

# 550 to 1100 MHz Frequency Synthesizer

Low Phase Noise in a Lower Cost Package



## Features

- Low Phase Noise: -110 dBc/Hz (100 kHz offset)
- Fast 80  $\mu$ sec Settling Speed
- Internal Reference Oscillator (External Optional)
- No User Programming Required
- Integrated Microcontroller Look-up Table
- Customized Parallel or Serial Programming Available
- 3 Additional Complementary Output Lines are Available

API Technologies' Model LCFS1054 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.

## Technical Specifications

Parameter	Typical	Min/Max
Frequency Range	550 to 1100 MHz	550 to 1100 MHz
Output Power	+13 dBm	-
Internal Input Reference Frequency	40 MHz	-
Step Size	2.5 MHz	-
SSB Phase Noise	-102 dBc/Hz @ 1 kHz -107 dBc/Hz @ 10 kHz -110 dBc/Hz @ 100 kHz -139 dBc/Hz @ 1 MHz -153 dBc/Hz @ 10 MHz	-
Digital Lock Indicator	3.3 volt logic	-
Locking Speed	80 $\mu$ 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	---
Frequency Accuracy	$\pm$ 2 PPM	---
Frequency Aging	$\pm$ 1 PPM	---
Frequency vs. Temperature	$\pm$ 2 PPM	---

## 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

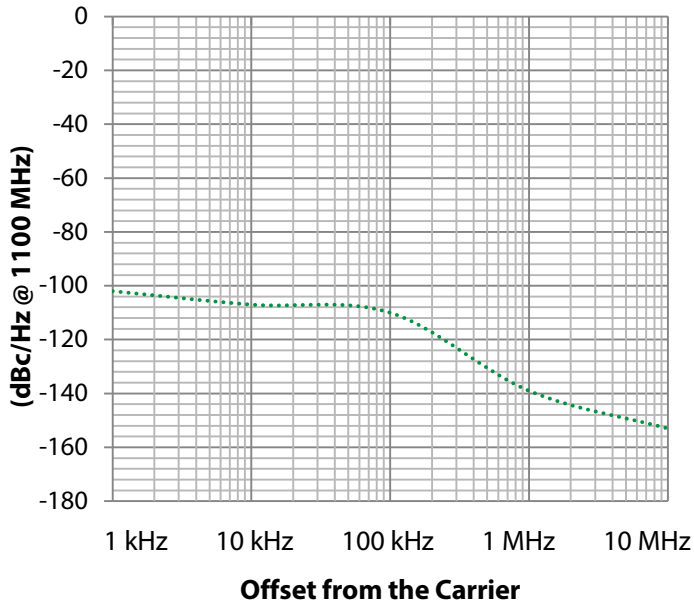
- One Output line: 150 mA
- Two Output Lines: 225 mA
- Three Output Lines: 300 mA
- Four Output Lines: 375 mA

## Mechanical & Electrical

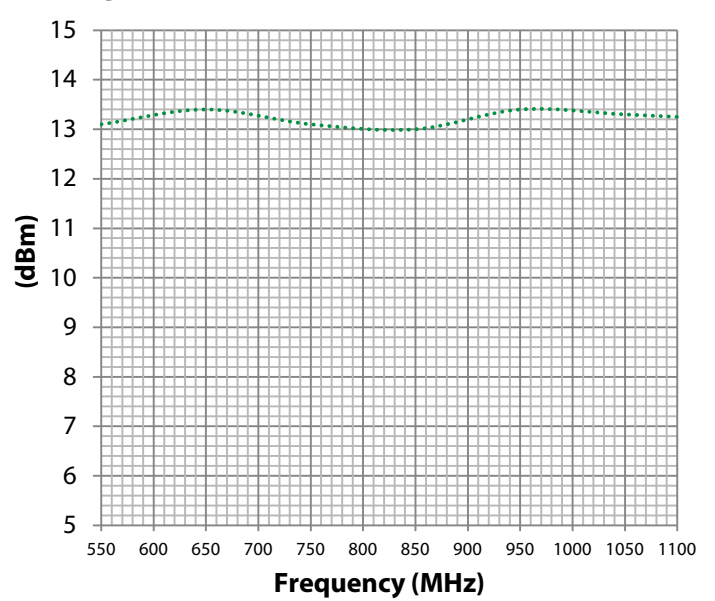
Parameter	Specification
Specification Temperatures (Min/Max)	-20°C to +70°C
Housing Size	0.800" L x 0.800" W x 0.130" H
Housing Drawing	LC800
Package Type	Surface Mount

## 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)

