

GENERAL DESCRIPTION

The EXP-12000-02 is a switchable fixed frequency synthesizer in a connectorized package, capable of alternating between the frequencies of 11 GHz and 12 GHz. This ruggedized DRO replacement features excellent phase noise, vibration tolerance, and shock tolerance.



EXP-12000-02 FEATURES

- Connectorized Package (2.25" x 2.25" x 0.6")
- Switches frequencies between 11 and 12 GHz
- Exceptionally low phase noise
- High vibration design

EXP SERIES OPTIONS

- Choose multiple fixed frequencies within selected bands from 9400 - 13600 MHz
- Output power up to +15 dBc
- Reference select 10 to 100 MHz
- Spurs less than -70 dBc

ELECTRICAL SPECIFICATIONS

Frequency	11 GHz or 12 GHz	
Stability	Same as Reference	
Switch Speed	10 mSEC MAX, to within ± 10 KHz	
Reference	100 MHz, +5 dBm ± 2 dB	
Ref. Input Imp.	50 Ω	
Ref. Phase Noise	1 KHz	<-150 dBc/Hz
	10 KHz	<-160 dBc/Hz
	100 KHz	<-160 dBc/Hz
Output Power	+13 dBm MIN, 50 Ω	
Harmonics	<-25 dBc TYP, <-20 dBc MAX	

APPLIED INDUSTRIES



Airborne



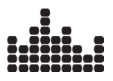
Instrumentation



UAV



Automated Test Equipment



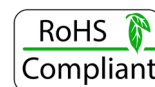
Test and Measurement

EXP SERIES TYPICAL APPLICATIONS

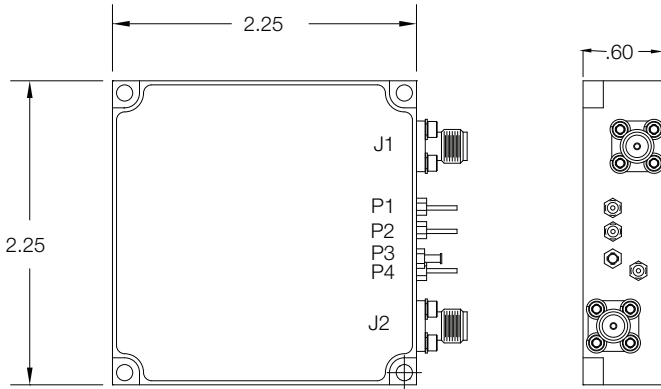
- Local oscillators for frequency conversion
- Test signals for systems requiring low phase noise inputs
- Airborne applications with demanding vibration requirements
- Ground-based mobile communications systems

Sub-Harmonics	<-55 dBc TYP, <-50 dBc MAX @ $F_{out} \pm (1/2 * F_{out})$		
Spurs	<-70 dBc TYP, <-65 dBc MAX		
Phase Noise	1 KHz	<-90 dBc/Hz TYP , <-85 dBc/Hz MAX	
	10 KHz	<-100 dBc/Hz TYP , <-95 dBc/Hz MAX	
	100 KHz	<-108 dBc/Hz TYP , <-103 dBc/Hz MAX	
VCC	+12 V ± 0.5 V @ 450 mA MAX		
Lock Detect	5V TTL, HIGH = LOCK		
Programming	F1; 3.3V TTL Logic		
Prog. Format	F-Select (F1)	OV	11 GHz
		+3V	12 GHz

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



PACKAGE OUTLINE



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

PIN DESCRIPTIONS

P1	LOCK	Filtered Feed-Thru
P2	F1	Filtered Feed-Thru
P3	GND	Threaded Lug
P4	VCC	Filtered Feed-Thru
J1	REF IN	Female SMA
J2	RF OUT	Female SMA

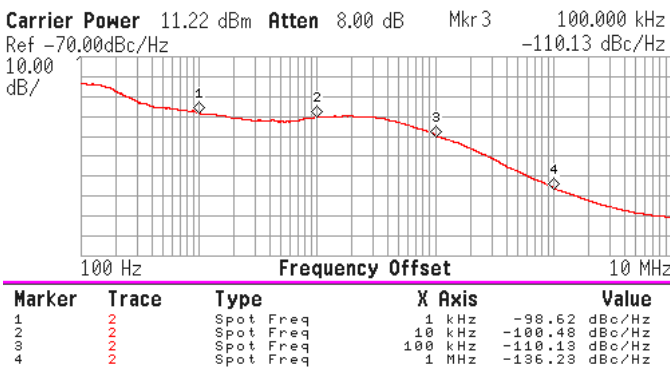
MECHANICAL SPECIFICATIONS

Package	Connectorized, 2.25" x 2.25" x 0.6"
Package Outline	EM Drawing 2200044001
Part Label	EM Drawing 8000050002

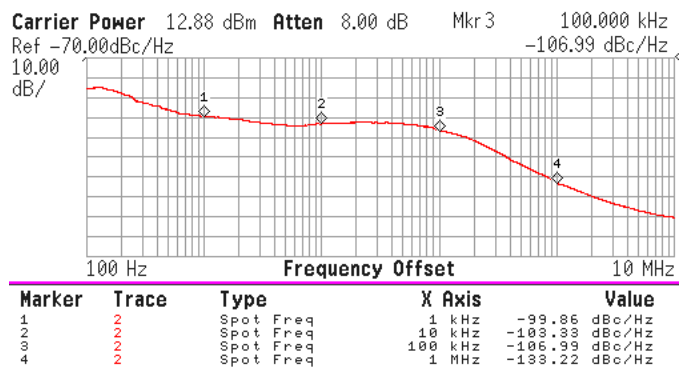
ENVIRONMENTAL SPECIFICATIONS

Standard Operating Temperature	-30°C to +70°C
Optional Operating Temperature	-40°C to +85°C
Storage Temperature	-50°C to +85°C
Relative Humidity	0 to 95% RH (non-condensing)
Pressure Range	3.45 to 15.66 PSI

PHASE NOISE PLOT | 11 GHZ



PHASE NOISE PLOT | 12 GHZ



Custom designs are available. Please contact EM Research.



DETAILS

Title	Fixed Frequency Synthesizer Part No. EXP-12000-02
File	SPC-EXP-12000-02-REVA
Scale	N/A
Size	A
Rev.	A

APPROVALS

Department	Date
DWN:	
QA:	
MKTG:	
ENG:	
MFG:	
Other:	

REVISION HISTORY

Rev.	Description	Date	Approved
A	Configurable Product		DCR#

NOTES

1. Vibration: RTCA/DO-160G Section 8, Curve E
2. Shock: MIL-STD-810G w/Change 1 METHOD 516.7, TABLE 516.7-I
3. MTBF: ≥ 6000 HRS

PRELIMINARY