTP IEEE-1588 v2, SNMP, MIB II, TELNET, SSH, IPv4, IPv6)	RJ-45	
2	Control Ports (1 on Front Panel, 1 on Rear Panel, RS-232C)	DE-9S	

Output Specifications (a,b)

1 PPS Output:		
Oscillator Type:	**Rubidium**	**OCXO**
Accuracy (c):		
GPS Locked (d):	< 100 ns at 95% probability to UTC	
Coasting: (a,b)	< 3 µS @ 24hrs	< 7 µS @ 24hrs
10 MHz Output:		
Oscillator Type:	**Rubidium**	**OCXO**
Accuracy (c):		
GPS Locked:	< 1E-12	< 1E-12
Coasting: (a,b)	< 1E-11	< 1E-10
Phase Noise:		
Oscillator Type:	**Rubidium**	**OCXO**
1 Hz:		-90 dBc/Hz
10 Hz	-100 dBc/Hz	-125 dBc/Hz
100 Hz:	-125 dBc/Hz	-140 dBc/Hz
1 kHz:	-135 dBc/Hz	-147 dBc/Hz
10 kHz:		-150 dBc/Hz
Short Term Stability (Allan Deviation):		
Oscillator Type:	**Rubidium Osc.**	**OCXO**
1 Sec:	< 3E-11	< 1E-11
10 Sec:	< 1E-11	< 1E-11
100 Sec:	< 1E-10	< 1E-10

AC or DC Power Options

AC:	100/240 VAC, 50-60 Hz, 60W Max.
DC:	12-36 VDC or 36-72 VDC 60W Max.

GPS Receiver Options

Standard GPS Rcvr:	Civil C/A Code
Type:	12 Channel L1
Ant. Connector:	TNC Female
SAASM GPS Rcvr:	Military P(Y) Code
Type:	12 Channel L1 & L2
Ant. Connector:	TNC Female

Chassis Dimensions

Height:	44 mm (1.75") (1U)
Width:	420 mm (16.5") (19" EIA Rack)
Depth:	305 mm (12.0") including connectors
Weight:	4.1 kg (9 lbs.) (max.)

Environmental

Operating Temperature:	0°C to 55°C
Rate of Change:	15°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

For more information on the AccuSync II or to request a quote, please contact FEI-Zyfer at 888-886-7465 or visit www.fei-zyfer.com

Notes:

(a) After 72 hours of GPS locked operation, fixed antenna location, correct position and antenna cable delay entered.

(b) Ambient temperature change < plus or minus 10°C.

(c) 24 Hour average

(d) Varies with receiver used

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

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