

**** MLVS Main Test Menu Final Test Data Summary ****

Serial Number: 0160
Model Number: MLVS-0510BS
Time: 8:58:00 AM
Date: 7/8/2019
Minimum Frequency: 50.000 MHz
Maximum Frequency: 10500.000 MHz
Frequency Step Size: 0.001 Hz
Internal Reference Oscillator SN: XF1274
Maximum RF Level (Min.): 15.0 dBm
Maximum RF Level (Max.): 23.0 dBm
Minimum Operating Temperature: 0.0 Degrees C.
Maximum Operating Temperature: 60.0 Degrees C.
MLVS Firmware Version: 00012019051318
MLWI Sales Order #: 10*033D
MLWI Outline Drawing #: 99-0101-001

Final Test Data Check Point Status:

Config data file backup = 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
Cal Status = Pass
Xtal 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. MLVS support USB Flash Drive (1 per lot)
6. MLVS quick start guide (1 per unit)
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 USB Flash Drive 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 50.0 MHz to 10500.0 MHz in 10 MHz Steps *****

Serial Number: 0160
Model Number: MLVS-0510BS
Time: 2:16:53 PM
Date: 7/3/2019
Minimum Frequency: 50.0 MHz
Maximum Frequency: 10500.0 MHz
Temperature: +26.00C Deg. C
NOVO State: Unlocked
Power Supply Spec: +12.0 VDC +/- 0.50 V @ < 1350 mA
Accuracy Tested to: +/-0.002 MHz

Begin Frequency Lock Test from 50.0 MHz to 10500.0 MHz in 10 MHz Steps

Total Frequency Errors: 0

Finish Time: 2:17:58 PM

Begin Random Frequency Lock Test from 50.0 MHz to 10500.0 MHz (1000 Frequencies)

Total Random Frequency Errors: 0

Finish Time: 2:19:23 PM

+1.8V = 1.8V = Pass
+3.3V = 3.3V = Pass
+5.0V = 5.1V = Pass
+11.6V = 11.6V = Pass
+30.0V = 29.9V = Pass
-5.0V = -5.2V = Pass
+10.0V = 10.0V = Pass

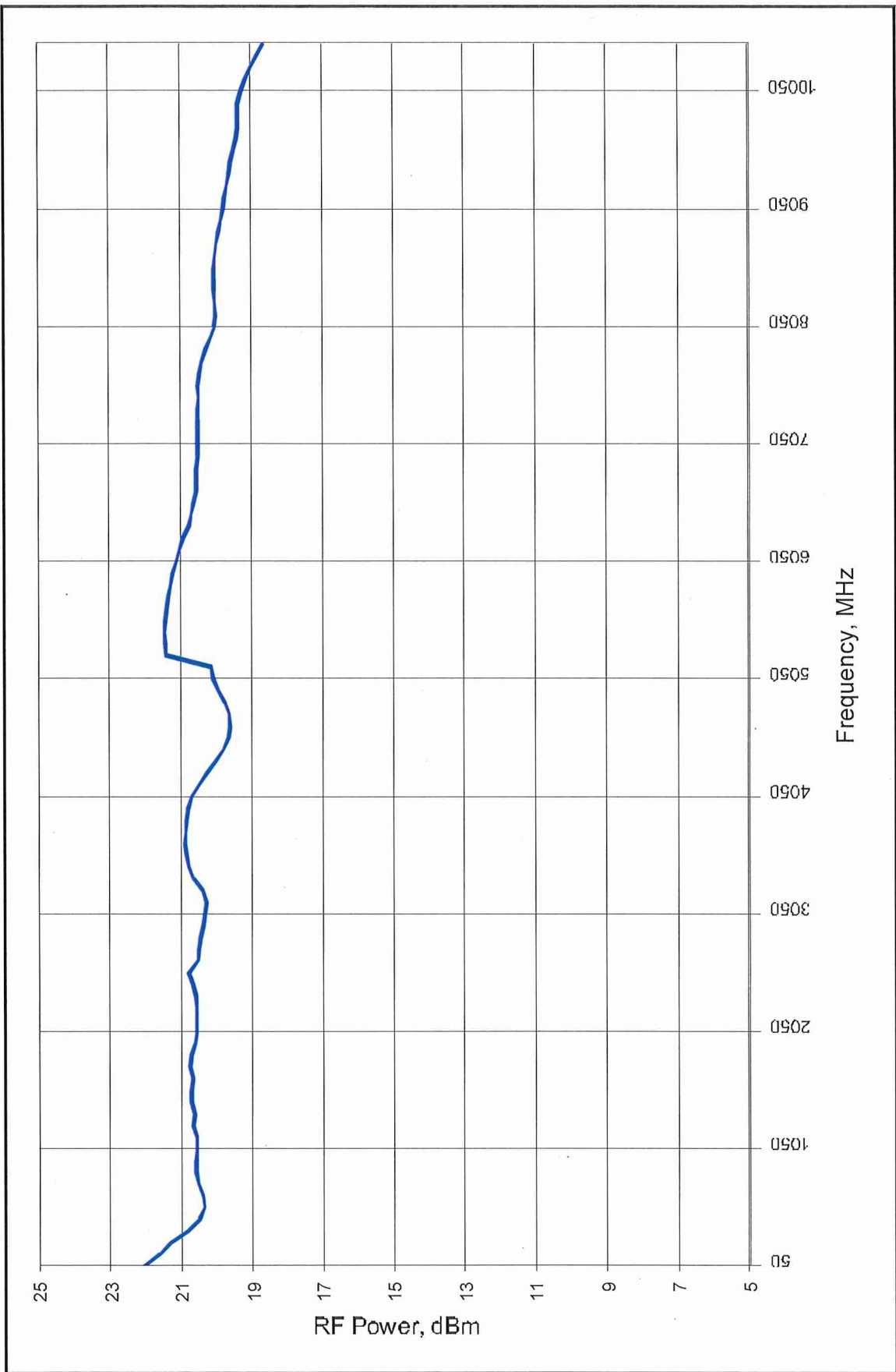
+12.0 VDC Voltage = 11.995V Pass
+12.0 VDC Current = 1263mA Pass

Finish Time: 2:19:25 PM

Total Errors: 0

Pass

Maximum RF Output Power vs. Frequency



Max Leveled Pwr: N/A dBm Min Leveled Pwr: N/A dBm Leveled Pwr Set: Max dBm Level Flatness Spec: +/-2.5 dB

Print

***** Harmonic Test from 50.000000 MHz to 10500.000000 MHz in 100 MHz Steps *****

Model Number: MLVS-0510BS
 Serial Number: 0160
 Time: 11:28:59 AM
 Date: 7/3/2019
 Minimum Frequency: 50.000000 MHz
 Maximum Frequency: 10500.000000 MHz
 Current Unit Temperature: +37.04C Deg. C
 Harmonic Spec Level (In Band): -12.0 dBc
 Harmonic Spec Level <= 250 MHz: -10.0 dBc

Frequency	Level	Harm #	Status
50 MHz	-11 dBc	3	PASS
150 MHz	-11 dBc	3	PASS
250 MHz	-12 dBc	3	PASS
350 MHz	-14 dBc	3	PASS
450 MHz	-16 dBc	3	PASS
550 MHz	-17 dBc	2	PASS
650 MHz	-14 dBc	2	PASS
750 MHz	-15 dBc	2	PASS
850 MHz	-15 dBc	2	PASS
950 MHz	-15 dBc	2	PASS
1050 MHz	-16 dBc	2	PASS
1150 MHz	-16 dBc	2	PASS
1250 MHz	-16 dBc	2	PASS
1350 MHz	-14 dBc	2	PASS
1450 MHz	-14 dBc	2	PASS
1550 MHz	-15 dBc	2	PASS
1650 MHz	-15 dBc	2	PASS
1750 MHz	-16 dBc	2	PASS
1850 MHz	-16 dBc	2	PASS
1950 MHz	-17 dBc	2	PASS
2050 MHz	-16 dBc	2	PASS
2150 MHz	-16 dBc	2	PASS
2250 MHz	-15 dBc	2	PASS
2350 MHz	-15 dBc	2	PASS
2450 MHz	-16 dBc	2	PASS
2550 MHz	-17 dBc	2	PASS
2650 MHz	-14 dBc	2	PASS
2750 MHz	-14 dBc	2	PASS
2850 MHz	-14 dBc	2	PASS
2950 MHz	-15 dBc	2	PASS
3050 MHz	-14 dBc	2	PASS
3150 MHz	-15 dBc	2	PASS
3250 MHz	-18 dBc	2	PASS
3350 MHz	-19 dBc	3	PASS
3450 MHz	-19 dBc	3	PASS
3550 MHz	-19 dBc	3	PASS
3650 MHz	-20 dBc	3	PASS
3750 MHz	-19 dBc	2	PASS
3850 MHz	-19 dBc	3	PASS
3950 MHz	-20 dBc	2	PASS
4050 MHz	-20 dBc	2	PASS
4150 MHz	-20 dBc	2	PASS
4250 MHz	-19 dBc	2	PASS
4350 MHz	-18 dBc	2	PASS
4450 MHz	-18 dBc	2	PASS
4550 MHz	-19 dBc	2	PASS
4650 MHz	-20 dBc	2	PASS
4750 MHz	-20 dBc	2	PASS
4850 MHz	-21 dBc	2	PASS
4950 MHz	-21 dBc	2	PASS
5050 MHz	-21 dBc	2	PASS
5150 MHz	-22 dBc	2	PASS
5250 MHz	-18 dBc	3	PASS
5350 MHz	-18 dBc	3	PASS
5450 MHz	-18 dBc	2	PASS
5550 MHz	-19 dBc	2	PASS
5650 MHz	-20 dBc	2	PASS
5750 MHz	-19 dBc	2	PASS
5850 MHz	-18 dBc	2	PASS
5950 MHz	-19 dBc	2	PASS
6050 MHz	-19 dBc	2	PASS
6150 MHz	-20 dBc	2	PASS
6250 MHz	-19 dBc	2	PASS
6350 MHz	-18 dBc	2	PASS
6450 MHz	-17 dBc	2	PASS
6550 MHz	-18 dBc	2	PASS
6650 MHz	-18 dBc	2	PASS
6750 MHz	-19 dBc	2	PASS
6850 MHz	-19 dBc	2	PASS
6950 MHz	-19 dBc	2	PASS
7050 MHz	-19 dBc	2	PASS
7150 MHz	-19 dBc	2	PASS

7250	MHz	-19	dBc	2	PASS
7350	MHz	-19	dBc	2	PASS
7450	MHz	-19	dBc	2	PASS
7550	MHz	-18	dBc	2	PASS
7650	MHz	-19	dBc	2	PASS
7750	MHz	-18	dBc	2	PASS
7850	MHz	-18	dBc	2	PASS
7950	MHz	-17	dBc	2	PASS
8050	MHz	-16	dBc	2	PASS
8150	MHz	-17	dBc	2	PASS
8250	MHz	-18	dBc	2	PASS
8350	MHz	-17	dBc	2	PASS
8450	MHz	-18	dBc	2	PASS
8550	MHz	-20	dBc	2	PASS
8650	MHz	-21	dBc	2	PASS
8750	MHz	-21	dBc	2	PASS
8850	MHz	-21	dBc	2	PASS
8950	MHz	-21	dBc	2	PASS
9050	MHz	-21	dBc	2	PASS
9150	MHz	-22	dBc	2	PASS
9250	MHz	-21	dBc	2	PASS
9350	MHz	-21	dBc	2	PASS
9450	MHz	-21	dBc	2	PASS
9550	MHz	-21	dBc	2	PASS
9650	MHz	-21	dBc	2	PASS
9750	MHz	-23	dBc	2	PASS
9850	MHz	-22	dBc	2	PASS
9950	MHz	-22	dBc	2	PASS
10050	MHz	-21	dBc	2	PASS
10150	MHz	-18	dBc	2	PASS
10250	MHz	-19	dBc	2	PASS
10350	MHz	-19	dBc	2	PASS
10450	MHz	-19	dBc	2	PASS

Number of Failures: 0

Finish Time: 11:46:50 AM

Harmonic Readings complete

Pass

***** Random Spur Test from 50.0 MHz to 10500.0 MHz *****

Serial Number: 0160
Model Number: MLVS-0510BS
Time: 12:44:46 PM
Date: 7/3/2019
Minimum Frequency: 50.0 MHz
Maximum Frequency: 10500.0 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: +36.09C Deg. C
NOVO State: Unlocked

Random Frequency	Status
Frequency Tested = 10177.717113 MHz	Pass
Frequency Tested = 10281.486351 MHz	Pass
Frequency Tested = 9899.214661 MHz	Pass
Frequency Tested = 6314.247627 MHz	Pass
Frequency Tested = 7761.226853 MHz	Pass
Frequency Tested = 4553.799125 MHz	Pass
Frequency Tested = 5180.401920 MHz	Pass
Frequency Tested = 6567.966260 MHz	Pass
Frequency Tested = 10036.212756 MHz	Pass
Frequency Tested = 127.264269 MHz	Pass
Frequency Tested = 6829.250355 MHz	Pass
Frequency Tested = 6816.462263 MHz	Pass
Frequency Tested = 4400.589325 MHz	Pass
Frequency Tested = 8037.018944 MHz	Pass
Frequency Tested = 7746.811050 MHz	Pass
Frequency Tested = 2751.664271 MHz	Pass
Frequency Tested = 4372.116526 MHz	Pass
Frequency Tested = 8656.819988 MHz	Pass
Frequency Tested = 6440.926917 MHz	Pass
Frequency Tested = 7876.023166 MHz	Pass
Frequency Tested = 961.333282 MHz	Pass
Frequency Tested = 1145.784174 MHz	Pass
Frequency Tested = 1241.313319 MHz	Pass
Frequency Tested = 5524.646339 MHz	Pass
Frequency Tested = 9825.603242 MHz	Pass

Total Spur Errors: 0

Finish Time: 1:17:01 PM
Test Completed
Pass

***** Switching Speed Test from 50.0 to 10500.0 MHz in 100 1000 MHz & Full Band Steps *****

Model Number: MLVS-0510BS
Serial Number: 0160
Time: 11:50:45 AM
Date: 7/3/2019
Minimum Frequency: 50.000 MHz
Maximum Frequency: 10500.000 MHz
Current Unit Temperature: +36.10C Deg. C
Switching Speed Spec:
For a Full Band Step: 50.0 uS
For 25 Random Jumps - Max Time Range: 50.0 uS

Frequency Step	Meas. Speed	Status
Full band Step Up =	32.0 uS	Pass
Full band Step Down =	22.0 uS	Pass

Frequency Step (MHz)	Step Size (MHz)	Meas. Speed	Status
Random Jump From 50.0 To 3421.0	3371.0	21.0 uS	Pass
Random Jump From 3421.0 To 2394.0	-1027.0	24.0 uS	Pass
Random Jump From 2394.0 To 10367.0	7973.0	22.0 uS	Pass
Random Jump From 10367.0 To 5885.0	-4482.0	29.0 uS	Pass
Random Jump From 5885.0 To 779.0	-5106.0	23.0 uS	Pass
Random Jump From 779.0 To 7461.0	6682.0	22.0 uS	Pass
Random Jump From 7461.0 To 6478.0	-983.0	22.0 uS	Pass
Random Jump From 6478.0 To 4845.0	-1633.0	28.0 uS	Pass
Random Jump From 4845.0 To 9425.0	4580.0	21.0 uS	Pass
Random Jump From 9425.0 To 3613.0	-5812.0	25.0 uS	Pass
Random Jump From 3613.0 To 3121.0	-492.0	20.0 uS	Pass
Random Jump From 3121.0 To 3173.0	52.0	13.0 uS	Pass
Random Jump From 3173.0 To 3129.0	-44.0	17.0 uS	Pass
Random Jump From 3129.0 To 7089.0	3960.0	22.0 uS	Pass
Random Jump From 7089.0 To 8477.0	1388.0	19.0 uS	Pass
Random Jump From 8477.0 To 4322.0	-4155.0	23.0 uS	Pass
Random Jump From 4322.0 To 6683.0	2361.0	24.0 uS	Pass
Random Jump From 6683.0 To 55.0	-6628.0	24.0 uS	Pass
Random Jump From 55.0 To 10229.0	10174.0	26.0 uS	Pass
Random Jump From 10229.0 To 2099.0	-8130.0	24.0 uS	Pass
Random Jump From 2099.0 To 10135.0	8036.0	25.0 uS	Pass
Random Jump From 10135.0 To 8099.0	-2036.0	26.0 uS	Pass
Random Jump From 8099.0 To 9828.0	1729.0	21.0 uS	Pass
Random Jump From 9828.0 To 2392.0	-7436.0	23.0 uS	Pass
Random Jump From 2392.0 To 7202.0	4810.0	25.0 uS	Pass

Number of Failures: 0

Finish Time: 11:57:56 AM

Switching Speed Readings complete

Pass

***** Phase Noise Test from 50.0 MHz to 10500.0 MHz *****

Model Number: MLVS-0510BS
 Serial Number: 0160
 Time: 11:11:58 AM
 Date: 7/3/2019
 Minimum Frequency: 50.0 MHz
 Maximum Frequency: 10500.0 MHz
 Current Unit Temperature: +36.10C Deg. C

Phase Noise Spec @ Offset and Frequency:

Offset	Noise 50 MHz	Noise 500 MHz	Noise 5 GHz	Noise 10 GHz	
100 Hz =	-131	-112	-97	-90	dBc/Hz
1.0 kHz =	-143	-128	-122	-116	dBc/Hz
10.0 kHz =	-150	-139	-129	-122	dBc/Hz
100 kHz =	-152	-143	-129	-122	dBc/Hz
1.0 MHz =	-152	-143	-124	-121	dBc/Hz
10.0 MHz =	-153	-148	-137	-133	dBc/Hz

Correlation = 100

Measured:

Frequency	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz	10 MHz	Status	RF Power
50.000	-131.2	-143.0	-150.4	-152.2	-155.7	-158.0	Pass	7.20 dBm
150.000	-125.9	-140.8	-148.4	-151.8	-153.7	-156.2	Pass	5.27 dBm
250.000	-120.9	-140.5	-147.2	-150.1	-150.0	-154.4	Pass	7.24 dBm
500.000	-116.3	-133.9	-142.2	-145.4	-145.0	-151.4	Pass	6.14 dBm
750.000	-112.4	-137.9	-143.5	-141.3	-137.1	-149.5	Pass	5.27 dBm
1000.000	-110.2	-137.7	-143.3	-143.2	-140.2	-150.2	Pass	5.68 dBm
2000.000	-104.8	-130.7	-139.7	-138.5	-134.7	-148.4	Pass	5.32 dBm
3000.000	-100.9	-127.4	-133.7	-130.2	-125.7	-141.5	Pass	4.67 dBm
5000.001	-100.5	-126.6	-132.4	-131.0	-128.5	-144.8	Pass	4.57 dBm
7500.001	-97.2	-122.1	-128.5	-126.5	-122.5	-136.9	Pass	4.81 dBm
10000.001	-95.2	-120.3	-126.1	-124.7	-122.4	-139.3	Pass	2.96 dBm
10500.001	-93.3	-117.7	-125.1	-124.5	-122.6	-139.7	Pass	2.33 dBm

Number of Failures: 0

Finish Time: 11:25:01 AM

Phase Noise Readings Complete

Pass