

## FEATURES

- 50 MHz to 10.5 GHz Frequency Coverage
- 0.001 Hz Frequency Resolution
- 50  $\mu$ sec Switching Speed
- Superior Phase Noise
- Compact Size

## DESCRIPTION

**LUXYN™** synthesizers are ideal main local oscillators in Receiving Systems, Frequency Converters and Test & Measurement Equipment. **MLVS-0510** is VCO-based and provides 0.001 Hz frequency resolution over the 50 MHz to 10.5 GHz frequency range. Output power level of +15 dBm is provided throughout the full frequency range. Full band switching speed is 50  $\mu$ sec maximum. The **MLVS-0510** is 4" x 3.6" x 0.94" high.

## APPLICATIONS

Test Equipment  
Local Oscillators  
Frequency Converters



## PERFORMANCE SPECIFICATIONS

### RF Specifications

Frequency Range <sup>(1)</sup>	50 MHz to 10.5 GHz
Resolution	0.001 Hz
Output Power	+15 dBm min.
Switching Speed <sup>(2)</sup> (Full band) (List Mode)	50 $\mu$ sec max. (settling within $\pm$ 1 ppm)
Harmonics <sup>(3)</sup>	-12 dBc typ.
Sub-Harmonics	-50 dBc typ.
Spurs	-60 dBc typ.

Phase Noise	50 MHz <sup>(1)</sup>		500 MHz		5 GHz		10 GHz	
	Typ.	Max	Typ.	Max	Typ.	Max	Typ.	Max
100 Hz	-134	-131	-115	-112	-100	-97	-93	-90
1 kHz	-146	-143	-131	-128	-125	-122	-119	-116
10 kHz	-153	-150	-142	-139	-131	-129	-125	-122
100 kHz	-155	-152	-146	-143	-131	-129	-125	-122
1 MHz	-155	-152	-146	-143	-127	-124	-124	-121
10 MHz	-156	-153	-151	-148	-140	-137	-136	-133
50 MHz	-156	-153	-152	-149	-152	-149	-153	-150
100 MHz	-156	-153	-154	-151	-152	-149	-153	-150

(1): Optional frequencies available. Please see Options.

(2): Optional switching speeds available. Please see Options

(3): -10dBc typ. below 250 MHz

**Reference**
**Internal Reference**

Output Frequency	10 MHz
Output Power	+5 dBm ± 1 dB
Stability	± 1 ppm
Aging	± 0.5 ppm / year
Tuning Range	± 2 ppm
Output Impedance	50 Ω
Warm Up Time	2 minutes

**External Reference**

Input Frequency	10 MHz
Stability for lock	± 2 ppm
Input Level	0 dBm ± 6 dB
Input Impedance	50 Ω

**Environmental**

Operating Case Temperature <sup>(4)</sup>	0° to +60° C
Operating Relative Humidity	10% to 90%, non-condensing
Operating Shock	30g, half-sine pulse, 11 msec duration
Operating Vibration	5 Hz to 500 Hz, 0.31g <sub>rms</sub>

**Additional**

Supply Voltage	+10 to +16 V DC
Power Consumption	15 W nom. / ≈ 1.2 amp @ 12 V
Control Interface	SPI & USB
Size	4" x 3.6" x 0.94"
Weight	21 ounces

**Options**

Frequency Range	Option A: 500 MHz to 10.5 GHz
	Option B: <b>50</b> MHz to 10.5 GHz
Switching Speed	Option R: 150 –200 μsec
	Option S: 50 μsec max.

**Part Number Example: MLVS-0510AS represents 500MHz to 10.5GHz frequency synthesizer with 50 μsec max. switching speed**

(4): Extended temperature ranges available



