



**GENERAL DESCRIPTION**

The ZFR-12750-05 synthesizer combines multi-octave bandwidth with a small step size, fast switching speed, 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

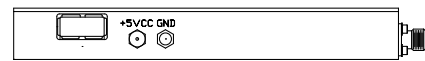
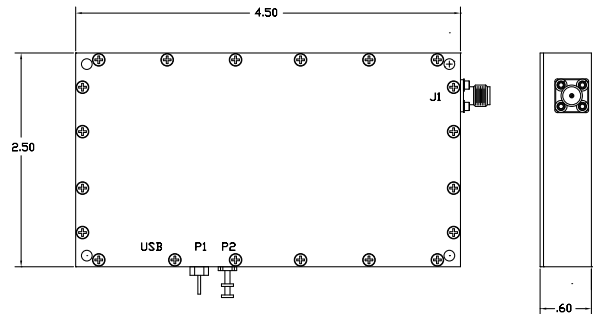
**ZFR SERIES OPTIONS**

- 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	+10 dBm ±2dB , 50 Ω
Step Size	5 KHz
Stability	±1 PPM
Reference	Internal

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



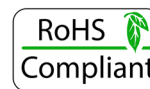
**INDUSTRIES**



**TYPICAL APPLICATIONS**

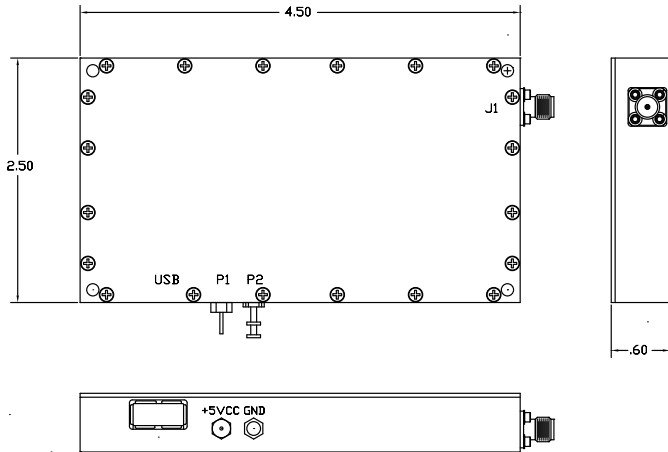
- Laboratory Testing
- Remote Sensing / Monitoring
- Electronic Countermeasures
- Radar Systems

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		-60 dBc TYP , -55 dBc MAX
Harmonics		-20 dBc TYP, -15 dBc MAX
Lock Detect		Read Through USB
Programming		USB
Power Supply		+5V ± 0.15V @700mA TYP, 750mA MAX





**PACKAGE OUTLINE**



**PIN DESCRIPTIONS**

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

All dimensions are in inches unless otherwise specified  
.XX = +/- 0.01  
.XXX = +/- 0.005.

**ENVIRONMENTAL SPECIFICATIONS**

Standard Operating Temperature	0°C to +50°C
Storage Temperature	-55°C to +125°C

Custom designs are available. Please contact EM Research.

**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



**DETAILS**

Title	Programmable Frequency Synthesizer Part No. ZFR-12750-05
File	SPC-ZFR-12750-05-REVA
Scale	N/A
Size	A
Rev.	A

**APPROVALS**

Department	Date
DWN: M. Anderson	1/15/18
QA: S. Zandonella	12/27/17
MKTG: M. Eiting	1/15/18
ENG: E. Smith	1/8/18
MFG: G. Evans	12/27/17
Other:	

**REVISION HISTORY**

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

**NOTES**