

***** MLSP Main Test Menu Final Test Data Summary *****

Serial Number: 2081
Model Number: MLSP-1028BE
Time: 12:39:21 PM
Date: 10/8/2018
Minimum Frequency: 6000.000 MHz
Maximum Frequency: 18000.000 MHz
Frequency Step Size: 0.001 MHz
External 100 MHz PLL Reference Frequency: 10.0 MHz
Maximum RF Level (Min.): 10.0 dBm
Maximum RF Level (Max.): 19.0 dBm
Minimum Operating Temperature: 0 Degrees C.
Maximum Operating Temperature: 60 Degrees C.
MLSP Firmware Version: 3.0 Mar 28 2013
MLWI Sales Order #: 18*0134
MLWI Outline Drawing #: 181-002 B

Final Test Data Check Point Status:

Config data file backup = Pass
Coarse Cal file = Pass
Fine Cal file = Pass
Xtal Oscillator Cal file = Pass
Frequency Lock test file = Pass
RF Max Power test file = Pass
Harmonics test file = Pass
Random Spur test file = Pass
Switching Speed test file = Pass
Phase Noise test file = Pass
NOVO Locked = Pass
Unit Health = Pass
Xtal SN Exists = Pass
Last Self Test = Pass
Full Cal Status = Pass
Coarse Cal = Pass
Fine Cal = Pass
PLL Locked Status = Pass
MLWI Job # = Pass
MLWI Drawing # = Pass
Current Self Test Run = Pass

Pass - Unit is Ready to Ship

Label unit per outline drawing listed above.
Fill out all paperwork and submit to QA for inspection.
Copy all paperwork to include in shipping box.

SHIPPING CHECKLIST:

- 1. Labeled unit with SMA connector protectors installed
2. USB cable (1 per unit)
3. MLSP support CD Rom (1 per lot)
4. J1 mating connector (1 per unit)
5. J1 connector pins (14 per unit)
6. MLSP quick start guide (1 per lot)
7. Copy of completed C of C
8. Copy of test data packet (1 per unit)
9. Copy of outline drawing (1 per unit)
10. Copy of completed Packing list (1 per unit)

Notes:

Place labeled unit into anti-static pouch.
Place CD and USB cables in a separate large anti-static pouch.
Staple bags with J1 mating items to paperwork.
Box and ship product.

Initials: _____ Date: _____

***** Frequency Lock Test from 6000 MHz to 18000 MHz in 10 MHz Steps *****

Serial Number: 2081
Model Number: MLSP-1028BE
Time: 12:01:10 PM
Date: 10/8/2018
Minimum Frequency: 6000 MHz
Maximum Frequency: 18000 MHz
Temperature: +31.8C Deg. C
NOVO State: UnLocked
Power Supply Spec: +5.0 VDC +/- 0.25 V @ < 325 mA
Power Supply Spec: +15.0 VDC +/- 0.50 V @ < 1620 mA
Accuracy Tested to: +/-0.002 MHz

Begin Frequency Lock Test from 6000 MHz to 18000 MHz in 10 MHz Steps

Total Frequency Errors: 0

Finish Time: 12:02:11 PM

Begin Random Frequency Lock Test from 6000 MHz to 18000 MHz (1000 Frequencies)

Total Random Frequency Errors: 0

Finish Time: 12:03:02 PM

Internal Power Supply Voltage Readings:

+2.5V = +2.5V Pass
+3.3V = +3.2V Pass
+5.0V = +5.0V Pass
-5.0V = -4.8V Pass
+6.75V = +6.7V Pass
+12.0V = +12.0V Pass
+13.5V = +13.5V Pass
100 MHz PLL V = +5.7V Pass
YIG PLL V = +6.4V Pass

External Power Supply Voltage and Current Readings:

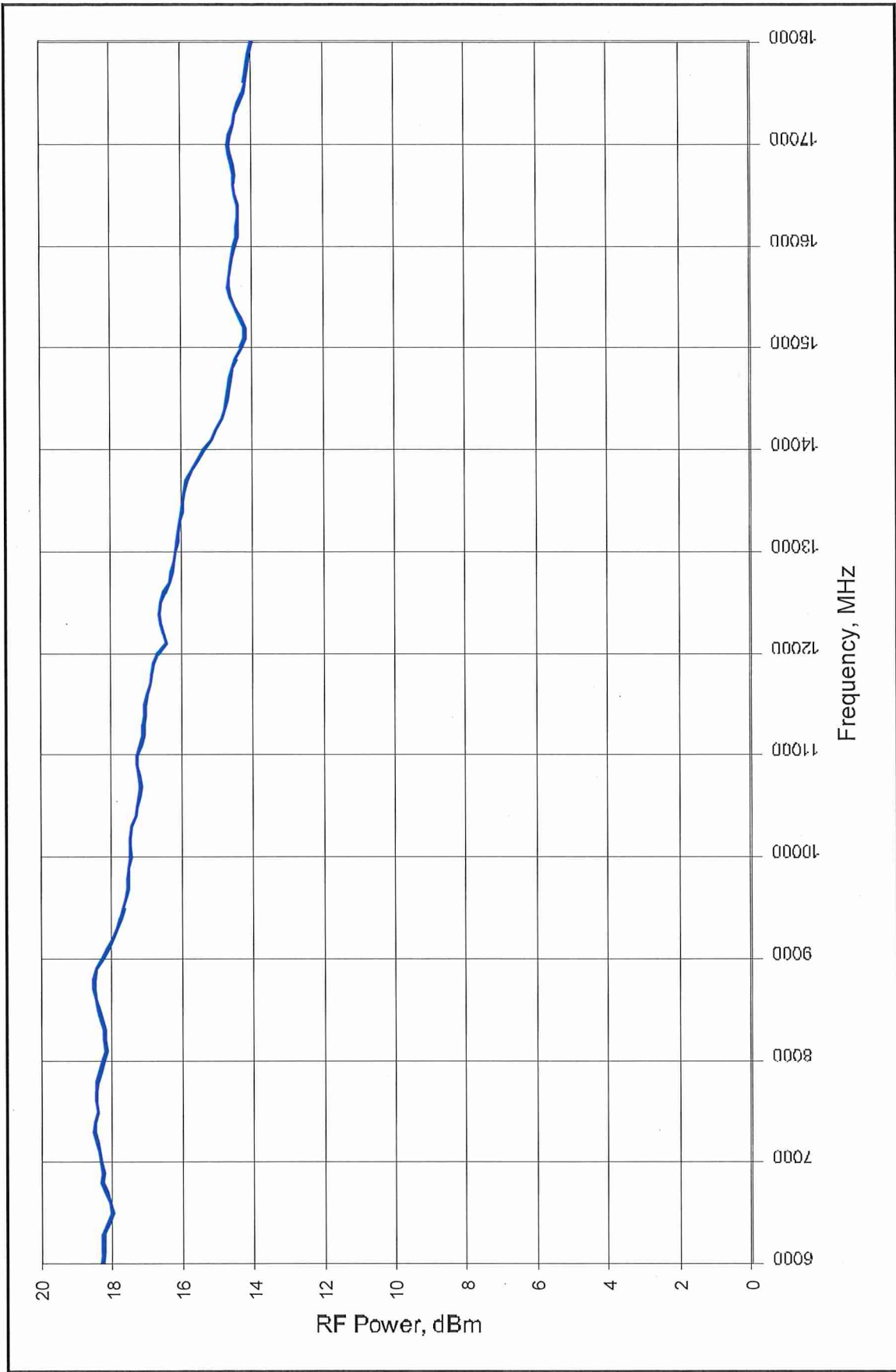
+5.0 VDC Voltage = 5.013V Pass
+5.0 VDC Current = 305mA Pass
+15.0 VDC Voltage = 14.994V Pass
+15.0 VDC Current = 1603mA Pass

Finish Time: 12:03:04 PM

Total Errors: 0

Pass

Maximum RF Output Power vs. Frequency



Max Levelled Pwr: N/A dBm

Min Levelled Pwr: N/A dBm

Levelled Pwr Set: Max dBm

Level Flatness Spec: +/-3.0 dB

Print

***** Harmonic Test from 6000.000000 MHz to 18000.000000 MHz in 100 MHz Steps *****

Model Number: MLSP-1028BE
Serial Number: 2081
Time: 4:08:27 PM
Date: 10/5/2018
Minimum Frequency: 6000.000000 MHz
Maximum Frequency: 18000.000000 MHz
Current Unit Temperature: +32.0C Deg. C
Harmonic Spec Level (In Band): -12.0 dBc

Frequency	Level	Harm #	Status
6000 MHz	-16 dBc	2	PASS
6100 MHz	-17 dBc	2	PASS
6200 MHz	-17 dBc	2	PASS
6300 MHz	-16 dBc	2	PASS
6400 MHz	-17 dBc	3	PASS
6500 MHz	-16 dBc	3	PASS
6600 MHz	-16 dBc	3	PASS
6700 MHz	-16 dBc	3	PASS
6800 MHz	-16 dBc	3	PASS
6900 MHz	-15 dBc	3	PASS
7000 MHz	-16 dBc	3	PASS
7100 MHz	-16 dBc	3	PASS
7200 MHz	-17 dBc	2	PASS
7300 MHz	-15 dBc	2	PASS
7400 MHz	-14 dBc	2	PASS
7500 MHz	-16 dBc	2	PASS
7600 MHz	-17 dBc	2	PASS
7700 MHz	-17 dBc	2	PASS
7800 MHz	-17 dBc	2	PASS
7900 MHz	-18 dBc	2	PASS
8000 MHz	-19 dBc	2	PASS
8100 MHz	-19 dBc	2	PASS
8200 MHz	-20 dBc	2	PASS
8300 MHz	-19 dBc	3	PASS
8400 MHz	-19 dBc	2	PASS
8500 MHz	-16 dBc	2	PASS
8600 MHz	-15 dBc	2	PASS
8700 MHz	-14 dBc	2	PASS
8800 MHz	-14 dBc	2	PASS
8900 MHz	-13 dBc	2	PASS
9000 MHz	-13 dBc	2	PASS
9100 MHz	-14 dBc	2	PASS
9200 MHz	-15 dBc	2	PASS
9300 MHz	-16 dBc	2	PASS
9400 MHz	-17 dBc	2	PASS
9500 MHz	-17 dBc	2	PASS
9600 MHz	-18 dBc	2	PASS
9700 MHz	-17 dBc	2	PASS
9800 MHz	-14 dBc	2	PASS
9900 MHz	-14 dBc	2	PASS
10000 MHz	-14 dBc	2	PASS
10100 MHz	-14 dBc	2	PASS
10200 MHz	-14 dBc	2	PASS
10300 MHz	-13 dBc	2	PASS
10400 MHz	-14 dBc	2	PASS
10500 MHz	-13 dBc	2	PASS
10600 MHz	-14 dBc	2	PASS
10700 MHz	-15 dBc	2	PASS
10800 MHz	-14 dBc	2	PASS
10900 MHz	-14 dBc	2	PASS
11000 MHz	-14 dBc	2	PASS
11100 MHz	-15 dBc	2	PASS
11200 MHz	-17 dBc	2	PASS
11300 MHz	-18 dBc	2	PASS
11400 MHz	-19 dBc	2	PASS
11500 MHz	-20 dBc	2	PASS
11600 MHz	-21 dBc	2	PASS
11700 MHz	-25 dBc	2	PASS
11800 MHz	-30 dBc	2	PASS
11900 MHz	-33 dBc	2	PASS
12000 MHz	-36 dBc	2	PASS
12100 MHz	-30 dBc	2	PASS
12200 MHz	-30 dBc	2	PASS
12300 MHz	-29 dBc	2	PASS
12400 MHz	-29 dBc	2	PASS
12500 MHz	-29 dBc	2	PASS
12600 MHz	-27 dBc	2	PASS
12700 MHz	-25 dBc	2	PASS
12800 MHz	-26 dBc	2	PASS
12900 MHz	-23 dBc	2	PASS
13000 MHz	-22 dBc	2	PASS
13100 MHz	-22 dBc	2	PASS
13200 MHz	-22 dBc	2	PASS

13300	MHz	-20	dBc	2	PASS
13400	MHz	-21	dBc	2	PASS

Number of Failures: 0

Finish Time: 4:17:02 PM

Harmonic Readings complete

Pass

***** Random Spur Test from 6000 MHz to 18000 MHz *****

Serial Number: 2081
Model Number: MLSP-1028BE
Time: 11:50:02 AM
Date: 10/5/2018
Minimum Frequency: 6000 MHz
Maximum Frequency: 18000 MHz
Analyzer Frequency Span Tested: 2 kHz to 2000 MHz - or Max span = 1.9 * CF if <=1000 MHz
Spur Level Spec <=: -60.0 dBc
Number of Frequencies Tested: 25
Temperature: +31.0C Deg. C
NOVO State: UnLocked

Random Frequency	Status
Frequency Tested = 13112.365423 MHz	Pass
Frequency Tested = 12972.042728 MHz	Pass
Frequency Tested = 8965.334742 MHz	Pass
Frequency Tested = 9531.623432 MHz	Pass
Frequency Tested = 17378.474648 MHz	Pass
Frequency Tested = 11106.388727 MHz	Pass
Frequency Tested = 7701.678688 MHz	Pass
Frequency Tested = 14904.022198 MHz	Pass
Frequency Tested = 15763.158127 MHz	Pass
Frequency Tested = 13807.445209 MHz	Pass
Frequency Tested = 15692.074380 MHz	Pass
Frequency Tested = 17351.296242 MHz	Pass
Frequency Tested = 15527.335826 MHz	Pass
Frequency Tested = 7534.899340 MHz	Pass
Frequency Tested = 15267.569060 MHz	Pass
Frequency Tested = 7633.356774 MHz	Pass
Frequency Tested = 11000.857539 MHz	Pass
Frequency Tested = 7043.520619 MHz	Pass
Frequency Tested = 9371.095939 MHz	Pass
Frequency Tested = 17980.733685 MHz	Pass
Frequency Tested = 7038.070631 MHz	Pass
Frequency Tested = 9112.947932 MHz	Pass
Frequency Tested = 10166.266225 MHz	Pass
Frequency Tested = 9786.083989 MHz	Pass
Frequency Tested = 6848.165853 MHz	Pass

Total Spur Errors: 0

Finish Time: 12:22:17 PM
Pass

***** Switching Speed Test from 6000.0 to 18000.0 MHz in 100 1000 MHz & Full Band Steps *****

Model Number: MLSP-1028BE
 Serial Number: 2081
 Time: 11:39:05 AM
 Date: 10/5/2018
 Minimum Frequency: 6000.000 MHz
 Maximum Frequency: 18000.000 MHz
 Current Unit Temperature: +30.2C Deg. C
 Switching Speed Spec:
 For a 100 MHz Step: 1.0 mS (Frequencies <500 MHz = 2.0 mS)
 For a 1000 MHz Step: 3.0 mS
 For a Full Band Step: 6.0 mS
 For 25 Random Jumps - Max Time Range: 1.0 to 6.0 mS

Frequency Step	Meas. Speed	Status
100 MHz Step Up =	0.7 mS	Pass
100 MHz Step Down =	0.3 mS	Pass
1000 MHz Step Up =	2.1 mS	Pass
1000 MHz Step Down =	2.0 mS	Pass
Full band Step Up =	4.9 mS	Pass
Full band Step Down =	4.6 mS	Pass

Frequency Step (MHz)	Step Size (MHz)	Meas. Speed	Status
Random Jump From 6000.0 To 11102.0	5102.0	3.3 mS	Pass
Random Jump From 11102.0 To 17914.0	6812.0	4.0 mS	Pass
Random Jump From 17914.0 To 10205.0	-7709.0	3.6 mS	Pass
Random Jump From 10205.0 To 13509.0	3304.0	2.8 mS	Pass
Random Jump From 13509.0 To 6303.0	-7206.0	3.3 mS	Pass
Random Jump From 6303.0 To 9040.0	2737.0	2.8 mS	Pass
Random Jump From 9040.0 To 13232.0	4192.0	3.2 mS	Pass
Random Jump From 13232.0 To 10448.0	-2784.0	2.6 mS	Pass
Random Jump From 10448.0 To 9214.0	-1234.0	2.0 mS	Pass
Random Jump From 9214.0 To 10333.0	1119.0	2.3 mS	Pass
Random Jump From 10333.0 To 6841.0	-3492.0	2.7 mS	Pass
Random Jump From 6841.0 To 12001.0	5160.0	3.4 mS	Pass
Random Jump From 12001.0 To 16384.0	4383.0	3.3 mS	Pass
Random Jump From 16384.0 To 11884.0	-4500.0	2.9 mS	Pass
Random Jump From 11884.0 To 11284.0	-600.0	1.7 mS	Pass
Random Jump From 11284.0 To 6511.0	-4773.0	3.0 mS	Pass
Random Jump From 6511.0 To 16067.0	9556.0	4.3 mS	Pass
Random Jump From 16067.0 To 13528.0	-2539.0	2.5 mS	Pass
Random Jump From 13528.0 To 12010.0	-1518.0	2.2 mS	Pass
Random Jump From 12010.0 To 13424.0	1414.0	2.5 mS	Pass
Random Jump From 13424.0 To 6884.0	-6540.0	3.2 mS	Pass
Random Jump From 6884.0 To 11220.0	4336.0	3.1 mS	Pass
Random Jump From 11220.0 To 15908.0	4688.0	3.4 mS	Pass
Random Jump From 15908.0 To 12600.0	-3308.0	2.7 mS	Pass
Random Jump From 12600.0 To 8053.0	-4547.0	2.9 mS	Pass

Number of Failures: 0

Finish Time: 11:48:10 AM

Switching Speed Readings complete

Pass

***** Phase Noise Test from 6000 MHz to 18000 MHz in 1200 MHz Steps *****

Model Number: MLSP-1028BE
Serial Number: 2081
Time: 11:25:56 AM
Date: 10/5/2018
Minimum Frequency: 6000 MHz
Maximum Frequency: 18000 MHz
Number of Frequencies Tested: 11
Current Loop Gain (LG) Setting: 26
Current Unit Temperature: +31.2C Deg. C

Phase Noise Spec @ Offset:

@ 100 Hz = -72.0 dBc/Hz
@ 1.0 kHz = -89.0 dBc/Hz
@ 10.0 kHz = -91.0 dBc/Hz
@ 100 kHz = -115.0 dBc/Hz
@ 1.0 MHz = -138.0 dBc/Hz
@ 10.0 MHz = -150 dBc/Hz

Correlation = 1

Measured:

Frequency	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz	10 MHz	Status	RF Power
6000.003	-83.9	-100.8	-104.8	-116.8	-143.1	-155.8	Pass	10.48 dBm
7200.004	-85.2	-98.8	-103.1	-117.2	-143.1	-156.1	Pass	11.29 dBm
8400.005	-80.6	-97.4	-100.8	-116.5	-141.9	-155.2	Pass	10.78 dBm
9600.005	-82.2	-96.2	-99.5	-116.8	-141.9	-155.2	Pass	9.81 dBm
10800.006	-80.5	-95.7	-98.2	-117.3	-141.8	-155.8	Pass	7.13 dBm
12000.007	-80.2	-94.9	-97.6	-117.8	-142.6	-155.8	Pass	6.46 dBm
13200.007	-77.9	-94.0	-96.4	-117.9	-141.9	-155.6	Pass	4.69 dBm
14400.008	-77.8	-92.7	-95.6	-118.1	-141.4	-154.9	Pass	2.28 dBm
15600.009	-75.2	-91.9	-94.5	-117.9	-141.8	-155.5	Pass	2.17 dBm
16800.009	-76.6	-91.8	-93.3	-117.6	-141.5	-155.1	Pass	2.44 dBm
18000.010	-77.2	-91.0	-92.2	-117.0	-140.9	-155.0	Pass	0.96 dBm

Number of Failures: 0

Finish Time: 11:32:29 AM

Phase Noise Readings Complete

Pass