

# INTELLIGENT INTERACTIVE SYNTHESIZER

## SURFACE MOUNT MODEL: FSW40110-50

**WIDE BANDWIDTH**

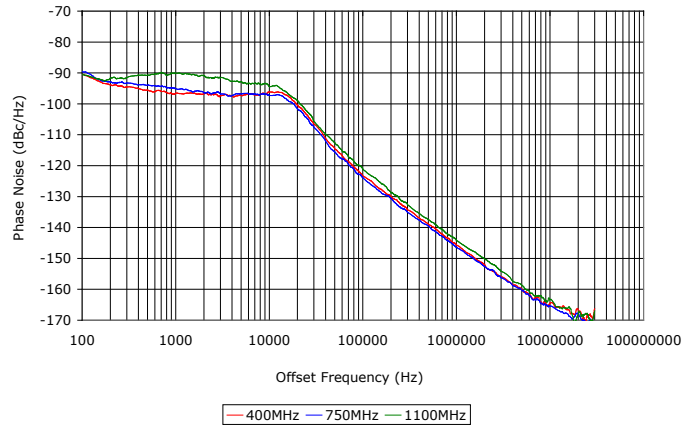
**400 - 1100 MHz**

**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**



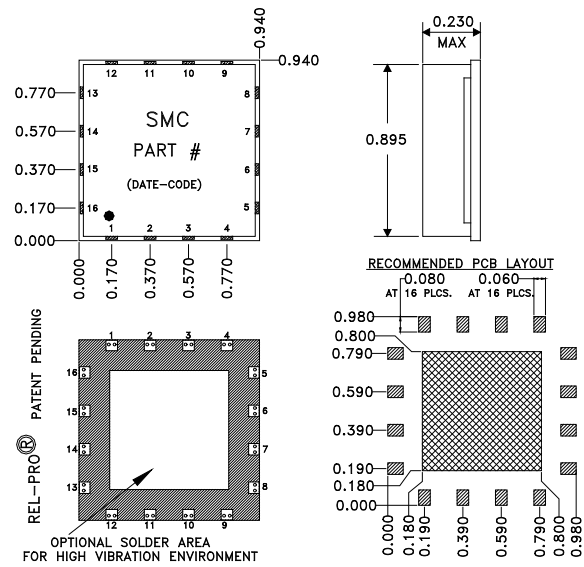
**SPECIFICATIONS (Rev. A 09/11/07)**

|                                    |                              |                    |                    |
|------------------------------------|------------------------------|--------------------|--------------------|
| <b>Frequency</b>                   | 400 - 1100 MHz               |                    |                    |
| <b>Step Size</b>                   | 500 kHz                      |                    |                    |
| <b>Reference Input Frequency</b>   | 10 MHz *                     |                    |                    |
| <b>Reference Input Voltage</b>     | 1.0 V p-p to 3.3 V p-p       |                    |                    |
| <b>Bias Voltage</b>                | <b>Vcc</b>                   | <b>V (Vdc)</b>     | <b>I (mA Max.)</b> |
|                                    | Digital                      | +5                 | 45                 |
|                                    | VCO                          | +5                 | 45                 |
|                                    | Tune                         | +25                | 5                  |
| <b>Output Power</b>                | 0 dBm (Min.)                 |                    |                    |
| <b>Spurious Suppression</b>        | 75 dB (Typ.)                 |                    |                    |
| <b>Harmonic Suppression</b>        | 10 dB (Typ.)                 |                    |                    |
| <b>Settling Time</b>               | 10 mSec (Max.) **            |                    |                    |
| <b>Output Impedance</b>            | 50 Ohms (Nom.)               |                    |                    |
| <b>Typical Phase Noise</b>         | <b>Offset</b>                | <b>Phase Noise</b> |                    |
|                                    | @ 1 kHz                      | -93 dBc/Hz         |                    |
|                                    | @ 10 kHz                     | -95 dBc/Hz         |                    |
|                                    | @ 100 kHz                    | -122 dBc/Hz        |                    |
| <b>Operating Temperature Range</b> | -40 to +85 °C                |                    |                    |
| <b>Programming</b>                 | 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

**Package #** 273LF



PACKAGE MOUNTING: SEE APPLICATION NOTE AN7200

**Absolute Maximum Ratings**

|                                     |                |
|-------------------------------------|----------------|
| <b>Storage Temp. Range</b>          | -55 to +125 °C |
| <b>Bias Voltage (Digital)</b>       | +5.25 V        |
| <b>Bias Voltage (Tune)</b>          | +28 V          |
| <b>Bias Voltage (VCO)</b>           | +5.5 V         |
| <b>DC Voltage Applied to RF Out</b> | ±25 V          |

**Port Configuration**

|                         |                            |                     |
|-------------------------|----------------------------|---------------------|
| Pin 1 - Reset **        | Pin 7 - Vcc (Digital)      | Pin 15 - Data In    |
| Pin 2,3 - NC            | Pin 8 - Vcc (Tune)         | Pin 16 - Clock In   |
| Pin 4 - Error flag      | Pin 9 - Vcc (VCO)          | All Others - Ground |
| Pin 5 - Latch Enable In | Pin 13 - RF Out            |                     |
| Pin 6 - Ref. In         | Pin 14 - Lock Detect Out * | NC - No Connection  |

\* High when locked (source/sink 500 uA)

\*\* A low on this input will reset the internal controller. Leave unconnected for normal operation.

This product is manufactured under one or more of the following patents: Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113  
 Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834;  
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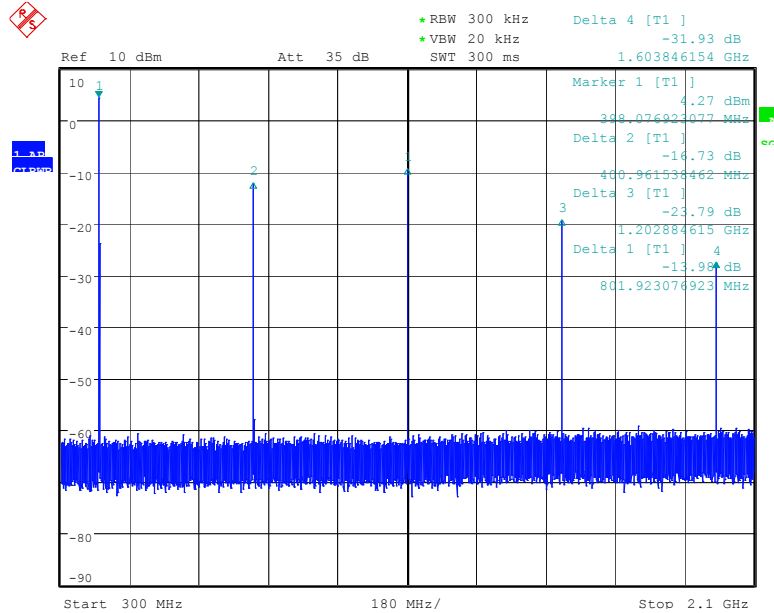
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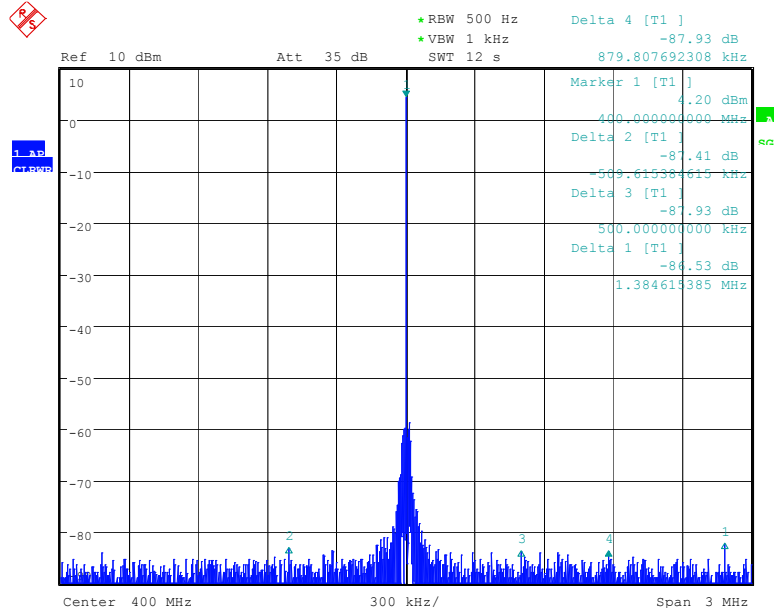
WIDE BANDWIDTH

400 - 1100 MHz

### HARMONIC SUPPRESSION



### REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

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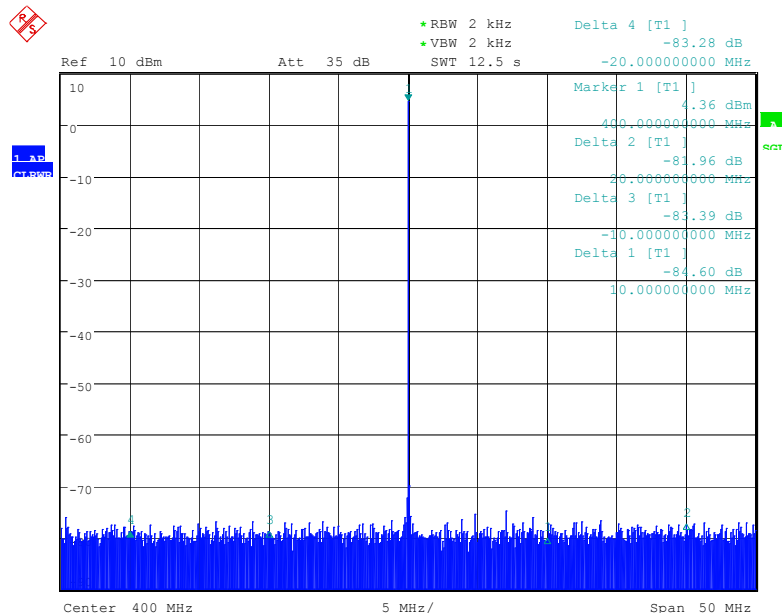
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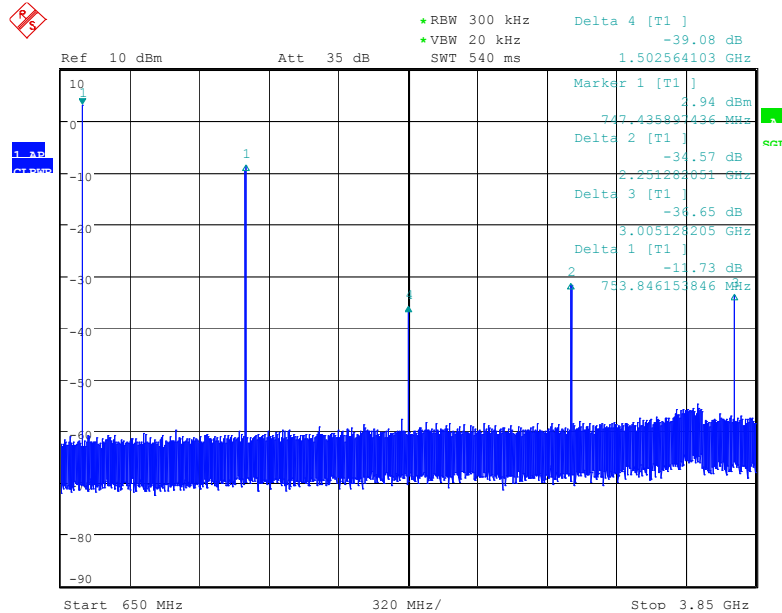
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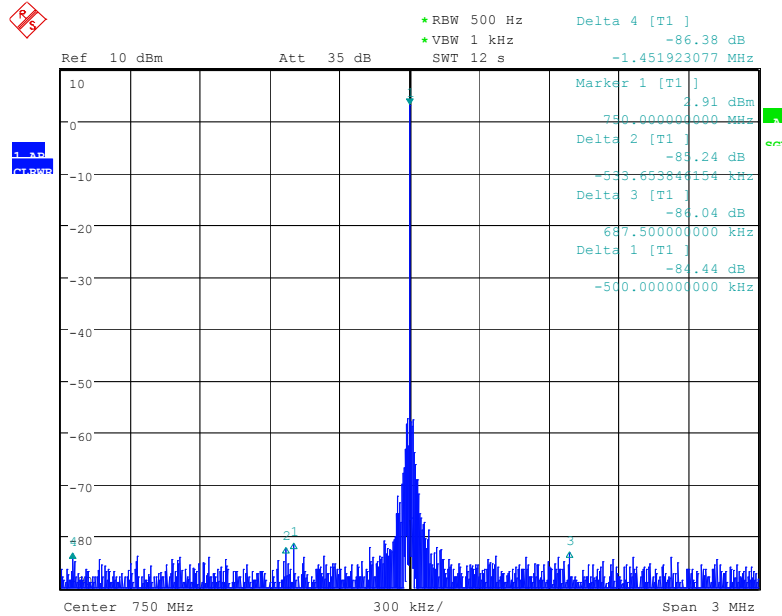
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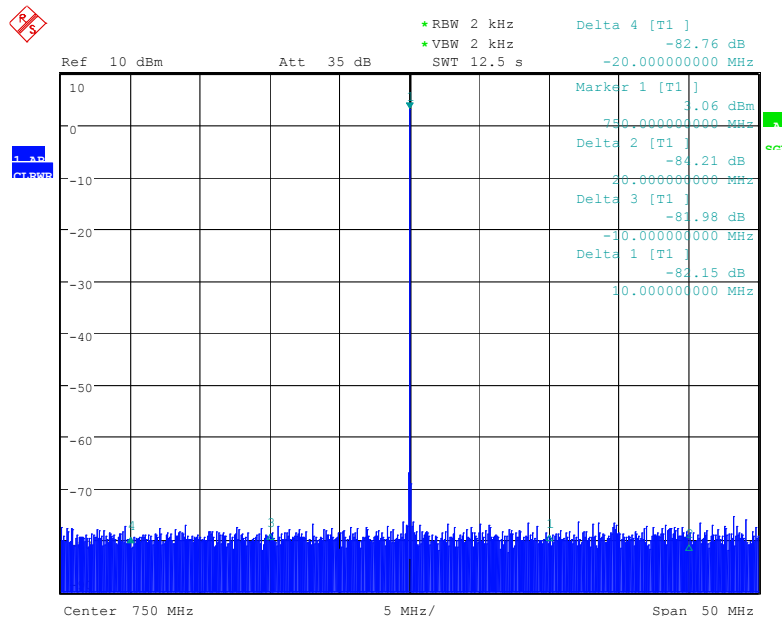
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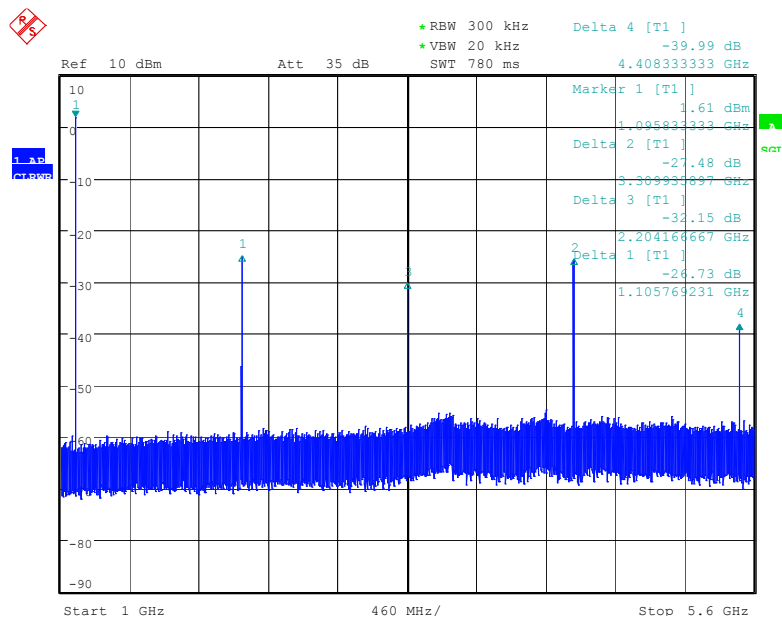
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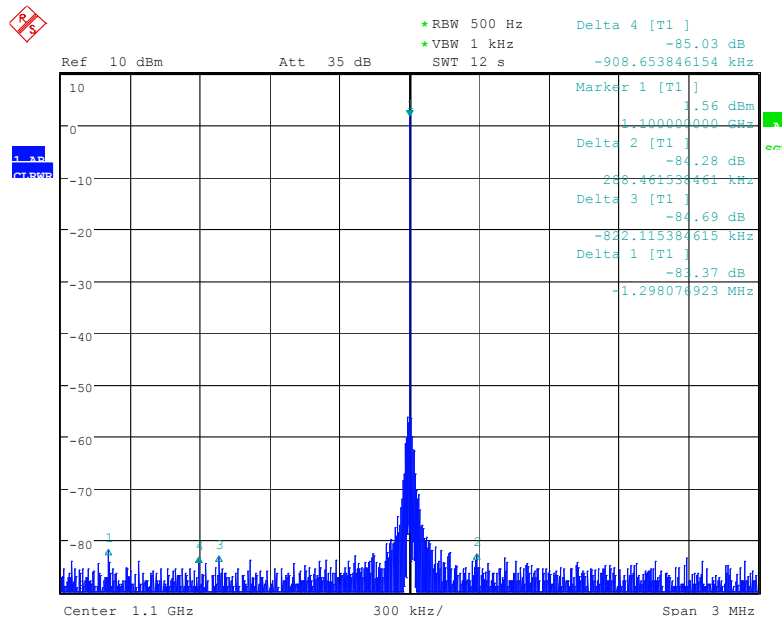
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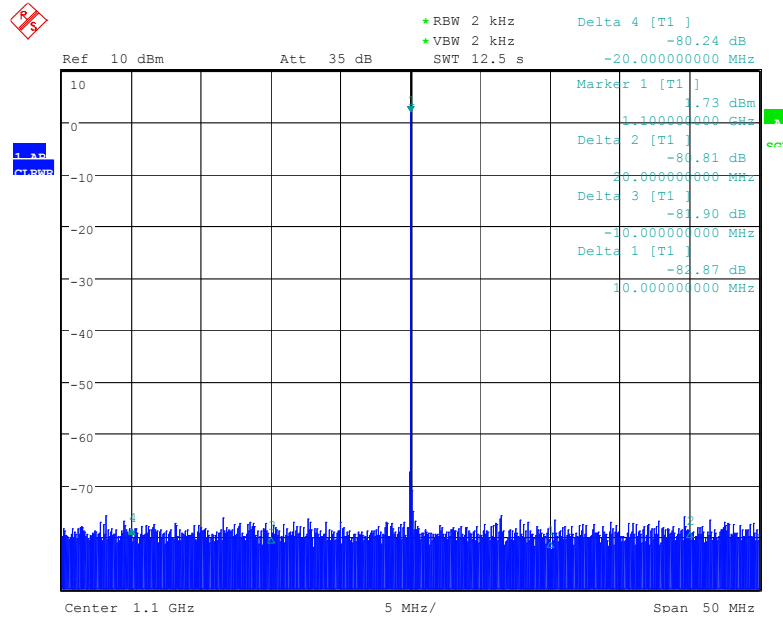
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