

# THOR-16000-XA

PRODUCT RELEASE

## Ultra-Rugged, Multi-Output Synthesizer Single 800 MHz / Dual 16 GHz Outputs

### FEATURES

- Ultra-Rugged Design for Missile/Artillery Application
- Fully Custom, Hermetically-Sealed Package
- Multiple Fixed Outputs (2x 16 GHz, 1x 800 MHz)
- Low Phase Noise Performance (-94 dBc/Hz @ 100 KHz)
- Designed for Extreme Vibration & Shock (>220 Gsrms)



### SPECIFICATIONS

Frequency RF1.....	16 GHz
Frequency RF2.....	16 GHz
Frequency RF3.....	800 MHz
Isolation Between Outputs.....	40 dB Min
External Reference.....	50 MHz
Power Output.....	+10 dBm ±2 dB, (all outputs)
Harmonics .....	<-20 dBc
Spurs .....	<-60 dBc
Supply.....	+5 V
Current.....	≤600 mA
Temperature Range (Operating).....	-40°C to +85°C
Programming .....	Serial; Clock, Data, Enable ..... (3.3V TTL Logic)
Connectors .....	GPPO (all RF & I/O)
Package Size.....	3.1" x 1.1" x 0.4"

Phase Noise (dBc/Hz)	800 MHz	16000 MHz
1 KHz Offset .....	<-110	<-84
10 KHz Offset .....	<-114	<-89
100 KHz Offset .....	<-118	<-94
1 MHz Offset.....	<-144	<-120

### OPTIONS

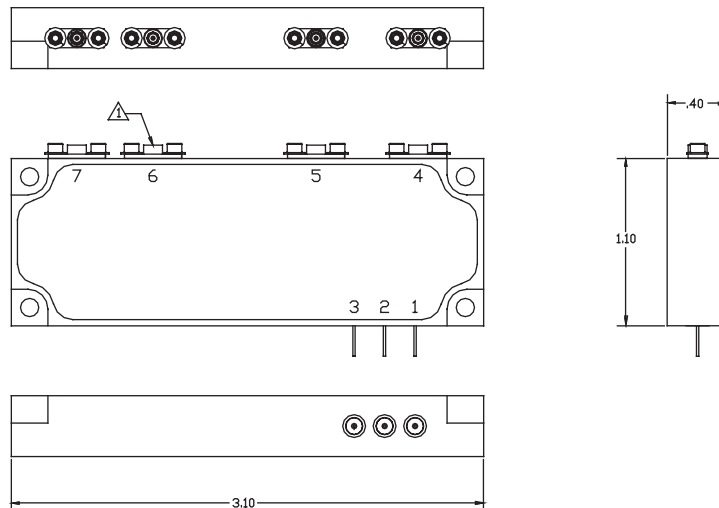
GPPO, SMA, K, or Pinned Connector Configurations Available  
Configurable Designs Available

### APPLICATION

Local Oscillator for Hyper-Velocity Projectile / Missile System.

Note: All specifications are typical unless otherwise specified and subject to change without notice. Not all performance parameters are available in combination with certain specifications. E.G. Not all power output levels are available at all frequency ranges.

### PACKAGE OUTLINE



#### Notes:

1. Includes removeable SMA connectors for drop-in, surface-mountability.
2. Alternate connectors available: GPO, GPPO, K
3. Demoboards and Reference Modules available.
4. All dimensions are in inches unless otherwise specified.
4. Diagrams and pictures shown are examples only.

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1

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## PERFORMANCE PLOTS

Figure 1: Phase noise at 800 MHz, Locked to 50 MHz ref.

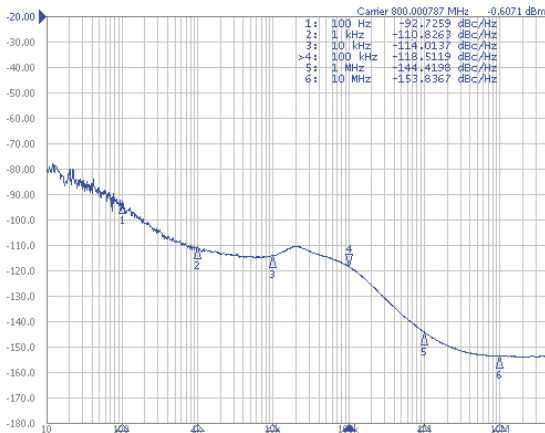


Figure 2: Phase noise at 16 GHz, locked to 50 MHz ref.

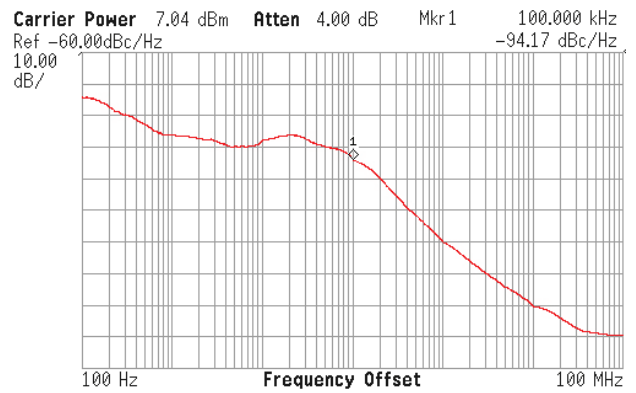


Figure 3: Adjacent launch shock profile, 234 Gs RMS

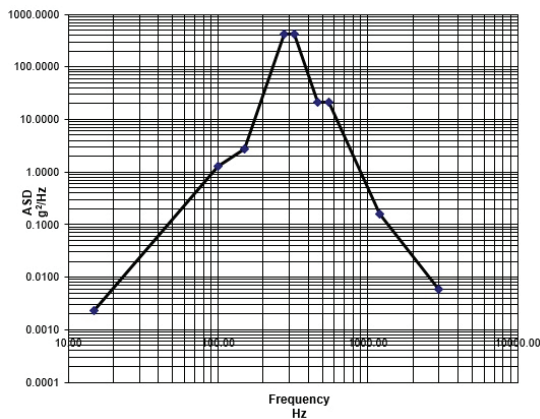


Figure 4: Captive carry shock profile, 131 Gs RMS

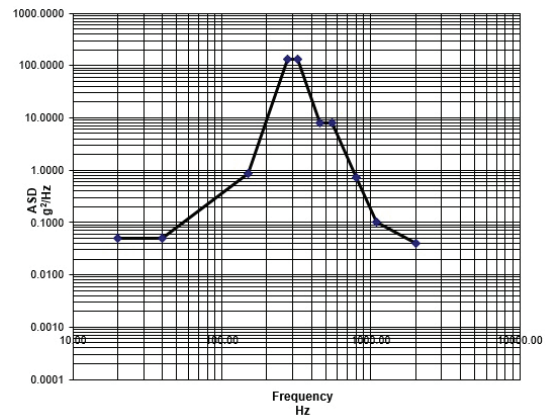


Figure 5: Flight 1 vibe profile, 20.95 Gs RMS

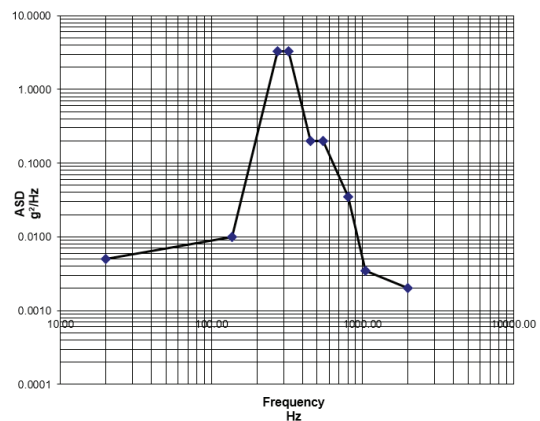


Figure 6: Flight 2 vibe profile, 29.63 Gs RMS

