WENZEL ASSOCIATES

# OCXO SORCERER II

"QUIETLY THE BEST"

## LOW NOISE CRYSTAL OSCILLATORS > SORCERER II

### FEATURES:

- HF Frequencies from 5 MHz to 25 MHz
- VHF Frequencies from 50 MHz to 130 MHz
- Ultra Low Phase Noise
- Excellent Temperature Stability
- Good Short Term Stability
- Low Aging Rate

### APPLICATIONS:

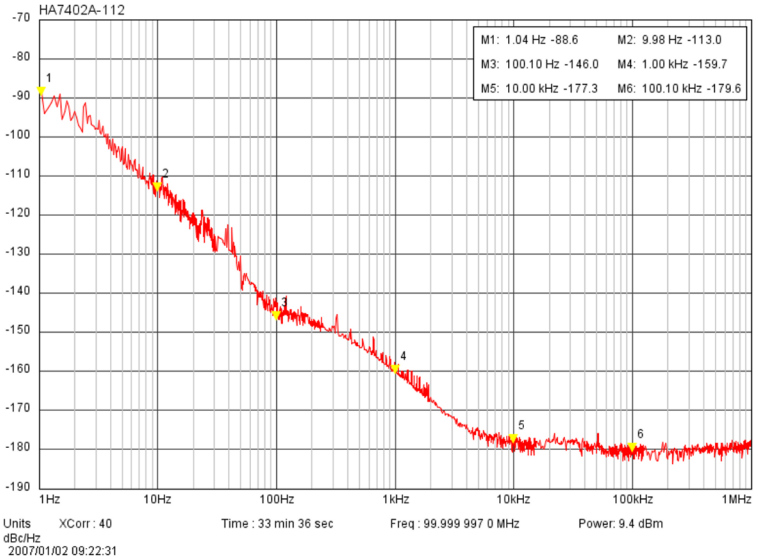
- Reference Frequency Source
- System Integration
- Instruments


### DESCRIPTION:

The Sorcerer II is a low noise frequency source which is comprised of two fixed frequency Ultra Low Noise oscillators, one HF and one VHF, and all necessary components required to phase lock these two oscillators together with a PLL loop bandwidth of ~300 Hz. The building blocks combine to form a system and are integrated into a nickel plated machined aluminum housing (4.75" x 3.5" x 1"). The result is a compact very stable frequency source that provides two ultra-low noise outputs. The typical configuration has both a 5 MHz and 100 MHz output. 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.

| Electrical Specifications | | |
|---|---|---|
| HF Output Frequency (fixed; specify within range) | | 5 MHz to 25 MHz |
| VHF Output Frequency (fixed; specify within range) | | 50 MHz and 130 MHz |
| Output Level | | +10 dBm ±2 dB into 50 ohms, each output |
| Aging | | (5 MHz/100 MHz model, typical) |
| Per day after 30 days operating, typical | | $5 \times 10^{-10}$ |
| Second year, typical | | $5 \times 10^{-8}$ |
| Per year thereafter, typical | | $3 \times 10^{-8}$ |
| Temperature Stability (consult factory for other ranges) | | (5 MHz/100 MHz model, typical) |
| Range E: | 0 to +50°C (Ref: +25°C) | $\leq \pm 2 \times 10^{-8}$ |
| Range F: | -20 to +70°C (Ref: +25°C) | $\leq \pm 5 \times 10^{-8}$ |
| Range G: | -55 to +85°C (Ref: +25°C) | $\leq \pm 2 \times 10^{-7}$ |
| Phase Noise | | (Frequency Dependent: See Std. Specifications and Part Numbers table below for details) |
| Harmonics | | ≤ -25 dBc |
| Sub-Harmonics | | ≤ -60 dBc |
| PLL Products (Phase Lock models only) | | ≤ -60 dBc |
| Spurious | | ≤ -80 dBc |
| Tuning | | (MT and ET ranges can be reversed upon request) |
| - Mechanical Tuning | | $\geq \pm 1.5 \times 10^{-6}$, typical |
| - Electrical Tuning | Tuning A: 0 to +10 VDC | $\geq \pm 2 \times 10^{-7}$, typical |
| | Tuning B: ±5 VDC | $\geq \pm 2 \times 10^{-7}$, typical |
| | Slope: Negative | (Positive Slope available on some ET only models) |
| Supply Voltage | | +15 VDC or +12 VDC (±5%) |
| Warm-up | | ≤ 20 Watts for 5 minutes at +25°C |
| Total | | ≤ 15 Watts at +25°C |
| Crystal Type | | SC-cut |
| **Mechanical** | | |
| Packaging | | Aluminum housing with extended mounting cover and gasketed access screw |
| Dimensions | | 5" x 6" x 2.62" |
| Connectors / Mounting | - Package A | SMA(f)s and solder pins on side Thru holes, Diam. 0.156, 4 places |

100 MHz Output
*P/N: 501-19250*

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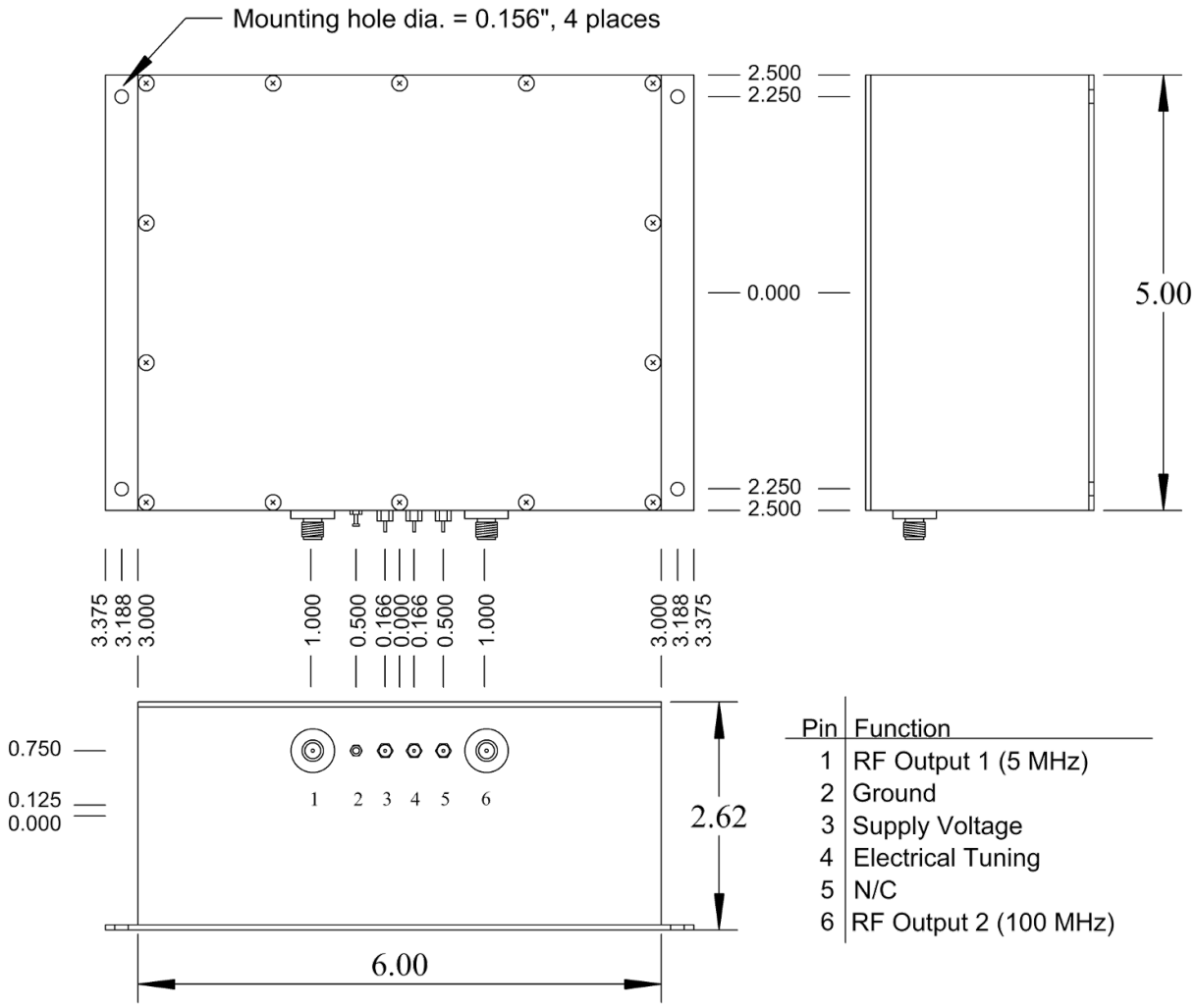


| Pin | Function |
|---|---|
| 1 | RF Output 1 (5 MHz) |
| 2 | Ground |
| 3 | Supply Voltage |
| 4 | Electrical Tuning |
| 5 | N/C |
| 6 | RF Output 2 (100 MHz) |

### Standard Specifications and Part Numbers * *

| Part Number | Output Frequency * (MHz) | Typical Phase Noise (dBc/Hz), Static * | | | | | Output Level (dBm) * into 50 ohms | Temperature Stability (Ref: +25°C) * | Supply Voltage (VDC) | Package / Connectors | Package Size (inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 10 Hz | 100 Hz | 1 kHz | 10 kHz | 100 kHz | | | | | |
| 501-17341 | 100/5 | -115 | -135 | -150 | -170 | -170 | +12 ±2 | ±2E-8, 0 to +50°C | +15 | SMA(f) & Pins on Side | 5 x 6 x 2.62" |
| 501-17998 | 100/5 | -120 | -135 | -155 | -174 | -174 | +10 ±2 | ±2E-8, 0 to +50°C | +15 | SMA(f) & Pins on Side | 5 x 6 x 2.62" |
| 501-27841 | 100/10 | -113 | -136 | -158 | -176 | -176 | +13 ±2 | ±2E-8, 0 to +50°C | +15 | SMA(f) & Pins on Side | 5 x 6 x 2.62" |

* 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.


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