

FEATURES

- 50 MHz to 21 GHz Frequency Coverage
- 0.001 Hz Frequency Resolution
- 50 μ 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-0520** is VCO-based and provides 0.001 Hz frequency resolution over the 50 MHz to 21 GHz frequency range. Output power level of +15 dBm is provided throughout the full frequency range. Full band switching speed is 50 μ sec maximum. The **MLVS-0520** is 4" x 3.6" x 0.94" high.

APPLICATIONS

Test Equipment
Local Oscillators
Frequency Converters



PERFORMANCE SPECIFICATIONS

RF Specifications

Frequency Range ⁽¹⁾	50 MHz to 21 GHz
Resolution	0.001 Hz
Output Power	+15 dBm min.
Switching Speed ⁽²⁾ (Full band) (List Mode)	50 μ sec max. (settling within ± 1 ppm)
Harmonics ⁽³⁾	-12 dBc typ.
Sub-Harmonics	-50 dBc typ.
Spurs	-60 dBc typ.

Phase Noise	50 MHz ⁽¹⁾		500 MHz		5 GHz		10 GHz		20 GHz		21 GHz ⁽¹⁾	
	Typ.	Max	Typ.	Max	Typ.	Max	Typ.	Max	Typ.	Max	Typ.	Max
100 Hz	-126	-123	-114	-111	-100	-97	-92	-89	-89	-86	-89	-86
1 kHz	-143	-140	-128	-125	-121	-118	-113	-110	-111	-108	-107	-104
10 kHz	-151	-148	-140	-137	-130	-127	-124	-121	-118	-115	-116	-113
100 kHz	-156	-153	-147	-144	-132	-129	-126	-123	-120	-117	-119	-116
1 MHz	-156	-153	-147	-144	-130	-127	-124	-121	-118	-115	-117	-114
10 MHz	-156	-153	-151	-148	-143	-140	-138	-135	-130	-127	-134	-131
50 MHz	-156	-153	-152	-149	-149	-146	-148	-145	-153	-150	-152	-149
100 MHz	-156	-153	-152	-149	-149	-146	-149	-146	-156	-153	-155	-152

(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 \pm 1 dB
Stability	\pm 1 ppm
Aging	\pm 0.5 ppm / year
Tuning Range	\pm 2 ppm
Output Impedance	50 Ω
Warm Up Time	2 minutes

External Reference

Input Frequency	10 MHz
Stability for lock	\pm 5 ppm
Input Level	0 dBm \pm 6 dB
Input Impedance	50 Ω

Environmental

Operating Case Temperature ⁽⁴⁾	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 _{rms}

Additional

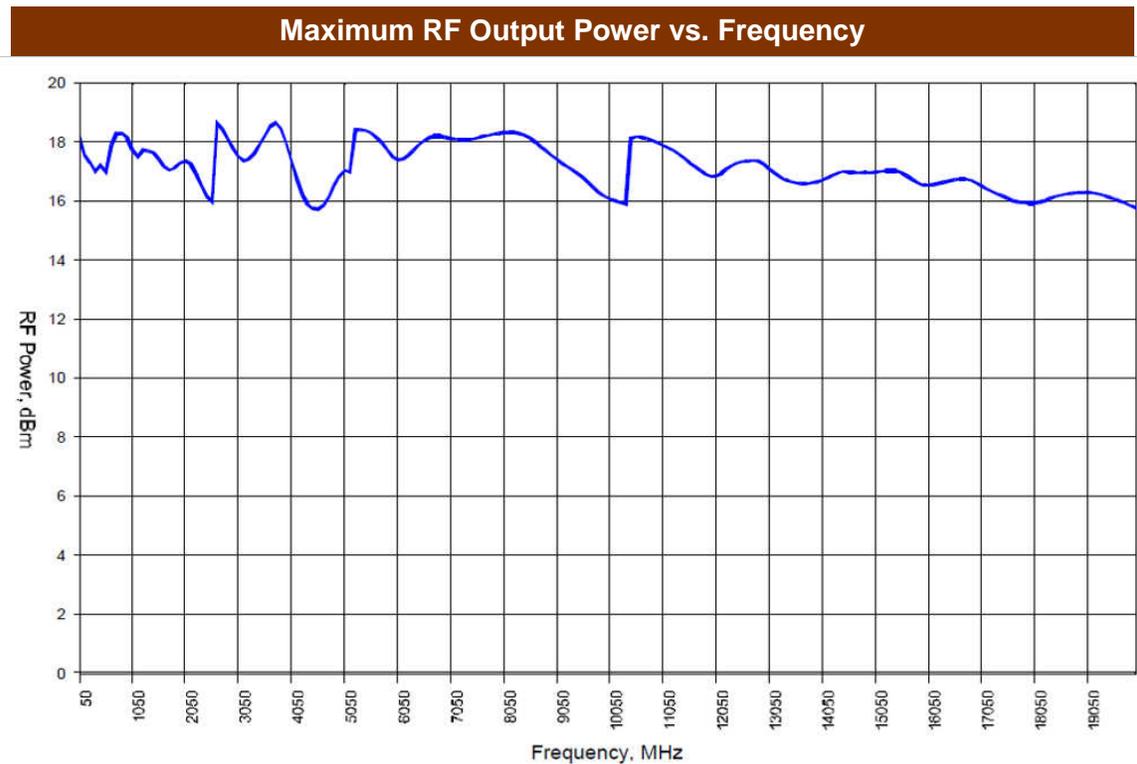
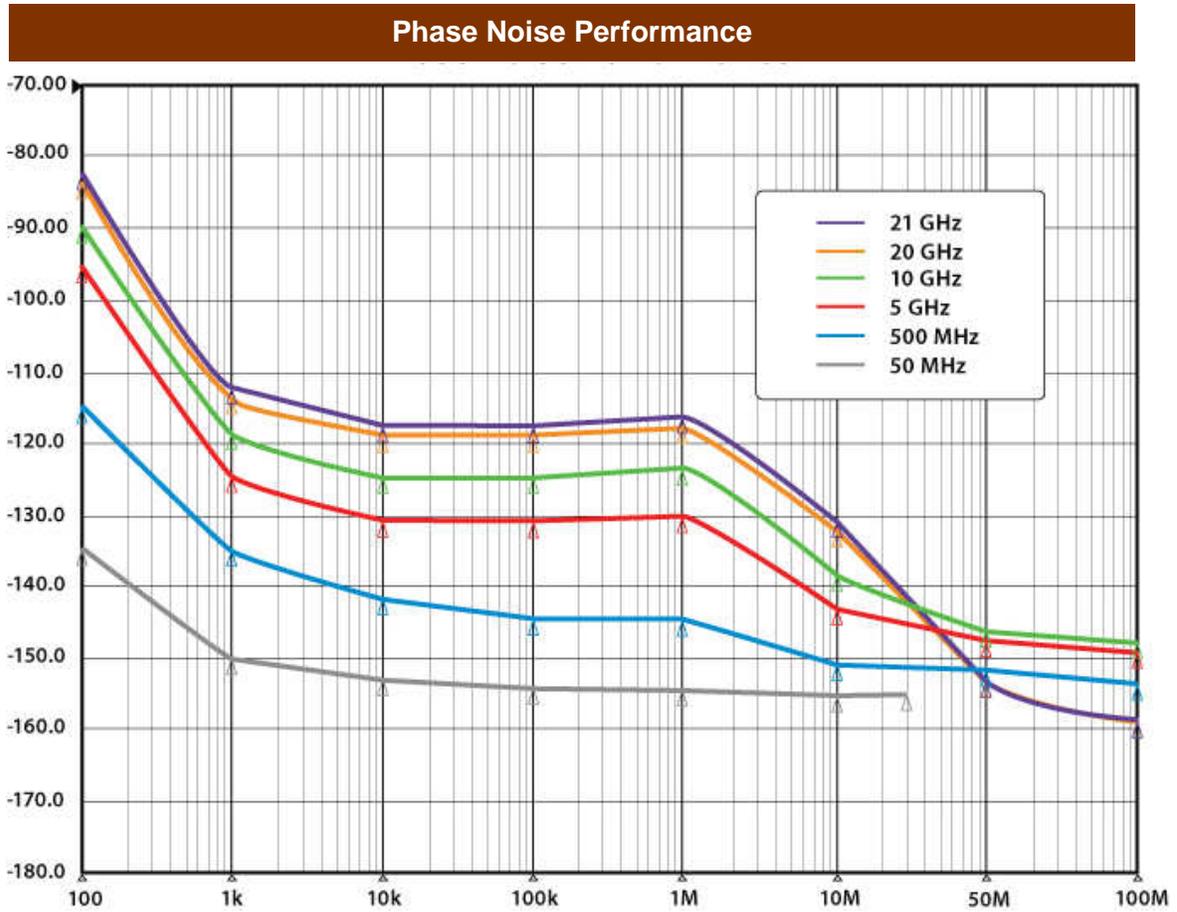
Supply Voltage	+10 to +16 V DC
Power Consumption	15 W nom. / \approx 1.2 amp @ 12 V
Control Interface	SPI & USB
Size	4" x 3.6" x 0.94"
Weight	21 ounces

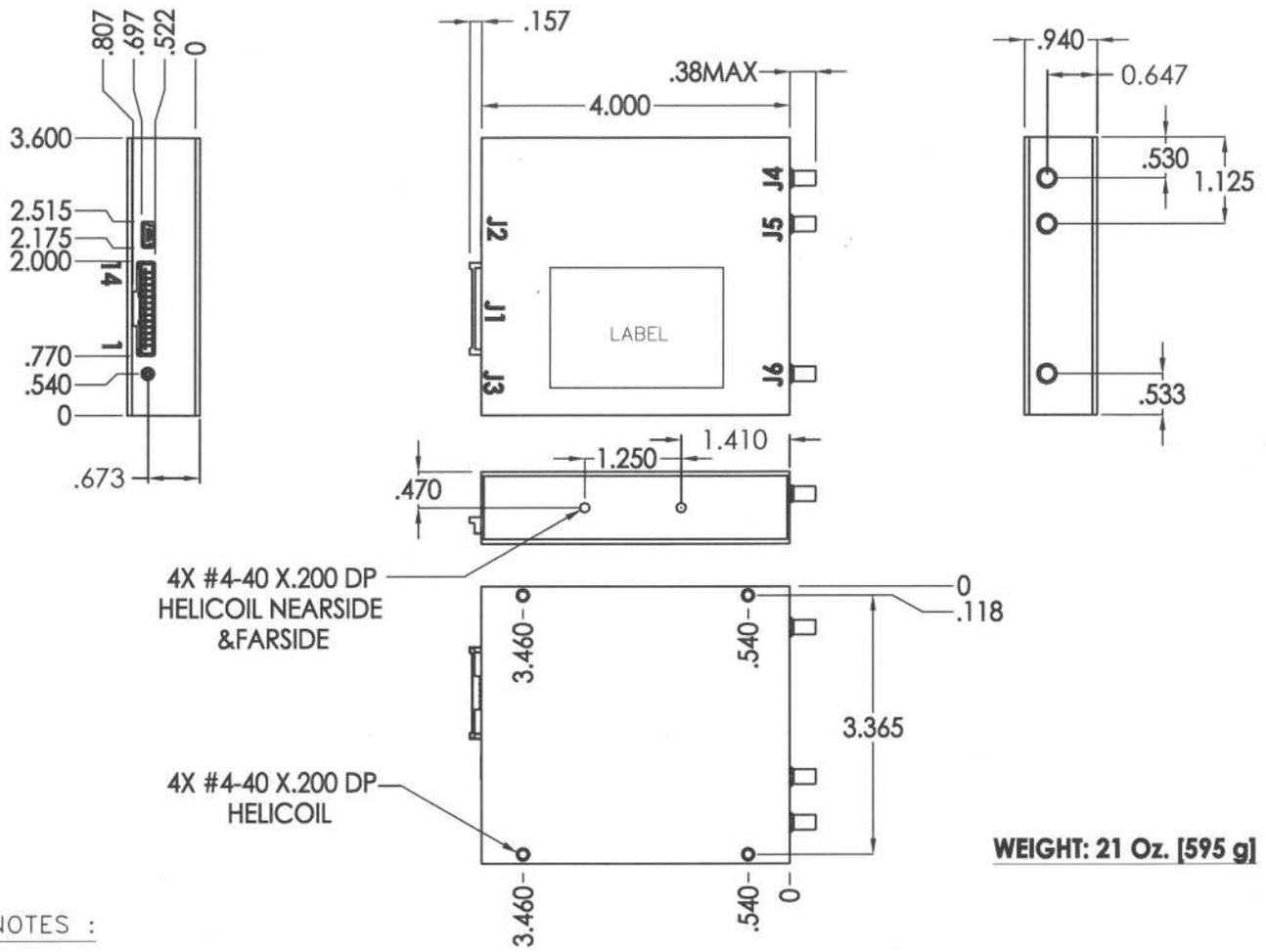
Options

Frequency Range	Option A: 500 MHz to 20 GHz
	Option B: 500 MHz to 21 GHz
	Option C: 50 MHz to 20 GHz
	Option D: 50 MHz to 21 GHz
Switching Speed	Option R: 150 - 200 μ sec
	Option S: 50 μ sec max.

Part Number Example: MLVS-0520AS represents 500MHz to 20GHz frequency synthesizer with 50 μ sec max. switching speed

(4): Extended temperature ranges available





WEIGHT: 21 Oz. [595 g]

NOTES :

- J1 MALE: - MOLEX# 35363-1460
- J1 MATES WITH: - MOLEX# 35507-1400
- CRIMP PIN: - MOLEX# 50212-8000

- J1 POWER SUPPLY INPUTS REQUIRED FOR USB OPERATION
- J1 RECOMMENDED WIRE SIZE = A.W.G. 22-24
- J2 CENTER PIN- 1.3MM DIA.; OUTER- 3.7MM DIA.
- (*) ACTIVE LOW

CONNECTIONS			
CONN.	TYPE	PIN #	FUNCTION
J1	35363-1460	1	+10V TO +16VDC
J1	35363-1460	2	+10V TO +16VDC
J1	35363-1460	3	GROUND
J1	35363-1460	4	GROUND
J1	35363-1460	5	N/C
J1	35363-1460	6	REF LOCK
J1	35363-1460	7	TRIG
J1	35363-1460	8	RESET (*)
J1	35363-1460	9	CLOCK
J1	35363-1460	10	DATA IN
J1	35363-1460	11	SELECT (*)
J1	35363-1460	12	BUSY
J1	35363-1460	13	RF LOCK
J1	35363-1460	14	DATA OUT

CONNECTIONS			
CONN.	TYPE	PIN #	FUNCTION
J2	USB MINI-B	1	+V
J2	USB MINI-B	2	D-
J2	USB MINI-B	3	D+
J2	USB MINI-B	4	GND
J2	USB MINI-B	5	GND
J3	DC PWR JACK	1	+12V INPUT
J4	SMA-FEMALE	1	REF OUTPUT
J5	SMA-FEMALE	1	REF. INPUT
J6	SMA-FEMALE	1	RF OUTPUT

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONS DECIMALS ANGLES
± .xx ±.02
± .xxx ±.010

UNCONTROLLED DRAWING:
SUBJECT TO CHANGE WITHOUT
NOTICE



MICRO LAMBDA WIRELESS, INC.

MLVS SYNTHESIZER

MATERIAL **6061 AL. & SS**
FINISH **NICKEL PLATE**
DO NOT SCALE DRAWING

APPROVAL		DATE
DRAWN	NVN	10/4/18
ENGR.	DS	10/4/18
MFG.		
Q.A.		

SIZE	CAGE NO.	DWG. NO.	REV
A	ORN63	99-0101-001	D
SCALE: 1:2		SHEET 1 OF 1	