# SELECTABLE FREQUENCY SYNTHESIZER
# SURFACE MOUNT MODEL: FCPL511-10

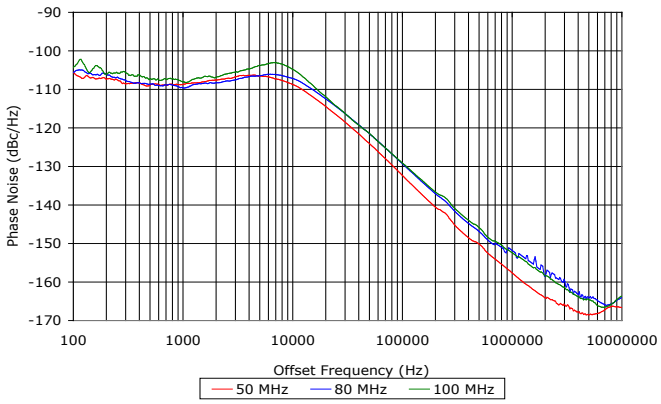
## 50 - 115 MHz

***FEATURES:***

- **Exceptional Phase Noise**
- **No Programming Required**
- **Lead Free - RoHS Compliant**
- **Patented REL-PRO® Technology**
- **Small Size, Surface Mount**
- **Buffered Output**



**Phase Noise**




## SPECIFICATIONS (Rev. D 04/25/11)

| | |
|---|---|
| **Frequency** | 50 - 115 MHz |
| **Reference Input Frequency** | 10 MHz |
| **Reference Input Voltage** | 1.0 V p-p to 3.3 V p-p |
| **Bias Voltage** | Vcc 1 (Digital): +5 V, 15 mA Max.<br>Vcc 2 (Vtune): +15 V, 10 mA Max.<br>Vcc 3 (VCO): +5 V, 50 mA Max. |
| **Lock Detect Indicator** | CMOS 5 V |
| **Output Power** | 6 dBm (Min.) |
| **Spurious Suppression** | -90 dB (Typ.) |
| **Harmonic Suppression** | 12 dB (Typ.) |
| **Power Up Time** | 90 mSec (Typ.) [1] |
| **Output Impedance** | 50 Ohms (Nom.) |
| **Typical Phase Noise** | @ 10 kHz: -107 dBc/Hz<br>@ 100 kHz: -127 dBc/Hz |
| **Operating Temperature Range** | -40 to +85 °C |

[1] *From stable power on to stable lock detect.*

**Binary Frequency Selection Table**

| D3* | D2* | D1* | D0* | Freq. (MHz) |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 50 |
| 0 | 0 | 0 | 1 | 43.75 |
| 0 | 0 | 1 | 0 | 70 |
| 0 | 0 | 1 | 1 | 96.25 |
| 0 | 1 | 0 | 0 | 80 |
| 0 | 1 | 0 | 1 | 100 |
| 0 | 1 | 1 | 0 | -- |
| 0 | 1 | 1 | 1 | -- |
| 1 | 0 | 0 | 0 | -- |
| 1 | 0 | 0 | 1 | -- |
| 1 | 0 | 1 | 0 | -- |
| 1 | 0 | 1 | 1 | -- |
| 1 | 1 | 0 | 0 | -- |
| 1 | 1 | 0 | 1 | -- |
| 1 | 1 | 1 | 0 | -- |
| 1 | 1 | 1 | 1 | -- |

*-- Reserved for future use.*
** Voltage levels: 0V or gnd. / +5V or open.*

**Absolute Maximum Ratings**

| | |
|---|---|
| **Storage Temp. Range** | -55 to +125 ºC |
| **Bias Voltage (Digital)** | +5.25 V |
| **Bias Voltage (VCO)** | +6 V |
| **Bias Voltage (Tune)** | +16 V |
| **DC Voltage Applied to RF Out** | ± 25 V |

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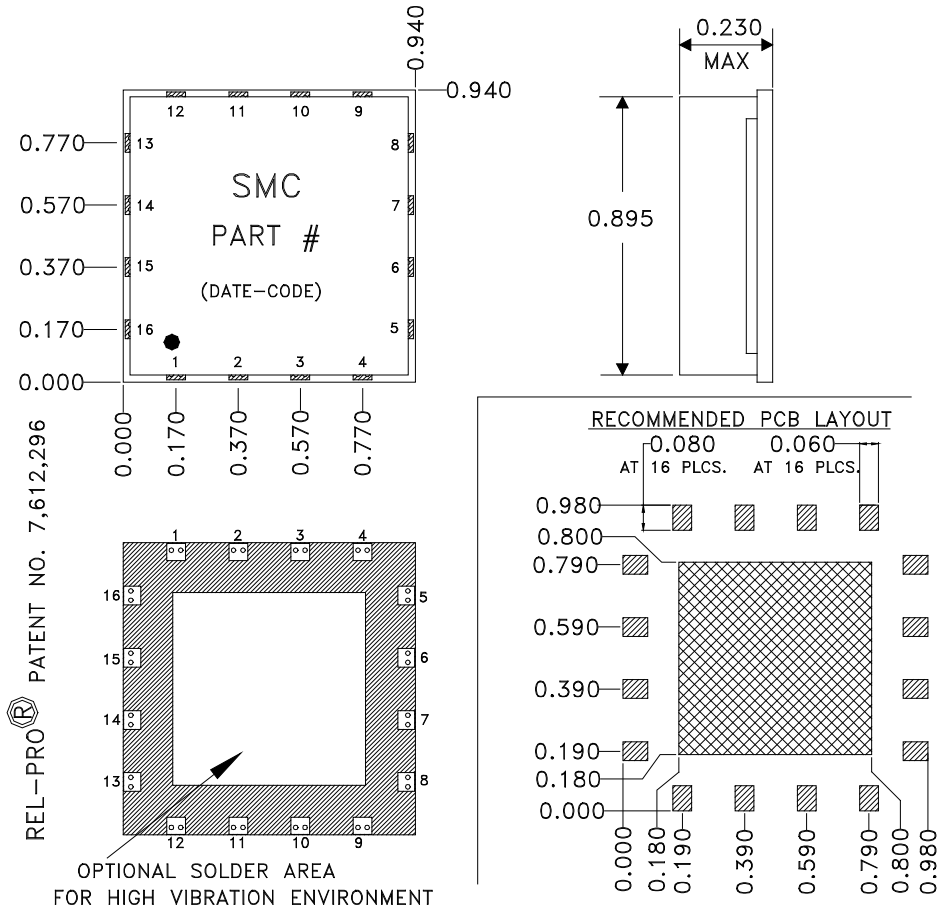
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SYNERGY® MICROWAVE CORPORATION

# SELECTABLE FREQUENCY SYNTHESIZER
# SURFACE MOUNT MODEL: FCPL511-10

**50 - 115 MHz**

| Package # | 273LF |
|---|---|




PACKAGE MOUNTING: SEE APPLICATION NOTE AN7200 & AN7300

**Port Configuration**

| | | | |
|---|---|---|---|
| Pin 1 - RESET | Pin 5 - D3 | Pin 9 - VCC3 (VCO) | Pin 13 - RF Out |
| Pin 2 - D0 | Pin 6 - Ref. Input | Pin 10 - Ground | Pin 14 - Lock Detect * |
| Pin 3 - D1 | Pin 7 - VCC1 (Digital) | Pin 11 - Ground | Pin 15 - NC |
| Pin 4 - D2 | Pin 8 - VCC2 (Vtune) | Pin 12 - Ground | Pin 16 - NC |

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

PERFORMANCE PLOTS

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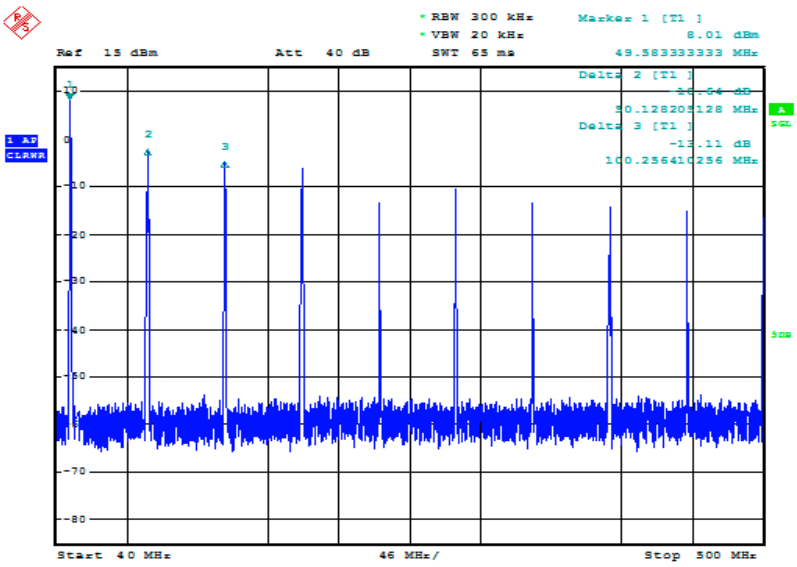
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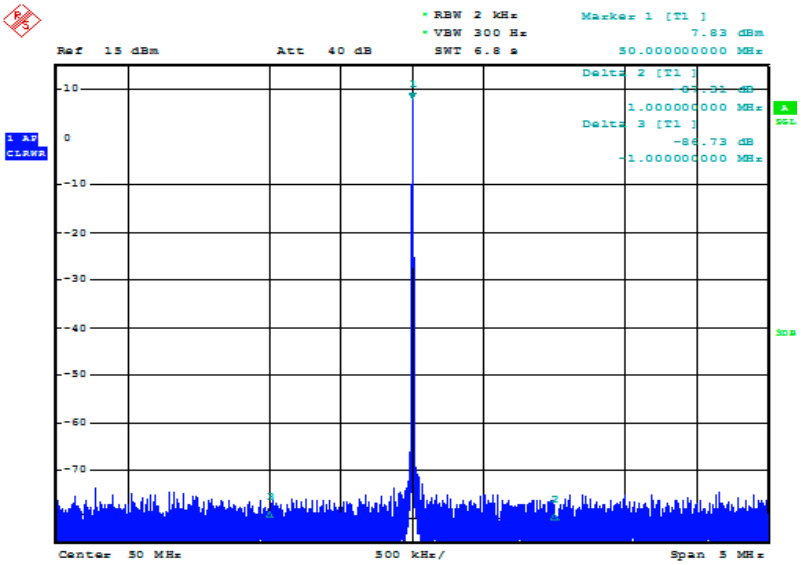
## 50 - 115 MHz

PERFORMANCE PLOTS

### HARMONIC SUPPRESSION




### REFERENCE SIDEBAND SUPPRESSION



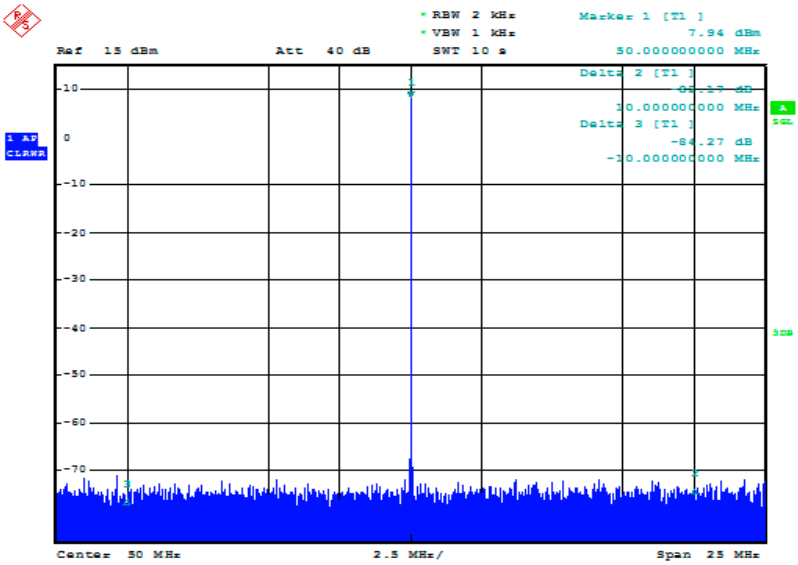

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PERFORMANCE PLOTS

**CLOSE IN SPURIOUS SUPPRESSION**





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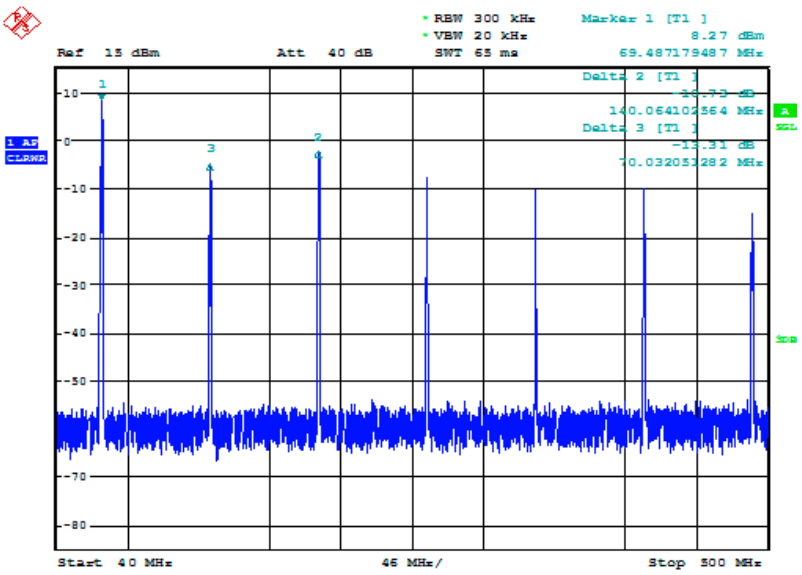

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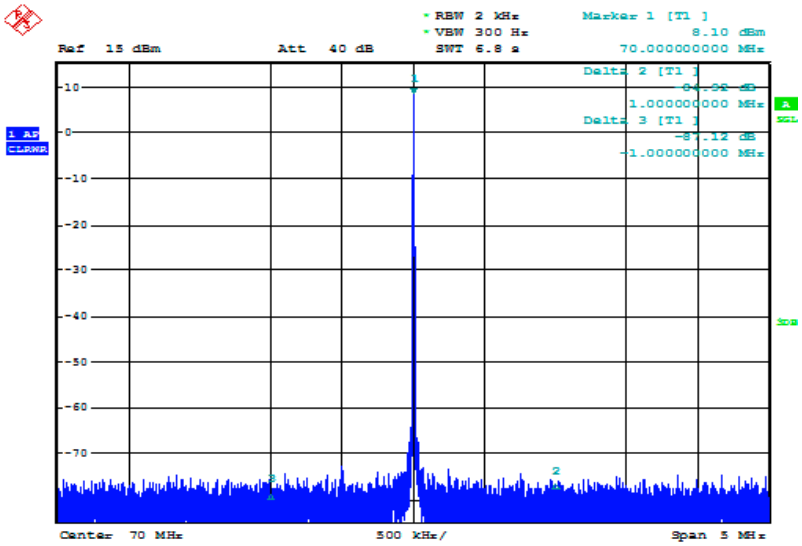
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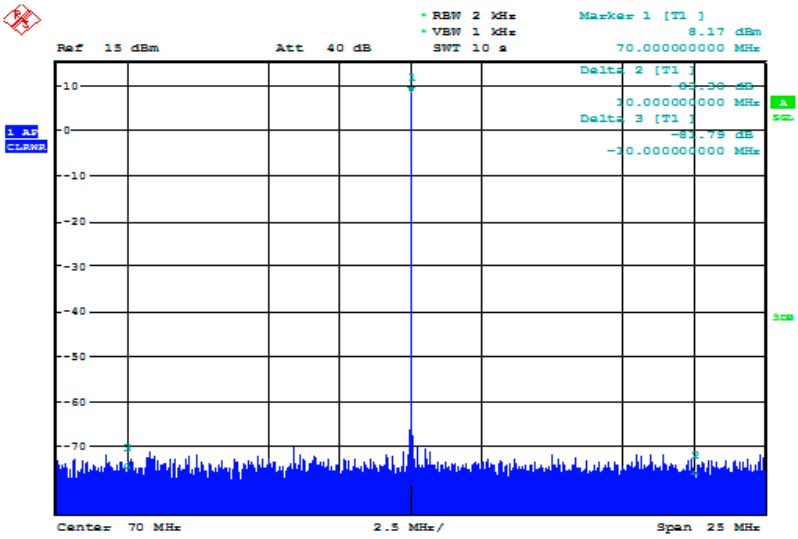
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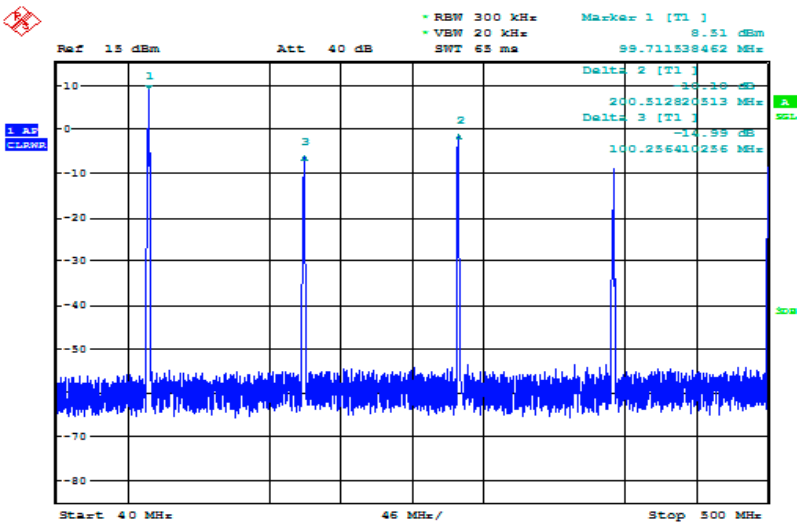
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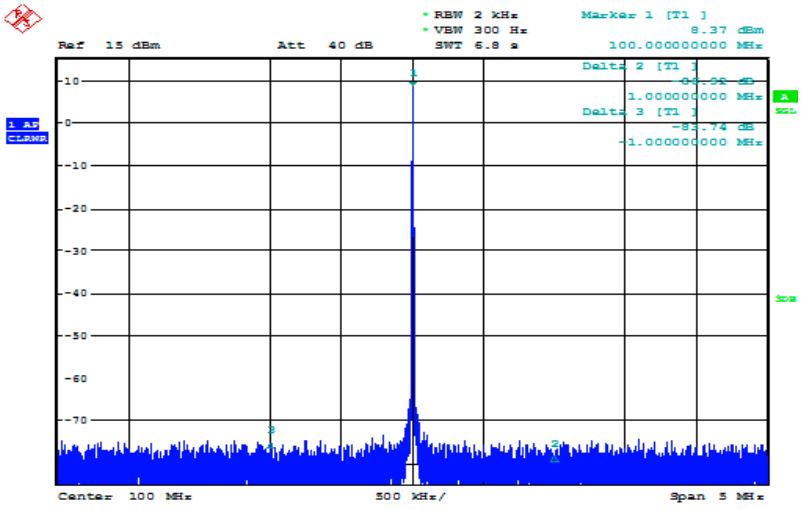
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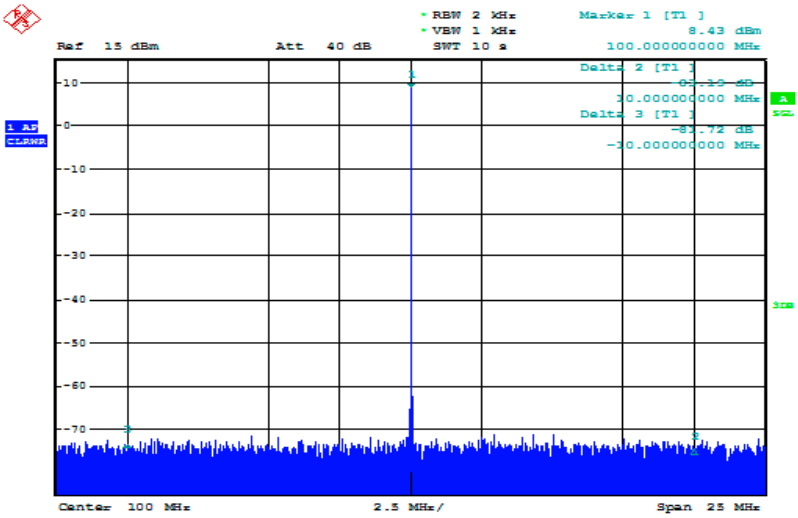
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