

# 1500 to 3000 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
- 3 Additional Complementary Output Lines are Available (Option)

API Technologies' Model LCFS1073 frequency synthesizer combines a monolithic integer-n microwave synthesizer, 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.

## Technical Specifications

| Parameter                                       | Typical                                                                                                           | Min/Max          |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------|
| Frequency Range                                 | 1500 to 3000 MHz                                                                                                  | 1500 to 3000 MHz |
| Output Power                                    | +13 dBm                                                                                                           | -                |
| External Reference Input Power Requirement (CW) | 0 to +13 dBm                                                                                                      | 0 to +13 dBm     |
| Step Size                                       | 10 MHz                                                                                                            | -                |
| SSB Phase Noise **                              | -86 dBc/Hz @ 1 kHz<br>-86 dBc/Hz @ 10 kHz<br>-104 dBc/Hz @ 100 kHz<br>-133 dBc/Hz @ 1 MHz<br>-156 dBc/Hz @ 10 MHz | -                |
| Digital Lock Indicator                          | 3.3 volt logic                                                                                                    | -                |
| Locking Speed                                   | 200 $\mu$ sec                                                                                                     | -                |
| Spurious                                        | -40 dBc                                                                                                           | -                |
| Harmonics                                       | -20 dBc                                                                                                           | -                |
| Output VSWR                                     | 1.75:1                                                                                                            | 2.0:1            |
| Optional Binary Divided Output                  | 2,4,8,16,32,64,128                                                                                                |                  |
| DC Supply Voltage                               | +3.3 volts                                                                                                        | (+/- 2%) volts   |
| DC Supply Current*                              | 150 mA*                                                                                                           | ---              |

\*\* SSB phase noise dependent on the input reference performance.

## 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 4 Optional Outputs\*

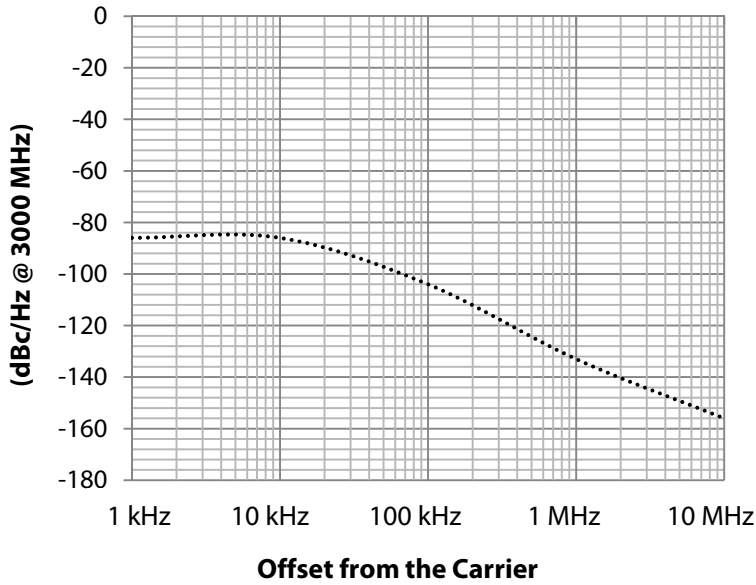
- One Output line: 150 mA \*
- Two Output Lines: 225 mA
- Three Output Lines: 300 mA
- Four Output Lines: 375 mA

## Mechanical & Electrical

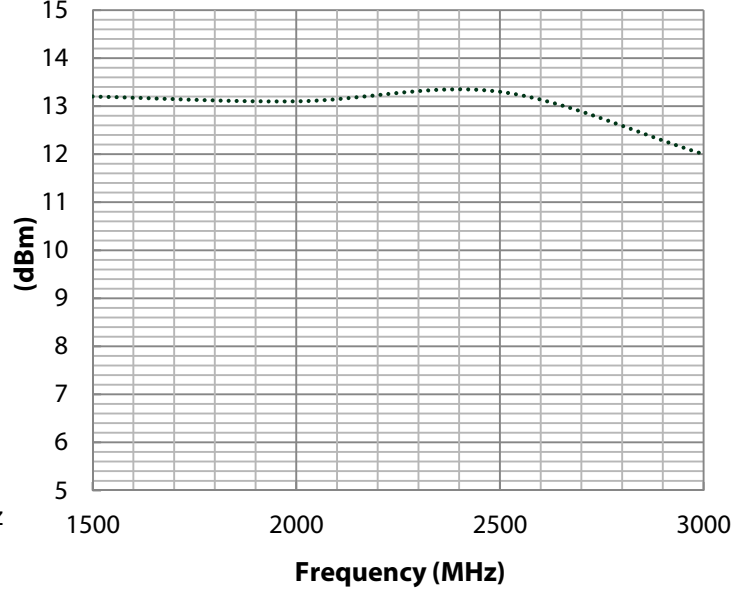
| Parameter                            | Specification                  |
|--------------------------------------|--------------------------------|
| Specification Temperatures (Min/Max) | -20°C to +70°C                 |
| Housing Size                         | 0.800" L x 0.800" W x 0.130" H |
| Housing Drawing                      | LC800                          |
| Package Type                         | Surface Mount                  |

## Typical Performance

### Phase Noise (dBc/Hz)



### Output Power (dBm)



## 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)

