

## OUTPUT

### Frequencies

- (1) 100 MHz (+8 dBm  $\pm$ 2dB into 50 ohms)
- (1) 200 MHz (+8 dBm  $\pm$ 2dB into 50 ohms)
- (1) 300 MHz (+8 dBm  $\pm$ 2dB into 50 ohms)
- (1) 400 MHz (+8 dBm  $\pm$ 2dB into 50 ohms)
- (1) 500 MHz (+8 dBm  $\pm$ 2dB into 50 ohms)
- (1) 800 MHz (+8 dBm  $\pm$ 2dB into 50 ohms)
- (1) 1000 MHz (+8 dBm  $\pm$ 2dB into 50 ohms)
- (1) 2000 MHz (+8 dBm  $\pm$ 2dB into 50 ohms)
- (1) 4000 MHz (+8 dBm  $\pm$ 2dB into 50 ohms)
- (1) 8000 MHz ((+8 dBm  $\pm$ 2dB into 50 ohms)

### STABILITY

#### Aging

1 x 10<sup>-6</sup> per year  
after 30 days operating, typical

#### Phase Noise (dBc/Hz)

	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz
100 MHz	-100	-130	-156	-172	-173
200 MHz	-94	-124	-150	-166	-167
300 MHz	-90	-120	-146	-162	-163
400 MHz	-88	-118	-144	-160	-161
500 MHz	-84	-114	-142	-154	-158
800 MHz	---	-112	-138	-154	-155
1000 MHz	---	-107	-135	-147	-151
2000 MHz	---	-101	-129	-141	-145
4000 MHz	---	-95	-123	-135	-139
8000 MHz	---	-89	-117	-129	-133

#### Harmonics

$\leq$  -25 dBc

#### Sub-Harmonics

$\leq$  -60 dBc

#### Spurious

$\leq$  -80 dBc, excluding supply line related spurs

### ENVIRONMENT

Laboratory, 0°C to +50°C operating temperature

### ADJUSTMENT

#### Electrical Tuning

(for internal 100 MHz ULN OCXO)

$\pm 4 \times 10^{-6}$ , 0 to +10 VDC

Negative Slope

REV	DATE	REVISION RECORD	DWN	AUTH
-	10-29-13	Initial Release	PAC	

### POWER REQUIREMENTS

#### Supply Voltage

120 VAC, 60 Hz; < 4 amps

#### Warm-up Time

1 hour, maximum; 15 minutes, typical (@ +25°C)

### CRYSTAL

#### Type

100 MHz SC-cut

### MECHANICAL

#### Dimensions

Standard 19" RETMA rack mount, 3U, 22" depth max

#### Connectors

RF Outputs: SMA(f), front panel

ET Input: SMA(f), rear panel

AC: IEC-320, EMI Filtered, switched and fused, rear panel  
(power cord included)

#### Front Panel

Painted White with Black silkscreen lettering

#### Monitoring

LED's (Green = Good; Red = Bad) provided on front panel for:

-Power – V<sub>RAW</sub> and V<sub>REG</sub>

### DESIGN

All output frequencies will be derived from a single 100 MHz  
ULN OCXO.

### OTHER

#### Test Data

Output Levels

Phase Noise

Harmonics, Subs, Spurious

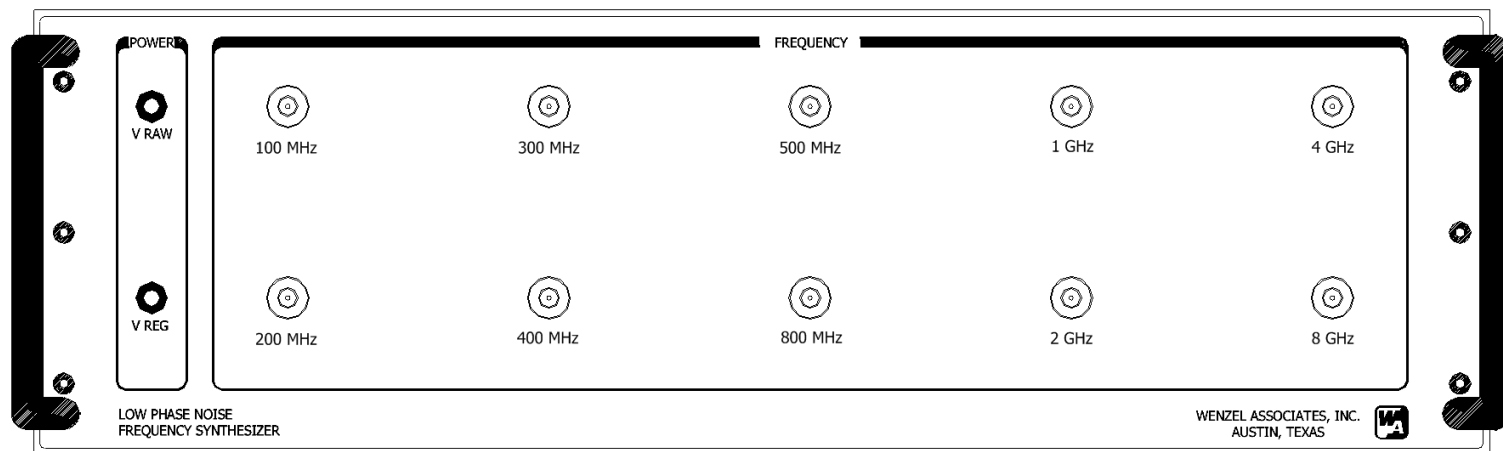
## Wenzel Associates, Inc.

Austin, Texas

Title:

### Ultra Low Phase Noise Frequency Synthesizer

P/N: <b>501-27277</b>	Rev: <b>-</b>	Date: <b>10-29-13</b>	Drawn:	Ref: 500-21936a
Tolerances: (except as noted) Dimensions are in inches	0.XX Dec: <b><math>\pm 0.030</math>"</b>	0.XXX Dec: <b><math>\pm 0.010</math>"</b>	FSCM: <b>62821</b>	Page 1 of 2



**Wenzel Associates, Inc.**  
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Title:

**Ultra Low Phase Noise Frequency Synthesizer**

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