### FEATURES:
- Exceptionally Low Phase Noise
- Interactive Communication
- Standard Programming Interface
- Ultra Wide Tuning Range
- Lead Free - RoHS Compliant
- Patented REL-PRO® Technology
- Small Size, Surface Mount
- Buffered Output

### SPECIFICATIONS (Rev. N 04/08/11)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>600 - 1700 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step Size</td>
<td>500 kHz</td>
</tr>
<tr>
<td>Reference Input Frequency</td>
<td>10 MHz ¹</td>
</tr>
<tr>
<td>Reference Input Voltage</td>
<td>1.0 V p-p to 3.3 V p-p</td>
</tr>
</tbody>
</table>

**Bias Voltage**

<table>
<thead>
<tr>
<th>Vcc V (Vdc)</th>
<th>I (mA Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital</td>
<td>+5</td>
</tr>
<tr>
<td>VCO</td>
<td>+5</td>
</tr>
<tr>
<td>Converter</td>
<td>+5</td>
</tr>
</tbody>
</table>

**Output Power**

+5 dBm (Min.)

**Spurious Suppression**

75 dB (Typ.)

**Harmonic Suppression**

12 dB (Typ.)

**Settling Time**

10 mSec (Typ.) ²

**Output Impedance**

50 Ohms (Nom.)

**Operating Temperature Range**

-40 to +85 °C

**Programming**

See Application Note: AN7100

¹ Reference input frequency is programmable (See AN7100) in multiples of the step size, 10 MHz is the factory default setting. 150 MHz (Max.)

² From the rising edge of LE to stable lock detect

### Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Storage Temp. Range</th>
<th>-55 to +125 °C</th>
</tr>
</thead>
</table>

**Bias Voltage (Digital)**

+5.25 V

**Bias Voltage (VCO)**

+5.5 V

**Bias Voltage (Converter)**

+8.0 V

**DC Voltage Applied to RF Out**

±25 V

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**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; 2,563,174; 7,580,693; 7,612,296; 2,524,751. Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 2/259766; 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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E-Mail: sales@synergymwave.com • World Wide Web: http://www.synergymwave.com

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**Phase Noise**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Offset Phase Noise @ 1 kHz</th>
<th>Offset Phase Noise @ 10 kHz</th>
<th>Offset Phase Noise @ 100 kHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 MHz</td>
<td>-92 dBc/Hz</td>
<td>-90 dBc/Hz</td>
<td>-118 dBc/Hz</td>
</tr>
<tr>
<td>1150 MHz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1700 MHz</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Operating Port Configuration**

- Pin 5 - RF out
- Pin 7 - Lock Detect Out ¹
- Pin 9 - Data In
- Pin 10 - Error Flag
- Pin 11 - Clock In
- Pin 13 - VCO (On/Off) ²
- Pin 19 - Latch Enable In
- Pin 21 - Ref. In
- Pin 23 - Vcc (Digital)
- Pin 24 - Vcc (Converter)
- Pin 25 - Vcc (VCO)
- Pin 26 - Vcc (Converter)
- Pin 27 - Vcc (Converter)

¹ High when locked (source/sink 500 uA)
² Connect externally. Bypassed with a 10uF 35V tantalum capacitor.
³ NC if unused.
INTELLIGENT INTERACTIVE SYNTHESIZER
SURFACE MOUNT MODEL: LFSW60170-50

WIDE BANDWIDTH
600 - 1700 MHz

PERFORMANCE PLOTS

HARMONIC SUPPRESSION

REFERENCE SIDEBAND SUPPRESSION

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PERFORMANCE PLOTS