

***** MLMS Main Test Menu Final Test Data Summary *****

Serial Number: 0061
Model Number: MLMS-1004-1B
Time: 11:31:11 AM
Date: 6/21/2018
Minimum Frequency: 6000.000 MHz
Maximum Frequency: 13000.000 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.): 18.0 dBm
Minimum Operating Temperature: 0 Degrees C.
Maximum Operating Temperature: 75 Degrees C.
MLMS Firmware Version: 3.0 Feb 20 2018
MLWI Sales Order #: 21-0024
MLWI Outline Drawing #: 211-001 A

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. MLMS support CD Rom (1 per lot)
4. J1 mating connector (1 per unit)
5. J1 connector pins (9 per unit)
6. MLMS 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)

Check box

Horizontal lines for check boxes corresponding to the shipping checklist items.

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 6000.000 MHz to 13000.000 MHz in 10 MHz Steps *****

Serial Number: 0061
Model Number: MLMS-1004-1B
Time: 11:00:44 AM
Date: 6/21/2018
Minimum Frequency: 6000.000 MHz
Maximum Frequency: 13000.000 MHz
Temperature: +39.0C Deg. C
NOVO State: Locked
Power Supply Spec: +5.0 VDC +/- 0.25 V @ < 550 mA
Power Supply Spec: +15.0 VDC +/- 0.50 V @ < 550 mA
Accuracy Tested to: +/-0.002 MHz

Begin Frequency Lock Test from 6000.000 MHz to 13000.000 MHz in 10 MHz Steps

Total Frequency Errors: 0

Finish Time: 11:01:15 AM

Begin Random Frequency Lock Test from 6000.000 MHz to 13000.000 MHz (1000 Frequencies)

Total Random Frequency Errors: 0

Finish Time: 11:02:01 AM

Internal Power Supply Voltage Readings:

+2.5V = +2.5V Pass
+3.3V = +3.3V Pass
+5.0V = +5.1V Pass
-5.0V = -5.1V Pass
+6.75V = +6.7V Pass
+13.5V = +13.5V Pass
100 MHz PLL V = +1.6V Pass
YIG PLL V = +7.0V Pass

External Power Supply Voltage and Current Readings:

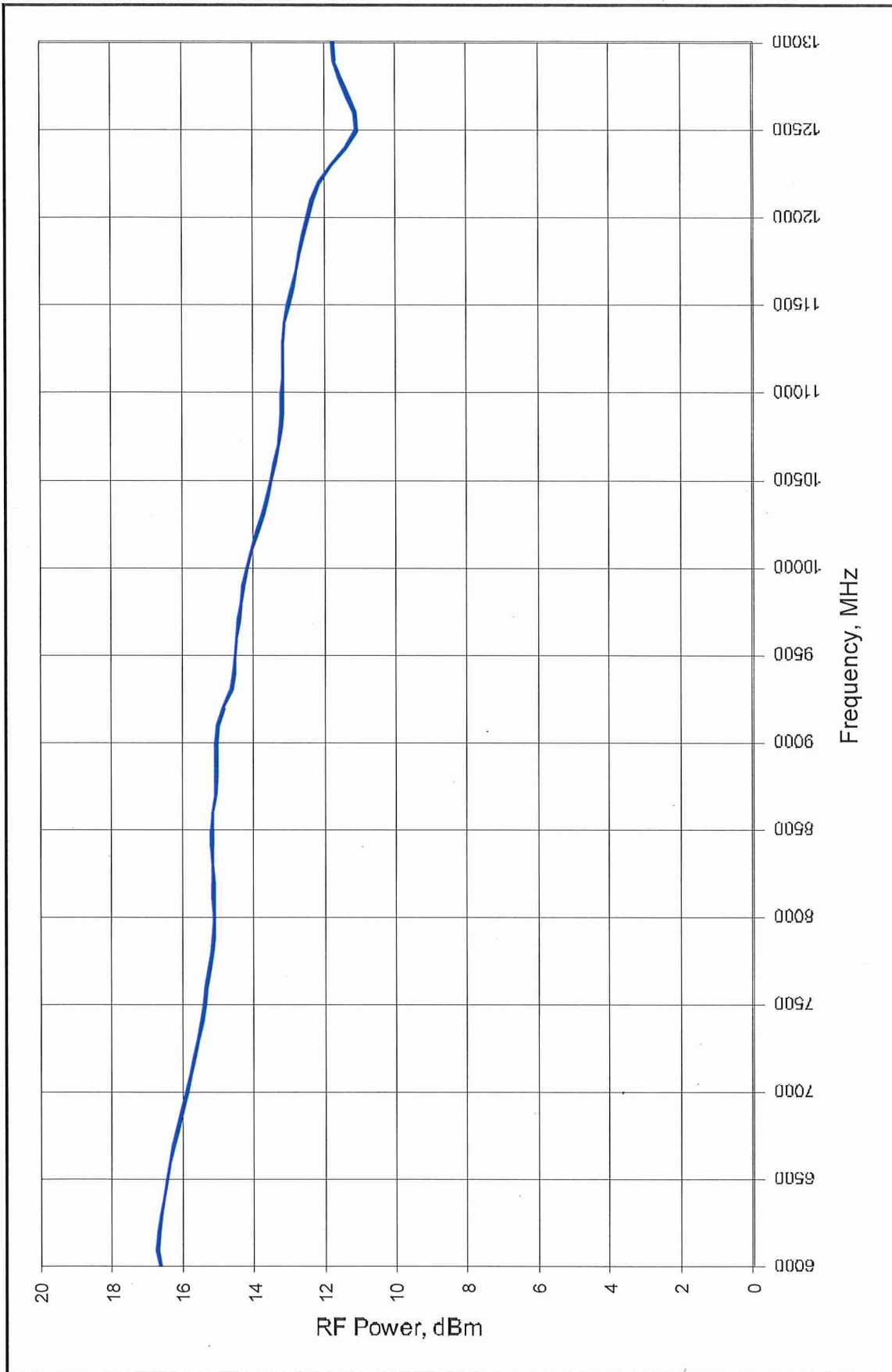
+5.0 VDC Voltage = 5.001V Pass
+5.0 VDC Current = 515mA Pass
+15.0 VDC Voltage = 14.996V Pass
+15.0 VDC Current = 462mA Pass

Finish Time: 11:02:02 AM

Total Errors: 0

Pass

Maximum RF Output Power vs. Frequency



Max Leveled Pwr: No dBm

Min Leveled Pwr: N/A dBm

Levelled Pwr Set: Max dBm

Level Flatness Spec: +/-2.5 dB

Print

***** Harmonic Test from 6000.000000 MHz to 13000.000000 MHz in 100 MHz Steps *****

Model Number: MLMS-1004-1B
Serial Number: 0061
Time: 8:40:54 AM
Date: 6/20/2018
Minimum Frequency: 6000.000000 MHz
Maximum Frequency: 13000.000000 MHz
Current Unit Temperature: +33.0C Deg. C
Harmonic Spec Level (In Band): -20.0 dBc

Frequency	Level	Harm #	Status
6000 MHz	-20 dBc	2	PASS
6100 MHz	-21 dBc	2	PASS
6200 MHz	-22 dBc	2	PASS
6300 MHz	-24 dBc	2	PASS
6400 MHz	-27 dBc	3	PASS
6500 MHz	-27 dBc	3	PASS
6600 MHz	-28 dBc	2	PASS
6700 MHz	-28 dBc	2	PASS
6800 MHz	-26 dBc	2	PASS
6900 MHz	-24 dBc	2	PASS
7000 MHz	-23 dBc	2	PASS
7100 MHz	-24 dBc	2	PASS
7200 MHz	-24 dBc	2	PASS
7300 MHz	-24 dBc	2	PASS
7400 MHz	-24 dBc	2	PASS
7500 MHz	-23 dBc	2	PASS
7600 MHz	-23 dBc	2	PASS
7700 MHz	-22 dBc	2	PASS
7800 MHz	-22 dBc	2	PASS
7900 MHz	-23 dBc	2	PASS
8000 MHz	-23 dBc	2	PASS
8100 MHz	-23 dBc	2	PASS
8200 MHz	-23 dBc	2	PASS
8300 MHz	-22 dBc	2	PASS
8400 MHz	-21 dBc	2	PASS
8500 MHz	-22 dBc	2	PASS
8600 MHz	-24 dBc	2	PASS
8700 MHz	-24 dBc	2	PASS
8800 MHz	-24 dBc	2	PASS
8900 MHz	-23 dBc	2	PASS
9000 MHz	-22 dBc	2	PASS
9100 MHz	-21 dBc	2	PASS
9200 MHz	-20 dBc	2	PASS
9300 MHz	-20 dBc	2	PASS
9400 MHz	-21 dBc	2	PASS
9500 MHz	-21 dBc	2	PASS
9600 MHz	-22 dBc	2	PASS
9700 MHz	-22 dBc	2	PASS
9800 MHz	-22 dBc	2	PASS
9900 MHz	-22 dBc	2	PASS
10000 MHz	-21 dBc	2	PASS
10100 MHz	-22 dBc	2	PASS
10200 MHz	-21 dBc	2	PASS
10300 MHz	-23 dBc	2	PASS
10400 MHz	-22 dBc	2	PASS
10500 MHz	-21 dBc	2	PASS
10600 MHz	-23 dBc	2	PASS
10700 MHz	-24 dBc	2	PASS
10800 MHz	-24 dBc	2	PASS
10900 MHz	-25 dBc	2	PASS
11000 MHz	-26 dBc	2	PASS
11100 MHz	-28 dBc	2	PASS
11200 MHz	-28 dBc	2	PASS
11300 MHz	-28 dBc	2	PASS
11400 MHz	-28 dBc	2	PASS
11500 MHz	-28 dBc	2	PASS
11600 MHz	-32 dBc	2	PASS
11700 MHz	-32 dBc	2	PASS
11800 MHz	-32 dBc	2	PASS
11900 MHz	-32 dBc	2	PASS
12000 MHz	-31 dBc	2	PASS
12100 MHz	-30 dBc	2	PASS
12200 MHz	-31 dBc	2	PASS
12300 MHz	-29 dBc	2	PASS
12400 MHz	-29 dBc	2	PASS
12500 MHz	-28 dBc	2	PASS
12600 MHz	-29 dBc	2	PASS
12700 MHz	-28 dBc	2	PASS
12800 MHz	-27 dBc	2	PASS
12900 MHz	-27 dBc	2	PASS
13000 MHz	-28 dBc	2	PASS

Number of Failures: 0

Finish Time: 8:49:05 AM

Harmonic Readings complete

Pass

***** Random Spur Test from 6000.000 MHz to 13000.000 MHz *****

Serial Number: 0061
Model Number: MLMS-1004-1B
Time: 9:01:05 AM
Date: 6/20/2018
Minimum Frequency: 6000.000 MHz
Maximum Frequency: 13000.000 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: +34.1C Deg. C
NOVO State: UnLocked

Random Frequency	Status
Frequency Tested = 10331.373257 MHz	Pass
Frequency Tested = 12871.256369 MHz	Pass
Frequency Tested = 12866.754204 MHz	Pass
Frequency Tested = 12630.179201 MHz	Pass
Frequency Tested = 10087.455999 MHz	Pass
Frequency Tested = 6408.010706 MHz	Pass
Frequency Tested = 7153.692943 MHz	Pass
Frequency Tested = 12082.907265 MHz	Pass
Frequency Tested = 10161.268298 MHz	Pass
Frequency Tested = 11396.943286 MHz	Pass
Frequency Tested = 8553.185550 MHz	Pass
Frequency Tested = 10726.021853 MHz	Pass
Frequency Tested = 6265.424076 MHz	Pass
Frequency Tested = 10338.758910 MHz	Pass
Frequency Tested = 11453.193846 MHz	Pass
Frequency Tested = 12255.515976 MHz	Pass
Frequency Tested = 8745.990365 MHz	Pass
Frequency Tested = 8105.506637 MHz	Pass
Frequency Tested = 8584.368955 MHz	Pass
Frequency Tested = 6699.643649 MHz	Pass
Frequency Tested = 12536.920672 MHz	Pass
Frequency Tested = 12546.284290 MHz	Pass
Frequency Tested = 11073.040726 MHz	Pass
Frequency Tested = 12627.142983 MHz	Pass
Frequency Tested = 6644.136703 MHz	Pass

Total Spur Errors: 0

Finish Time: 9:33:24 AM
Pass

***** Switching Speed Test from 6000.0 to 13000.0 MHz in 100 1000 MHz & Full Band Steps *****

Model Number: MLMS-1004-1B
 Serial Number: 0061
 Time: 8:07:35 AM
 Date: 6/21/2018
 Minimum Frequency: 6000.000 MHz
 Maximum Frequency: 13000.000 MHz
 Current Unit Temperature: +31.7C Deg. C
 Switching Speed Spec:
 For a 100 MHz Step: 1.0 mS (Frequencies <500 MHz = 2.0 mS)
 For a 1000 MHz Step: 2.0 mS
 For a Full Band Step: 3.0 mS
 For 25 Random Jumps - Max Time Range: 1.0 to 3.0 mS

Frequency Step	Meas. Speed	Status
100 MHz Step Up =	0.9 mS	Pass
100 MHz Step Down =	0.7 mS	Pass
1000 MHz Step Up =	1.4 mS	Pass
1000 MHz Step Down =	1.6 mS	Pass
Full band Step Up =	2.9 mS	Pass
Full band Step Down =	2.4 mS	Pass

Frequency Step (MHz)	Step Size (MHz)	Meas. Speed	Status
Random Jump From 6000.0 To 12358.0	6358.0	2.8 mS	Pass
Random Jump From 12358.0 To 12757.0	399.0	1.4 mS	Pass
Random Jump From 12757.0 To 9419.0	-3338.0	2.3 mS	Pass
Random Jump From 9419.0 To 9807.0	388.0	1.3 mS	Pass
Random Jump From 9807.0 To 12955.0	3148.0	2.5 mS	Pass
Random Jump From 12955.0 To 7497.0	-5458.0	2.3 mS	Pass
Random Jump From 7497.0 To 11034.0	3537.0	2.3 mS	Pass
Random Jump From 11034.0 To 6219.0	-4815.0	2.3 mS	Pass
Random Jump From 6219.0 To 8522.0	2303.0	2.1 mS	Pass
Random Jump From 8522.0 To 7822.0	-700.0	1.4 mS	Pass
Random Jump From 7822.0 To 7079.0	-743.0	1.6 mS	Pass
Random Jump From 7079.0 To 8446.0	1367.0	1.7 mS	Pass
Random Jump From 8446.0 To 11300.0	2854.0	2.1 mS	Pass
Random Jump From 11300.0 To 11961.0	661.0	1.5 mS	Pass
Random Jump From 11961.0 To 12927.0	966.0	1.4 mS	Pass
Random Jump From 12927.0 To 12876.0	-51.0	0.9 mS	Pass
Random Jump From 12876.0 To 6091.0	-6785.0	2.3 mS	Pass
Random Jump From 6091.0 To 9231.0	3140.0	2.3 mS	Pass
Random Jump From 9231.0 To 11955.0	2724.0	2.6 mS	Pass
Random Jump From 11955.0 To 11493.0	-462.0	1.5 mS	Pass
Random Jump From 11493.0 To 12559.0	1066.0	1.9 mS	Pass
Random Jump From 12559.0 To 12966.0	407.0	1.2 mS	Pass
Random Jump From 12966.0 To 10858.0	-2108.0	1.8 mS	Pass
Random Jump From 10858.0 To 9309.0	-1549.0	1.8 mS	Pass
Random Jump From 9309.0 To 7570.0	-1739.0	1.8 mS	Pass

Number of Failures: 0

Finish Time: 8:16:16 AM

Switching Speed Readings complete

Pass

***** Phase Noise Test from 6000.000 MHz to 13000.000 MHz in 700 MHz Steps *****

Model Number: MLMS-1004-1B
Serial Number: 0061
Time: 2:56:36 PM
Date: 6/19/2018
Minimum Frequency: 6000.000 MHz
Maximum Frequency: 13000.000 MHz
Number of Frequencies Tested: 11
Current Unit Temperature: +34.6C Deg. C

Phase Noise Spec @ Offset:
@ 100 Hz = -70.0 dBc/Hz
@ 1.0 kHz = -88.0 dBc/Hz
@ 10.0 kHz = -90.0 dBc/Hz
@ 100 kHz = -116.0 dBc/Hz
@ 1.0 MHz = -142.0 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	-76.7	-97.6	-100.9	-122.5	-149.0	-163.5	Pass	11.03 dBm
6700.004	-77.9	-97.1	-99.7	-122.1	-148.8	-165.1	Pass	10.22 dBm
7400.004	-77.0	-95.8	-98.9	-122.1	-149.1	-164.6	Pass	9.87 dBm
8100.004	-74.1	-96.1	-96.9	-121.7	-148.3	-163.7	Pass	8.73 dBm
8800.005	-74.5	-93.3	-92.6	-117.0	-145.1	-163.6	Pass	8.56 dBm
9500.005	-74.5	-93.6	-94.8	-120.2	-147.9	-161.8	Pass	7.62 dBm
10200.006	-70.8	-92.9	-93.7	-120.3	-145.7	-160.1	Pass	5.91 dBm
10900.006	-72.3	-92.7	-93.8	-120.8	-145.4	-159.8	Pass	5.46 dBm
11600.006	-70.8	-92.7	-94.2	-121.3	-144.9	-160.4	Pass	5.65 dBm
12300.007	-70.1	-91.8	-93.4	-121.4	-144.9	-154.1	Pass	4.89 dBm
13000.007	-70.3	-91.7	-93.7	-121.7	-145.0	-157.6	Pass	4.81 dBm

Number of Failures: 0

Finish Time: 3:02:16 PM

Phase Noise Readings Complete

Pass