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

Serial Number: 0292
Model Number: MLSP-1021BE
Time: 11:35:13 AM
Date: 11/12/2013
Minimum Frequency: 2000.000 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: -45.0 Degrees C.
Maximum Operating Temperature: 85.0 Degrees C.
MLSP Firmware Version: 3.0 Mar 28 2013
MLWI Sales Order #: 18-0047
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
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: Check box

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 (For all units in the lot) _____
8. Copy of test data packet (1 per unit) _____
9. Copy of outline drawing (1 per lot) _____
10. Copy of completed Packing list (1 per lot) _____

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 2000 MHz to 18000 MHz in 10 MHz Steps *****

Serial Number: 0292
Model Number: MLSP-1021BE
Time: 11:00:18 AM
Date: 11/12/2013
Minimum Frequency: 2000 MHz
Maximum Frequency: 18000 MHz
Temperature: +34.6C Deg. C
NOVO State: Locked
Power Supply Spec: +5.0 VDC +/- 0.25 V @ < 350 mA
Power Supply Spec: +15.0 VDC +/- 0.50 V @ < 2200 mA
Accuracy Tested to: +/-0.002 MHz

Begin Frequency Lock Test from 2000 MHz to 18000 MHz in 10 MHz Steps

Total Frequency Errors: 0

Finish Time: 11:01:31 AM

Begin Random Frequency Lock Test from 2000 MHz to 18000 MHz (1000 Frequencies)

Total Ramdom Frequency Errors: 0

Finish Time: 11:02:17 AM

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 = +5.4V Pass
YIG PLL V = +5.7V Pass

External Power Supply Voltage and Current Readings:
+5.0 VDC Voltage = 5.001V Pass
+5.0 VDC Current = 289mA Pass
+15.0 VDC Voltage = 14.996V Pass
+15.0 VDC Current = 1973mA Pass

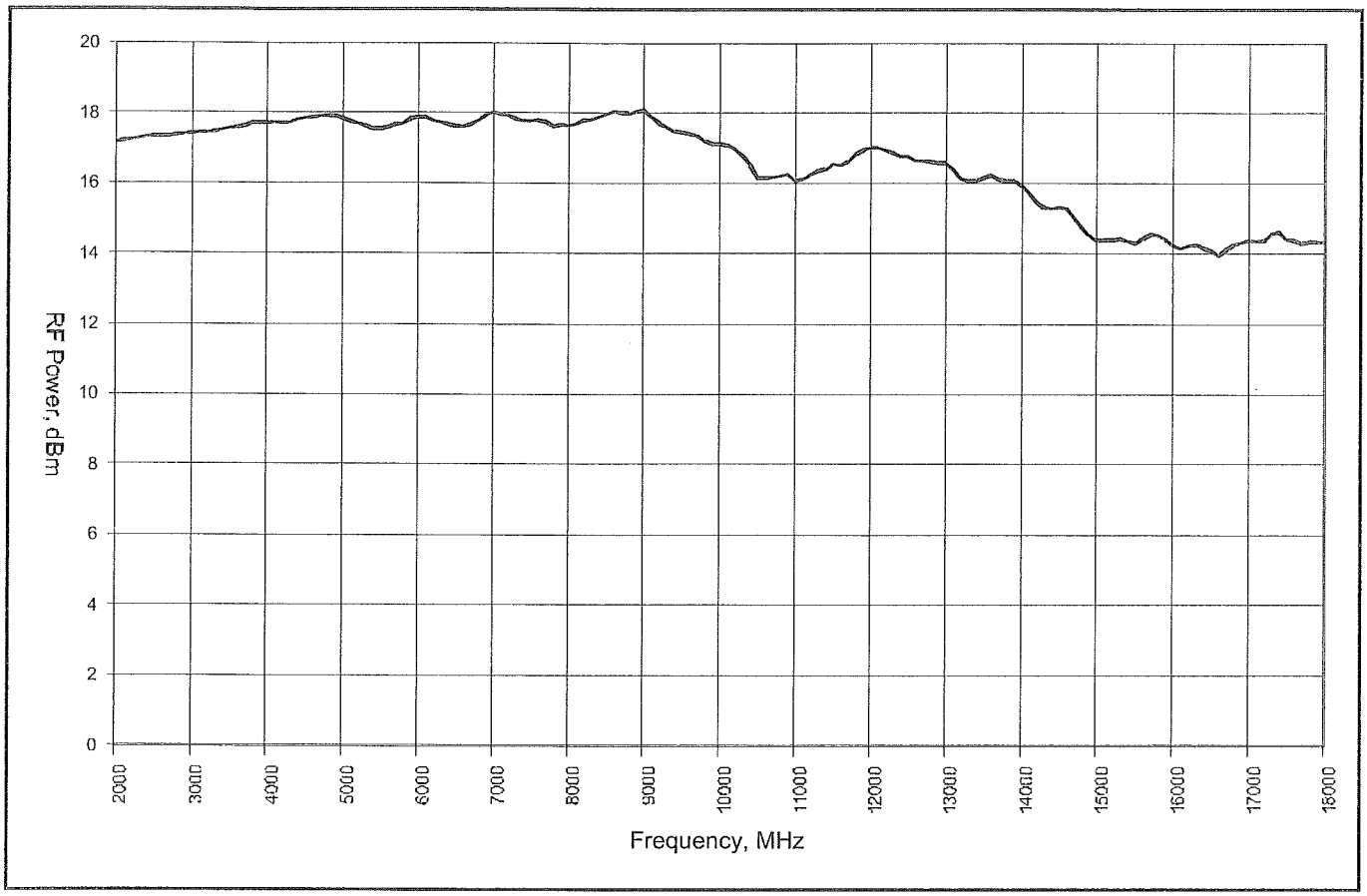
Finish Time: 11:02:19 AM

Total Errors: 0

Pass

Model #: MLSP-1021BE Serial #: 0292 Min Power: 10 dBm Max Power: 19 dBm Temp.: +35.6C Deg. Date: 11-12-2013 Time: 11:21:34 Status = Pass

Maximum RF Output Power vs. Frequency



Print

Max Leveled Pwr: N/A dBm Min Leveled Pwr: N/A dBm Leveled Pwr Set: Max dBm Level Flatness Spec: +/-3.0 dB

***** Harmonic Test from 2000.000000 MHz to 18000.000000 MHz in 100 MHz Steps *****

Model Number: MLSP-1021BE
Serial Number: 0292
Time: 7:25:26 AM
Date: 11/12/2013
Minimum Frequency: 2000.000000 MHz
Maximum Frequency: 18000.000000 MHz
Current Unit Temperature: +30.6C Deg. C
Harmonic Spec Level (In Band): -12.0 dBc

Frequency	Level	Harm #	Status
2000 MHz	-16 dBc	3	PASS
2100 MHz	-15 dBc	3	PASS
2200 MHz	-15 dBc	3	PASS
2300 MHz	-14 dBc	3	PASS
2400 MHz	-14 dBc	3	PASS
2500 MHz	-14 dBc	3	PASS
2600 MHz	-14 dBc	3	PASS
2700 MHz	-14 dBc	3	PASS
2800 MHz	-13 dBc	3	PASS
2900 MHz	-13 dBc	3	PASS
3000 MHz	-13 dBc	3	PASS
3100 MHz	-13 dBc	3	PASS
3200 MHz	-13 dBc	3	PASS
3300 MHz	-14 dBc	3	PASS
3400 MHz	-14 dBc	3	PASS
3500 MHz	-15 dBc	3	PASS
3600 MHz	-15 dBc	3	PASS
3700 MHz	-15 dBc	3	PASS
3800 MHz	-15 dBc	3	PASS
3900 MHz	-15 dBc	3	PASS
4000 MHz	-14 dBc	3	PASS
4100 MHz	-14 dBc	3	PASS
4200 MHz	-14 dBc	3	PASS
4300 MHz	-14 dBc	3	PASS
4400 MHz	-14 dBc	3	PASS
4500 MHz	-14 dBc	3	PASS
4600 MHz	-15 dBc	3	PASS
4700 MHz	-15 dBc	3	PASS
4800 MHz	-15 dBc	3	PASS
4900 MHz	-16 dBc	2	PASS
5000 MHz	-15 dBc	3	PASS
5100 MHz	-15 dBc	3	PASS
5200 MHz	-16 dBc	3	PASS
5300 MHz	-16 dBc	3	PASS
5400 MHz	-15 dBc	3	PASS
5500 MHz	-16 dBc	3	PASS
5600 MHz	-15 dBc	3	PASS
5700 MHz	-15 dBc	3	PASS
5800 MHz	-15 dBc	3	PASS
5900 MHz	-15 dBc	2	PASS
6000 MHz	-15 dBc	2	PASS
6100 MHz	-15 dBc	2	PASS
6200 MHz	-16 dBc	2	PASS
6300 MHz	-15 dBc	2	PASS
6400 MHz	-16 dBc	2	PASS
6500 MHz	-16 dBc	2	PASS
6600 MHz	-16 dBc	2	PASS
6700 MHz	-15 dBc	2	PASS
6800 MHz	-14 dBc	2	PASS
6900 MHz	-13 dBc	2	PASS
7000 MHz	-13 dBc	2	PASS
7100 MHz	-14 dBc	2	PASS
7200 MHz	-14 dBc	2	PASS
7300 MHz	-16 dBc	2	PASS
7400 MHz	-17 dBc	2	PASS
7500 MHz	-17 dBc	2	PASS
7600 MHz	-17 dBc	2	PASS
7700 MHz	-18 dBc	2	PASS
7800 MHz	-18 dBc	3	PASS
7900 MHz	-19 dBc	2	PASS
8000 MHz	-18 dBc	2	PASS
8100 MHz	-18 dBc	2	PASS
8200 MHz	-17 dBc	2	PASS
8300 MHz	-17 dBc	2	PASS
8400 MHz	-16 dBc	2	PASS
8500 MHz	-15 dBc	2	PASS
8600 MHz	-13 dBc	2	PASS
8700 MHz	-14 dBc	2	PASS
8800 MHz	-15 dBc	2	PASS
8900 MHz	-14 dBc	2	PASS
9000 MHz	-15 dBc	2	PASS
9100 MHz	-16 dBc	2	PASS
9200 MHz	-17 dBc	2	PASS

9300	MHz	-19	dBc	2	PASS
9400	MHz	-19	dBc	2	PASS
9500	MHz	-19	dBc	2	PASS
9600	MHz	-19	dBc	2	PASS
9700	MHz	-17	dBc	2	PASS
9800	MHz	-17	dBc	2	PASS
9900	MHz	-18	dBc	2	PASS
10000	MHz	-19	dBc	2	PASS
10100	MHz	-20	dBc	2	PASS
10200	MHz	-21	dBc	2	PASS
10300	MHz	-20	dBc	2	PASS
10400	MHz	-22	dBc	2	PASS
10500	MHz	-22	dBc	2	PASS
10600	MHz	-22	dBc	2	PASS
10700	MHz	-23	dBc	2	PASS
10800	MHz	-24	dBc	2	PASS
10900	MHz	-26	dBc	2	PASS
11000	MHz	-27	dBc	2	PASS
11100	MHz	-29	dBc	2	PASS
11200	MHz	-29	dBc	2	PASS
11300	MHz	-29	dBc	2	PASS
11400	MHz	-28	dBc	2	PASS
11500	MHz	-24	dBc	2	PASS
11600	MHz	-24	dBc	2	PASS
11700	MHz	-26	dBc	2	PASS
11800	MHz	-28	dBc	2	PASS
11900	MHz	-29	dBc	2	PASS
12000	MHz	-31	dBc	2	PASS
12100	MHz	-30	dBc	2	PASS
12200	MHz	-29	dBc	2	PASS
12300	MHz	-30	dBc	2	PASS
12400	MHz	-33	dBc	2	PASS
12500	MHz	-33	dBc	2	PASS
12600	MHz	-34	dBc	2	PASS
12700	MHz	-32	dBc	2	PASS
12800	MHz	-30	dBc	2	PASS
12900	MHz	-27	dBc	2	PASS
13000	MHz	-24	dBc	2	PASS
13100	MHz	-23	dBc	2	PASS
13200	MHz	-22	dBc	2	PASS
13300	MHz	-20	dBc	2	PASS
13400	MHz	-20	dBc	2	PASS

Number of Failures: 0

Finish Time: 7:38:57 AM

Harmonic Readings complete

Pass

***** Random Spur Test from 2000 MHz to 18000 MHz *****

Serial Number: 0292
Model Number: MLSP-1021BE
Time: 12:55:35 PM
Date: 11/7/2013
Minimum Frequency: 2000 MHz
Maximum Frequency: 18000 MHz
Analyzer Frequency Span Tested: 2 kHz to 2000 MHz
Spur Level Spec <=: -60.0 dBc
Number of Frequencies Tested: 25
Temperature: +38.8C Deg. C
NOVO State: UnLocked

Random Frequency	Status
Frequency Tested = 6887.942 MHz	Pass
Frequency Tested = 2014.277 MHz	Pass
Frequency Tested = 10133.401 MHz	Pass
Frequency Tested = 15976.646 MHz	Pass
Frequency Tested = 13182.941 MHz	Pass
Frequency Tested = 5518.375 MHz	Pass
Frequency Tested = 6216.733 MHz	Pass
Frequency Tested = 16672.982 MHz	Pass
Frequency Tested = 10539.454 MHz	Pass
Frequency Tested = 11821.050 MHz	Pass
Frequency Tested = 8565.165 MHz	Pass
Frequency Tested = 8126.126 MHz	Pass
Frequency Tested = 8676.838 MHz	Pass
Frequency Tested = 14980.522 MHz	Pass
Frequency Tested = 7271.830 MHz	Pass
Frequency Tested = 8193.395 MHz	Pass
Frequency Tested = 6163.852 MHz	Pass
Frequency Tested = 4914.132 MHz	Pass
Frequency Tested = 8753.631 MHz	Pass
Frequency Tested = 15185.718 MHz	Pass
Frequency Tested = 3672.169 MHz	Pass
Frequency Tested = 5948.838 MHz	Pass
Frequency Tested = 17585.562 MHz	Pass
Frequency Tested = 12131.088 MHz	Pass
Frequency Tested = 9718.434 MHz	Pass

Total Spur Errors: 0

Finish Time: 1:27:49 PM
Test Completed
Pass

***** Switching Speed Test from 2000.0 to 18000.0 MHz in 100 1000 MHz & Full Band Steps *****

Model Number: MLSP-1021BE
Serial Number: 0292
Time: 12:37:07 PM
Date: 11/7/2013
Minimum Frequency: 2000.000 MHz
Maximum Frequency: 18000.000 MHz
Current Unit Temperature: +32.1C Deg. C
Switching Speed Spec:
For a 100 MHz Step: 1.0 mS
For a 1000 MHz Step: 3.0 mS
For a Full Band Step: 7.0 mS
For 25 Random Jumps - Max Time Range: 1.0 to 7.0 mS

Frequency Step	Meas. Speed	Status
100 MHz Step Up =	0.6 mS	Pass
100 MHz Step Down =	0.3 mS	Pass
1000 MHz Step Up =	1.5 mS	Pass
1000 MHz Step Down =	1.4 mS	Pass
Full band Step Up =	4.3 mS	Pass
Full band Step Down =	4.2 mS	Pass

Frequency Step (MHz)	Step Size (MHz)	Meas. Speed	Status
Random Jump From 2000.0 To 10205.0	8205.0	3.1 mS	Pass
Random Jump From 10205.0 To 15949.0	5744.0	3.0 mS	Pass
Random Jump From 15949.0 To 11931.0	-4018.0	2.4 mS	Pass
Random Jump From 11931.0 To 13881.0	1950.0	2.1 mS	Pass
Random Jump From 13881.0 To 17834.0	3953.0	2.7 mS	Pass
Random Jump From 17834.0 To 5599.0	-12235.0	3.4 mS	Pass
Random Jump From 5599.0 To 17772.0	12173.0	3.9 mS	Pass
Random Jump From 17772.0 To 16455.0	-1317.0	1.7 mS	Pass
Random Jump From 16455.0 To 6064.0	-10391.0	3.2 mS	Pass
Random Jump From 6064.0 To 16389.0	10325.0	3.8 mS	Pass
Random Jump From 16389.0 To 8373.0	-8016.0	2.9 mS	Pass
Random Jump From 8373.0 To 14616.0	6243.0	3.1 mS	Pass
Random Jump From 14616.0 To 2807.0	-11809.0	3.4 mS	Pass
Random Jump From 2807.0 To 12139.0	9332.0	3.3 mS	Pass
Random Jump From 12139.0 To 15796.0	3657.0	2.5 mS	Pass
Random Jump From 15796.0 To 16631.0	835.0	1.6 mS	Pass
Random Jump From 16631.0 To 13073.0	-3558.0	2.3 mS	Pass
Random Jump From 13073.0 To 10877.0	-2196.0	1.8 mS	Pass
Random Jump From 10877.0 To 10876.0	-1.0	0.8 mS	Pass
Random Jump From 10876.0 To 13507.0	2631.0	2.3 mS	Pass
Random Jump From 13507.0 To 8564.0	-4943.0	2.5 mS	Pass
Random Jump From 8564.0 To 9796.0	1232.0	1.7 mS	Pass
Random Jump From 9796.0 To 11914.0	2118.0	2.1 mS	Pass
Random Jump From 11914.0 To 10452.0	-1462.0	1.6 mS	Pass
Random Jump From 10452.0 To 7334.0	-3118.0	2.1 mS	Pass

Number of Failures: 0

Finish Time: 12:47:24 PM

Switching Speed Readings complete

Pass

***** Phase Noise Test from 2000 MHz to 18000 MHz in 1600 MHz Steps *****

Model Number: MLSP-1021BE
Serial Number: 0292
Time: 8:03:33 AM
Date: 11/12/2013
Minimum Frequency: 2000 MHz
Maximum Frequency: 18000 MHz
Number of Frequencies Tested: 11
Current Loop Gain (LG) Setting: 000
Current Unit Temperature: +33.8C Deg. C

Phase Noise Spec @ Offset:
@ 100 Hz = -72.0 dBc/Hz
@ 1.0 kHz = -79.0 dBc/Hz
@ 10.0 kHz = -72.0 dBc/Hz
@ 100 kHz = -95.0 dBc/Hz
@ 1.0 MHz = -125.0 dBc/Hz
@ 10.0 MHz = -150 dBc/Hz

Measured:

Frequency	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz	10 MHz	Status	RF Power
2000.000	-92.6	-108.8	-110.7	-118.3	-143.6	-162.4	Pass	12.97 dBm
3600.001	-89.0	-103.9	-105.9	-120.4	-147.1	-167.2	Pass	12.23 dBm
5200.001	-84.1	-101.9	-103.5	-120.3	-147.2	-167.6	Pass	12.18 dBm
6800.002	-80.2	-99.9	-100.6	-119.1	-146.2	-166.6	Pass	12.10 dBm
8400.002	-80.0	-97.7	-98.2	-117.7	-145.0	-166.9	Pass	11.83 dBm
10000.002	-81.6	-96.5	-95.5	-115.4	-142.6	-163.8	Pass	10.20 dBm
11600.003	-76.5	-95.2	-94.3	-115.1	-142.2	-162.1	Pass	7.25 dBm
13200.003	-76.7	-94.3	-93.1	-114.5	-141.7	-161.4	Pass	7.85 dBm
14800.004	-75.5	-92.9	-89.7	-111.1	-139.2	-158.5	Pass	7.08 dBm
16400.004	-75.1	-91.9	-88.1	-109.8	-137.8	-154.8	Pass	5.64 dBm
18000.005	-75.3	-90.3	-84.3	-106.6	-135.0	-152.9	Pass	5.74 dBm

Number of Failures: 0

Finish Time: 8:07:53 AM

Phase Noise Readings Complete

Pass