API Technologies’ Model LCFS1072 frequency synthesizer combines a monolithic integer-n microwave synthesizer, a reference oscillator and a microcontroller to provide an economical frequency source solution. Complex serial register programming is not required. A built-in lookup table in the microcontroller allows for simplified frequency programming with a dual 8-bit binary frequency selection word. Either parallel or serial programming can be accommodated.

1100 to 2200 MHz Frequency Synthesizer
Low Phase Noise in a Lower Cost Package

**Features**
- Low Phase Noise: -104 dBc/Hz (100 kHz offset)
- **External Reference Oscillator** (Internal Ref. Option at No Extra Charge)
- No User Programming Required
- Integrated Microcontroller Look-up Table
- Customized Parallel or Serial Programming Available
- Additional Complementary Output Line is Available (Option)

**Technical Specifications**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Typical</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>1100 to 2200 MHz</td>
<td>1100 to 2200 MHz</td>
</tr>
<tr>
<td>Output Power</td>
<td>+3 dBm</td>
<td>-</td>
</tr>
<tr>
<td>External Reference Input Power Requirement (CW)</td>
<td>0 to +3 dBm</td>
<td>0 to +3 dBm</td>
</tr>
<tr>
<td>Step Size</td>
<td>10 MHz</td>
<td>-</td>
</tr>
<tr>
<td>SSB Phase Noise **</td>
<td>-96 dBc/Hz @ 1 kHz</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-101 dBc/Hz @ 10 kHz</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-104 dBc/Hz @ 100 kHz</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-133 dBc/Hz @ 1 MHz</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-150 dBc/Hz @ 10 MHz</td>
<td>-</td>
</tr>
<tr>
<td>Digital Lock Indicator</td>
<td>3.3 volt logic</td>
<td>-</td>
</tr>
<tr>
<td>Locking Speed</td>
<td>80 μsec</td>
<td>-</td>
</tr>
<tr>
<td>Spurious</td>
<td>-40 dBc</td>
<td>-</td>
</tr>
<tr>
<td>Harmonics</td>
<td>-20 dBc</td>
<td>-</td>
</tr>
<tr>
<td>Output VSWR</td>
<td>1.75:1</td>
<td>2.0:1</td>
</tr>
<tr>
<td>Optional Binary Divided Output</td>
<td>2,4,8,16,32,64,128</td>
<td></td>
</tr>
<tr>
<td>DC Supply Voltage</td>
<td>+3.3 volts</td>
<td>(+/- 2%) volts</td>
</tr>
<tr>
<td>DC Supply Current *</td>
<td>150 mA *</td>
<td>---</td>
</tr>
</tbody>
</table>

**Maximum (No Damage) Ratings**

- **Storage Temperature**: -55°C to +125°C
- **Operating Temperature**: -40°C to +85°C
- **DC Voltage**: +5 volts

**Notes**: Typical values are measured at 25°C, but not guaranteed.

**Up to 2 Optional Outputs**
- One Output line: 150 mA *
- Two Output Lines: 225 mA*

**Mechanical & Electrical**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specification Temperatures (Min/Max)</td>
<td>-20°C to +70°C</td>
</tr>
<tr>
<td>Housing Size</td>
<td>0.800” L x 0.800” W x 0.130” H</td>
</tr>
<tr>
<td>Housing Drawing</td>
<td>LC800</td>
</tr>
<tr>
<td>Package Type</td>
<td>Surface Mount</td>
</tr>
</tbody>
</table>

**SSB phase noise dependent on the input reference performance.**
Typical Performance

Notes
1. Specifications labeled “min.” or “max.” are guaranteed in a 50 Ohm system over the specified temperature range.
2. Output frequency and step size must be specified.
3. Other input voltages are available.

Outline Drawing
(LC800 Package)