



**GENERAL DESCRIPTION**

The ZFR-12750-06 synthesizer combines excellent output power stability with a small step size, good phase noise, and a compact package size. It is a versatile synthesizer that can be tailored to the specific frequency range and control interface required. It is used in applications from lab benchtops to airborne military electronics.

**ZFR SERIES FEATURES**

- Programmable Frequencies to 20 GHz
- Fast Switching Speed
- Step Sizes as low as 10 kHz
- Multi-octave bandwidth
- Low Phase Noise
- Small Package Size: 2.5" x 4.5" x 0.6" typical
- High Stability Power Output

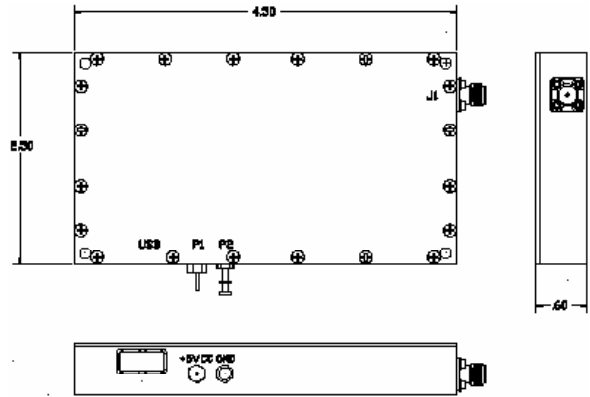
**ZFR SERIES OPTIONS**

- Step size configurable to larger size
- Switch speeds <150 usec available
- Serial or USB communication interfaces available
- Internal Reference available

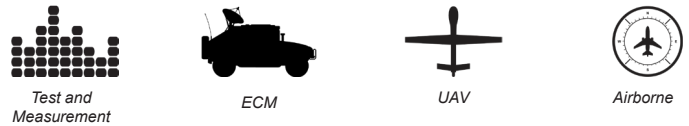
**ELECTRICAL SPECIFICATIONS**

Frequency	10900 - 12750 MHz
Output Power VS Freq.	0 dBm ± 2.0 dB , 50 Ω
Output Power Variation	± 0.4 dB with TEMP
	± 0.1 dB with Power Cycle Off/On
Step Size	250 KHz
Stability	±1 PPM
Reference	Internal

All specifications are typical unless otherwise specified and subject to change without notice.



**INDUSTRIES**



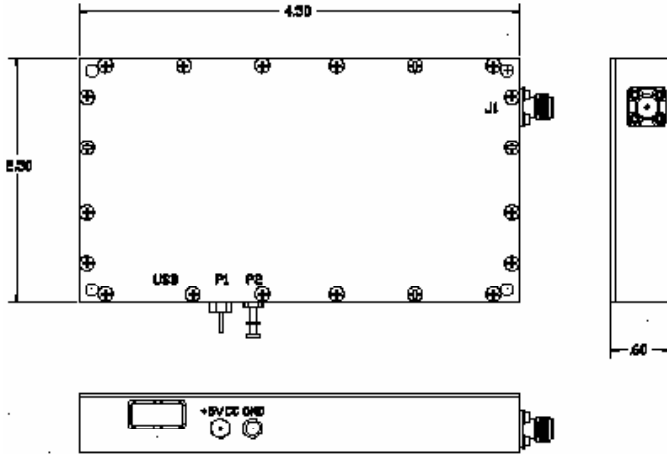
**TYPICAL APPLICATIONS**

- Laboratory Testing
- Remote Sensing / Monitoring
- Electronic Countermeasures
- Radar Systems

Phase Noise	1 kHz	-88 dBc/Hz TYP, -83 dBc/Hz MAX
	10 kHz	-95 dBc/Hz TYP , -90 dBc/Hz MAX
	100 kHz	-95 dBc/Hz TYP , -90 dBc/Hz MAX
Spurs		-55 dBc TYP , -50 dBc MAX
Harmonics		-20 dBc TYP, -15 dBc MAX
Power Supply		+5V ± 0.15V @700mA TYP, 750mA MAX
Lock Detect		Read Through USB
Programming		USB



**PACKAGE OUTLINE**



All dimensions are in inches unless otherwise specified

.XX = +/- 0.01

.XXX = +/- 0.005.

**PIN DESCRIPTIONS**

J1	RF OUT	Female SMA
P1	VCC	Filtered Feedthrough
P2	GND	Ground Lug
USB	λ CONTROL	USB, Style A

**MECHANICAL SPECIFICATIONS**

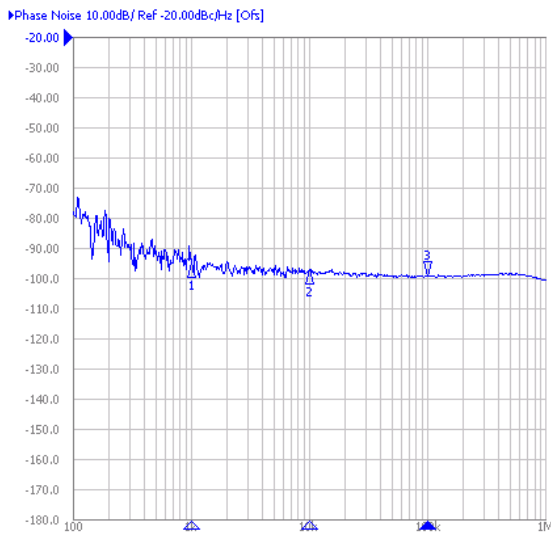
RF Connector	Female SMA
Package	Aluminum 4.5" x 2.5" x 0.6"
Package Outline	EM Drawing 2200029005
Part Label	EM Drawing 8000040009

**ENVIRONMENTAL SPECIFICATIONS**

Standard Operating Temperature	-15°C to +45°C
Storage Temperature	-55°C to +125°C

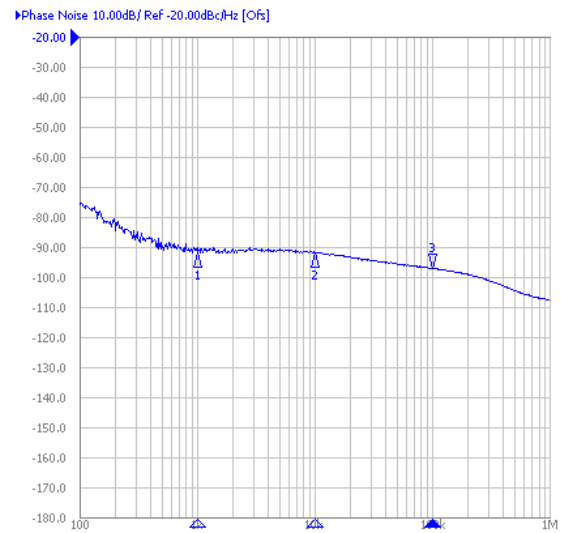
**TYPICAL PHASE NOISE**

**10.9 GHZ**



Carrier 10.90000000 GHz	-4.2447 dBm
1kHz	-95.1001 dBc/Hz
10 Khz	-97.1694 dBc/Hz
100 kHz	-99.5581 dBc/Hz

**12.75 GHZ**



Carrier 12.75000000 GHz	-4.1142 dBm
1kHz	-92.0309 dBc/Hz
10 Khz	-91.7584 dBc/Hz
100 kHz	-97.0830 dBc/Hz

Custom designs are available. Please contact EM Research.

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**DETAILS**

Title	Programmable Frequency Synthesizer Part No. ZFR-12750-06
File	SPC-ZFR-12750-06-REVA
Scale	N/A
Size	A
Rev.	A

**APPROVALS**

Department	Date
DWN: M. Anderson	1/17/18
QA: S. Zandonella	12/27/17
MKTG: M. Eiting	1/3/18
ENG: E. Smith	1/8/18
MFG: G. Evans	12/28/17
Other:	

**REVISION HISTORY**

Rev.	Description	Date	Approved
A	Configurable Product	1/17/18	DCR# 1703775

**NOTES**