

# INTELLIGENT INTERACTIVE SYNTHESIZER

## SURFACE MOUNT MODEL: MFSH490517-100

### OPTIMIZED LOOP PARAMETER

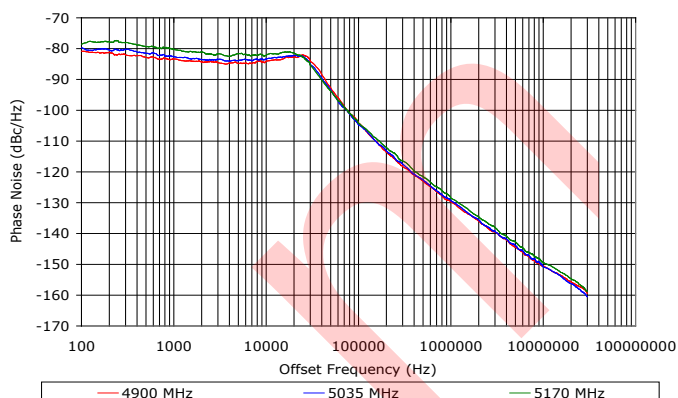
4900 - 5170 MHz

#### 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



#### SPECIFICATION (Rev. B 04/22/11)

|                             |                              |             |             |
|-----------------------------|------------------------------|-------------|-------------|
| Frequency                   | 4900 - 5170 MHz              |             |             |
| Step Size                   | 1 MHz                        |             |             |
| Reference Input Frequency   | 10 MHz <sup>1</sup>          |             |             |
| Reference Input Voltage     | 0.5 V p-p to 1.0 V p-p       |             |             |
| Bias Voltage                | Vcc                          | V (Vdc)     | I (mA Max.) |
|                             | VCO                          | +5          | 55          |
|                             | Digital                      | +3          | 18          |
| Output Power                | +6 dBm (Min.)                |             |             |
| Spurious Suppression        | -65 dB (Typ.)                |             |             |
| Harmonic Suppression        | 48 dB (Typ.)                 |             |             |
| Settling Time               | 5 mSec (Max.) <sup>2</sup>   |             |             |
| Output Impedance            | 50 Ohms (Nom.)               |             |             |
| Lock Detect Indicator       | CMOS 3.0 V                   |             |             |
| Typical Phase Noise         | Offset                       |             | Phase Noise |
|                             | @ 10 kHz                     | -83 dBc/Hz  |             |
|                             | @ 100 kHz                    | -104 dBc/Hz |             |
| Operating Temperature Range | -40 to +85 °C                |             |             |
| Programming                 | See Application Note: AN7500 |             |             |

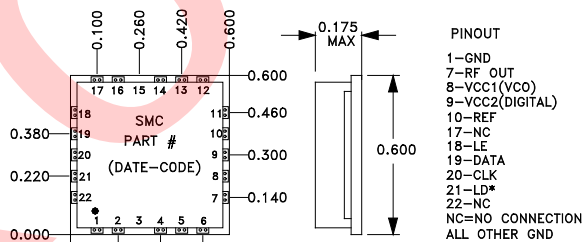
<sup>1</sup> Reference input frequency is programmable (See AN7500) in multiples of the step size, 10 MHz is the factory default setting. 150 MHz (Max.)

<sup>2</sup> From the rising edge of LE to stable lock detect

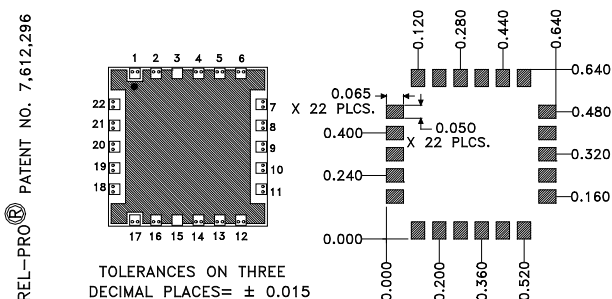
#### Absolute Maximum Ratings

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

Package # 366



#### RECOMMENDED PCB LAYOUT



PACKAGE MOUNTING: SEE APPLICATION NOTE AN7200 & AN7300

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

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; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 11/259766; 60/622485 & 60/710103; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

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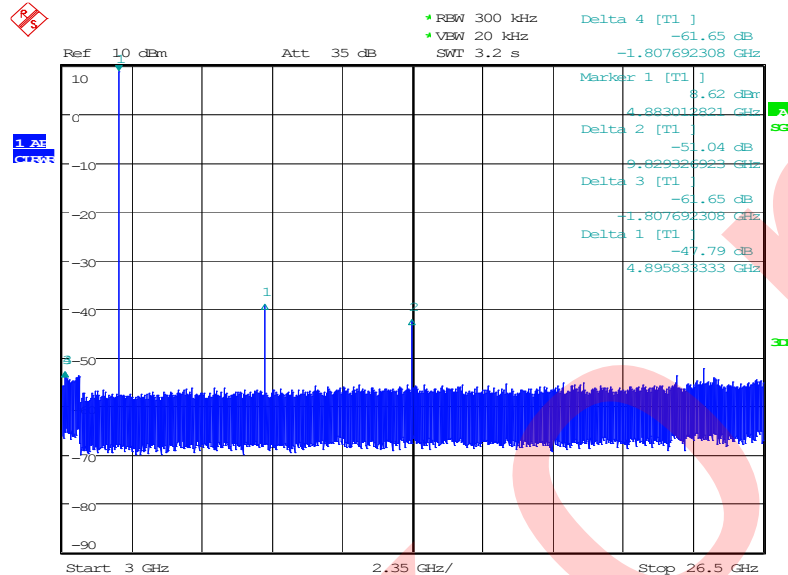
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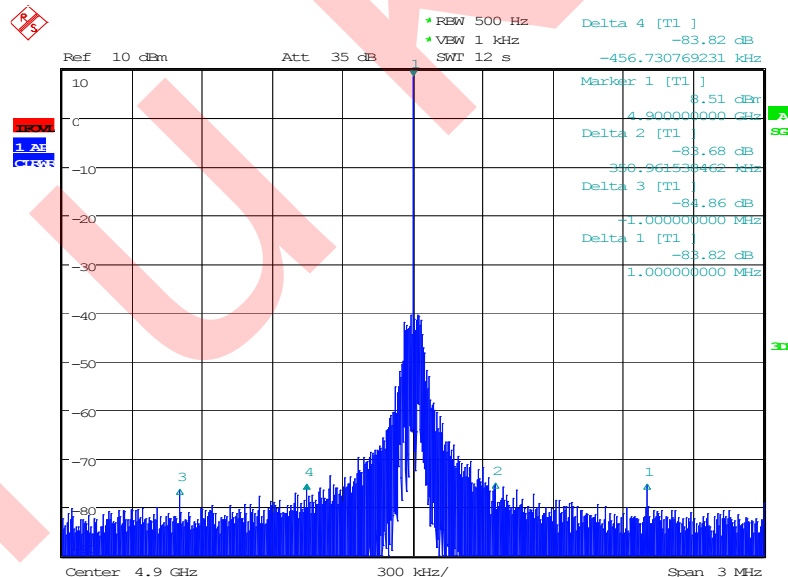
OPTIMIZED LOOP PARAMETER

4900 - 5170 MHz

### HARMONIC SUPPRESSION



### REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

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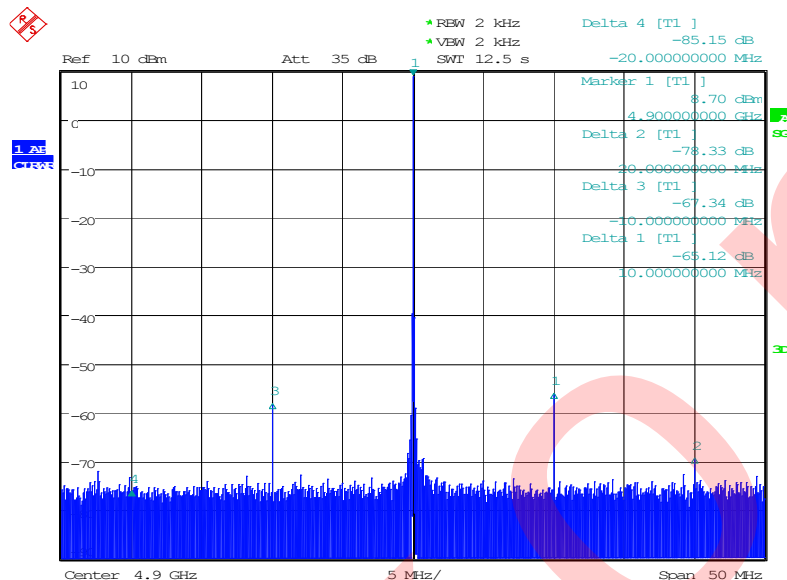
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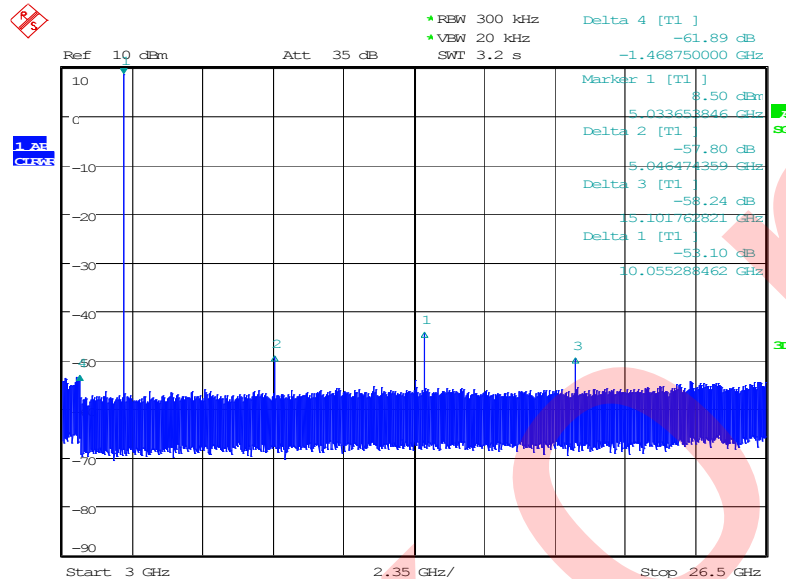
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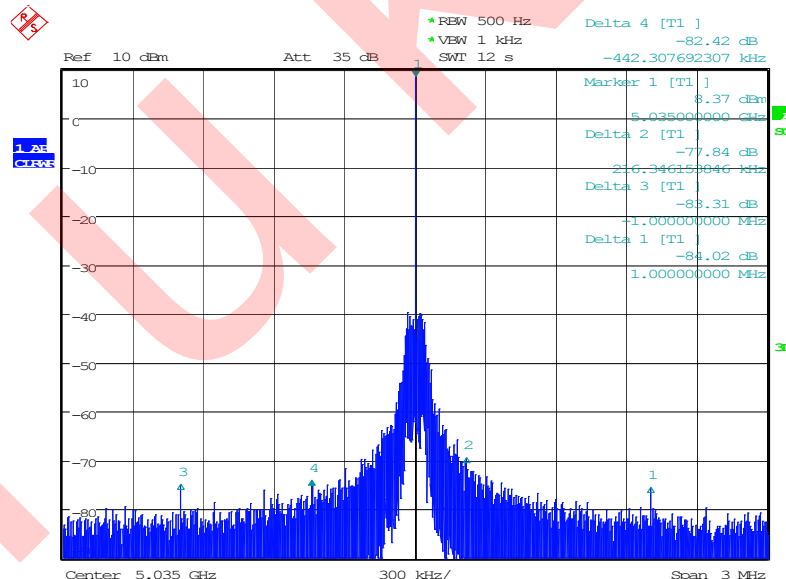
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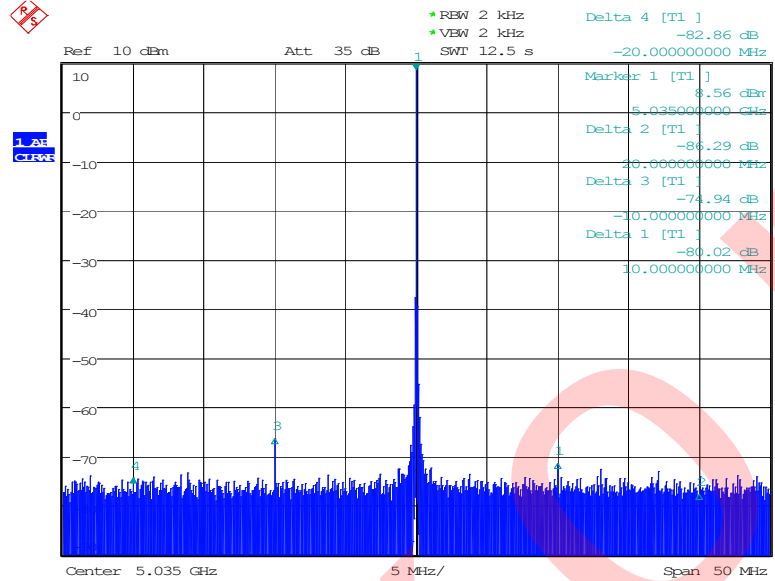
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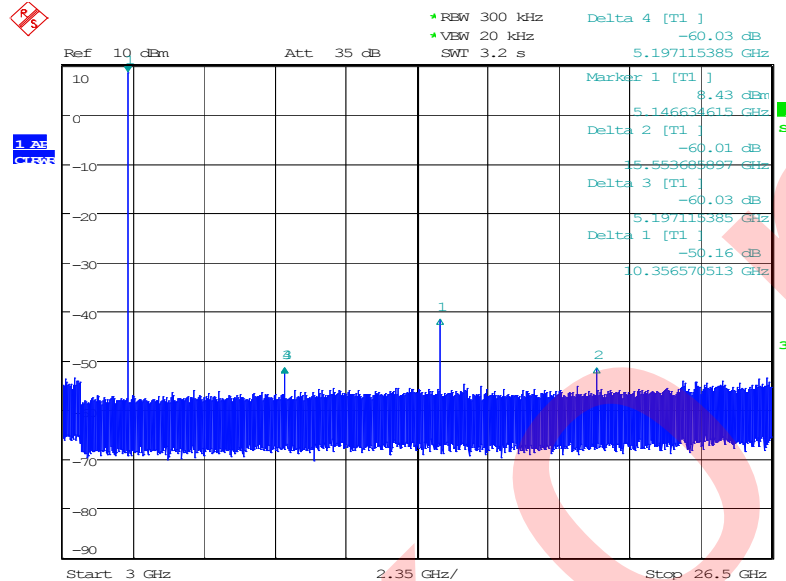
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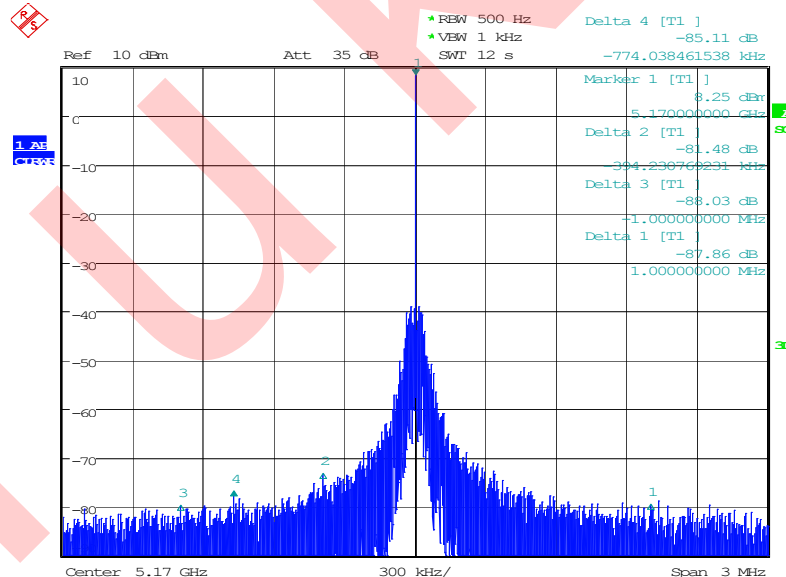
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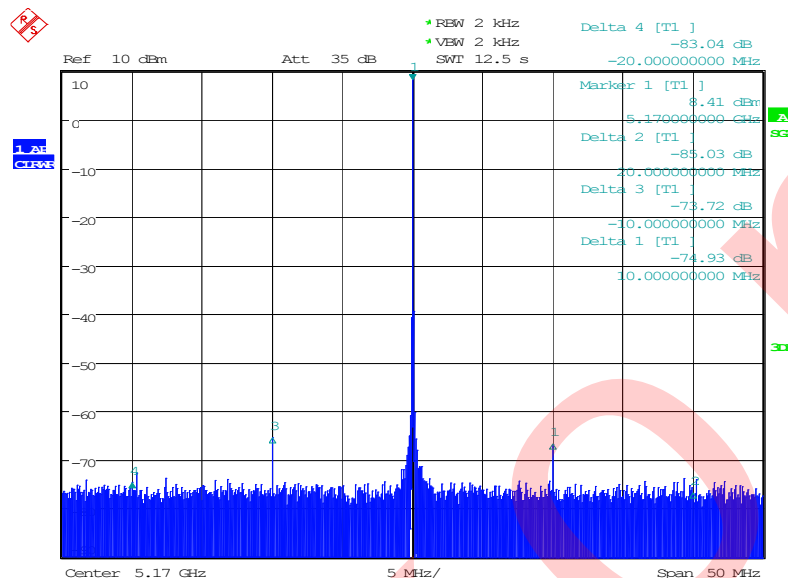
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