

## INPUT

### Frequency

10 MHz,  $\pm 2 \times 10^{-7}$

### Level

+7 dBm  $\pm 5$  dB into 50 Ohms

## OUTPUT

### Frequency

20 MHz

### Level

+13 dBm  $\pm 2$  dB into 50 ohms

## STABILITY

### Output Phase Noise L(f)

#### Free-Running

10 Hz -120 dBc/Hz

100 Hz -150 dBc/Hz

1 kHz -172 dBc/Hz

10 kHz -174 dBc/Hz

#### Aging

$\pm 1 \times 10^{-7}$  per year after 30 days  
operating, typical

#### Temperature Stability

$\pm 1 \times 10^{-8}$  free-running from  
0 to +50°C, (Ref. +25°C)

#### Harmonics

-30 dBc

#### Sub-Harmonics

-50 dBc

#### PLL Divider Products

-50 dBc

#### Non-Harmonic Spurious

-70 dBc

#### Phase Lock Alarm

TTL

Locked: +3.5 VDC to +5.2 VDC (Hi)

Out-of-Lock: +0.8 VDC max (Lo)

#### Phase Lock Voltage Monitor

Voltage monitor pin supplied

## MECHANICAL

### Dimensions

2.5 x 3.5 x 0.8"

### Connectors

SMA's and solder pins on side  
Feed-thru terminals for lock alarm,  
supply and phase lock voltage  
monitor

## Packaging

Nickel-plated machined aluminum housing

## Mounting

Shock mount patterns on sides

Through holes, 4 places

Threaded inserts on base, 4 places

## POWER REQUIREMENTS

### Supply Voltage

+15 VDC  $\pm 5\%$

### Warm-Up Power

8 Watts at start-up for 5 minutes at +25°C

### Total Power

5 Watts at steady state +25°C

## ADJUSTMENT

### Loop BW

Target Bandwidth: < 1 Hz

Type 2 Loop, < 5 minutes

to  $\pm 1 \times 10^{-9}$  of input

## CRYSTAL

### Type

20 MHz SC-cut

## OTHER

### Test Data

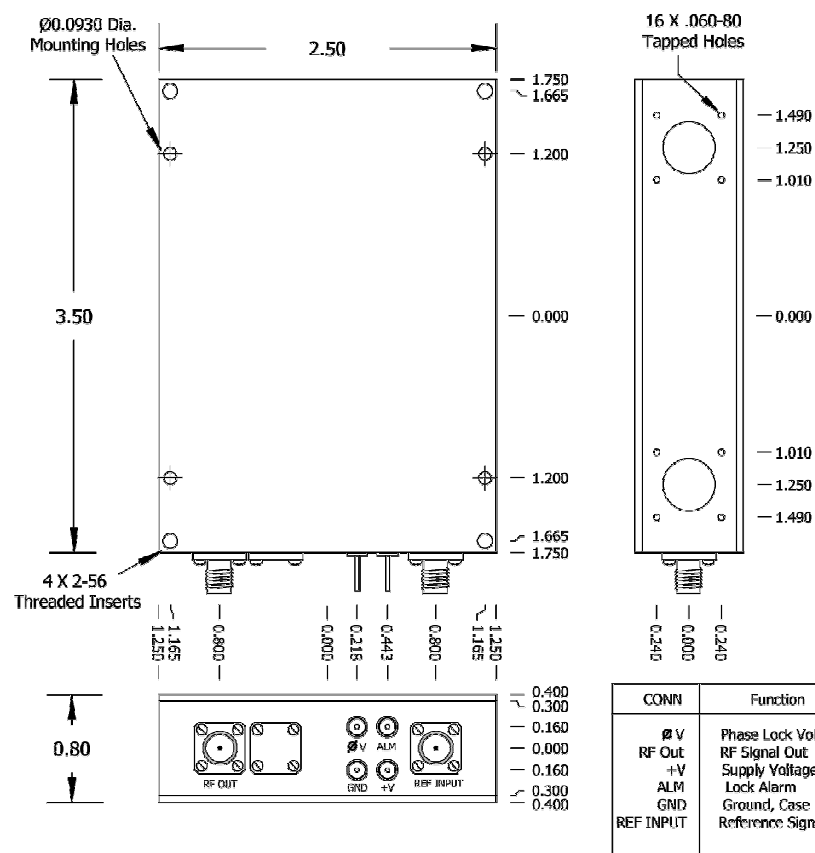
Output Level

Phase Noise (free-running)

Temperature Stability (free-running)

Harmonics, PLL Products, Spurious

REV	DATE	REVISION RECORD	DWN	AUTH
-	12-08-16	Initial Release	Liz	
A	01-10-17	Updated mechanical outline	Liz	VG



**Wenzel Associates, Inc.**

Austin, Texas

Title:

**20 MHz-SC ULN Phase Lock Crystal Oscillator**

P/N:

**501-30530**

Rev:

**A**

Date:

**01-10-17**

Drawn:

Ref:

501-10136B

Tolerances:  
(except as noted)  
Dimensions are in inches

0.XX Dec:

**$\pm 0.030$ "**

0.XXX Dec:

**$\pm 0.010$ "**

FSCM:

**62821**

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