FireFly-IA World's Smallest GPSDO

▶**Only 1.0"x 2.5"x 0.5"**
▶ **1 Minute Warm Up**
▶ **50 Channel WAAS GPS Receiver**
▶ **Very Low Power Consumption < 1.5W**

FireFly is an extremely small Global Positioning System Disciplined Oscillator (GPSDO) that has very low power consumption, delivers long-term performance similar to Atomic Frequency Standards, and supports mobile as well as stationary applications.

At only 1.25 Cubic Inches small, FireFly provides Stratum-1 long-term performance of better than 10 parts per Trillion (1E-011) averaged over 24 hours when locked to GPS at less than ½ the size of the smallest competitive products. The unit generates both an OCXO-driven 1PPS output that is phase–synchronized to better than 100ns rms to UTC, and a synchronized low-noise+12dBm 10MHz Sine-Wave Output. The FireFly is easy to integrate in any application requiring a stable and accurate reference clock, and can be monitored and controlled by an RS-232 port via industry-standard SCPI Commands. FireFly has excellent phase noise, superior spurious suppression, and very low jitter at a power consumption of only 1.4W typically.

JACKSON LABS

The Next Generation of Timing & Frequency

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Electrical Specifications:

Module Specification:

1 PPS Accuracy	±50ns to UTC RMS (1-Sigma) GPS Locked
Holdover Stability	<±11us over 3 Hour Period @+25°C (No Motion)
1 PPS Output (OCXO Flywheel Generated)	3.3VDC CMOS
RS-232 Control	NMEA and SCPI-99 Control Commands
	1PPS Level Output for Linux SNTP Server Software (with D Sub RTS pin)
Avionics Support	3D Velocity Vector (Velocity Output for the X, Y, and Z planes)
GPS Frequency	L1, C/A 1574MHz
GPS Antenna	Active or Passive
GPS Receiver	50 Channels, Mobile, WAAS, EGNOS, MSAS capable
Sensitivity	Acquisition –144 dBm, Tracking -160 dBm
TTFF	Cold Start - <45 sec, Warm Start – 1 sec, Hot Start - 1 sec
ADEV	1s – 1E-11
TTL Alarm Output	GPS Unlock and Hardware Failure, and LOCK indicators
Warm Up Time / Stabilization Time	<5 min at +25°C to 1E-08 Accuracy
Supply Voltage (Vdd)	8.0V to 14.0 VDC (12 VDC Nominal)
Power Consumption	<1.8W Max, 1.35W Typ.
Operating Temperature	0°C to +60°C
Storage Temperature	-45°C to +85°C

Oscillator Specification:

Frequency Output	10MHz Sine Wave
10MHz Retrace	±2E-08 After 1 Hour @ +25°C
Frequency Stability Over Temperature (Unlock Condition)	±2.5E-08
Output Amplitude	+13dBm ± 3dBm
Warm Up Time	< 1 min @ +25°C
Phase Noise	1Hz -80dBc/Hz 10Hz -110dBc/Hz 100Hz -135dBc/Hz
	1kHz -145dBc/Hz 10kHz <-145dBc/Hz

Connections:

1PPS Output, 10MHz Output	SMB (SMA upon special order)
RS-232	3 Pin

Also Available:

Firefly-IA GPSOCXO – Extended Temperature Option -40°C to +70°C