



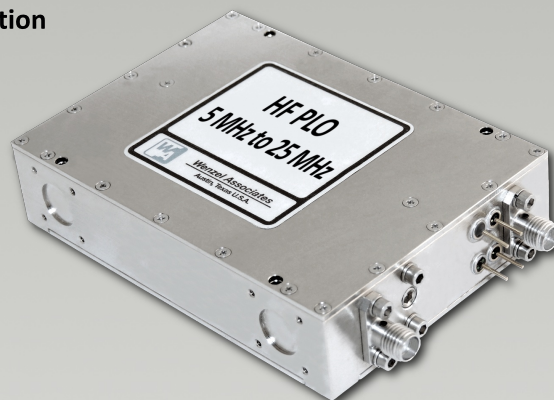
Low Noise Crystal Oscillators > Premium HF PLO

Features:

- Frequencies from 5 MHz to 25 MHz, fixed
- Ruggedized for Dynamic Environments
- Low Phase Noise Floor to -174 dBc/Hz
- PLL Loop Bandwidth as low as 1 Hz
- Good Temperature Stability
- Low Aging Rate
- Dual Output Option

Applications:

- Up/Down Converters
- GPS Receivers
- System Synchronization
- Test Equipment
- Radar Systems



Electrical Specifications

Output Frequency (fixed; specify within range)	10 MHz to 25 MHz
Output Level	+13 dBm ± 2 dB into 50 ohms
Output Level (Dual Output - Package B)	+10 dBm ± 2 dB into 50 ohms, each output
External Reference Input Frequency	10 MHz (standard; other options available)
External Reference Input Level	+7 dBm ± 6 dB into 50 ohms
Aging	(10 MHz model, typical)
Per day after 30 days operating, typical	5×10^{-10}
Second year, typical	5×10^{-8}
Per year thereafter, typical	3×10^{-8}
Temperature Stability (consult factory for other ranges)	(10 MHz model, typical)
Range E: 0 to +50°C (Ref: +25°C)	$\leq \pm 5 \times 10^{-9}$
Range F: -20 to +70°C (Ref: +25°C)	$\leq \pm 1 \times 10^{-8}$
Range G: -55 to +85°C (Ref: +25°C)	$\leq \pm 1 \times 10^{-7}$
Phase Noise	(Frequency Dependent: See Standard Specifications and Part Numbers table below for details)
Harmonics	≤ -30 dBc
PLL & Divider Products	≤ -50 dBc
Spurious	≤ -80 dBc
PLL Loop Bandwidth	≤ 1 Hz or ≤ 10 Hz
Supply Voltage	+15 VDC or +12 VDC ($\pm 5\%$)
Warm-up	≤ 6 Watts for 5 minutes at +25°C
Total	≤ 2.5 Watts at +25°C
Crystal Type	SC-cut
Crystal Acceleration Sensitivity (10 MHz models only)	5×10^{-10} /g, typical; to 1×10^{-10} /g, available

Mechanical

Packaging	Nickel-Plated Machined Aluminum
Dimensions	3.5" x 2.5" x 0.8"
Connectors / Mounting	Package A: SMA(f) and solder pins on side Threaded Inserts, #2-56, 4 places
	Package B: SMA(f) x2 and solder pins on side Threaded Inserts, #2-56, 4 places

Description:

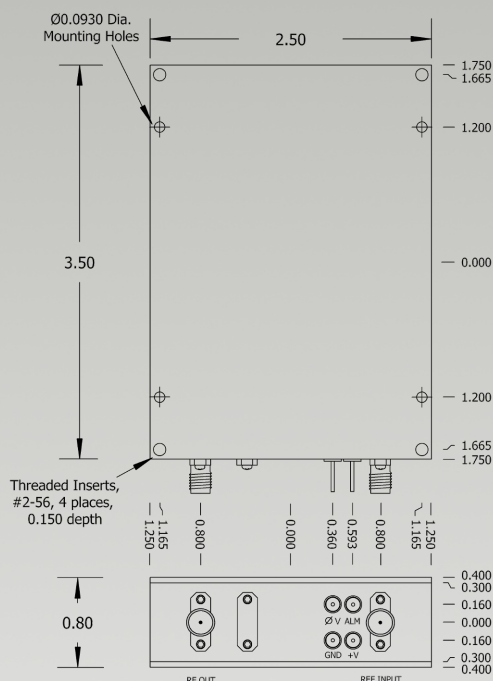
The Premium HF PLO is a 5 MHz to 25 MHz fixed frequency ultra-low noise OCXO integrated with a low noise phase lock loop circuit, and is ideal for use as a phase noise clean-up oscillator when phase locking to a more stable source such as a rubidium, cesium or GPS reference. The PLO offers low aging and good temperature stability (when free-running), and a low phase noise floor to -174 dBc/Hz. Frequency dividers are used to prescale the internal HF oscillator and the external reference frequencies to phase lock at a common lower frequency. The standard PLL loop bandwidth is ≤ 1 Hz. The PLO is housed in a 3.5" x 2.5" x 0.8" nickel plated machined aluminum case. An internal voltage regulator is provided for excellent power supply line rejection. Please consult the factory if you need any specifications to be modified to better suit your application.





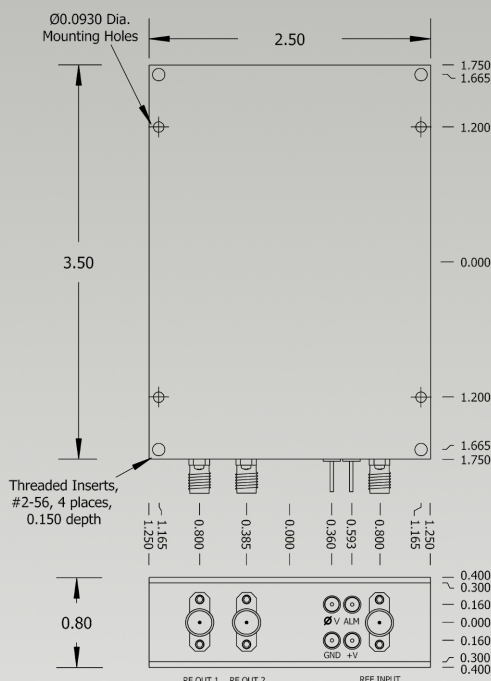
Low Noise Crystal Oscillators > Premium HF PLO

Package A



CONN	Function
Ø V	Phase Lock Voltage
RF OUT	RF Signal Out
+V	Supply Voltage
ALM	Lock Alarm
GND	Ground, Case
REF INPUT	Reference Signal In

Package B



CONN	Function
Ø V	Phase Lock Voltage
RF Out 1	RF Signal Out
RF Out 2	RF Signal Out
+V	Supply Voltage
ALM	Lock Alarm
GND	Ground, Case
REF INPUT	Reference Signal In

Standard Specifications and Part Numbers **

Part Number	Output Frequency * (MHz)	Typical Phase Noise (dBc/Hz), Static * (free-running)					Output Level (dBm) * into 50 ohms	Temperature Stability (Ref: +25°C) *	Supply Voltage (VDC)	Acceleration Sensitivity (g per axis) *	External Reference Frequency (MHz)	Package / Connectors	Package Size (inches)
		10 Hz	100 Hz	1 kHz	10 kHz	100 kHz							
501-27592-01	10	-140	-157	-169	-172	-172	+13 ±2	±5E-9, 0° to +50°C	+15	5E-10, typ	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-02	10	-140	-157	-169	-172	-172	+13 ±2	±1E-8, -20° to +70°C	+15	5E-10, typ	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-11	10	-145	-160	-172	-174	-174	+13 ±2	±5E-9, 0° to +50°C	+15	5E-10, typ	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-12	10	-145	-160	-172	-174	-174	+13 ±2	±1E-8, -20° to +70°C	+15	5E-10, typ	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-21	10	-140	-157	-169	-172	-172	+13 ±2	±5E-9, 0° to +50°C	+12	5E-10, typ	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-22	10	-140	-157	-169	-172	-172	+13 ±2	±1E-8, -20° to +70°C	+12	5E-10, typ	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-31	10	-145	-160	-172	-174	-174	+13 ±2	±5E-9, 0° to +50°C	+12	5E-10, typ	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-32	10	-145	-160	-172	-174	-174	+13 ±2	±1E-8, -20° to +70°C	+12	5E-10, typ	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-41	10	-140	-157	-169	-172	-172	+13 ±2	±5E-9, 0° to +50°C	+15	3E-10, gtd	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-42	10	-140	-157	-169	-172	-172	+13 ±2	±1E-8, -20° to +70°C	+15	3E-10, gtd	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-51	10	-145	-160	-172	-174	-174	+13 ±2	±5E-9, 0° to +50°C	+15	3E-10, gtd	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27592-52	10	-145	-160	-172	-174	-174	+13 ±2	±1E-8, -20° to +70°C	+15	3E-10, gtd	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27601-01	10	-140	-157	-169	-172	-172	+13 ±3	±5E-9, 0° to +50°C	+15	1E-10, gtd	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27601-02	10	-140	-157	-169	-172	-172	+13 ±3	±1E-8, -20° to +70°C	+15	1E-10, gtd	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27601-11	10	-145	-160	-172	-174	-174	+13 ±3	±5E-9, 0° to +50°C	+15	1E-10, gtd	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8
501-27601-12	10	-145	-160	-172	-174	-174	+13 ±3	±1E-8, -20° to +70°C	+15	1E-10, gtd	10, LBW=1Hz	SMA(f) & Pins on Side	2.5 x 3.5 x 0.8

* Consult factory for custom frequency, phase noise performance, output level, temperature stability and acceleration sensitivity options.

** See website for additional Standard Part Numbers and Specifications.

