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

Serial Number: 0025
Model Number: MLSP-6018BD
Time: 1:28:02 PM
Date: 7/17/2012
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.): 18.0 dBm
Minimum Operating Temperature: 0 Degrees C.
Maximum Operating Temperature: 60 Degrees C.
MLSP Firmware Version: 1.00 May 11 2012
MLWI Sales Order #: 18-0016D
MLWI Outline Drawing #: 181-001 A

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)	N/A
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: DS Date: 7/17/12

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

Serial Number: 0025
Model Number: MLSP-6018BD
Time: 1:18:01 PM
Date: 7/17/2012
Minimum Frequency: 6000 MHz
Maximum Frequency: 18000 MHz
Temperature: +30.6C Deg. C
NOVO State: Locked
Power Supply Spec: +5.0 VDC +/- 0.25 V @ < 300 mA
Power Supply Spec: +15.0 VDC +/- 0.50 V @ < 1700 mA
Accuracy Tested to: +/-0.002 MHz

Total Frequency Errors: 0

Finish Time: 1:19:40 PM

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

Total Ramdom Frequency Errors: 0

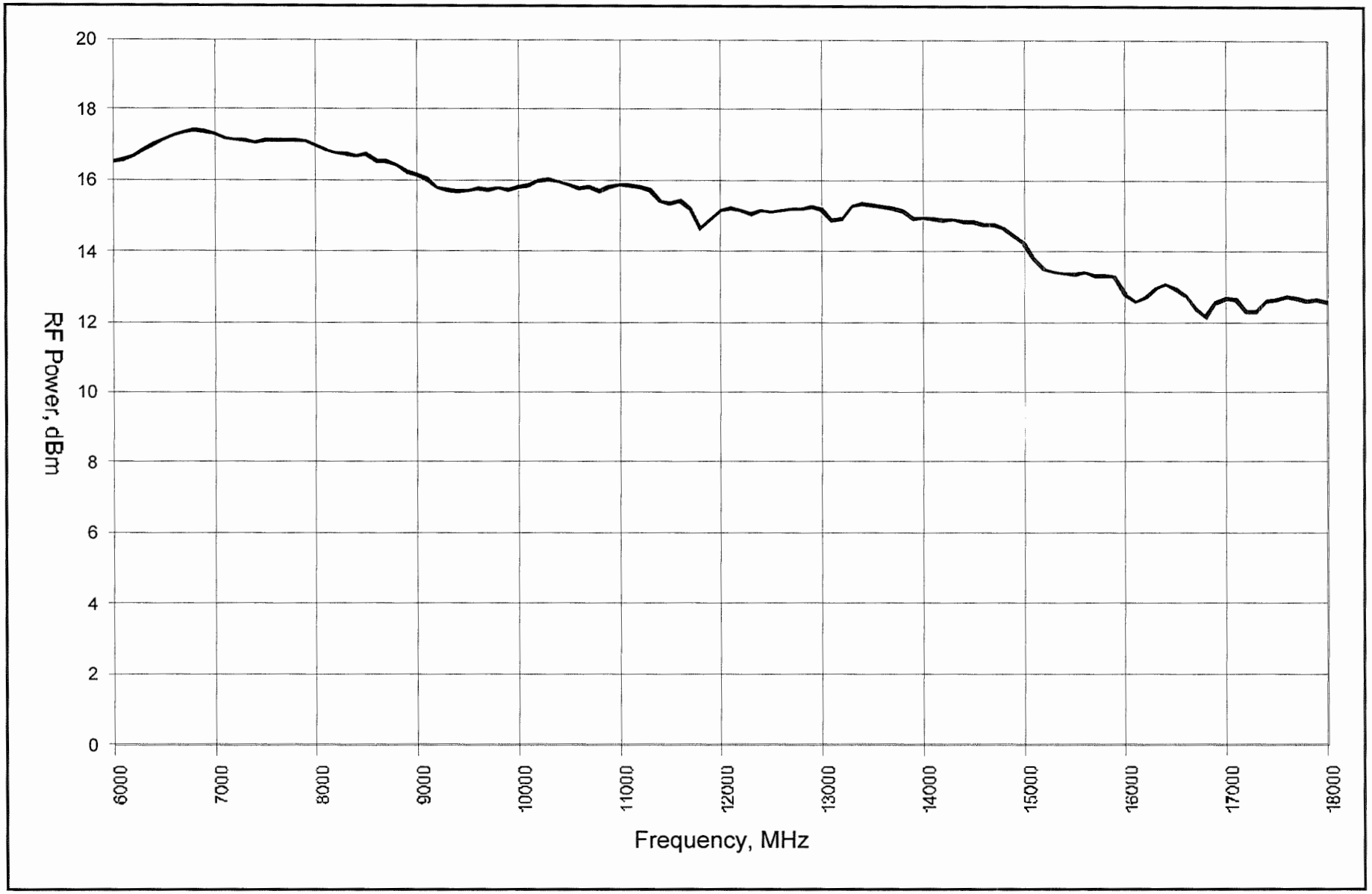
Finish Time: 1:21:02 PM

+5.0 VDC Voltage = 5.001V Pass
+5.0 VDC Current = 289mA Pass
+15.0 VDC Voltage = 14.996V Pass
+15.0 VDC Current = 1512mA Pass

Pass

Model #: MLSP-6018BD Serial #: 0025 Min Power: 10 dBm Max Power: 18 dBm Temp. : +35.1C Deg. Date: 07-17-2012 Time: 09:26:16 **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 6000.000000 MHz to 18000.000000 MHz in 100 MHz Steps *****

Model Number: MLSP-6018BD
Serial Number: 0025
Time: 9:27:10 AM
Date: 7/17/2012
Minimum Frequency: 6000.000000 MHz
Maximum Frequency: 18000.000000 MHz
Current Unit Temperature: +34.7C Deg. C
Harmonic Spec Level (In Band): -12.0 dBc

Frequency	Level	Harm #	Status
6000 MHz	-15 dBc	3	PASS
6100 MHz	-16 dBc	3	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	3	PASS
6700 MHz	-16 dBc	3	PASS
6800 MHz	-17 dBc	2	PASS
6900 MHz	-17 dBc	2	PASS
7000 MHz	-17 dBc	2	PASS
7100 MHz	-18 dBc	2	PASS
7200 MHz	-17 dBc	2	PASS
7300 MHz	-16 dBc	2	PASS
7400 MHz	-16 dBc	2	PASS
7500 MHz	-15 dBc	2	PASS
7600 MHz	-14 dBc	2	PASS
7700 MHz	-14 dBc	2	PASS
7800 MHz	-14 dBc	2	PASS
7900 MHz	-13 dBc	2	PASS
8000 MHz	-14 dBc	2	PASS
8100 MHz	-15 dBc	2	PASS
8200 MHz	-15 dBc	2	PASS
8300 MHz	-15 dBc	2	PASS
8400 MHz	-14 dBc	2	PASS
8500 MHz	-13 dBc	2	PASS
8600 MHz	-14 dBc	2	PASS
8700 MHz	-14 dBc	2	PASS
8800 MHz	-14 dBc	2	PASS
8900 MHz	-16 dBc	2	PASS
9000 MHz	-16 dBc	2	PASS
9100 MHz	-18 dBc	2	PASS
9200 MHz	-19 dBc	2	PASS
9300 MHz	-20 dBc	2	PASS
9400 MHz	-20 dBc	2	PASS
9500 MHz	-20 dBc	2	PASS
9600 MHz	-21 dBc	2	PASS
9700 MHz	-21 dBc	2	PASS
9800 MHz	-22 dBc	2	PASS
9900 MHz	-26 dBc	2	PASS
10000 MHz	-26 dBc	2	PASS
10100 MHz	-25 dBc	2	PASS
10200 MHz	-26 dBc	2	PASS
10300 MHz	-30 dBc	2	PASS
10400 MHz	-34 dBc	2	PASS
10500 MHz	-35 dBc	2	PASS
10600 MHz	-35 dBc	2	PASS
10700 MHz	-33 dBc	2	PASS
10800 MHz	-31 dBc	2	PASS
10900 MHz	-32 dBc	2	PASS
11000 MHz	-31 dBc	2	PASS
11100 MHz	-31 dBc	2	PASS
11200 MHz	-31 dBc	2	PASS
11300 MHz	-29 dBc	2	PASS
11400 MHz	-27 dBc	2	PASS
11500 MHz	-26 dBc	2	PASS
11600 MHz	-24 dBc	2	PASS
11700 MHz	-25 dBc	2	PASS
11800 MHz	-25 dBc	2	PASS
11900 MHz	-27 dBc	2	PASS
12000 MHz	-29 dBc	2	PASS
12100 MHz	-30 dBc	2	PASS
12200 MHz	-29 dBc	2	PASS
12300 MHz	-28 dBc	2	PASS
12400 MHz	-31 dBc	2	PASS
12500 MHz	-32 dBc	2	PASS
12600 MHz	-33 dBc	2	PASS
12700 MHz	-33 dBc	2	PASS
12800 MHz	-35 dBc	2	PASS
12900 MHz	-35 dBc	2	PASS
13000 MHz	-35 dBc	2	PASS

13100	MHz	-34	dBc	2	PASS
13200	MHz	-31	dBc	2	PASS
13300	MHz	-29	dBc	2	PASS
13400	MHz	-29	dBc	2	PASS

Number of Failures: 0

Finish Time: 9:34:11 AM

Harmonic Readings complete

Pass

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

Serial Number: 0025
Model Number: MLSP-6018BD
Time: 11:48:40 AM
Date: 4/23/2012
Minimum Frequency: 6000 MHz
Maximum Frequency: 18000 MHz
Analyzer Frequency Span Tested: 2 kHz to 2000 MHz
Spur Level Spec <500 kHz Span: -60.0 dBc
Spur Level Spec >= 500 kHz Span: -80 dBc
Number of Frequencies Tested: 25
Temperature: +39.7C Deg. C
NOVO State: UnLocked

Random Frequency	Status
Frequency Tested = 14628.238 MHz	Pass
Frequency Tested = 12490.435 MHz	Pass
Frequency Tested = 15658.763 MHz	Pass
Frequency Tested = 11174.765 MHz	Pass
Frequency Tested = 12249.079 MHz	Pass
Frequency Tested = 9520.563 MHz	Pass
Frequency Tested = 6346.768 MHz	Pass
Frequency Tested = 12070.961 MHz	Pass
Frequency Tested = 17399.708 MHz	Pass
Frequency Tested = 14093.662 MHz	Pass
Frequency Tested = 11049.231 MHz	Pass
Frequency Tested = 13480.490 MHz	Pass
Frequency Tested = 8623.318 MHz	Pass
Frequency Tested = 13557.923 MHz	Pass
Frequency Tested = 13266.425 MHz	Pass
Frequency Tested = 7904.375 MHz	Pass
Frequency Tested = 13112.972 MHz	Pass
Frequency Tested = 15362.878 MHz	Pass
Frequency Tested = 6259.142 MHz	Pass
Frequency Tested = 12827.533 MHz	Pass
Frequency Tested = 7700.601 MHz	Pass
Frequency Tested = 11449.385 MHz	Pass
Frequency Tested = 16444.377 MHz	Pass
Frequency Tested = 12406.175 MHz	Pass
Frequency Tested = 10222.714 MHz	Pass

Total Spur Errors: 0

Finish Time: 12:20:54 PM
Test Completed
Pass

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

Model Number: MLSP-6018BD
Serial Number: 0025
Time: 12:57:10 PM
Date: 7/17/2012
Minimum Frequency: 6000.000 MHz
Maximum Frequency: 18000.000 MHz
Current Unit Temperature: +37.4C 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: 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 =	0.6 mS	Pass
100 MHz Step Down =	0.7 mS	Pass
1000 MHz Step Up =	1.9 mS	Pass
1000 MHz Step Down =	2.4 mS	Pass
Full band Step Up =	5.0 mS	Pass
Full band Step Down =	4.3 mS	Pass

Frequency Step (MHz)	Step Size (MHz)	Meas. Speed	Status
Random Jump From 6000.0 To 7240.0	1240.0	2.8 mS	Pass
Random Jump From 7240.0 To 16482.0	9242.0	4.5 mS	Pass
Random Jump From 16482.0 To 11142.0	-5340.0	3.1 mS	Pass
Random Jump From 11142.0 To 10244.0	-898.0	2.3 mS	Pass
Random Jump From 10244.0 To 16804.0	6560.0	3.8 mS	Pass
Random Jump From 16804.0 To 6926.0	-9878.0	3.7 mS	Pass
Random Jump From 6926.0 To 16318.0	9392.0	4.4 mS	Pass
Random Jump From 16318.0 To 13049.0	-3269.0	3.0 mS	Pass
Random Jump From 13049.0 To 15608.0	2559.0	2.8 mS	Pass
Random Jump From 15608.0 To 16491.0	883.0	1.9 mS	Pass
Random Jump From 16491.0 To 16419.0	-72.0	1.0 mS	Pass
Random Jump From 16419.0 To 9803.0	-6616.0	3.2 mS	Pass
Random Jump From 9803.0 To 11153.0	1350.0	2.8 mS	Pass
Random Jump From 11153.0 To 17148.0	5995.0	3.9 mS	Pass
Random Jump From 17148.0 To 17985.0	837.0	2.0 mS	Pass
Random Jump From 17985.0 To 15207.0	-2778.0	3.1 mS	Pass
Random Jump From 15207.0 To 11484.0	-3723.0	2.9 mS	Pass
Random Jump From 11484.0 To 17067.0	5583.0	3.7 mS	Pass
Random Jump From 17067.0 To 13983.0	-3084.0	3.2 mS	Pass
Random Jump From 13983.0 To 13340.0	-643.0	1.5 mS	Pass
Random Jump From 13340.0 To 14499.0	1159.0	2.9 mS	Pass
Random Jump From 14499.0 To 10784.0	-3715.0	3.0 mS	Pass
Random Jump From 10784.0 To 13230.0	2446.0	2.7 mS	Pass
Random Jump From 13230.0 To 16828.0	3598.0	3.5 mS	Pass
Random Jump From 16828.0 To 14684.0	-2144.0	2.6 mS	Pass

Number of Failures: 0

Finish Time: 1:06:47 PM

Switching Speed Readings complete

Pass

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

Model Number: MLSP-6018BD
Serial Number: 0025
Time: 12:13:24 PM
Date: 7/17/2012
Minimum Frequency: 6000 MHz
Maximum Frequency: 18000 MHz
Number of Frequencies Tested: 11
Current Loop Gain (LG) Setting: 015
Current Unit Temperature: +40.1C Deg. C

Phase Noise Spec @ Offset:
@ 100 Hz = -72.0 dBc/Hz
@ 1.0 kHz = -89.0 dBc/Hz
@ 10.0 kHz = -90.0 dBc/Hz
@ 100 Hz = -115.0 dBc/Hz
@ 1.0 MHz = -138.0 dBc/Hz
@ 10.0 MHz = -150 dBc/Hz

Measured:

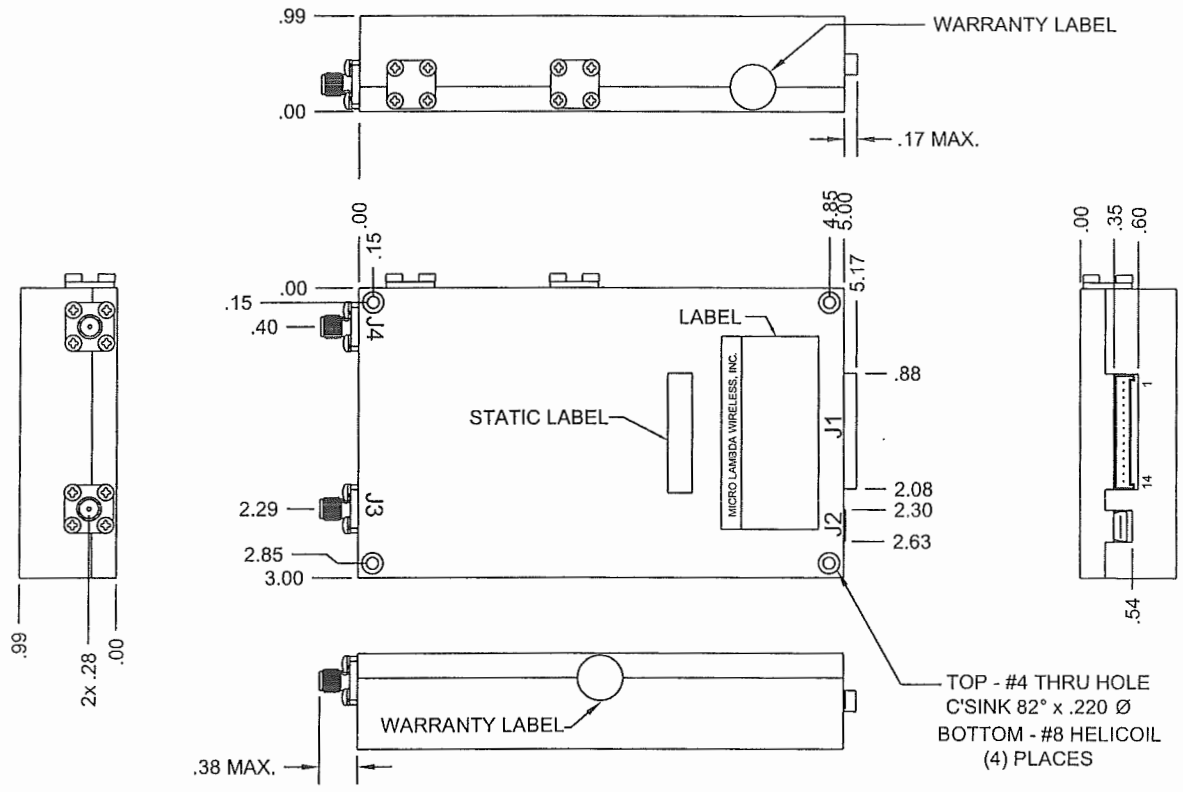
Frequency	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz	10 MHz	Status	RF Power
6000.000	-87.5	-101.1	-103.1	-118.9	-144.6	-164.8	Pass	11.16 dBm
7200.000	-85.9	-99.2	-101.5	-119.2	-144.5	-164.4	Pass	11.28 dBm
8400.000	-86.5	-97.4	-99.7	-118.8	-144.7	-165.7	Pass	10.61 dBm
9600.000	-83.7	-97.0	-97.8	-119.1	-144.6	-165.6	Pass	9.15 dBm
10800.000	-83.1	-96.2	-97.1	-119.6	-143.8	-162.5	Pass	6.90 dBm
12000.000	-82.5	-94.7	-96.2	-119.9	-144.0	-162.1	Pass	6.57 dBm
13200.000	-80.3	-94.3	-94.9	-119.9	-143.8	-160.7	Pass	7.14 dBm
14400.000	-79.9	-93.1	-94.4	-120.1	-143.2	-160.5	Pass	7.16 dBm
15600.000	-77.0	-92.7	-93.3	-119.9	-143.4	-158.5	Pass	5.99 dBm
16800.000	-79.0	-91.6	-92.1	-119.1	-142.7	-159.2	Pass	4.75 dBm
18000.000	-77.3	-91.0	-90.7	-118.3	-142.1	-160.4	Pass	4.70 dBm

Number of Failures: 0

Finish Time: 12:17:53 PM

Phase Noise Readings Complete

Pass



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

(*) ACTIVE LOW

CONNECTIONS			
CONN.	TYPE	PIN #	FUNCTION
J1	35363-1460	1	+15 VDC, +12V OPT.
J1	35363-1460	2	+15 VDC, +12V OPT.
J1	35363-1460	3	GROUND
J1	35363-1460	4	GROUND
J1	35363-1460	5	+ 5 VDC
J1	35363-1460	6	+ 5 VDC
J1	35363-1460	7	N/C
J1	35363-1460	8	N/C
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	LOCK ALARM
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	SMA-FEMALE	1	REF. INPUT
J4	SMA-FEMALE	1	RF OUTPUT

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

WEIGHT: 15 Oz. / 425gr

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS		DATE
DRAWN	N.NGUYEN	3/12/12
ENGR.	DS	3/12/12
MANUF.		
Q.A.		

MICRO LAMBDA WIRELESS, INC.

MLSP SYNTHESIZER, EXT. REF. (FRONT)

SIZE	CAGE No	DWG. NO.	REV.
	0RN63	181 - 001	B