

# INTELLIGENT INTERACTIVE SYNTHESIZER

## CONNECTORIZED MODEL: KFSW50120-50

WIDE BANDWIDTH

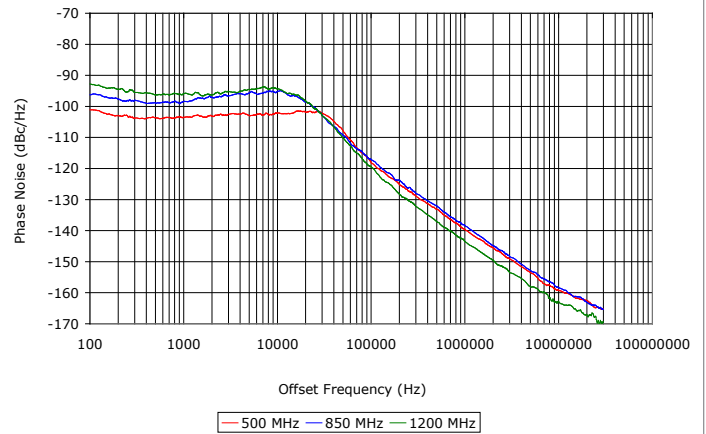
500 - 1200 MHz

**FEATURES:**

- ▶ Exceptionally Low Phase Noise
- ▶ Interactive Communication
- ▶ Standard Programming Interface
- ▶ Ultra Wide Tuning Range
- ▶ Lead Free - RoHS Compliant



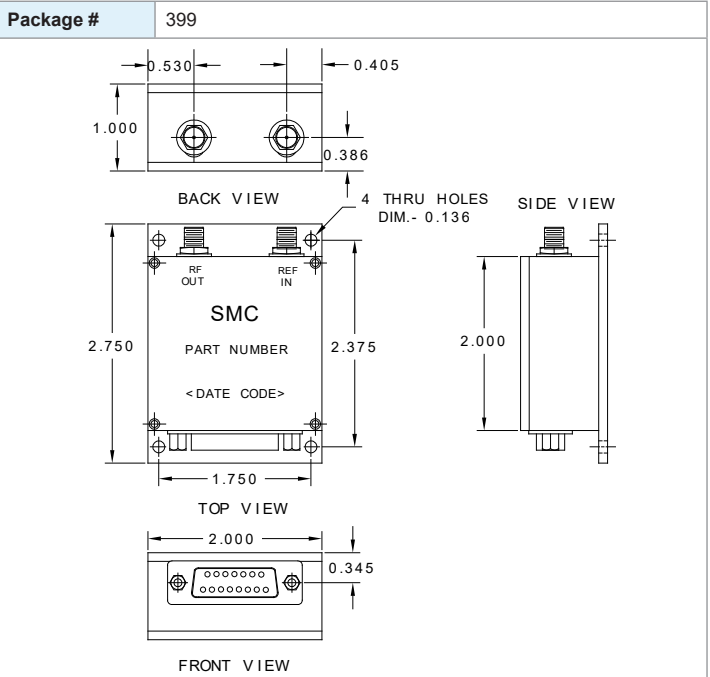
Phase Noise



**SPECIFICATIONS**

|                             |                              |                    |                    |
|-----------------------------|------------------------------|--------------------|--------------------|
| Frequency                   | 500 - 1200 MHz               |                    |                    |
| Step Size                   | 500 kHz                      |                    |                    |
| Reference Input Frequency   | 10 MHz <sup>1</sup>          |                    |                    |
| Reference Input Voltage     | 1.0 V p-p to 3.3 V p-p       |                    |                    |
| Bias Voltage                | <b>Vcc</b>                   | <b>V (Vdc)</b>     | <b>I (mA Max.)</b> |
|                             | Digital                      | +5                 | 15                 |
|                             | VCO                          | +5                 | 45                 |
|                             | Tune                         | +25                | 10                 |
| Lock Detect Indicator       | CMOS 3.3 V                   |                    |                    |
| Output Power                | 0 dBm (Min.)                 |                    |                    |
| Spurious Suppression        | 85 dB (Typ.)                 |                    |                    |
| Harmonic Suppression        | 15 dB (Typ.)                 |                    |                    |
| Settling Time               | 3 mSec (Typ.) <sup>2</sup>   |                    |                    |
| Output Impedance            | 50 Ohms (Nom.)               |                    |                    |
| Lock Detect Indicator       | CMOS 3.3 V                   |                    |                    |
| Typical Phase Noise         | <b>Offset</b>                | <b>Phase Noise</b> |                    |
|                             | @ 1 kHz                      | -96 dBc/Hz         |                    |
|                             | @ 10 kHz                     | -94 dBc/Hz         |                    |
|                             | @ 100 kHz                    | -118 dBc/Hz        |                    |
| Operating Temperature Range | -40 to +85 °C                |                    |                    |
| Programming                 | See Application Note: AN7100 |                    |                    |

<sup>1</sup> Reference input frequency is programmable (See AN7100) 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)       | +5.25 V        |
| Bias Voltage (Tune)          | +28 V          |
| Bias Voltage (VCO)           | +5.5 V         |
| DC Voltage Applied to RF Out | ±25 V          |

| Port Configuration      |                            |                     |
|-------------------------|----------------------------|---------------------|
| Pin 1,2,3 - 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  |
| Pin 7 - Vcc (Digital)   | Pin 15 - Data In           |                     |

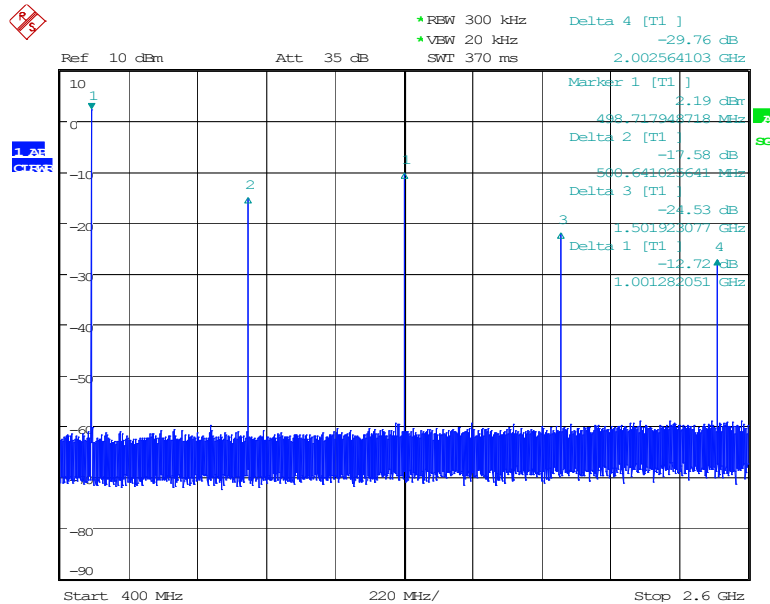
\* High when locked (source/sink 500 uA)

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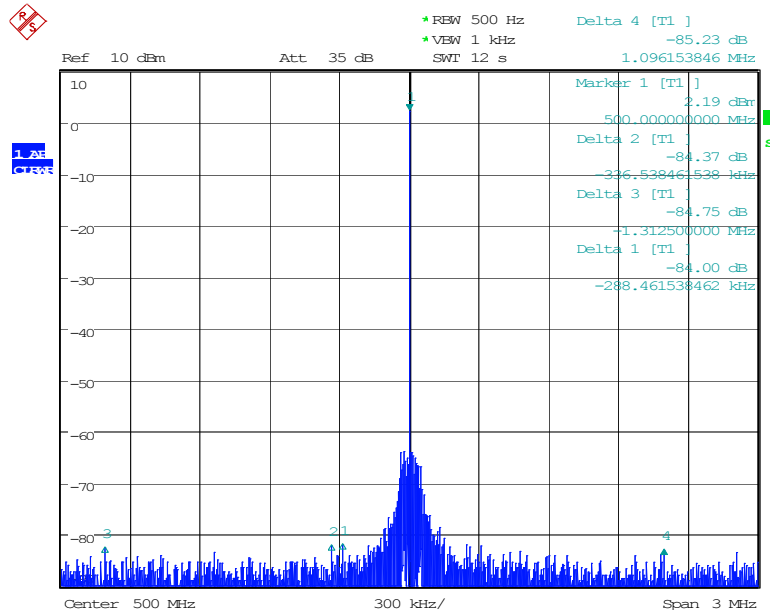
WIDE BANDWIDTH

500 - 1200 MHz

## HARMONIC SUPPRESSION



## REFERENCE SIDEBAND SUPPRESSION



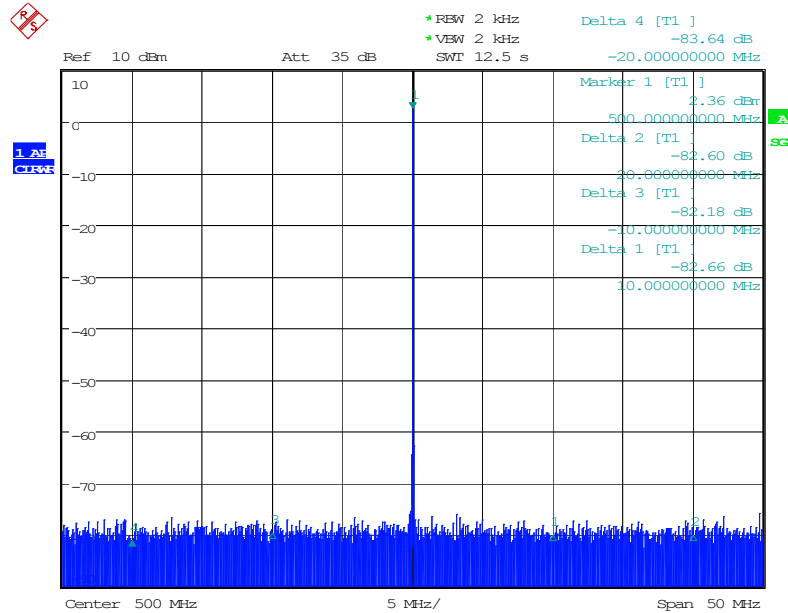
PERFORMANCE PLOTS

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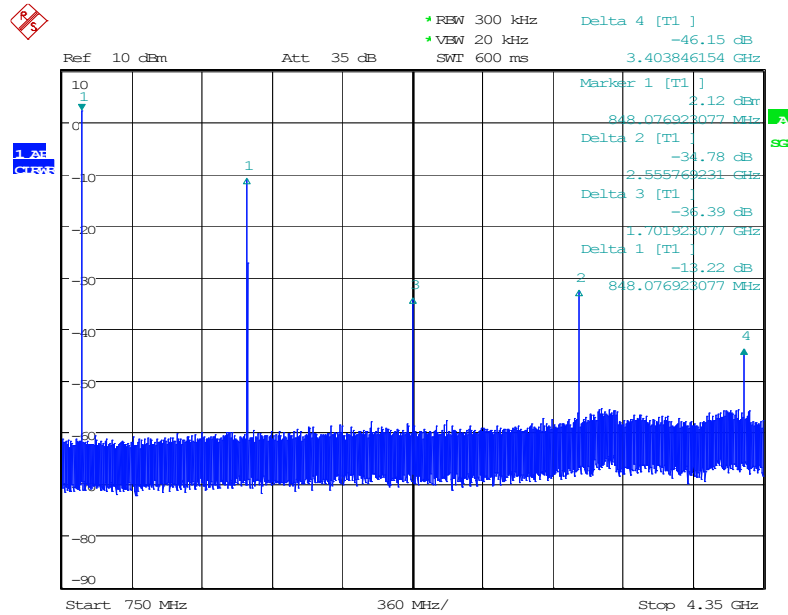
PERFORMANCE PLOTS

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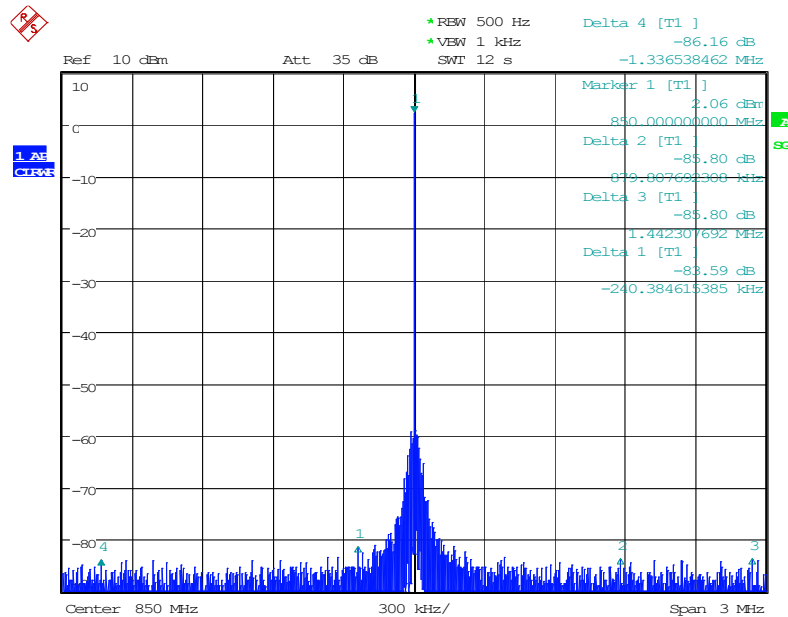
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## HARMONIC SUPPRESSION



## REFERENCE SIDEBAND SUPPRESSION



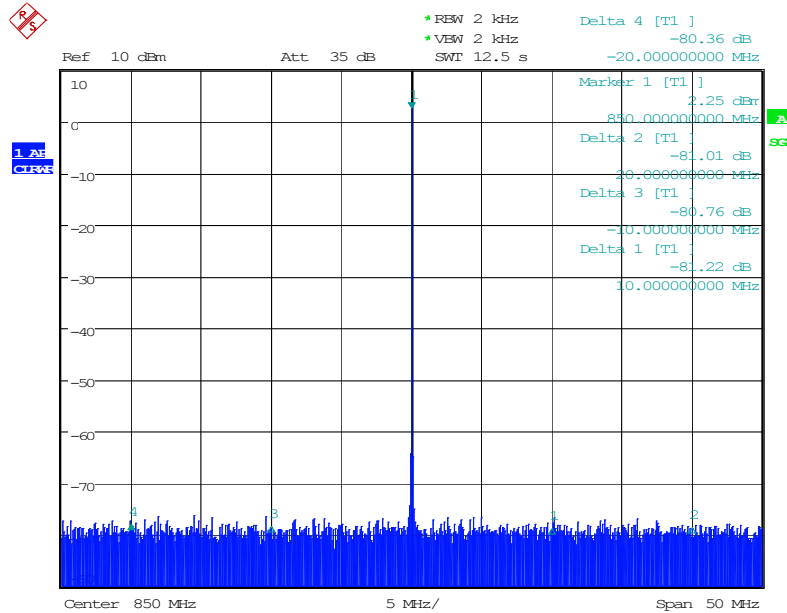
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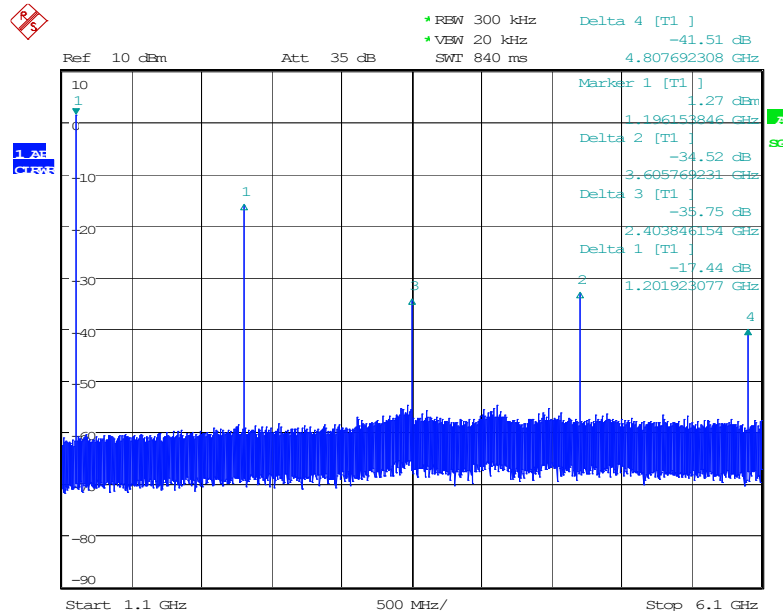
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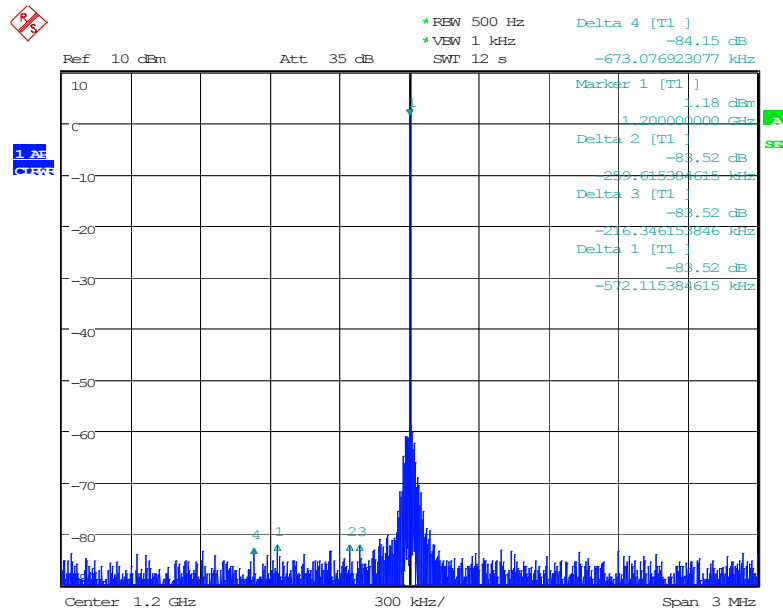
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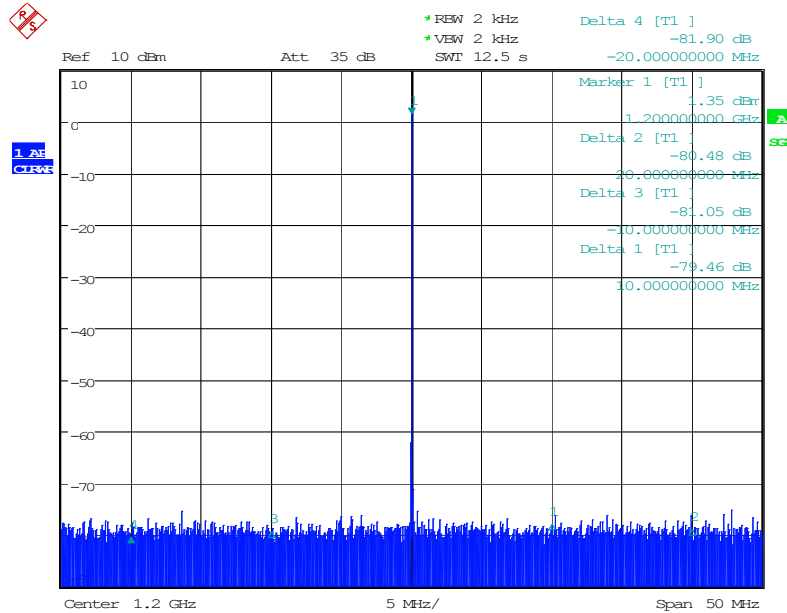
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