

# INTELLIGENT INTERACTIVE SYNTHESIZER

## SURFACE MOUNT MODEL: LFSW110250-100

**WIDE BANDWIDTH**

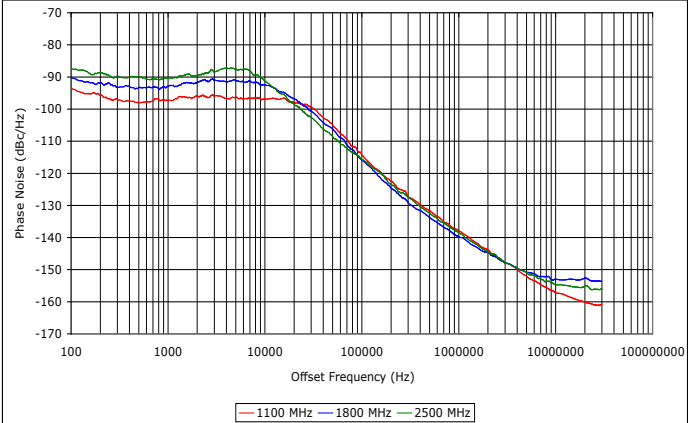
**1100 - 2500 MHz**

**FEATURES:**

- ▶ Exceptionally Low Phase Noise
- ▶ Interactive Communication
- ▶ Standard Programming Interface
- ▶ Ultra Wide Tuning Range
- ▶ Lead Free - RoHS Compliant
- ▶ Patent Pending REL-PRO® Technology
- ▶ Small Size, Surface Mount
- ▶ Buffered Output



**Phase Noise**



**SPECIFICATIONS (Rev. A 11/19/07)**

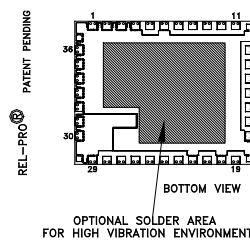
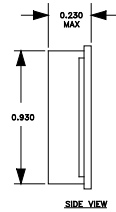
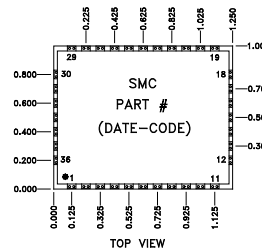
Frequency	1100 - 2500 MHz		
Step Size	1 MHz		
Reference Input Frequency	10 MHz *		
Reference Input Voltage	1 V p-p to 3.3 V p-p		
Bias Voltage	Vcc	V (Vdc)	I (mA Max.)
	Digital	+5	50
	VCO	+5	35
	Converter	+5	60
Output Power	+5 dBm (Min.)		
Spurious Suppression	70 dB (Typ.)		
Harmonic Suppression	20 dB (Typ.)		
Settling Time	15 mSec (Typ.) **		
Output Impedance	50 Ohms (Nom.)		
Typical Phase Noise	Offset	Phase Noise	
	@ 1 kHz	-92 dbc/Hz	
	@ 10 kHz	-92 dbc/Hz	
	@ 100 kHz	-115 dbc/Hz	
Operating Temperature Range	-40 to +85 °C		
Programming	See Application Note: AN7100		

\* Reference input frequency is programmable in multiples of the step size, 10 MHz is the default setting. 150 MHz (Max.)  
 \*\* From the rising edge of LE to stable lock detect

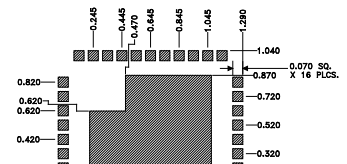
**Absolute Maximum Ratings**

Storage Temp. Range	-55 to +125 °C
Bias Voltage (Digital)	+5.25 V
Bias Voltage (VCO)	+5.5 V
Bias Voltage (Converter)	+8 V
DC Voltage Applied to RF Out	±25 V

**Package # 197LF**



**RECOMMENDED PCB LAYOUT**



TOLERANCES ON THREE DECIMAL PLACES = ± 0.015  
 PACKAGE MOUNTING: SEE APPLICATION NOTE AN7200

**Pin-Out**

Pin 5 - RF out	Pin 19 - Latch Enable In	Pin 28 - Vcc (Converter)
Pin 7 - Lock Detect Out *	Pin 21 - Ref. In	Pin 8,12,14,15,17 - NC
Pin 9 - Data In	Pin 23 - Vcc (Digital)	All Others - Ground
Pin 10 - Error Flag	Pin 24 - Vtune (Output)	
Pin 11 - Clock In	Pin 25 - Vcc (VCO)	NC - No Connection
Pin 13 - VCO (On/Off)****	Pin 26 - Vout (Converter) ***	
Pin 16 - Reset **	Pin 27 - Vcc (Tune) ***	

\* High when locked (source/sink 500 uA)  
 \*\* A low on this input will reset the internal controller. Leave unconnected for normal operation.  
 \*\*\* Connect externally. Bypassed with a 10uF 35V tantalum capacitor.  
 \*\*\*\* NC if unused.

This product is manufactured under one or more of the following patents: Approved: 5,180,810; 5,122,621; 5,380,346; 5,416,446; 5,630,754; 5,805,431; 6,325,623; 6,806,573; 7,088,189; 7,180,381; 7,185,591; 7,282,670; 7,283,642; 7,292,113  
 Pending: 65/48,307; 65/50,1371 & 65/50,1796; 65/52,937 & 65/53,067; 65/56,481; 65/56,473; 65/58,083; 65/60,822; 65/60,579; 65/73,883/4;  
 65/73,883/4; 65/73,883/4; 65/73,883/4; 65/73,883/4; 65/73,883/4



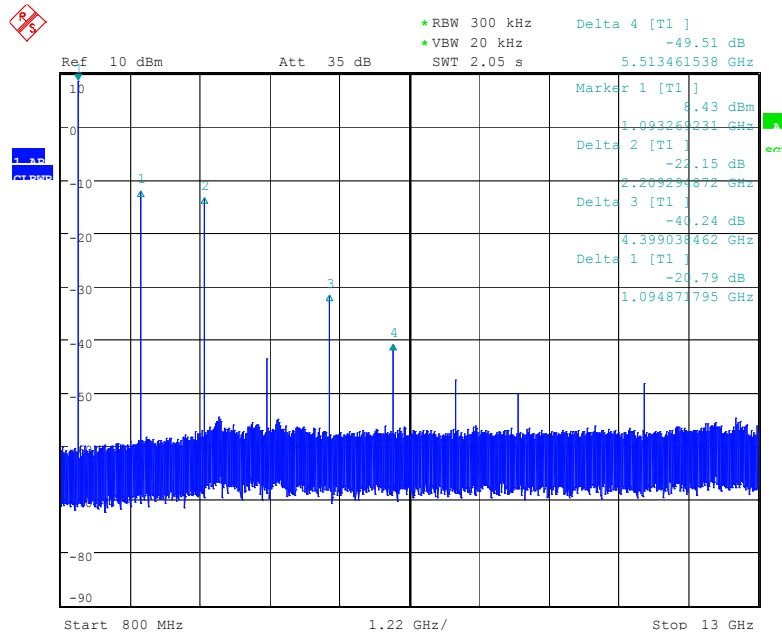
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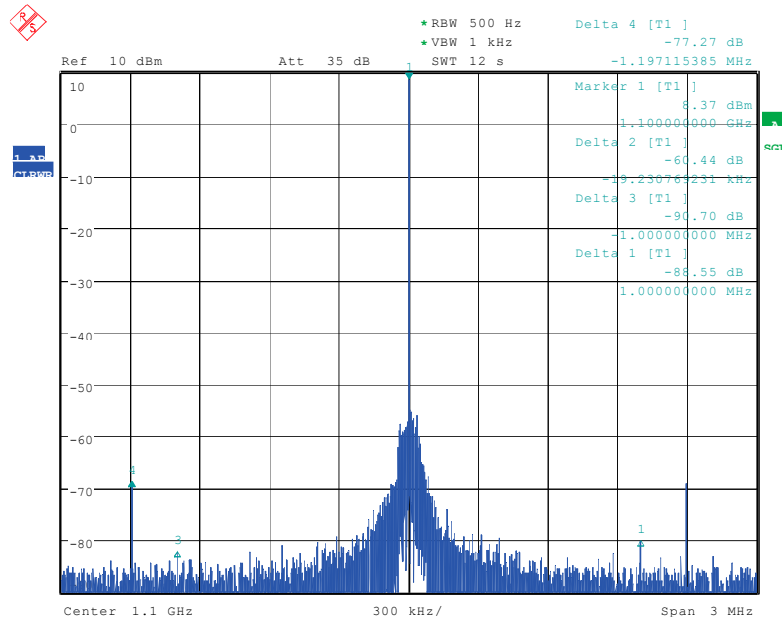
WIDE BANDWIDTH

1100 - 2500 MHz

### HARMONIC SUPPRESSION



### REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

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 Pending: 66483075; 60501371 & 66561796; 60507957 & 66533676; 60263481; 60564173; 60580083; 60661822; 60805791; EV31268034;  
 RU258768; 60622485 & 66710212; RU60732560/736901; 60732737

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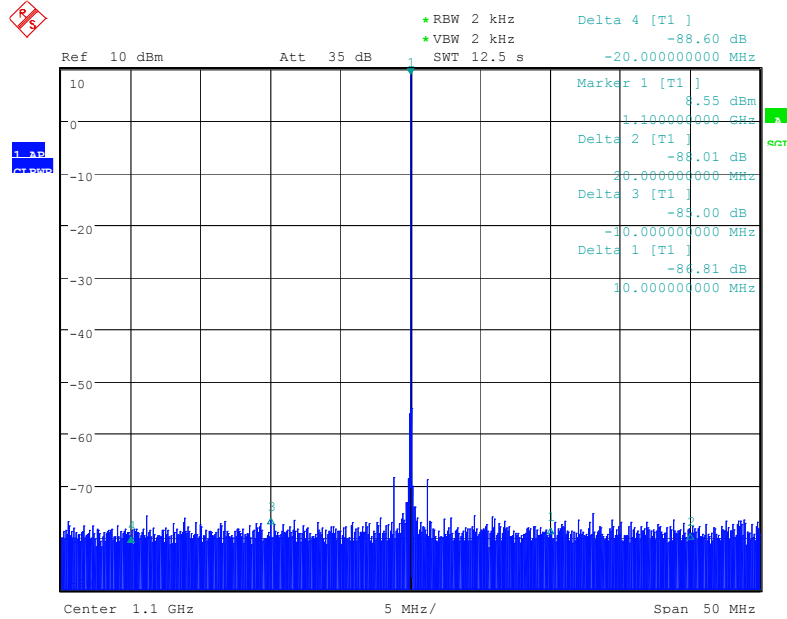
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Pending: 6,648,307; 6,650,137; 6,656,756; 6,657,957; 6,658,676; 6,663,481; 6,656,173; 6,658,083; 6,661,822; 6,660,579; EV31268034;  
RU258768; 6,662,485; 6,667,102; RU60732560736901; 6,673,0787

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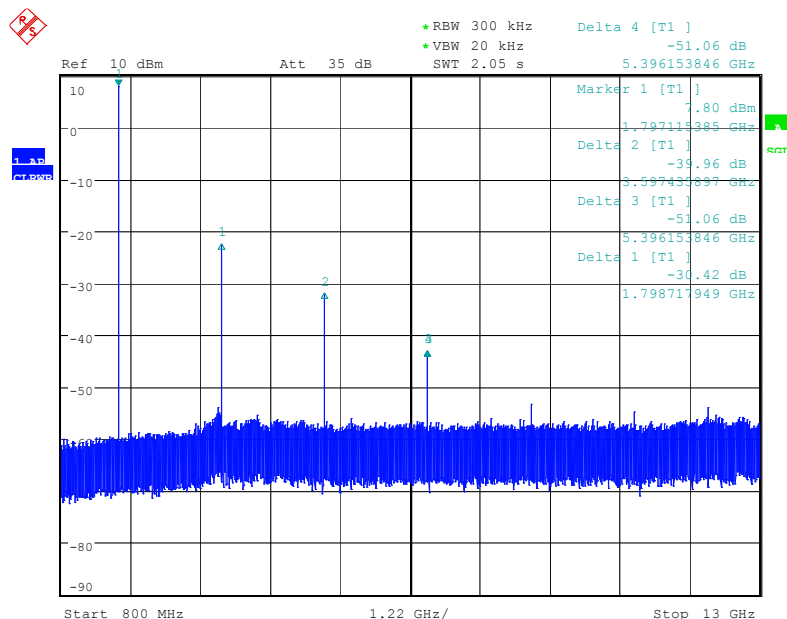
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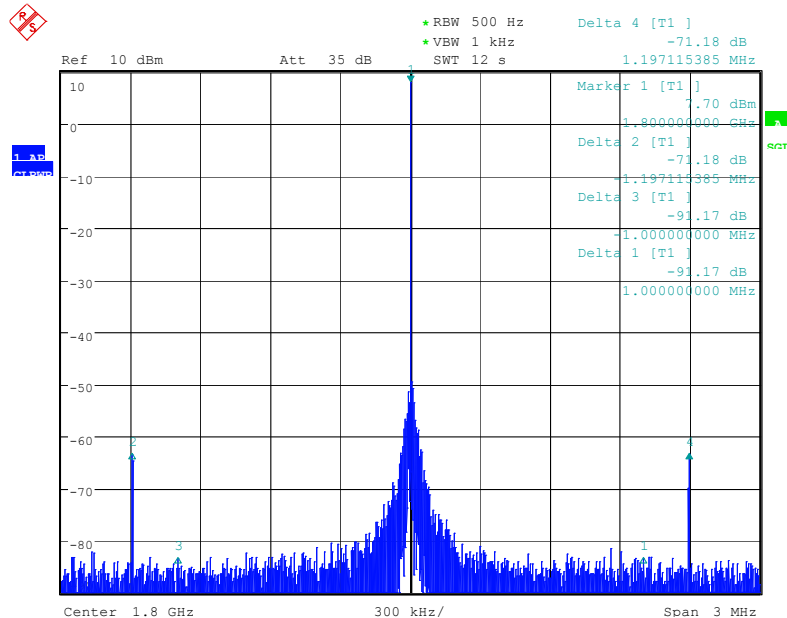
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 Pending: 66493075; 60501371 & 66561796; 60527937 & 66538676; 60263481; 60564173; 60586083; 60661822; 60605791; EV31268034;  
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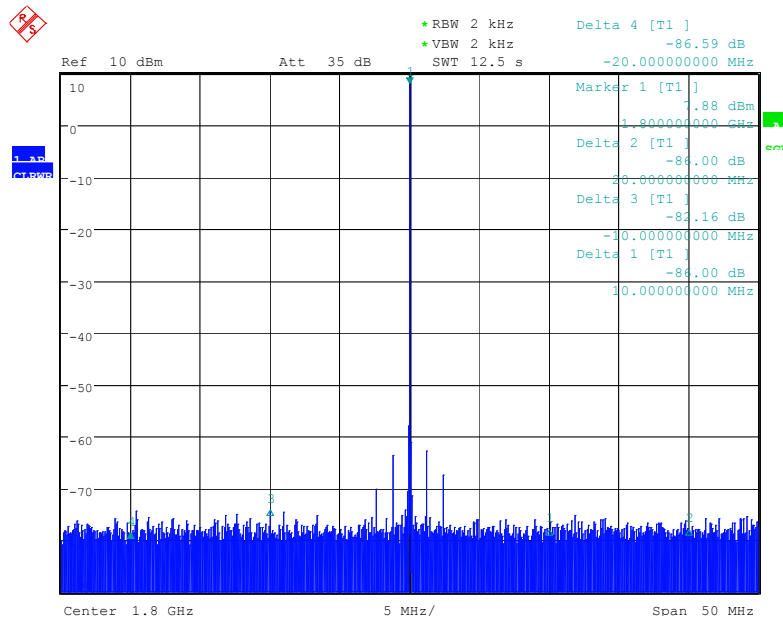
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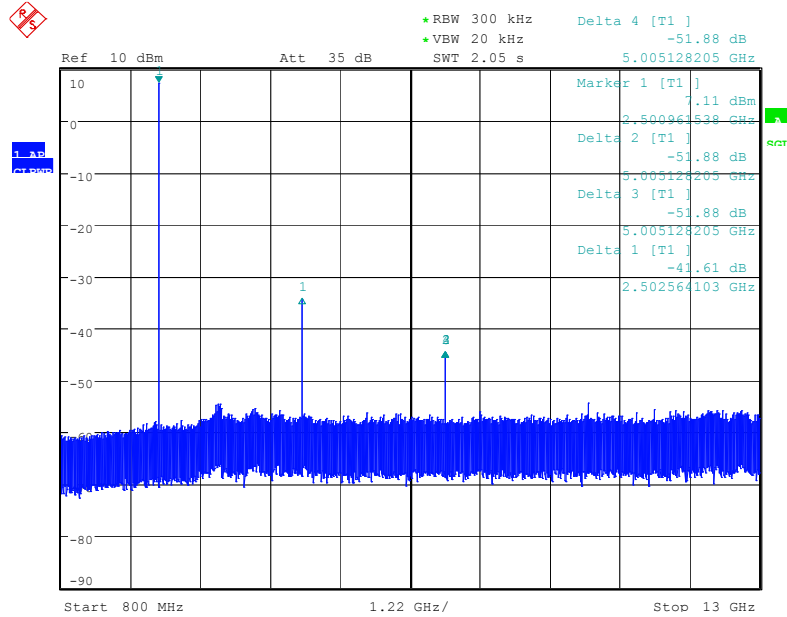
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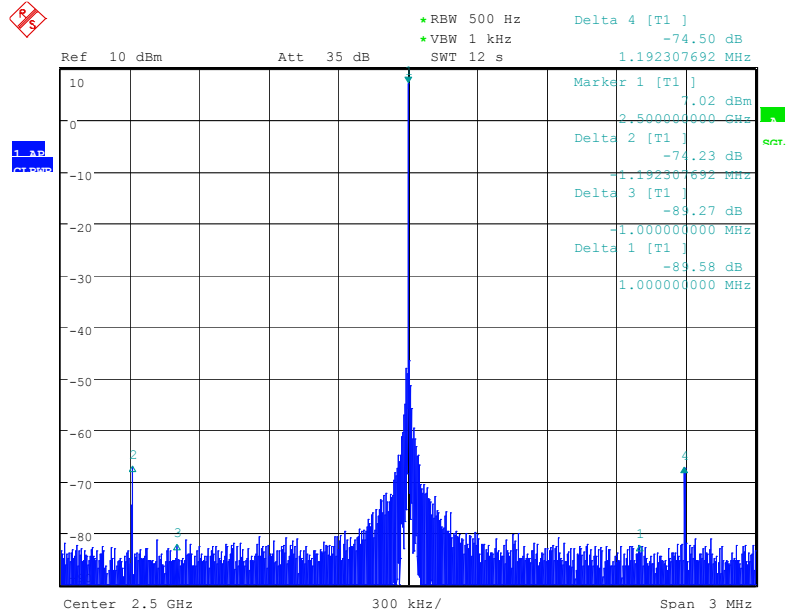
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Pending: 6648307; 66501371 & 66501796; 66527957 & 66533676; 66563481; 66564173; 66580083; 66661822; 66605791; EV31268034  
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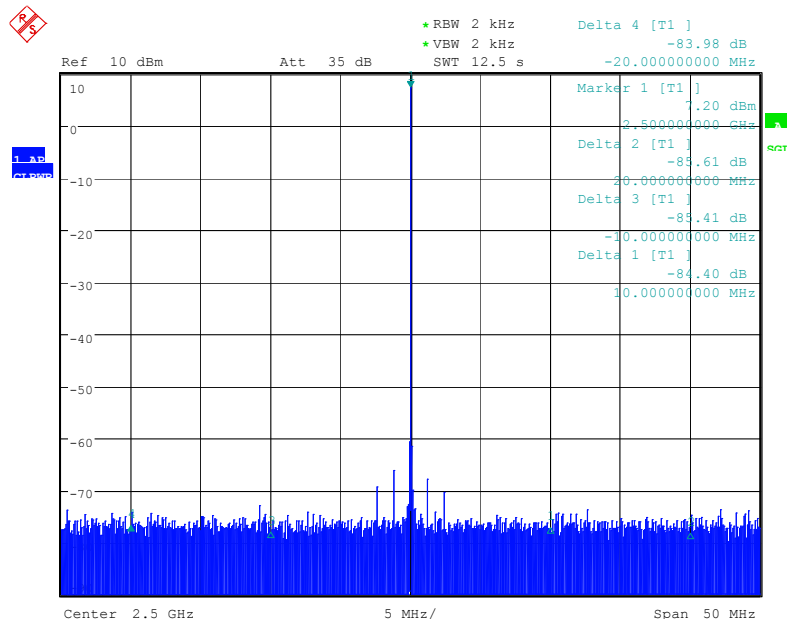
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