

INTELLIGENT INTERACTIVE SYNTHESIZER

SURFACE MOUNT MODEL: MFSH200400-50

OPTIMIZED LOOP PARAMETER

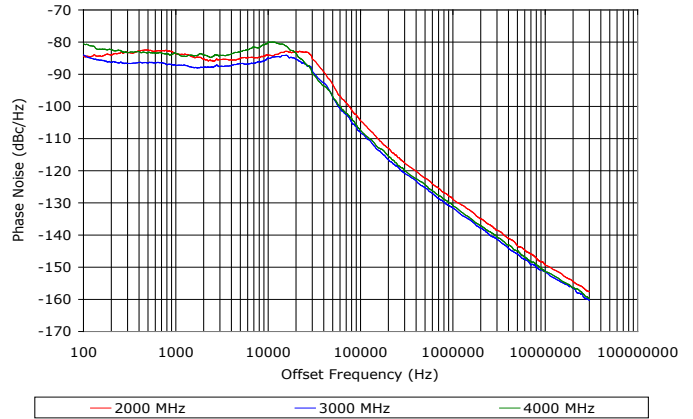
2000 - 4000 MHz

FEATURES:

- ▶ Small Size, Surface Mount (0.6" x 0.6")
- ▶ Exceptionally Low Phase Noise
- ▶ Standard Programming Interface
- ▶ Ultra Wide Tuning Range
- ▶ Lead Free - RoHS Compliant
- ▶ Patented REL-PRO® Technology
- ▶ Buffered Output



Phase Noise



SPECIFICATIONS (Rev. B 04/22/11)

Frequency	2000 - 4000 MHz		
Step Size	0.5 MHz		
Reference Input Frequency	10 MHz ¹		
Reference Input Voltage	1.0 V p-p to 3.0 V p-p		
Bias Voltage	Vcc	V (Vdc)	I (mA Max.)
	VCO	+5	55
	Digital	+3	15
	Tune	+18	5
Output Power	5 dBm (Min.)		
Spurious Suppression	75 dB (Typ.)		
Harmonic Suppression	18 dB (Typ.)		
Settling Time	10 mSec (Typ.) ²		
Output Impedance	50 Ohms (Nom.)		
Lock Detect Indicator	CMOS 3.0 V		
Typical Phase Noise	Offset	Phase Noise	
	@ 10 kHz	-85 dBc/Hz	
	@ 100 kHz	-108 dBc/Hz	
Operating Temperature Range	-40 to +85 °C		
Programming	See Application Note: AN7500		
¹ Reference input frequency is programmable (See AN7500) in multiples of the step size, 10 MHz is the factory default setting. 150 MHz (Max.)			
² From the rising edge of LE to stable lock detect			

Absolute Maximum Ratings

Storage Temp. Range	-55 to +125 °C
Bias Voltage (Digital)	+3.6 V
Bias Voltage (VCO)	+5.5 V
Bias Voltage (Tune)	+18.5 V
DC Voltage Applied to RF Out	±25 V

Package # 367

PINOUT

- 1-VCC3(TUNE)
- 7-RF OUT
- 8-VCC1(VCO)
- 9-VCC2(DIGITAL)
- 10-REF
- 17-NC
- 18-LE
- 19-DATA
- 20-CLK
- 21-LD*
- 22-NC
- NC=NO CONNECTION
- ALL OTHER GND

RECOMMENDED PCB LAYOUT

TOLERANCES ON THREE DECIMAL PLACES = ± 0.015

PACKAGE MOUNTING: SEE APPLICATION NOTE AN7200 & AN7300

* High when locked (source/sink 500uA)

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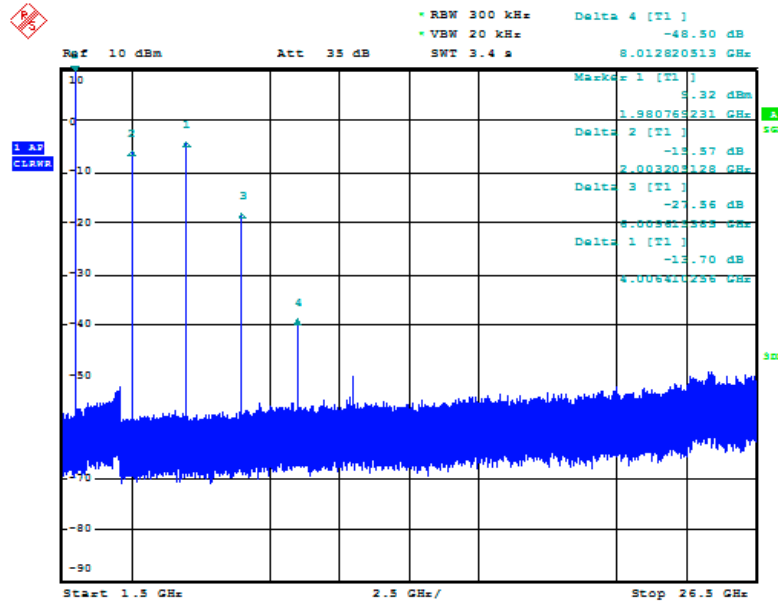
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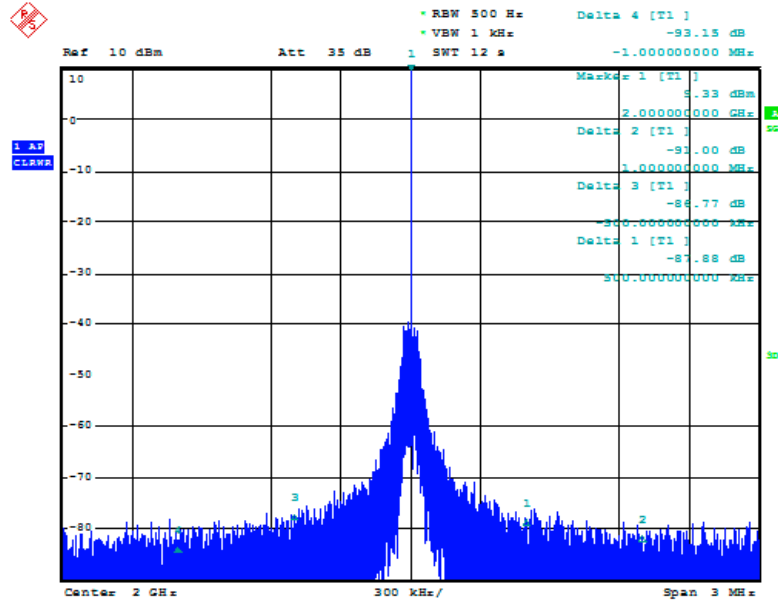
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HARMONIC SUPPRESSION



REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

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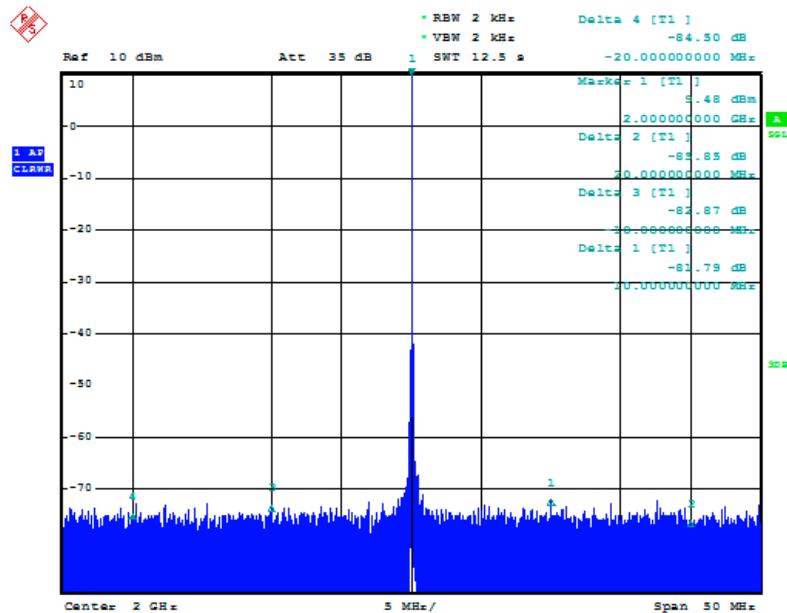
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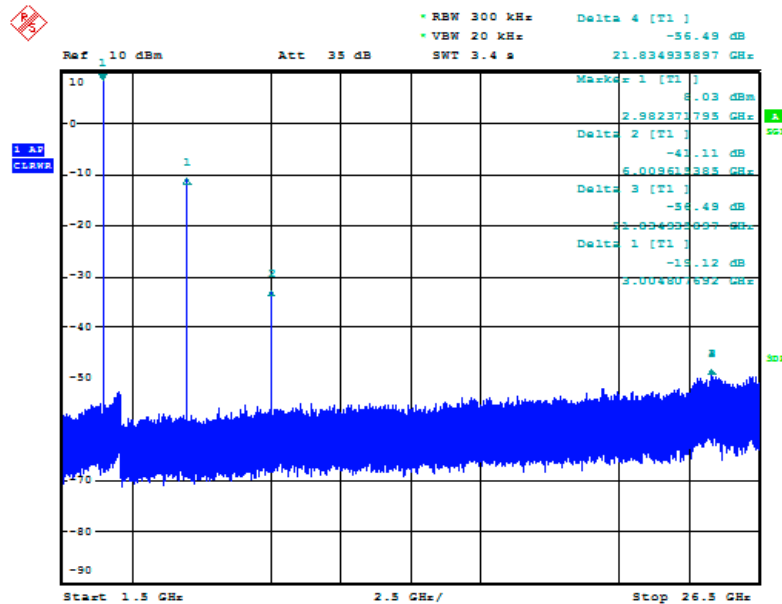
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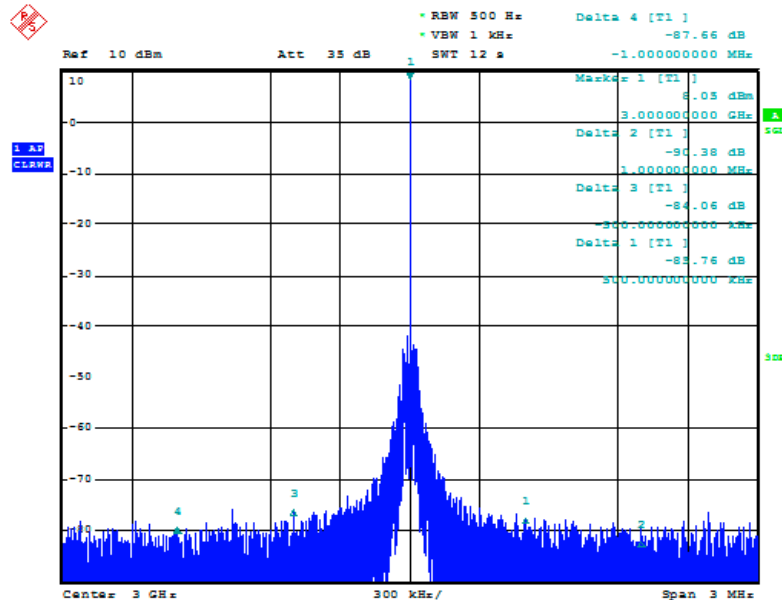
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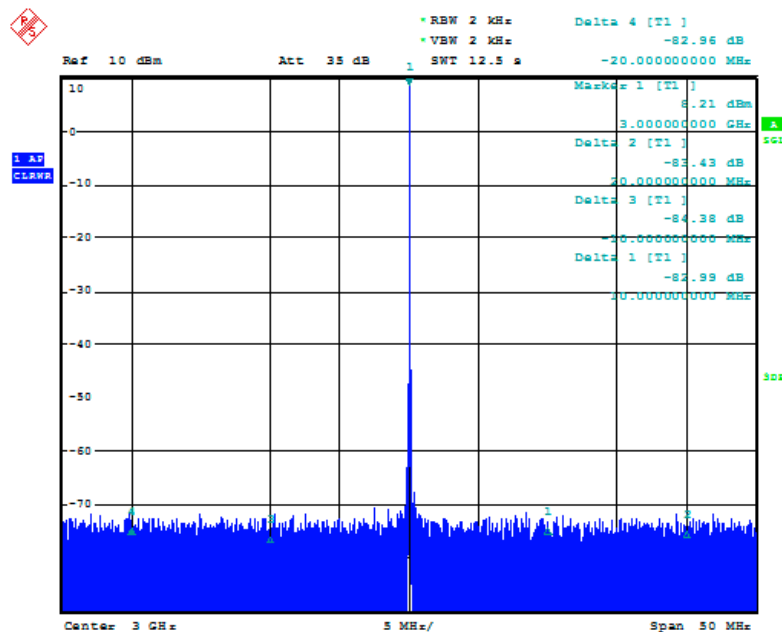
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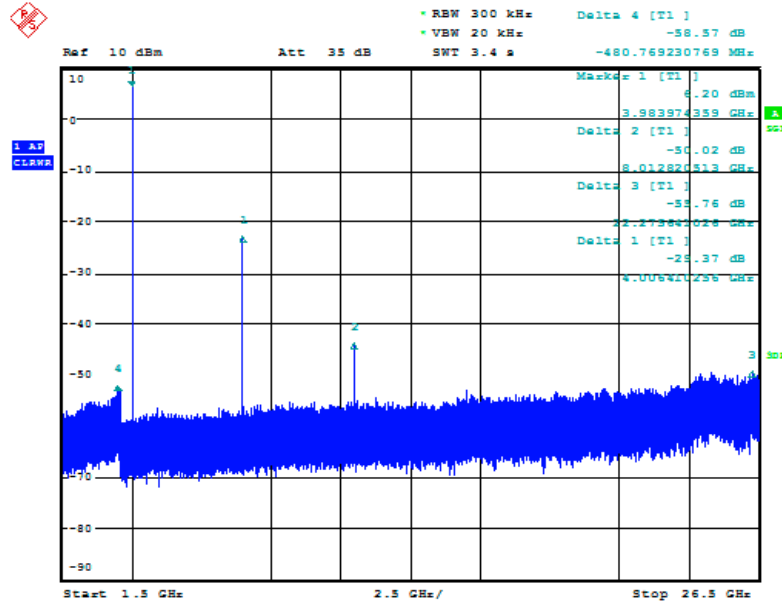
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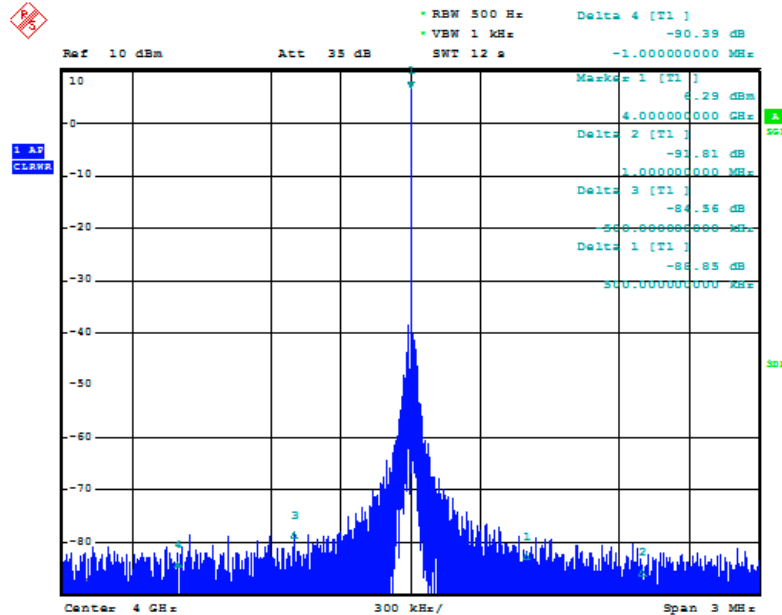
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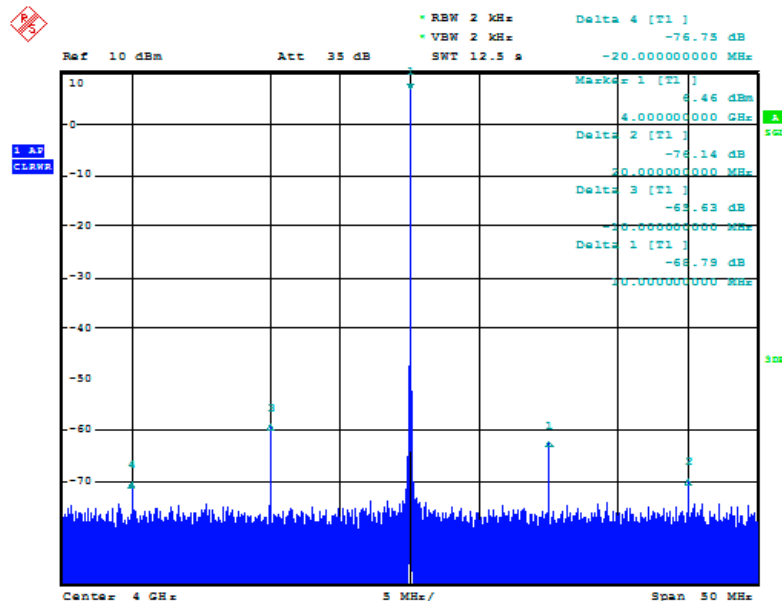
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