

# SELECTABLE FREQUENCY SYNTHESIZER

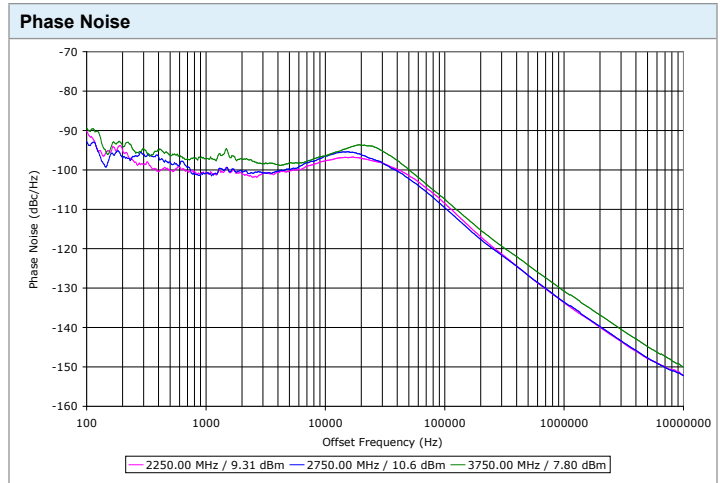
## SURFACE MOUNT MODEL: FCPH225375-10

**WIDE BANDWIDTH**

**2250 - 3750 MHz**

**FEATURES:**

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



**SPECIFICATIONS (Rev. B 12/20/10)**

|                             |                        |             |             |
|-----------------------------|------------------------|-------------|-------------|
| Frequency                   | 2250 - 3750 MHz        |             |             |
| Reference Input Frequency   | 10 MHz                 |             |             |
| Reference Input Voltage     | 1.0 V p-p to 3.3 V p-p |             |             |
| Bias Voltage                | Vcc                    | V (Vdc)     | I (mA Max.) |
|                             | Digital                | +5          | 55          |
|                             | Tune                   | +5          | 20          |
|                             | Converter              | +5          | 50          |
| Output Power                | +6 dBm (Min.)          |             |             |
| Spurious Suppression        | 70 dBc (Typ.)          |             |             |
| Harmonic Suppression        | 20 dBc (Typ.)          |             |             |
| Power Up Time               | 90 mSec (Typ.) *       |             |             |
| Output Impedance            | 50 Ohms (Nom.)         |             |             |
| Typical Phase Noise         | Offset                 | Phase Noise |             |
|                             | @ 1 kHz                | -96 dBc/Hz  |             |
|                             | @ 10 kHz               | -96 dBc/Hz  |             |
|                             | @ 100 kHz              | -107 dBc/Hz |             |
| Operating Temperature Range | -40 to +85 °C          |             |             |

\* From stable power on to stable lock detect.

**Absolute Maximum Ratings**

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

**Binary Frequency Selection Table**

| D3 * | D2 * | D1 * | D0 * | Freq. (MHz) |
|------|------|------|------|-------------|
| 0    | 0    | 0    | 0    | 2250        |
| 0    | 0    | 0    | 1    | 2750        |
| 0    | 0    | 1    | 0    | 3250        |
| 0    | 0    | 1    | 1    | 3750        |
| 0    | 1    | 0    | 0    | --          |
| 0    | 1    | 0    | 1    | --          |
| 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.

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 & 60/710310; 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

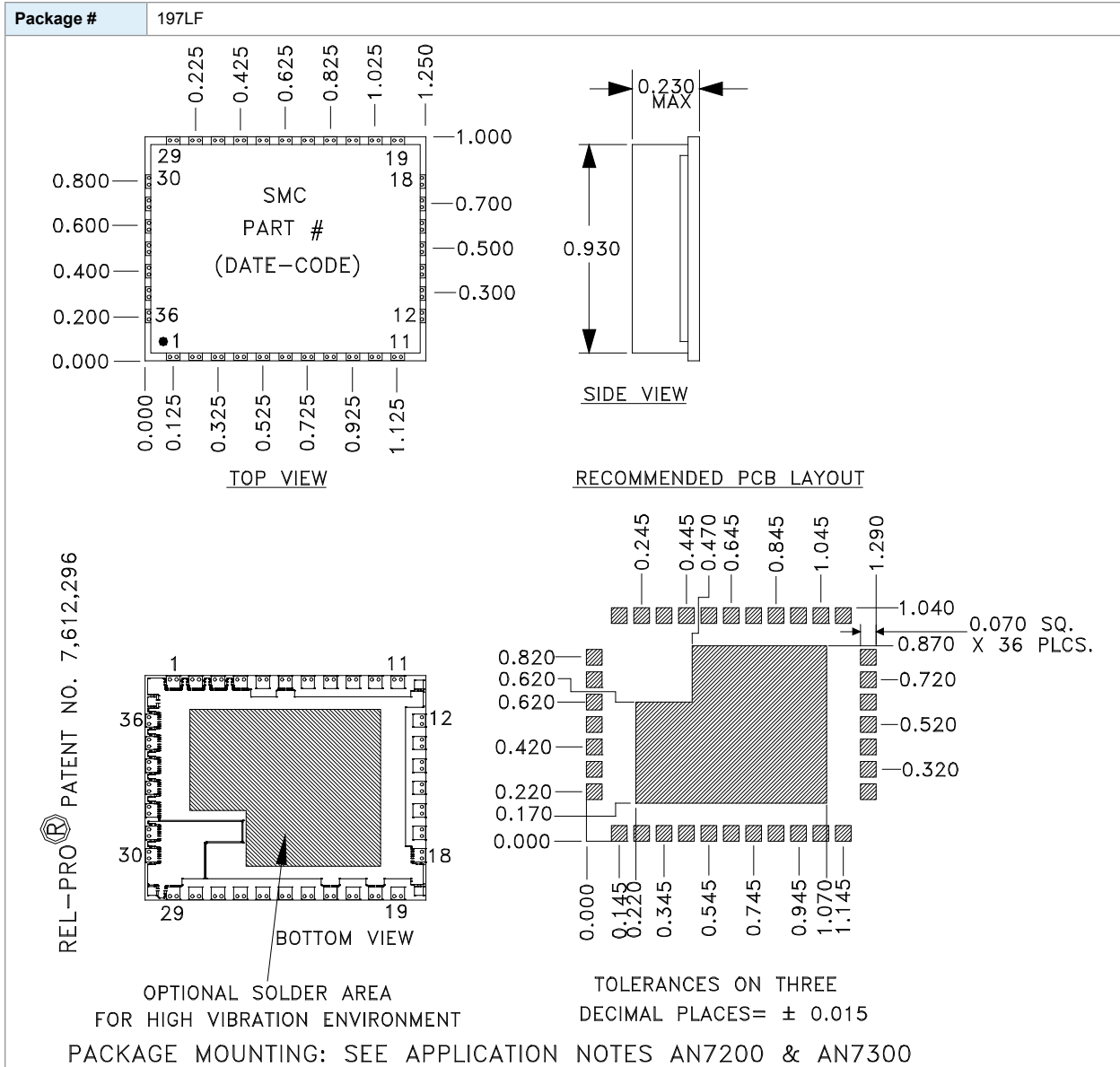
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PERFORMANCE PLOTS



REL-PRO® PATENT NO. 7,612,296

### Pin Configuration

|                                 |                       |                         |
|---------------------------------|-----------------------|-------------------------|
| Pin 5 - RF Out                  | Pin 17 - D2           | Pin 28 - Vcc(Converter) |
| Pin 7 - Lock Detect Out         | Pin 21 - Ref In       | Pin 9,10,11,14 - NC     |
| Pin 8 - D0                      | Pin 23 - Vcc(Digital) | Pin 16, 19, 24 - NC     |
| Pin 12 - D3                     | Pin 25 - Vcc(VCO)     | All Others - Ground     |
| Pin 13 - VCO on/off ctrl (CMOS) | Pin 26 - *            | NC - No Connection      |
| Pin 15 - D1                     | Pin 27 - *            |                         |

\*Connect externally together to ground with a bypass capacitor 10uF (tantalum 35V Min.)

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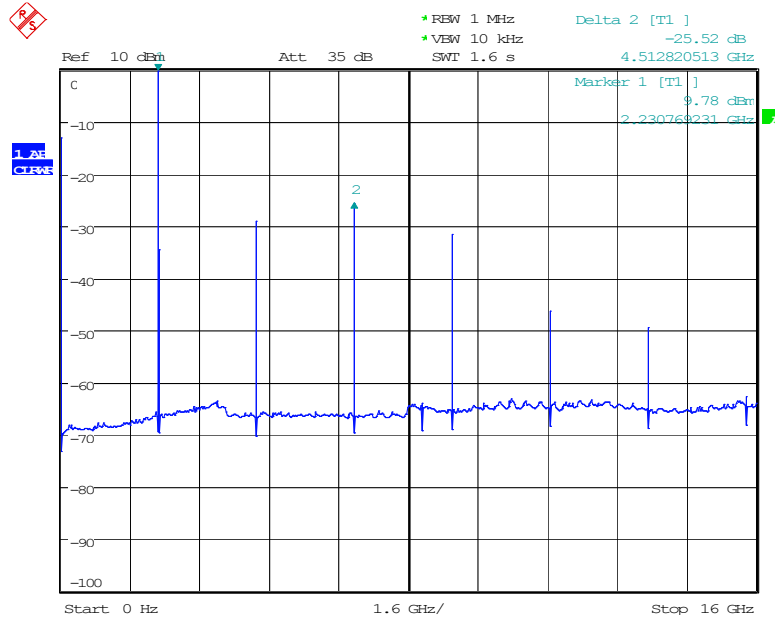
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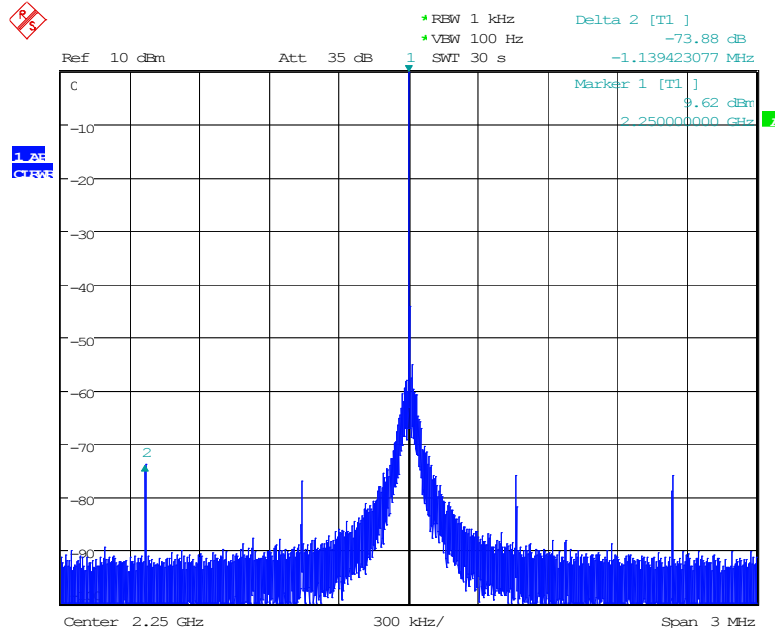
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### HARMONIC SUPPRESSION



### REFERENCE SIDEBAND SUPPRESSION



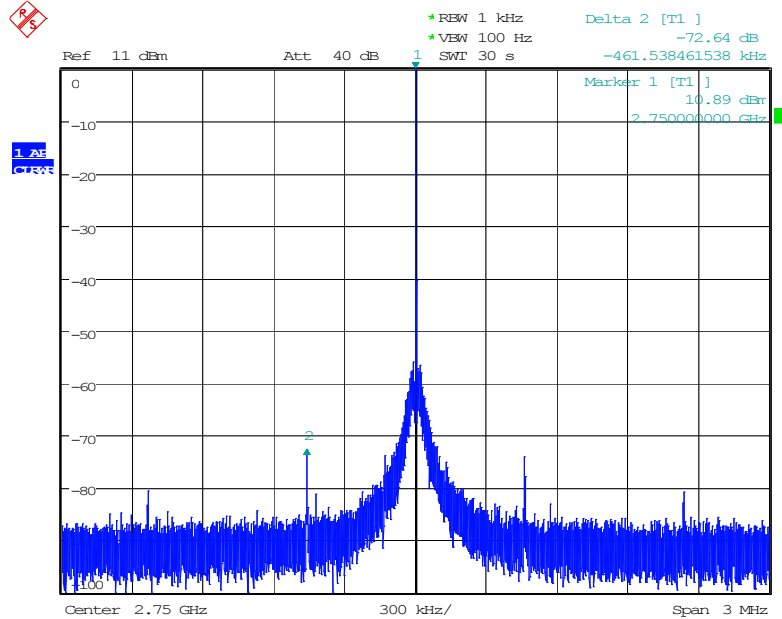
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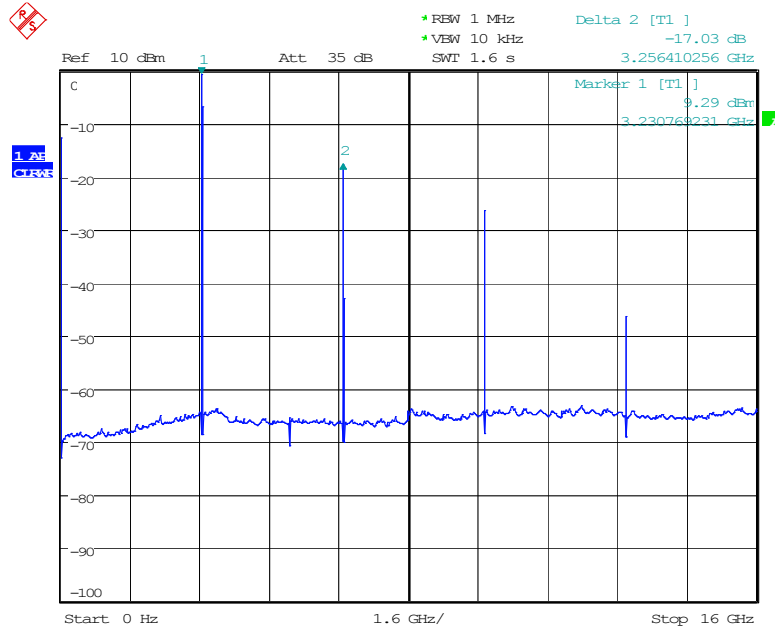
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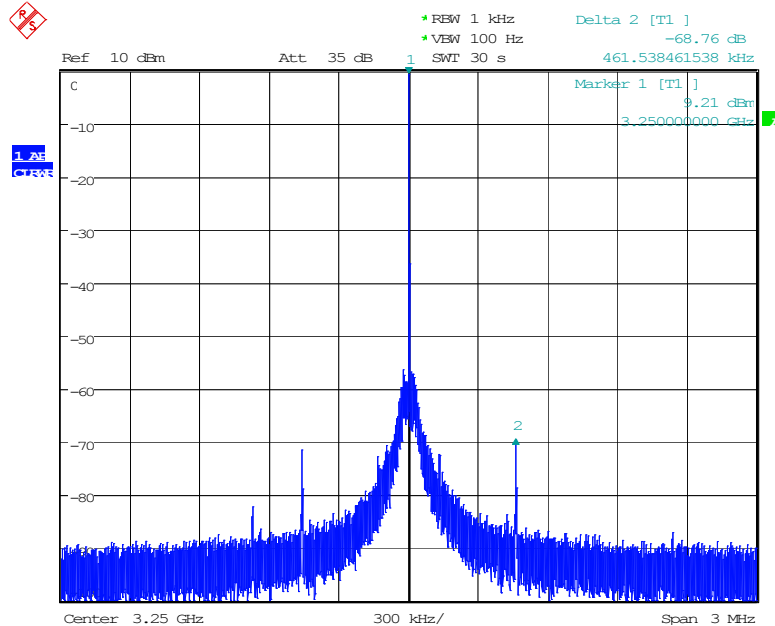
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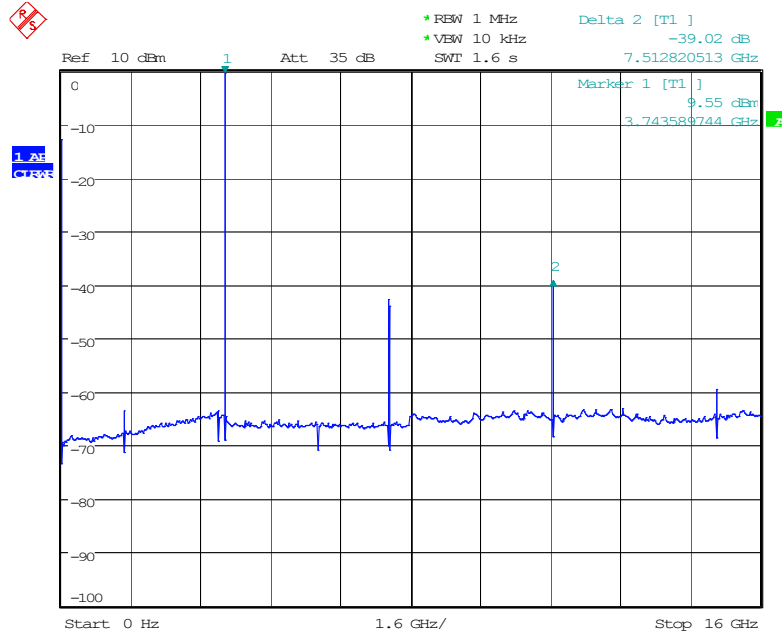
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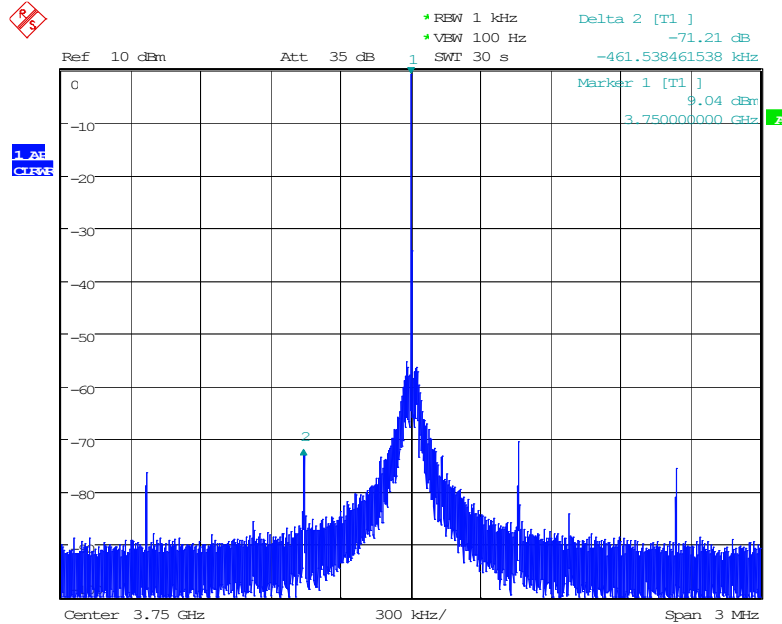
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