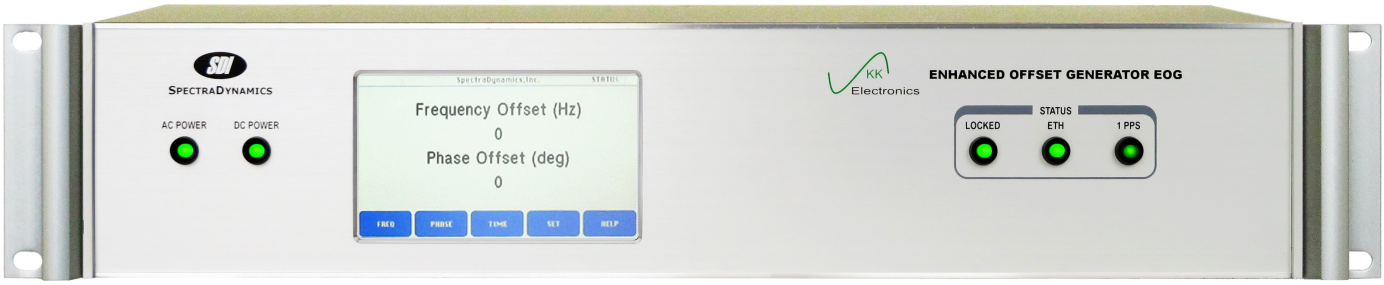
EOG Datasheet

SpectraDynamics, Inc.



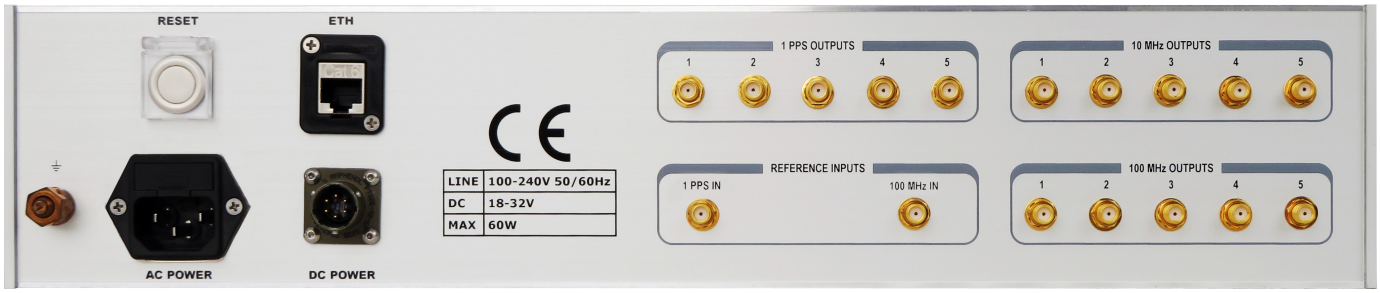
The EOG is an enhanced high-resolution phase and frequency offset generator. The phase and frequency of the output signals are adjustable with respect to a 100 MHz user supplied reference. The EOG may be used to generate a physical timescale by frequency steering a stable frequency reference such as a Hydrogen maser or atomic clock. The output frequency resolution of the generator is 3E-20, and the time offset resolution is less than 0.1 ps. All phase and frequency steps are phase continuous.

This instrument provides five sine wave outputs at 100 MHz, five sinewave outputs at 10 MHz and five 1PPS (one pulse-per-second) outputs. The sine wave outputs are buffered to provide greater than 100 dB of port-to-port and reverse isolation. The outputs are at a level of +13 ±1 dBm. The pulse outputs are derived from the 100 MHz sine wave outputs and are independently adjustable. The pulse outputs can be synchronized to an external reference pulse to within 10 ns. All instrument functions are displayed and controlled through the front screen touch interface and via the Ethernet port.

SPECIFICATIONS

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Frequency tuning range		-	+/- 1 E-8	-	-
Phase noise L(f) 100 MHz Output	1Hz 10 Hz 100 Hz 1 kHz >10 kHz	- - - -	-115 -125 -134 -137 -157	-110 -120 -130 -133 -154	dBc/Hz
Phase noise L(f) 10 MHz Output	1Hz 10 Hz 100 Hz 1 kHz >10 kHz	- - - -	-135 -145 -155 -159 -167	-130 -140 -150 -155 -165	dBc/Hz
Allan deviation $\sigma_y(t)$ 100 MHz Output	$\Delta f = 0$ to 1.0 E^{-12} 1 s 10 s 100 s 1000 s	 - - -	 2 E-14 2 E-15 4 E-16 1 E-16	 4 E-14 4 E-15 6 E-16 2 E-16	-
Spurious		-	-110	-100	dBc
Harmonics		-	-45	-30	dBc

SPECTRADYNAMICS, INC • 1849 Cherry St. Unit 2. • Louisville, CO 80027 • Phone: (303) 665-1852 • Fax: (303) 604-6088
www.spectradynamics.com



BACK PANEL

- **AC Power**

  100 - 240 VAC, 50 / 60 Hz
- **DC Power**

  18 - 32 VDC
- **Data LAN:**

  Network connector, RJ45, for CAT5e.

  The EOG is controlled by Telnet protocol, and provides status information over UDP.

  Telnet commands include:

  • Frequency offset of all output versus reference,

  • External sync of the 1PPS outputs,

  • Time shift of 1PPS outputs,

  • Time shift of the 10MHz outputs,

  • Phase shift of all output,

  • IP address setting,

  • UDP destination addresses setting.
- **RF Input:**

  100 MHz, +7 to +14 dBm.
- **1PPS Sync Input**

  Max voltage level is 2.5 V over 50 Ω, positive voltages only.
- **100 MHz Outputs**

  Five 100 MHz outputs at +13 dBm
- **1PPS Outputs**

  Five 1PPS outputs, 2.5 V
- **10 MHz Outputs**

  Five 10 MHz outputs at +13 dBm
- **Rack-mount enclosure:**

  3.5” X 16” X 19”, Weight: 20 lbs