EMRESEARCH®
FULL SPECTRUM INNOVATION

DATA SHEET

LT-8000-05

PROGRAMMABLE FREQUENCY SYNTHESIZER

GENERAL DESCRIPTION

The LT-8000-05 is a ruggedized synthesizer in a module mount package, that produces a programmable signal between 5000 and 8000 MHz. Part of the Little THOR family from EM Research, this compact device features extreme shock and vibration tolerance.

LT-8000-05 FEATURES

- Module Mount Package (1.30” x 1.10” x 0.20”)
- Programmable Frequency between 5000 and 8000 MHz
- Extreme shock, and vibration tolerance

APPLIED INDUSTRIES

SatCom *ECM* *UAV* *Airborne*

LT SERIES OPTIONS

- Frequency range from 500 MHz to 16.5 GHz (within selected bands)
- Hermetic seal optional per MIL-STD-883
- Power output up to +17 dBm

LT SERIES TYPICAL APPLICATIONS

- LO for Up/Down Converters
- X-Band Tunable Local Oscillator
- LO for Sub-harmonic Mixers

ELECTRICAL SPECIFICATIONS

Frequency	5000-8000 MHz
Step Size	10 MHz
Reference	50 MHz
Ref. Level	+4 dBm ± 3 dB
Accuracy	Same as Reference
RF Power Out	+6 dBm ±3 dB
2nd Harmonic	<-20 dBc
Spurs	<-55 dBc REF SPURS @ ±10 MHz
	<-50 dBc REFERENCE LEAKAGE
	<-65 dBc ALL OTHER SPURS
VCC	+5 VDC ±0.125V @ < 175mA TYP, < 200mA MAX
Programming	Serial; Clock, Data, Enable

Prog. Format		PF-60
Phase Noise	1 KHz	<-75 dBc/Hz TYP , <-70 dBc/Hz MAX
	10 KHz	<-80 dBc/Hz TYP , <-75 dBc/Hz MAX
	100 KHz	<-80 dBc/Hz TYP , <-75 dBc/Hz MAX
	1 MHz	<-85 dBc/Hz TYP , <-80 dBc/Hz MAX
	10 MHz	<-127 dBc/Hz TYP , <-122 dBc/Hz MAX
Switching Speed		<10 uSec to w/in ±10 KHz (Band Edge to Band Edge)
		<15 uSec MAX
Lock Detect		TTL, HIGH = LOCK
Ref. Phase Noise	1 KHz	<-125 dBc/Hz
	10 KHz	<-140 dBc/Hz
	100 KHz	<-150 dBc/Hz

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

IPC® CERTIFIED ISO 9001 COMPANY RoHS Compliant REACH COMPLIANCE

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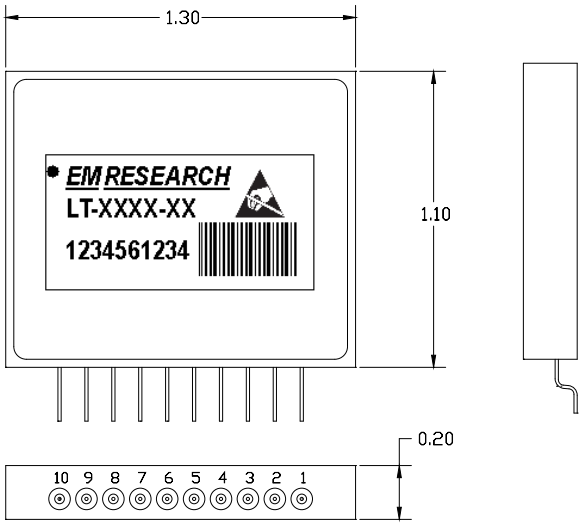
PACKAGE OUTLINE



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

PIN DESCRIPTIONS

1	NC	6	Lock
2	VCC	7	REF IN
3	Enable	8	GND
4	Data	9	RF OUT
5	Clock	10	Ground
Housing is Ground			

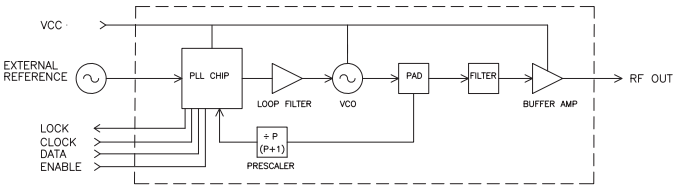
MECHANICAL SPECIFICATIONS

Package	Module Mount, 1.30” x 1.10” x 0.20”
Package Outline	EM Drawing 2200006001
Part Label	EM Drawing 8000002001

ENVIRONMENTAL SPECIFICATIONS

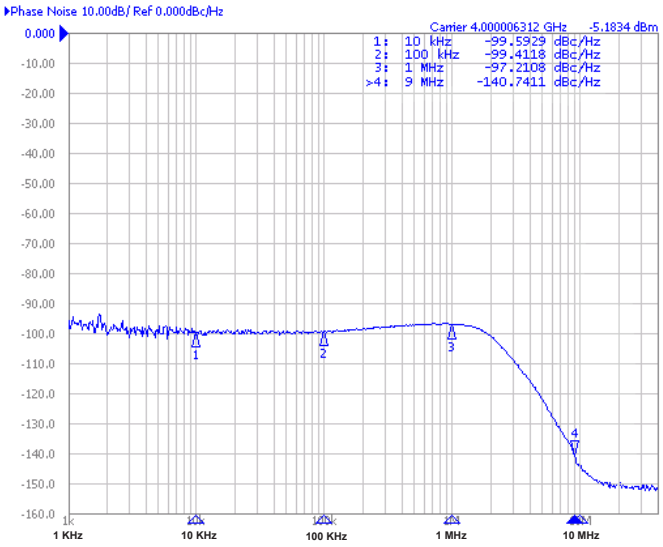
Standard Operating Temperature	-30°C to +70°C
Storage Temperature	-55°C to +125°C
For Extended Temperature: -40°C to +85°C, Order Part # LT-8000-06.	

BLOCK DIAGRAM



Custom designs are available. Please contact EM Research.

PHASE NOISE PLOT



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DETAILS

Title	Programmable Frequency Synthesizer Part No. LT-8000-05
File	SPC-LT-8000-05-REVA
Scale	N/A
Size	A
Rev.	A

APPROVALS

Department	Date
DWN: Kieley Smith	3/27/20
QA: Susan Zandonella	10/4/19
MKTG: Sandi Renden	1/20/20
ENG: Evan Smith	2/3/20
MFG: Nick Hicks	1/20/20
Other:	

REVISION HISTORY

Rev.	Description	Date	Approved
A	Configurable Product	3/27/20	DCR# 1904346

NOTES

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