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Synthesizer Assembly

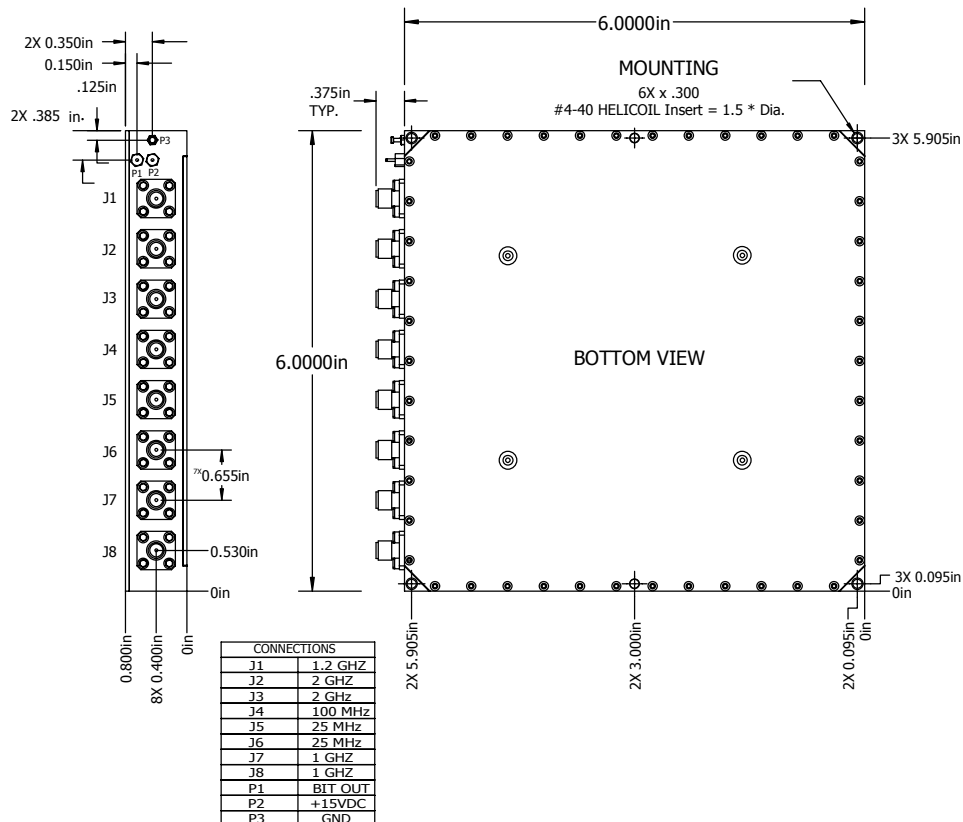
Features

- Low Phase Noise
- Modular Design
- Excellent Spectral Purity
- Power Level Detectors
- Custom Specifications Readily Available

Applications

- Airborne Integration
- Frequency Distribution
- Low Noise Reference Source

This low phase noise frequency source generates and distributes 25, 100 MHz, 1, 1.2, and 2 GHz signals. The RF outputs are organized in a single row on the front of the unit along with power and ground interfaces. Included with this system are power level detector BITS for each output for monitoring purposes. The phase noise performance of this system is derived from an Ultra Low Noise Crystal Oscillator and integrated Low Noise Multipliers and Dividers.





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OUTPUT 1

Frequency

25 MHz (2 EA)

Output Level

+10 dBm min. into 50 ohms,
each output

Phase Noise L(f), Typical

10 Hz	-110 dBc/Hz
100 Hz	-140 dBc/Hz
1 kHz	-160 dBc/Hz
10 kHz	-166 dBc/Hz
100 kHz	-167 dBc/Hz

OUTPUT 2

Frequency

100 MHz (1 EA)

Output Level

+10 dBm min. into 50 ohms

Phase Noise L(f), Typical

10 Hz	-100 dBc/Hz
100 Hz	-130 dBc/Hz
1 kHz	-158 dBc/Hz
10 kHz	-172 dBc/Hz
100 kHz	-174 dBc/Hz

OUTPUT 3

Frequency

1 GHz (2 EA)

Output Level

+10 dBm min. into 50 ohms,
each output

Phase Noise L(f), Typical

10 Hz	-77 dBc/Hz
100 Hz	-107 dBc/Hz
1 kHz	-135 dBc/Hz
10 kHz	-149 dBc/Hz
100 kHz	-150 dBc/Hz

OUTPUT 4

Frequency

1.2 GHz (1 EA)

Output Level

+13 dBm min. into 50 ohms

Phase Noise L(f), Typical

10 Hz	-75 dBc/Hz
100 Hz	-105 dBc/Hz
1 kHz	-133 dBc/Hz
10 kHz	-147 dBc/Hz
100 kHz	-148 dBc/Hz

OUTPUT 5

Frequency

2 GHz (2 EA)

Output Level

+11 dBm min. into 50 ohms, each output

Phase Noise L(f), Typical

10 Hz	-70 dBc/Hz
100 Hz	-100 dBc/Hz
1 kHz	-128 dBc/Hz
10 kHz	-142 dBc/Hz
100 kHz	-143 dBc/Hz

STABILITY

Aging

1×10^{-6} per year after 30 days operating, typical

Temperature Stability

$\pm 1 \times 10^{-6}$, 0° to +60°C

Harmonics, Sub-Harmonics and Spurious

-60 dBc max
(-55 dBc max, for 2 GHz outputs only)

POWER REQUIREMENTS

Supply Voltage

+15 VDC $\pm 5\%$

Warm-Up Power

<19 Watts for 7 minutes

Total Power

<14.5 Watts at +25°C

MECHANICAL

Dimensions

6 x 6 x 0.8" max

Connectors

SMA(f) and feedthru capacitors
(all on one end)

Packaging

Machined Aluminum Case

OTHER

Power Level Detector BIT

TTL High = All outputs within thresholds limits
TTL Low = At least one output out of tolerance:
(2 EA) 25 MHz +12 dBm ± 5 dB
(1 EA) 100 MHz +12 dBm ± 5 dB
(2 EA) 1 GHz +12 dBm ± 5 dB
(1 EA) 1.2 GHz +13 dBm ± 5 dB
(2 EA) 2 GHz +12 dBm ± 5 dB

Test Data

Phase Noise
Harmonics, Sub-Harmonics & Spurious
Warm-Up and Steady State Current
Bit Signal Test