

AS9100 / ISO9001 Certified

Rugged Ultra-Stable

The Global Positioning System Disciplined Oscillator (GPSDO) is available either as a rugged military or a commercial frequency reference that allows Cesium Atomic Clock or Stratum I performance on either stationary or mobile platforms. The GPSDO generates a highly accurate frequency (typically $< 5E-12$ after 24hrs) with very low phase noise performance. The entire assembly uses less than 8W at +25°C using a 16-34V supply. A one pulse per second (1PPS) output is available. Additionally, the GPSDO offers fast warm up of < 9 min to an accuracy of $1E-08$ at +25°C. The receiver offers GPS signal tracking down to -160dBm. RS-232 is available for communication, control and status reporting along with TTL Built-in-test (BIT) status outputs. Multiple options are available to offer a customized high performance next generation GPS disciplined frequency reference.



Applications

- Mobile Fast Acquisition
- Low G for Rugged, Military Applications
- Ground Communications
- Satellite Communications
- Commercial Telecom and Satellite Communications
- OEM Timing System Integration

Phase Noise

Offset	Level
1Hz	-95dBc/Hz
10Hz	-125dBc/Hz
100Hz	-145dBc/Hz
1000Hz	-155dBc/Hz
10000Hz	-160dBc/Hz

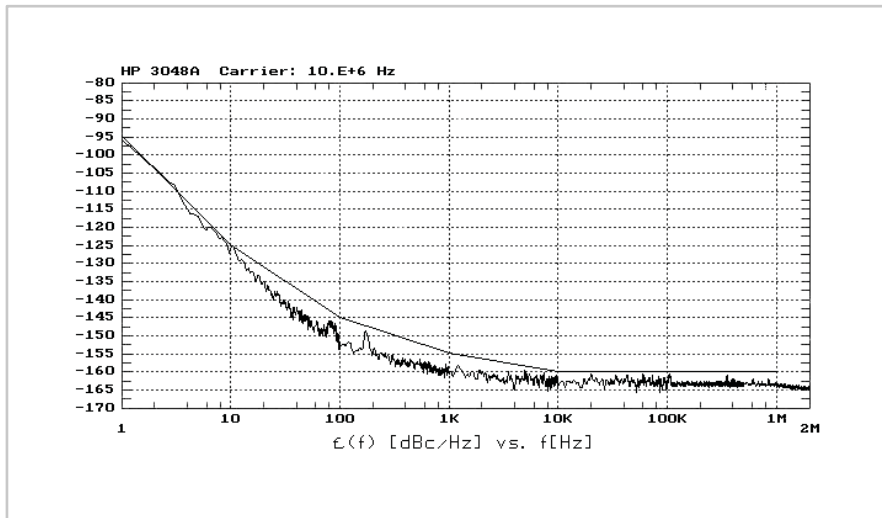
Module Performance (Typical) and Features

- **Frequency Output:** 5MHz/10MHz
- **Retrace:** $\pm 5E-09$ After 2 hours
- **Frequency Stability:** $2.0E-10$ over temperature (hold over)
- **Acceleration Sensivity:** $< \pm 2E-010/g/axis$
- **Supply Voltage:** 16-34VDC
- **Power Consumption:** 8W at +25°C
- **Operating Temperature:** -40°C to +85°C
- **GPS Antenna:** Active
- **GPS Sensitivity:** Acquisition -144dBm, tracking -160dBm
- **GPS Receiver:** 50 Channels, Mobile, GPS, WAAS, EGNOS, MSAS capable
- **1 PPS Accuracy:** $< \pm 50ns$ to UTC RMS (1-sigma) GPS locked
- **Holdover Stability:** $< \pm 7\mu s$ over 24 hour period at +25°C (No Motion)
- **1 PPS Output (OCXO Flywheel Generated):** CMOS Output
- **RF Outputs:** 2 @ 10MHz, 1 @ 5MHz, 13dBm $\pm 2dB$ Sinewave, SMA 50 Ω
- **RS-232 Control:** Control commands, BIT status registers, and NMEA data (2nd com port)
- **Time To First Fix:** Cold start < 45 second, warm start 1 second, hot start 1 second
- **Warm Up Time / Stabilization Time:** < 9 minutes at +25°C to $1E-08$ accuracy, GPS lock 20 min any condition
- **TTL Alarm Output:** GPS unlock, RF level BIT, oven temp BIT status signals

*RoHS compliant available

*Parameters can be modified to meet specific requirements

Phase Noise



Allan Deviation $\sigma_y(\tau)$

