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

Serial Number: 0004
Model Number: MLMS-2080B
Time: 1:44:49 PM
Date: 11/27/2018
Minimum Frequency: 2000.000 MHz
Maximum Frequency: 8000.000 MHz
Frequency Step Size: 0.001 MHz
External 100 MHz PLL Reference Frequency: 10.0 MHz
Maximum RF Level (Min.): 13.0 dBm
Maximum RF Level (Max.): 20.0 dBm
Minimum Operating Temperature: 0 Degrees C.
Maximum Operating Temperature: 60 Degrees C.
MLMS Firmware Version: 3.0 Feb 20 2018
MLWI Sales Order #: 21*04D2
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:	Check box
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)	_____

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 2000.000 MHz to 8000.000 MHz in 10 MHz Steps *****

Serial Number: 0004
Model Number: MLMS-2080B
Time: 11:45:19 AM
Date: 11/27/2018
Minimum Frequency: 2000.000 MHz
Maximum Frequency: 8000.000 MHz
Temperature: +34.8C Deg. C
NOVO State: UnLocked
Power Supply Spec: +5.0 VDC +/- 0.25 V @ < 450 mA
Power Supply Spec: +15.0 VDC +/- 0.50 V @ < 450 mA
Accuracy Tested to: +/-0.002 MHz

Begin Frequency Lock Test from 2000.000 MHz to 8000.000 MHz in 10 MHz Steps

Total Frequency Errors: 0

Finish Time: 11:45:46 AM

Begin Random Frequency Lock Test from 2000.000 MHz to 8000.000 MHz (1000 Frequencies)

Total Random Frequency Errors: 0

Finish Time: 11:46:31 AM

Internal Power Supply Voltage Readings:
+2.5V = +2.5V Pass
+3.3V = +3.3V Pass
+5.0V = +5.1V Pass
-5.0V = -5.0V Pass
+6.75V = +6.7V Pass
+13.5V = +13.3V Pass
100 MHz PLL V = +1.7V Pass
YIG PLL V = +7.2V Pass

External Power Supply Voltage and Current Readings:
+5.0 VDC Voltage = 5.002V Pass
+5.0 VDC Current = 410mA Pass
+15.0 VDC Voltage = 14.995V Pass
+15.0 VDC Current = 344mA Pass

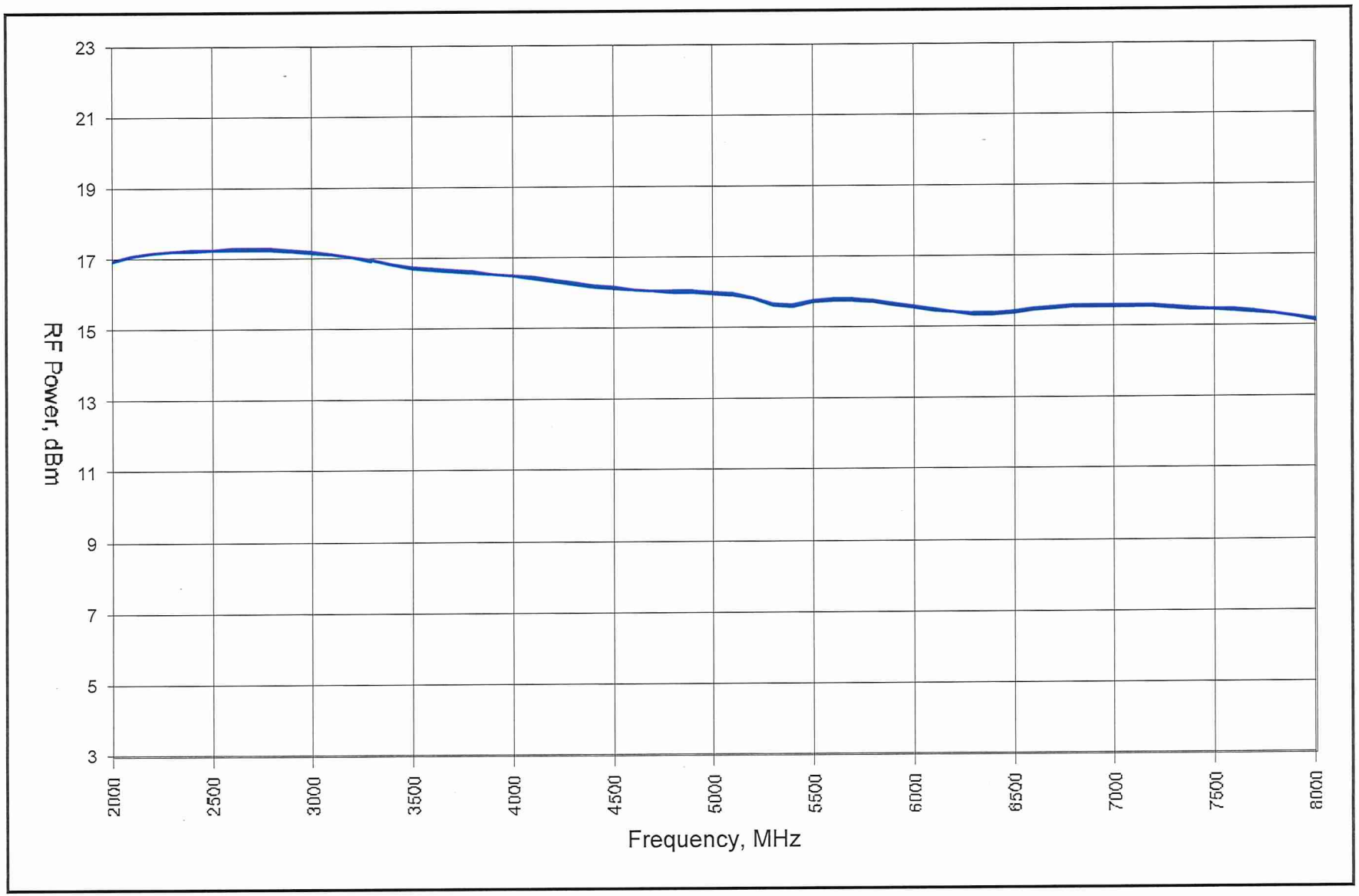
Finish Time: 11:46:32 AM

Total Errors: 0

Pass

Model #: MLMS-2080B Serial #: 0004 Min Power: 13 dBm Max Power: 20 dBm Temp. : +33.6C Deg. Date: 11-27-2018 Time: 11:47:14 **Status = Pass**

Maximum RF Output Power vs. Frequency



Print

Max Leveled Pwr: No dBm Min Leveled Pwr: N/A dBm Leveled Pwr Set: Max dBm Level Flatness Spec: +/-2.0 dB

***** Harmonic Test from 2000.000000 MHz to 8000.000000 MHz in 100 MHz Steps *****

Model Number: MLMS-2080B
Serial Number: 0004
Time: 11:52:22 AM
Date: 11/27/2018
Minimum Frequency: 2000.000000 MHz
Maximum Frequency: 8000.000000 MHz
Current Unit Temperature: +36.8C Deg. C
Harmonic Spec Level (In Band): -12.0 dBc

Frequency	Level	Harm #	Status
2000 MHz	-16 dBc	3	PASS
2100 MHz	-17 dBc	3	PASS
2200 MHz	-17 dBc	3	PASS
2300 MHz	-17 dBc	3	PASS
2400 MHz	-17 dBc	3	PASS
2500 MHz	-17 dBc	3	PASS
2600 MHz	-17 dBc	3	PASS
2700 MHz	-17 dBc	3	PASS
2800 MHz	-17 dBc	3	PASS
2900 MHz	-17 dBc	3	PASS
3000 MHz	-17 dBc	3	PASS
3100 MHz	-16 dBc	3	PASS
3200 MHz	-17 dBc	3	PASS
3300 MHz	-17 dBc	3	PASS
3400 MHz	-17 dBc	3	PASS
3500 MHz	-17 dBc	3	PASS
3600 MHz	-17 dBc	3	PASS
3700 MHz	-18 dBc	3	PASS
3800 MHz	-17 dBc	3	PASS
3900 MHz	-18 dBc	3	PASS
4000 MHz	-18 dBc	3	PASS
4100 MHz	-20 dBc	3	PASS
4200 MHz	-19 dBc	3	PASS
4300 MHz	-21 dBc	3	PASS
4400 MHz	-22 dBc	3	PASS
4500 MHz	-22 dBc	3	PASS
4600 MHz	-23 dBc	3	PASS
4700 MHz	-24 dBc	3	PASS
4800 MHz	-24 dBc	3	PASS
4900 MHz	-24 dBc	3	PASS
5000 MHz	-24 dBc	3	PASS
5100 MHz	-25 dBc	3	PASS
5200 MHz	-25 dBc	3	PASS
5300 MHz	-26 dBc	3	PASS
5400 MHz	-25 dBc	3	PASS
5500 MHz	-26 dBc	2	PASS
5600 MHz	-26 dBc	2	PASS
5700 MHz	-26 dBc	3	PASS
5800 MHz	-27 dBc	3	PASS
5900 MHz	-27 dBc	2	PASS
6000 MHz	-24 dBc	2	PASS
6100 MHz	-28 dBc	2	PASS
6200 MHz	-29 dBc	3	PASS
6300 MHz	-28 dBc	2	PASS
6400 MHz	-30 dBc	2	PASS
6500 MHz	-30 dBc	3	PASS
6600 MHz	-29 dBc	3	PASS
6700 MHz	-29 dBc	3	PASS
6800 MHz	-29 dBc	3	PASS
6900 MHz	-28 dBc	3	PASS
7000 MHz	-29 dBc	3	PASS
7100 MHz	-29 dBc	3	PASS
7200 MHz	-29 dBc	3	PASS
7300 MHz	-29 dBc	3	PASS
7400 MHz	-29 dBc	3	PASS
7500 MHz	-29 dBc	3	PASS
7600 MHz	-29 dBc	3	PASS
7700 MHz	-30 dBc	3	PASS
7800 MHz	-31 dBc	3	PASS
7900 MHz	-32 dBc	3	PASS
8000 MHz	-31 dBc	3	PASS

Number of Failures: 0

Finish Time: 12:03:36 PM

Harmonic Readings complete

Pass

***** Random Spur Test from 2000.000 MHz to 8000.000 MHz *****

Serial Number: 0004
Model Number: MLMS-2080B
Time: 12:04:13 PM
Date: 11/27/2018
Minimum Frequency: 2000.000 MHz
Maximum Frequency: 8000.000 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: +33.5C Deg. C
NOVO State: UnLocked

Random Frequency	Status
Frequency Tested = 7068.632874 MHz	Pass
Frequency Tested = 2346.994763 MHz	Pass
Frequency Tested = 4175.502785 MHz	Pass
Frequency Tested = 3060.702171 MHz	Pass
Frequency Tested = 5485.303520 MHz	Pass
Frequency Tested = 6198.609245 MHz	Pass
Frequency Tested = 6754.179086 MHz	Pass
Frequency Tested = 3503.343281 MHz	Pass
Frequency Tested = 7022.542697 MHz	Pass
Frequency Tested = 5740.049612 MHz	Pass
Frequency Tested = 3685.239165 MHz	Pass
Frequency Tested = 5858.954228 MHz	Pass
Frequency Tested = 7285.269869 MHz	Pass
Frequency Tested = 4689.983635 MHz	Pass
Frequency Tested = 7417.168556 MHz	Pass
Frequency Tested = 2486.643822 MHz	Pass
Frequency Tested = 4633.593847 MHz	Pass
Frequency Tested = 7442.667738 MHz	Pass
Frequency Tested = 2234.885136 MHz	Pass
Frequency Tested = 6994.331528 MHz	Pass
Frequency Tested = 7790.831067 MHz	Pass
Frequency Tested = 5551.778664 MHz	Pass
Frequency Tested = 2890.999853 MHz	Pass
Frequency Tested = 2379.672376 MHz	Pass
Frequency Tested = 5496.041298 MHz	Pass

Total Spur Errors: 0

Finish Time: 12:36:26 PM
Test Completed
Pass

***** Switching Speed Test from 2000.0 to 8000.0 MHz in 100 1000 MHz & Full Band Steps *****

Model Number: MLMS-2080B
Serial Number: 0004
Time: 1:03:09 PM
Date: 11/27/2018
Minimum Frequency: 2000.000 MHz
Maximum Frequency: 8000.000 MHz
Current Unit Temperature: +34.7C 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 =	0.4 mS	Pass
100 MHz Step Down =	0.7 mS	Pass
1000 MHz Step Up =	0.9 mS	Pass
1000 MHz Step Down =	0.7 mS	Pass
Full band Step Up =	1.5 mS	Pass
Full band Step Down =	1.1 mS	Pass

Frequency Step (MHz)	Step Size (MHz)	Meas. Speed	Status
Random Jump From 2000.0 To 5296.0	3296.0	1.2 mS	Pass
Random Jump From 5296.0 To 4288.0	-1008.0	1.1 mS	Pass
Random Jump From 4288.0 To 7011.0	2723.0	1.1 mS	Pass
Random Jump From 7011.0 To 7283.0	272.0	1.1 mS	Pass
Random Jump From 7283.0 To 5159.0	-2124.0	0.8 mS	Pass
Random Jump From 5159.0 To 5495.0	336.0	0.9 mS	Pass
Random Jump From 5495.0 To 6007.0	512.0	0.8 mS	Pass
Random Jump From 6007.0 To 4070.0	-1937.0	1.0 mS	Pass
Random Jump From 4070.0 To 4866.0	796.0	0.9 mS	Pass
Random Jump From 4866.0 To 7346.0	2480.0	1.4 mS	Pass
Random Jump From 7346.0 To 5663.0	-1683.0	1.0 mS	Pass
Random Jump From 5663.0 To 6832.0	1169.0	1.0 mS	Pass
Random Jump From 6832.0 To 3859.0	-2973.0	1.0 mS	Pass
Random Jump From 3859.0 To 3221.0	-638.0	0.8 mS	Pass
Random Jump From 3221.0 To 4448.0	1227.0	1.0 mS	Pass
Random Jump From 4448.0 To 3255.0	-1193.0	0.9 mS	Pass
Random Jump From 3255.0 To 5197.0	1942.0	1.3 mS	Pass
Random Jump From 5197.0 To 7569.0	2372.0	1.0 mS	Pass
Random Jump From 7569.0 To 5876.0	-1693.0	1.0 mS	Pass
Random Jump From 5876.0 To 6085.0	209.0	0.7 mS	Pass
Random Jump From 6085.0 To 2994.0	-3091.0	1.0 mS	Pass
Random Jump From 2994.0 To 7797.0	4803.0	1.3 mS	Pass
Random Jump From 7797.0 To 7862.0	65.0	1.0 mS	Pass
Random Jump From 7862.0 To 4617.0	-3245.0	1.2 mS	Pass
Random Jump From 4617.0 To 5188.0	571.0	1.4 mS	Pass

Number of Failures: 0

Finish Time: 1:12:04 PM

Switching Speed Readings complete

Pass

***** Phase Noise Test from 2000.000 MHz to 8000.000 MHz in 600 MHz Steps *****

Model Number: MLMS-2080B
Serial Number: 0004
Time: 10:07:29 AM
Date: 11/27/2018
Minimum Frequency: 2000.000 MHz
Maximum Frequency: 8000.000 MHz
Number of Frequencies Tested: 11
Current Unit Temperature: +31.4C Deg. C

Phase Noise Spec @ Offset:
@ 100 Hz = -72.0 dBc/Hz
@ 1.0 kHz = -93.0 dBc/Hz
@ 10.0 kHz = -95.0 dBc/Hz
@ 100 kHz = -117.0 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
2000.000	-94.0	-107.1	-109.4	-118.8	-145.8	-162.3	Pass	11.54 dBm
2600.000	-90.6	-105.2	-108.2	-121.5	-147.3	-161.8	Pass	11.75 dBm
3200.002	-89.1	-103.3	-106.9	-122.7	-148.4	-166.6	Pass	11.41 dBm
3800.002	-87.1	-103.0	-105.9	-123.7	-148.9	-166.3	Pass	10.80 dBm
4400.002	-84.2	-100.2	-102.8	-122.0	-149.5	-167.2	Pass	10.34 dBm
5000.003	-83.8	-99.4	-101.2	-122.0	-149.4	-167.3	Pass	10.47 dBm
5600.003	-83.5	-98.4	-99.7	-121.6	-149.3	-165.8	Pass	10.08 dBm
6200.003	-82.7	-97.8	-98.4	-121.4	-149.3	-164.8	Pass	9.60 dBm
6800.004	-82.2	-96.6	-97.4	-121.6	-148.6	-164.5	Pass	9.34 dBm
7400.004	-82.6	-96.0	-96.6	-121.6	-148.1	-163.6	Pass	9.34 dBm
8000.004	-81.2	-95.4	-95.4	-121.4	-147.9	-162.6	Pass	8.76 dBm

Number of Failures: 0

Finish Time: 10:12:34 AM

Phase Noise Readings Complete

Pass