FCC PART 15, SUBPART B and C
TEST REPORT

for

RADIOPOPPER JrX TRANSMITTER

MODEL: JrX

Prepared for

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DATE: MAY 15, 2009

	REPORT BODY	APPENDICES					TOTAL
		A	*B*	*C*	*D*	*E*	
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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Device Tested:	RadioPopper JrX Transmitter Model: JrX S/N: N/A
Product Description:	See Expository Statement
Modifications:	The EUT was not modified in order to meet the specifications.
Manufacturer:	Leap Devices, LLC. 20987 North John Wayne Parkway, Suite B-104-207 Maricopa, Arizona 85279
Test Dates:	May 1 and 4, 2009
Test Specifications:	EMI requirements CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.247
Test Procedure:	ANSI C63.4: 2003
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz – 30 MHz	This test was not performed because the EUT operates on batteries only and cannot be plugged into the AC public mains.
2	Spurious Radiated RF Emissions, 10 kHz – 9300 MHz	Complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and CFR Title 47, Part 15, Subpart C, section 15.247(d)
3	Fundamental and Emissions produced by the intentional radiator in non-restricted bands, 10 kHz – 9300	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(d) Highest reading in relation to spec limit: 51.67 dBuV @ 5558MHz (*Uc = 3.05 dB)
4	Emissions produced by the intentional radiator in restricted bands, 10 kHz – 40 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209(a), and section 15.247 (d)
5	6 dB Bandwidth	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(a)(2)
6	Peak Power Output	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(b)(3)
7	RF Conducted Antenna Test	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(d)
8	Peak Power Spectral Density Conducted from the Intentional Radiator to the Antenna	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (e)

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the RadioPopper JrX Transmitter, Model: JrX. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2003. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the Class B specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.247.

Note: For the unintentional radiator portion of the test, the EUT was within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Leap Devices, LLC.

Kevin King	Director

Compatible Electronics Inc.

Kyle Fujimoto	Test Engineer
Michael Christensen	Lab Manager

2.4 Date Test Sample was Received

The test sample was received prior to the date of testing.

2.5 Disposition of the Test Sample

The test sample has not yet been returned as of the date of this report.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
N/A	Not Applicable

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules - Radio frequency devices (including digital devices) – Intentional Radiators
ANSI C63.4 2003	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz
FCC Title 47, Part 15 Subpart B	FCC Rules - Radio frequency devices (including digital devices) – Unintentional Radiators

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

The RadioPopper JrX Transmitter, Model: JrX (EUT) was tested as a stand alone unit in three orthogonal axis. The EUT was also tested in a configuration that had a cable connected to its jack input. However, emissions were higher in the stand alone configuration, thus final data was taken in the stand alone configuration. The EUT was continuously transmitting during the test.

The antenna is a ¼ wave monopole antenna that is permanently connected to the PCB.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The final emissions data was taken in this mode of operation and any cables were maximized. All initial investigations were performed with the measurement receiver in manual mode scanning the frequency range continuously. Photographs of the test setup are in Appendix D of this report.

4.1.1 Cable Construction and Termination

Cable 1 This is a 1-meter unshielded cable connected to the EUT's jack input. The cable has a 3.5 mm jack at the EUT end and is shorted at the other end. The cable was bundled to a length of 40 centimeters.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
RADIOPOPPER JRX TRANSMITTER (EUT)	LEAP DEVICES, LLC.	JrX	N/A	**V4TJRTX304**

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
GENERAL TEST EQUIPMENT USED FOR ALL RF EMISSIONS TESTS					
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08784	June 2, 2008	June 2, 2009
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	2648A14530	June 2, 2008	June 2, 2009
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	June 2, 2008	June 2, 2009
EMI Receiver	Rohde & Schwarz	ESIB40	100194	September 17, 2008	Sept. 17, 2010
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
Biconical Antenna	Com Power	AB-900	15250	February 23, 2009	Feb. 23, 2010
Log Periodic Antenna	Com Power	AL-100	16060	June 27, 2008	June 27, 2009
Preamplifier	Com-Power	PA-102	1017	January 12, 2009	Jan. 12, 2010
Loop Antenna	Com-Power	AL-130	17089	September 29, 2008	Sept. 29, 2009
Horn Antenna	Com-Power	AH-118	071175	June 27, 2008	June 27, 2010
Microwave Preamplifier	Com Power	PA-122	181921	March 12, 2009	March 12, 2010
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for EMI test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.

7. CHARACTERISTICS OF THE TRANSMITTER

7.1 Channel Number and Frequencies

Please see the theory of operation exhibit for the list of channels and their frequencies.

7.2 Antenna Gain

The antenna gain of the dipole antenna is –7.76 dBi.

8. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

8.1 RF Emissions

8.1.1 Conducted Emissions Test

The spectrum analyzer was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A transient limiter was used for the protection of the spectrum analyzer input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the spectrum analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 2003. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by the Compatible Electronics conducted emissions software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. The final qualification data is located in Appendix E.

Test Results:

The EUT does not directly or indirectly connect to the AC mains, thus this test was not performed.

8.1.2 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer and EMI Receiver were used as a measuring meter along with the quasi-peak adapter. Amplifiers were used to increase the sensitivity of the instrument. The Com Power Preamplifier Model: PA-102 was used for frequencies from 30 MHz to 1 GHz and the Com Power Microwave Preamplifier Model: PA-122 was used for frequencies above 1 GHz. The spectrum analyzer and EMI Receiver were used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer records the highest measured reading over all the sweeps.

The quasi-peak adapter was used only for those readings which are marked accordingly on the data sheets.

The frequencies above 1 GHz were averaged manually by narrowing the video filter down to 2 kHz (VBW > 1/T, with T = 561 uS) and putting the sweep time on AUTO on the EMI Receiver to keep the amplitude reading calibrated.

Also, where indicated on the data sheets, an additional duty cycle correction factor of 20 Log (Duty Cycle %) was applied to the manually averaged reading mentioned above.

The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
10 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 300 MHz	120 kHz	Biconical Antenna
300 MHz to 1 GHz	120 kHz	Log Periodic Antenna
1 GHz to 9.3 GHz	1 MHz	Horn Antenna

The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 2003. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT by the Radiated Emission Manual Test software. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

Radiated Emissions (Spurious and Harmonics) Test (con't)

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 10 meter test distance from 10 kHz to 30 MHz, and at a 3 meter test distance from 30 MHz to 9.3 GHz to obtain the final test data.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.247 (d) for radiated emissions. Please see Appendix E for the data sheets.

8.2 6 dB Bandwidth

The 6 dB bandwidth was measured using the EMI Receiver. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz.

Test Results:

This test complies with the relevant requirements of CFR Title 47, Part 15, Subpart C section 15.247 (a)(2).

8.3 Peak Output Power

Since antenna conducted tests could not be performed on the EUT due to a lack of an antenna connector on the EUT, the peak output power was calculated by the following equation:

P = [(E*D)^2] / (30 G)
P = Power in Watts for which you are solving
E = the measured maximum field strength in V/m utilizing the widest available RBW.
G = the numeric gain of the transmitting antenna over an isotropic radiator.

Test Results:

This test complies with the relevant requirements of CFR Title 47, Part 15, Subpart C section 15.247 (b)(3).

8.4 RF Antenna Conducted Test

Since antenna conducted tests could not be performed on the EUT due to a lack of an antenna connector on the EUT, all harmonics were tested using the radiated emissions test procedure located in section 7.1.2 of this test report.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). The RF power that is produced by the intentional radiator is at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of desired power. Please see the radiated emission data sheets located in Appendix E.

7.5 RF Band Edges

The RF band edges were taken at the edges of the ISM spectrum (902 MHz when the EUT was on the low channel and 928 MHz when the EUT was on the high channel) using the EMI Receiver. The RBW was set to 100 kHz and the VBW was set to 300 kHz. Plots of the fundamental were taken to ensure the amplitude at the band edges were at least 20 dB down from the peak of the fundamental emission.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). The RF power at the band edges at 902 MHz and 928 MHz meet the requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). Please see the data sheets located in Appendix E.

8.7 Spectral Density Test

The spectral density output was measured using the EMI Receiver. The spectral density output was measured using a direct connection from the RF out on the EUT into the input of the EMI Receiver. The resolution bandwidth was 3 kHz, and the video bandwidth was 10 kHz. The highest 1.5 MHz of the signal was used as the frequency span with the sweep rate being 1 second for every 3 kHz of span.

Test Results:

This test complies with the relevant requirements of CFR Title 47, Part 15, Subpart C section 15.247 (e).

8. CONCLUSIONS

The RadioPopper JrX Transmitter Model: JrX meets all of the specification limits defined in FCC Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.247.

Note: For the unintentional radiator portion of the test, the EUT was within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B.

APPENDIX A

LABORATORY RECOGNITIONS

LABORATORY RECOGNITIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200528-0

Voluntary Control Council for Interference - Registration Numbers: R-983, C-1026, R-984 and C-1027

Bureau of Standards and Metrology Inspection - Reference Number: SL2-IN-E-1031

Conformity Assessment Body for the EMC Directive Under the US/EU MRA Appointed by NIST

Compatible Electronics is recognized or on file with the following agencies:

Federal Communications Commission

Industry Canada

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.247 specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

There were no modifications made to the EUT.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

RadioPopper JrX Transmitter
Model: JrX
S/N: N/A

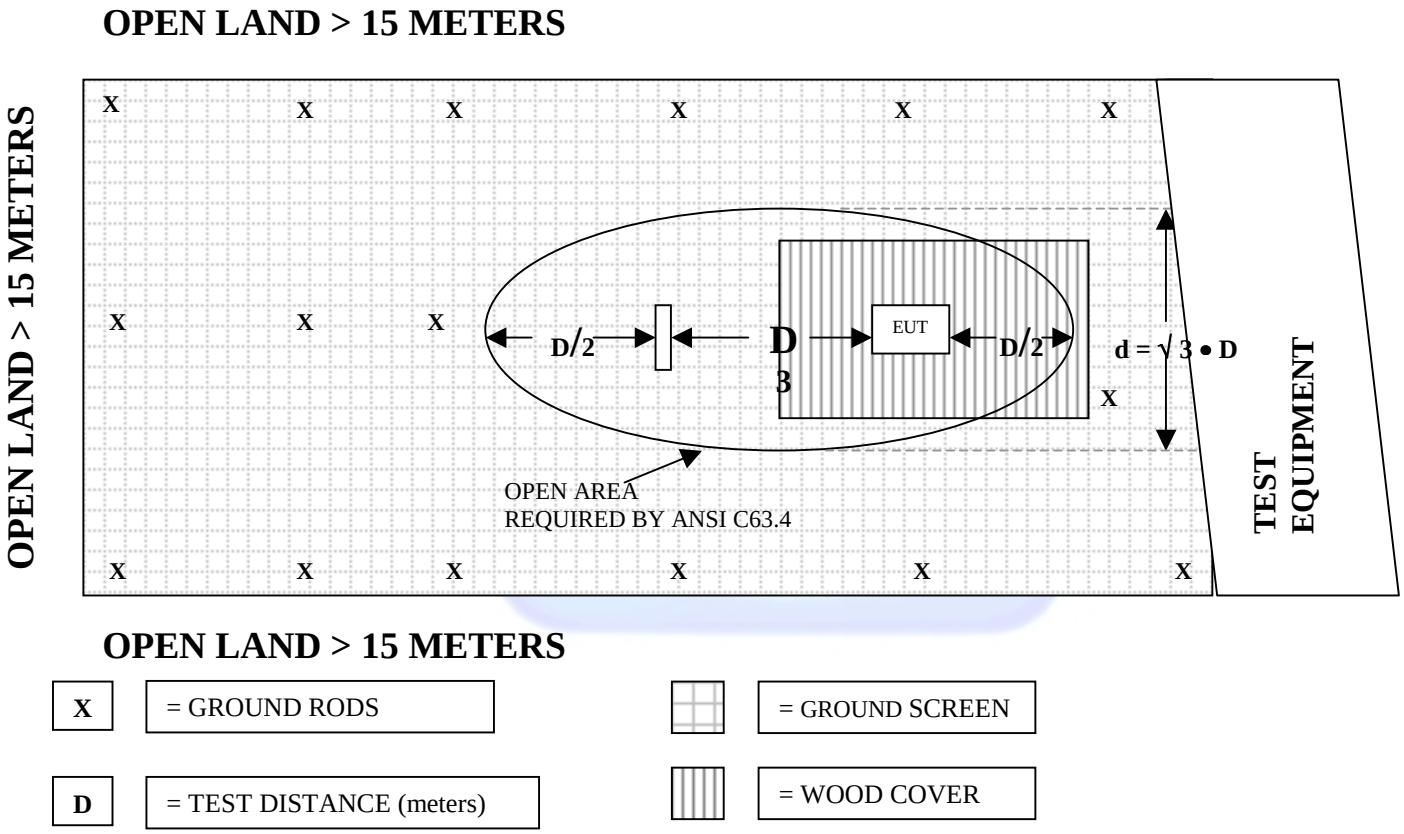
ALSO APPROVED UNDER THIS REPORT:

There were no additional models covered under this report.

APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED SITE – 3 METERS



COM-POWER AB-900

BICONICAL ANTENNA

S/N: 15250

CALIBRATION DATE: FEBRUARY 23, 2009

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	13.0	100	11.1
35	11.1	120	13.6
40	10.2	140	12.4
45	11.2	160	12.9
50	11.6	180	16.5
60	9.1	200	17.0
70	8.4	250	16.3
80	6.2	275	18.2
90	8.5	300	17.9

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16060

CALIBRATION DATE: JUNE 27, 2008

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	12.7	700	21.2
400	15.3	800	21.7
500	17.4	900	21.8
600	19.0	1000	22.8

COM POWER AH-118

HORN ANTENNA

S/N: 071175

CALIBRATION DATE: JUNE 27, 2008

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.5	10.0	39.4
1.5	25.4	10.5	39.7
2.0	28.3	11.0	39.0
2.5	28.9	11.5	40.0
3.0	29.7	12.0	39.7
3.5	30.8	12.5	41.7
4.0	31.4	13.0	42.7
4.5	32.6	13.5	41.2
5.0	33.7	14.0	41.6
5.5	34.4	14.5	43.2
6.0	34.7	15.0	42.3
6.5	35.4	15.5	39.3
7.0	37.0	16.0	41.7
7.5	37.4	16.5	39.6
8.0	37.6	17.0	43.0
8.5	37.6	17.5	47.1
9.0	38.5	18.0	46.2
9.5	38.6		

COM-POWER PA-102

PREAMPLIFIER

S/N: 1017

CALIBRATION DATE: JANUARY 12, 2009

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	39.0	300	38.8
40	39.0	350	38.8
50	38.8	400	38.7
60	38.7	450	38.6
70	38.8	500	38.3
80	38.8	550	38.9
90	39.1	600	38.4
100	39.1	650	38.8
125	38.9	700	38.4
150	38.9	750	38.5
175	38.9	800	38.3
200	38.8	850	38.4
225	39.0	900	38.1
250	38.9	950	37.4
275	38.8	1000	38.1

COM-POWER PA-122

PREAMPLIFIER

S/N: 181921

CALIBRATION DATE: MARCH 12, 2009

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	36.46	10.0	35.06
1.5	35.36	10.5	34.82
2.0	34.76	11.0	33.12
2.5	34.94	11.5	34.33
3.0	34.59	12.0	34.75
3.5	34.55	12.5	33.94
4.0	34.25	13.0	35.50
4.5	33.89	13.5	34.89
5.0	34.22	14.0	36.56
5.5	34.81	14.5	36.06
6.0	35.74	15.0	36.67
6.5	36.51	15.5	36.84
7.0	36.66	16.0	34.31
7.5	35.72	16.5	35.11
8.0	33.28	17.0	35.35
8.5	33.11	17.5	34.11
9.0	34.71	18.0	33.88
9.5	35.50	18.5	32.20

COM-POWER AL-130

LOOP ANTENNA

S/N: 17089

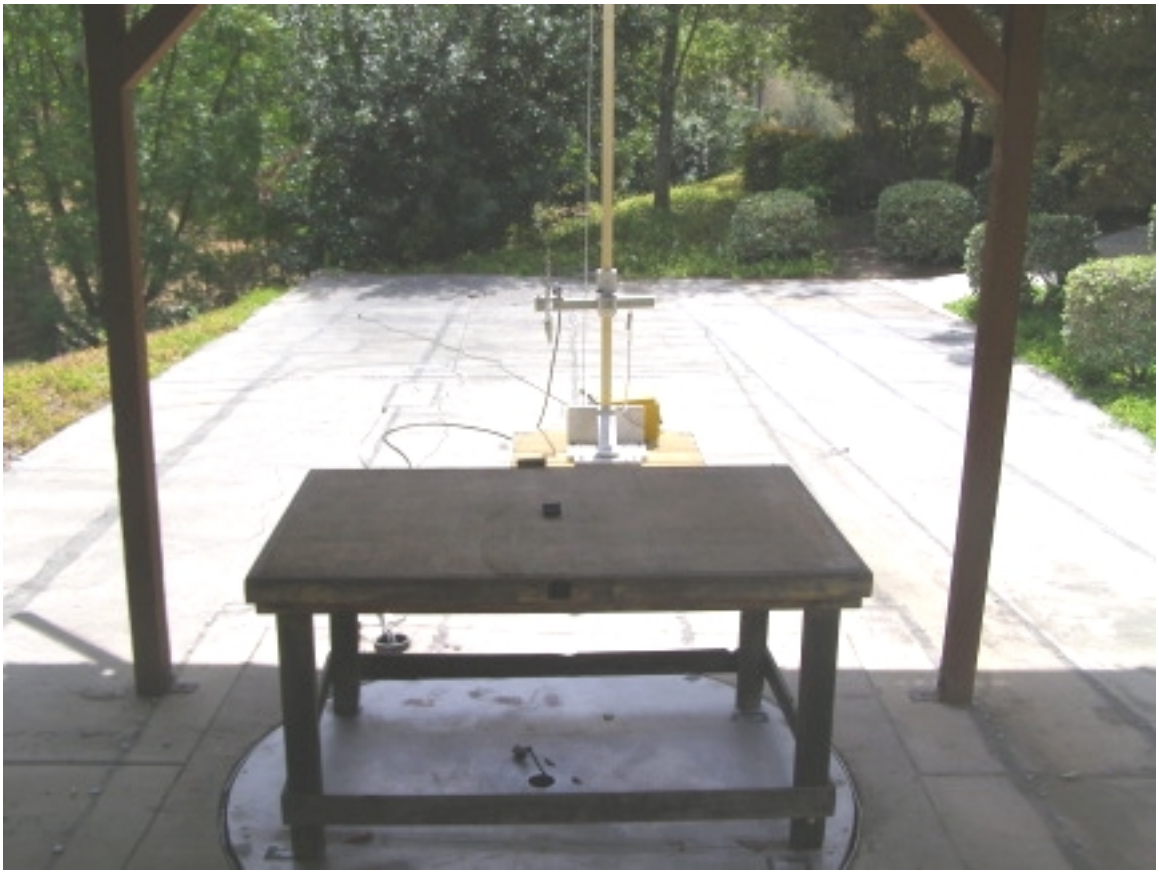
CALIBRATION DATE: SEPTEMBER 29, 2008

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-41.57	9.93
0.01	-42.06	9.44
0.02	-42.43	9.07
0.05	-42.50	9.00
0.07	-42.10	9.40
0.1	-42.03	9.47
0.2	-44.50	7.00
0.3	-41.93	9.57
0.5	-41.90	9.60
0.7	-41.73	9.77
1	-41.23	10.27
2	-40.90	10.60
3	-41.20	10.30
4	-41.30	10.20
5	-40.70	10.80
10	-41.10	10.40
15	-42.17	9.33
20	-42.00	9.50
25	-42.20	9.30
30	-43.10	8.40

FRONT VIEW

LEAP DEVICES, LLC.
RADIOPOPPER JrX TRANSMITTER
MODEL: JrX
FCC SUBPART B AND C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

LEAP DEVICES, LLC.
RADIOPOPPER JrX TRANSMITTER
MODEL: JrX
FCC SUBPART B AND C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISISONS

DATA SHEETS

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Low Channel - X-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
903.11	93.34	V	--	--	Peak	1.25	225	
903.11	88.57	V	--	--	Avg	1.25	225	Video Averaging Only
1806.22	60.49	V	--	--	Peak	1.25	270	Not in Restricted Band
1806.22	55.84	V	--	--	Avg	1.25	270	Video Averaging Only
2709.33	47.11	V	74	-26.89	Peak	1.25	250	
2709.33	41.03	V	54	-12.97	Avg	1.25	250	Video Averaging Only
3612.44	43.64	V	74	-30.36	Peak	1.26	225	
3612.44	35.03	V	54	-18.97	Avg	1.26	225	Video Averaging Only
4515.55	55.54	V	74	-18.46	Peak	1.26	250	
4515.55	45.59	V	54	-8.41	Avg	1.26	250	Video Averaging Only
5418.66	61.61	V	74	-12.39	Peak	1.26	250	
5418.66	51.73	V	54	-2.27	Avg	1.26	250	Video Averaging Only
5418.7	38.54	V	54	-15.46	Avg	1.26	250	Video Averaging + Duty Cycle
6321.77	59.99	V	--	--	Peak	1.12	150	Not in Restricted Band
6321.77	49.83	V	--	--	Avg	1.12	150	Video Averaging Only
7224.88	61.97	V	74	-12.03	Peak	1.25	150	
7224.88	51.13	V	54	-2.87	Avg	1.25	150	Video Averaging Only
7224.9	37.94	V	54	-16.06	Avg	1.25	150	Video Averaging + Duty Cycle
8127.99	63.41	V	74	-10.59	Peak	1.35	160	
8127.99	53.06	V	54	-0.94	Avg	1.35	160	Video Averaging Only
8128	39.87	V	54	-14.13	Avg	1.35	160	Video Averaging + Duty Cycle
9031.1	65.87	V	74	-8.13	Peak	1.12	135	
9031.1	53.92	V	54	-0.08	Avg	1.12	135	Video Averaging Only
9031.1	40.73	V	54	-13.27	Avg	1.12	135	Video Averaging + Duty Cycle

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Low Channel - X-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
903.11	96.55	H	--	--	Peak	1	90	
903.11	92.01	H	--	--	Avg	1	90	Video Averaging Only
1806.22	60.71	H	--	--	Peak	1.26	125	Not in Restricted Band
1806.22	55.72	H	--	--	Avg	1.26	125	Video Averaging Only
2709.33	44.42	H	74	-29.58	Peak	1.26	125	
2709.33	32.33	H	54	-21.67	Avg	1.26	125	Video Averaging Only
3612.44	49.01	H	74	-24.99	Peak	1.29	125	
3612.44	40.54	H	54	-13.46	Avg	1.29	125	Video Averaging Only
4515.55	51.08	H	74	-22.92	Peak	1.25	180	
4515.55	41.91	H	54	-12.09	Avg	1.25	180	Video Averaging Only
5418.66	58.67	H	74	-15.33	Peak	1.26	125	
5418.66	47.61	H	54	-6.39	Avg	1.26	125	Video Averaging Only
6321.77	59.55	H	--	--	Peak	1.45	135	Not in Restricted Band
6321.77	48.58	H	--	--	Avg	1.45	135	Video Averaging Only
7224.88	60.99	H	74	-13.01	Peak	1.26	125	
7224.88	50.55	H	54	-3.45	Avg	1.26	125	Video Averaging Only
8127.99	57.83	H	74	-16.17	Peak	1.45	225	
8127.99	47.89	H	54	-6.11	Avg	1.45	225	Video Averaging Only
9031.1	63.61	H	74	-10.39	Peak	1.35	135	
9031.1	53.07	H	54	-0.93	Avg	1.35	135	Video Averaging Only
9031.1	39.88	H	54	-14.12	Avg	1.35	135	Video Averaging + Duty Cycle

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Middle Channel - X-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
915.09	92.62	V	--	--	Peak	1	225	
915.09	87.51	V	--	--	Avg	1	225	Video Averaging Only
1830.18	59.14	V	--	--	Peak	1.25	135	Not in Restricted Band
1830.18	54.15	V	--	--	Avg	1.25	135	Video Averaging Only
2745.27	49.04	V	74	-24.96	Peak	1.35	225	
2745.27	39.24	V	54	-14.76	Avg	1.35	225	Video Averaging Only
3660.36	47.18	V	74	-26.82	Peak	1.45	135	
3660.36	38.25	V	54	-15.75	Avg	1.45	135	Video Averaging Only
4575.45	52.56	V	74	-21.44	Peak	1.25	135	
4575.45	41.66	V	54	-12.34	Avg	1.25	135	Video Averaging Only
5490.54	60.44	V	74	-13.56	Peak	1.25	135	
5490.54	49.87	V	54	-4.13	Avg	1.25	135	Video Averaging Only
6405.63	58.18	V	--	--	Peak	1.35	180	Not in Restricted Band
6405.63	47.94	V	--	--	Avg	1.35	180	Video Averaging Only
7320.72	61.95	V	74	-12.05	Peak	1.25	135	
7320.72	51.51	V	54	-2.49	Avg	1.25	135	Video Averaging Only
7320.7	38.32	V	54	-15.68	Avg	1.25	135	Video Averaging + Duty Cycle
8235.81	55.21	V	74	-18.79	Peak	1.35	150	
8235.81	44.79	V	54	-9.21	Avg	1.35	150	
9150.9	63.08	V	74	-10.92	Peak	1.26	150	
9150.9	52.17	V	54	-1.83	Avg	1.26	150	Video Averaging Only
9150.9	38.98	V	54	-15.02	Avg	1.26	150	Video Averaging + Duty Cycle

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Middle Channel - X-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
915.09	97.95	H	--	--	Peak	1	125	
915.09	93.95	H	--	--	Avg	1	125	Video Averaging Only
1830.18	61.42	H	--	--	Peak	1.25	135	Not in Restricted Band
1830.18	57.38	H	--	--	Avg	1.25	135	Video Averaging Only
2745.27	44.89	H	74	-29.11	Peak	1.35	150	
2745.27	35.86	H	54	-18.14	Avg	1.35	150	Video Averaging Only
3660.36	43.67	H	74	-30.33	Peak	1.25	150	
3660.36	32.46	H	54	-21.54	Avg	1.25	150	Video Averaging Only
4575.45	49.83	H	74	-24.17	Peak	1.35	160	
4575.45	40.75	H	54	-13.25	Avg	1.35	160	Video Averaging Only
5490.54	60.11	H	74	-13.89	Peak	1.25	150	
5490.54	48.38	H	54	-5.62	Avg	1.25	150	Video Averaging Only
6405.63	56.01	H	--	--	Peak	1.35	150	Not in Restricted Band
6405.63	46.28	H	--	--	Avg	1.35	150	Video Averaging Only
7320.72	57.63	H	74	-16.37	Peak	1.25	135	
7320.72	47.74	H	54	-6.26	Avg	1.25	135	Video Averaging Only
8235.81	55.66	H	74	-18.34	Peak	1.25	150	
8235.81	44.14	H	54	-9.86	Avg	1.25	150	Video Averaging Only
9150.9	63.79	H	74	-10.21	Peak	1.35	150	
9150.9	52.52	H	54	-1.48	Avg	1.35	150	Video Averaging Only
9150.9	39.33	H	54	-14.67	Avg	1.35	150	Video Averaging + Duty Cycle

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

High Channel - X-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
926.33	92.88	V	--	--	Peak	1.25	50	
926.33	88.59	V	--	--	Avg	1.25	50	Video Averaging Only
1852.66	66.01	V	--	--	Peak	1.26	135	Not in Restricted Band
1852.66	61.68	V	--	--	Avg	1.26	135	Video Averaging Only
2778.99	51.11	V	74	-22.89	Peak	1.28	125	
2778.99	42.41	V	54	-11.59	Avg	1.28	125	Video Averaging Only
3705.32	48.52	V	74	-25.48	Peak	1.85	126	
3705.32	40.03	V	54	-13.97	Avg	1.85	126	Video Averaging Only
4631.65	51.81	V	74	-22.19	Peak	1.96	125	
4631.65	40.57	V	54	-13.43	Avg	1.96	125	Video Averaging Only
5557.98	61.29	V	74	-12.71	Peak	2.06	135	
5557.98	50.12	V	54	-3.88	Avg	2.06	135	Video Averaging Only
6484.31	54.26	V	--	--	Peak	1.28	135	Not in Restricted Band
6484.31	44.22	V	--	--	Avg	1.28	135	Video Averaging Only
7410.64	60.05	V	74	-13.95	Peak	1.26	150	
7410.64	50.31	V	54	-3.69	Avg	1.26	150	Video Averaging Only
8336.97	56.01	V	74	-17.99	Peak	1.29	160	
8336.97	50.31	V	54	-3.69	Avg	1.29	160	Video Averaging Only
9263.3	61.59	V	74	-12.41	Peak	1.28	135	
9263.3	50.95	V	54	-3.05	Avg	1.28	135	Video Averaging Only

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

High Channel - X-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
926.33	98.54	H	--	--	Peak	1	225	
926.33	94.83	H	--	--	Avg	1	225	Video Averaging Only
1852.66	60.55	H	--	--	Peak	1.26	150	Not in Restricted Band
1852.66	56.25	H	--	--	Avg	1.26	150	Video Averaging Only
2778.99	46.54	H	74	-27.46	Peak	1.28	135	
2778.99	37.76	H	54	-16.24	Avg	1.28	135	Video Averaging Only
3705.32	45.83	H	74	-28.17	Peak	1.26	135	
3705.32	36.48	H	54	-17.52	Avg	1.26	135	Video Averaging Only
4631.65	55.02	H	74	-18.98	Peak	1.27	115	
4631.65	45.44	H	54	-8.56	Avg	1.27	115	Video Averaging Only
5557.98	58.77	H	74	-15.23	Peak	1.29	125	
5557.98	48.76	H	54	-5.24	Avg	1.29	125	Video Averaging Only
6484.31	53.64	H	--	--	Peak	1.35	125	Not in Restricted Band
6484.31	42.25	H	--	--	Avg	1.35	125	Video Averaging Only
7410.64	57.09	H	74	-16.91	Peak	1.28	135	
7410.64	47.51	H	54	-6.49	Avg	1.28	135	Video Averaging Only
8336.97	52.84	H	74	-21.16	Peak	1.29	185	
8336.97	40.91	H	54	-13.09	Avg	1.29	185	Video Averaging Only
9263.3	59.11	H	74	-14.89	Peak	1.28	195	
9263.3	49.19	H	54	-4.81	Avg	1.28	195	Video Averaging Only

FCC 15.247 and FCC Class B

Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Transmit Mode - X-Axis
Digital Portion and Non Harmonic Emissions of the Transmitter

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected
								from 10 kHz to 9300 MHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 10 kHz to 9300 MHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Low Channel - Y-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
903.11	95.85	V	--	--	Peak	1.25	225	
903.11	90.99	V	--	--	Avg	1.25	225	Video Averaging Only
1806.22	52.51	V	--	--	Peak	1.26	135	Not in Restricted Band
1806.22	47.54	V	--	--	Avg	1.26	135	Video Averaging Only
2709.33	45.84	V	74	-28.16	Peak	1.26	135	
2709.33	37.62	V	54	-16.38	Avg	1.26	135	Video Averaging Only
3612.44	48.72	V	74	-25.28	Peak	1.29	225	
3612.44	37.62	V	54	-16.38	Avg	1.29	225	Video Averaging Only
4515.55	58.18	V	74	-15.82	Peak	1.29	125	
4515.55	48.06	V	54	-5.94	Avg	1.29	125	Video Averaging Only
5418.66	62.12	V	74	-11.88	Peak	1.25	135	
5418.66	51.11	V	54	-2.89	Avg	1.25	135	Video Averaging Only
6321.77	67.62	V	--	--	Peak	1.25	135	Not in Restricted Band
6321.77	55.99	V	--	--	Avg	1.25	135	Video Averaging Only
7224.88	61.11	V	74	-12.89	Peak	1.25	135	
7224.88	48.44	V	54	-5.56	Avg	1.25	135	Video Averaging Only
8127.99	61.12	V	74	-12.88	Peak	1.99	135	
8127.99	50.21	V	54	-3.79	Avg	1.99	135	Video Averaging Only
9031.1	59.74	V	74	-14.26	Peak	1.23	135	
9031.1	47.44	V	54	-6.56	Avg	1.23	135	Video Averaging Only

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Low Channel - Y-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
903.11	96.22	H	--	--	Peak	1	90	
903.11	92.61	H	--	--	Avg	1	90	Video Averaging Only
1806.22	60.79	H	--	--	Peak	1.26	125	Not in Restricted Band
1806.22	56.59	H	--	--	Avg	1.26	125	Video Averaging Only
2709.33	48.23	H	74	-25.77	Peak	1.26	150	
2709.33	39.91	H	54	-14.09	Avg	1.26	150	Video Averaging Only
3612.44	49.85	H	74	-24.15	Peak	1.26	135	
3612.44	37.26	H	54	-16.74	Avg	1.26	135	Video Averaging Only
4515.55	61.44	H	74	-12.56	Peak	1.28	135	
4515.55	50.61	H	54	-3.39	Avg	1.28	135	Video Averaging Only
5418.66	63.29	H	74	-10.71	Peak	1.28	150	
5418.66	49.72	H	54	-4.28	Avg	1.28	150	Video Averaging Only
6321.77	62.98	H	--	--	Peak	1.29	135	Not in Restricted Band
6321.77	52.47	H	--	--	Avg	1.29	135	Video Averaging Only
7224.88	58.95	H	74	-15.05	Peak	1.26	135	
7224.88	48.28	H	54	-5.72	Avg	1.26	135	Video Averaging Only
8127.99	69.16	H	74	-4.84	Peak	1.35	150	
8127.99	57.61	H	54	3.61	Avg	1.35	150	Video Averaging Only
8128	44.42	H	54	-9.58	Avg	1.35	150	Video Averaging + Duty Cycle
9031.1	56.64	H	74	-17.36	Peak	1.25	135	
9031.1	45.89	H	54	-8.11	Avg	1.25	135	Video Averaging Only

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Middle Channel - Y-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
915.09	92.43	V	--	--	Peak	1.25	150	
915.09	90.14	V	--	--	Avg	1.25	150	Video Averaging Only
1830.18	61.16	V	--	--	Peak	1.26	150	Not in Restricted Band
1830.18	57.59	V	--	--	Avg	1.26	150	Video Averaging Only
2745.27	49.98	V	74	-24.02	Peak	1.28	150	
2745.27	44.08	V	54	-9.92	Avg	1.28	150	Video Averaging Only
3660.36	48.09	V	74	-25.91	Peak	1.29	160	
3660.36	38.74	V	54	-15.26	Avg	1.29	160	Video Averaging Only
4575.45	53.32	V	74	-20.68	Peak	1.28	150	
4575.45	43.21	V	54	-10.79	Avg	1.28	150	Video Averaging Only
5490.54	61.44	V	74	-12.56	Peak	1.25	225	
5490.54	51.82	V	54	-2.18	Avg	1.25	225	Video Averaging Only
5490.5	38.63	V	54	-15.37	Avg	1.25	225	Video Averaging + Duty Cycle
6405.63	56.79	V	--	--	Peak	1.58	135	Not in Restricted Band
6405.63	49.55	V	--	--	Avg	1.58	135	Video Averaging Only
7320.72	55.61	V	74	-18.39	Peak	1.58	150	
7320.72	49.55	V	54	-4.45	Avg	1.58	150	Video Averaging Only
8235.81	62.71	V	74	-11.29	Peak	1.25	150	
8235.81	55.12	V	54	1.12	Avg	1.25	150	Video Averaging Only
8235.8	41.93	V	54	-12.07	Avg	1.25	150	Video Averaging + Duty Cycle
9150.9	66.55	V	74	-7.45	Peak	1.58	135	
9150.9	54.81	V	54	0.81	Avg	1.58	135	Video Averaging Only
9150.9	41.62	V	54	-12.38	Avg	1.58	135	Video Averaging + Duty Cycle

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Middle Channel - Y-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
915.09	96.77	H	--	--	Peak	1	315	
915.09	92.74	H	--	--	Avg	1	315	Video Averaging Only
1830.18	57.98	H	--	--	Peak	1.25	135	Not in Restricted Band
1830.18	52.31	H	--	--	Avg	1.25	135	Video Averaging Only
2745.27	43.47	H	74	-30.53	Peak	1.25	150	
2745.27	33.28	H	54	-20.72	Avg	1.25	150	Video Averaging Only
3660.36	47.63	H	74	-26.37	Peak	1.35	150	
3660.36	38.01	H	54	-15.99	Avg	1.35	150	Video Averaging Only
4575.45	56.08	H	74	-17.92	Peak	1.55	125	
4575.45	46.34	H	54	-7.66	Avg	1.55	125	Video Averaging Only
5490.54	62.99	H	74	-11.01	Peak	1.28	135	
5490.54	50.42	H	54	-3.58	Avg	1.28	135	Video Averaging Only
6405.63	61.12	H	--	--	Peak	1.29	135	Not in Restricted Band
6405.63	50.76	H	--	--	Avg	1.29	135	Video Averaging Only
7320.72	59.18	H	74	-14.82	Peak	1.58	165	
7320.72	48.96	H	54	-5.04	Avg	1.58	165	Video Averaging Only
8235.81	71.78	H	74	-2.22	Peak	1.48	135	
8235.81	59.65	H	54	5.65	Avg	1.48	135	Video Averaging Only
8235.8	46.46	H	54	-7.54	Avg	1.48	135	Video Averaging + Duty Cycle
9150.9	62.43	H	74	-11.57	Peak	1.35	180	
9150.9	51.18	H	54	-2.82	Avg	1.35	180	Video Averaging Only
9150.9	37.99	H	54	-16.01	Avg	1.35	180	Video Averaging + Duty Cycle

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RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

High Channel - Y-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
926.33	93.81	V	--	--	Peak	1.25	150	
926.33	90.01	V	--	--	Avg	1.25	150	Video Averaging Only
1852.66	60.47	V	--	--	Peak	1.26	185	Not in Restricted Band
1852.66	56.24	V	--	--	Avg	1.26	185	Video Averaging Only
2778.99	44.85	V	74	-29.15	Peak	1.26	135	
2778.99	36.05	V	54	-17.95	Avg	1.26	135	Video Averaging Only
3705.32	47.25	V	74	-26.75	Peak	1.28	150	
3705.32	38.07	V	54	-15.93	Avg	1.28	150	Video Averaging Only
4631.65	60.58	V	74	-13.42	Peak	1.26	150	
4631.65	49.51	V	54	-4.49	Avg	1.26	150	Video Averaging Only
5557.98	59.59	V	74	-14.41	Peak	1.28	150	
5557.98	49.22	V	54	-4.78	Avg	1.28	150	Video Averaging Only
6484.31	63.73	V	--	--	Peak	1.58	125	Not in Restricted Band
6484.31	51.77	V	--	--	Avg	1.58	125	Video Averaging Only
7410.64	61.92	V	74	-12.08	Peak	1.85	135	
7410.64	51.95	V	54	-2.05	Avg	1.85	135	Video Averaging Only
7410.6	38.76	V	54	-15.24	Avg	1.85	135	Video Averaging + Duty Cycle
8336.97	62.01	V	74	-11.99	Peak	1.28	150	
8336.97	50.95	V	54	-3.05	Avg	1.28	150	Video Averaging Only
9263.3	61.18	V	74	-12.82	Peak	1.74	135	
9263.3	50.27	V	54	-3.73	Avg	1.74	135	Video Averaging Only

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

High Channel - Y-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
926.33	94.46	H	--	--	Peak	1.25	150	
926.33	89.63	H	--	--	Avg	1.25	150	Video Averaging Only
1852.66	60.16	H	--	--	Peak	1.58	135	Not in Restricted Band
1852.66	55.75	H	--	--	Avg	1.58	135	Video Averaging Only
2778.99	44.39	H	74	-29.61	Peak	1.28	150	
2778.99	35.28	H	54	-18.72	Avg	1.28	150	Video Averaging Only
3705.32	51.48	H	74	-22.52	Peak	1.29	135	
3705.32	41.89	H	54	-12.11	Avg	1.29	135	Video Averaging Only
4631.65	64.58	H	74	-9.42	Peak	1.29	180	
4631.65	53.09	H	54	-0.91	Avg	1.29	180	Video Averaging Only
4631.7	39.9	H	54	-14.1	Avg	1.29	180	Video Averaging + Duty Cycle
5557.98	66.45	H	74	-7.55	Peak	1.28	135	
5557.98	54.55	H	54	0.55	Avg	1.28	135	Video Averaging Only
5558	41.36	H	54	-12.64	Avg	1.28	135	Video Averaging + Duty Cycle
6484.31	60.72	H	--	--	Peak	1.29	315	Not in Restricted Band
6484.31	50.59	H	--	--	Avg	1.29	315	Video Averaging Only
7410.64	61.99	H	74	-12.01	Peak	2.05	135	
7410.64	52.01	H	54	-1.99	Avg	2.05	135	Video Averaging Only
7410.6	38.82	H	54	-15.18	Avg	2.05	135	Video Averaging + Duty Cycle
8336.97	68.78	H	74	-5.22	Peak	1.26	125	
8336.97	55.71	H	54	1.71	Avg	1.26	125	Video Averaging Only
8337	42.52	H	54	-11.48	Avg	1.26	125	Video Averaging + Duty Cycle
9263.3	64.59	H	74	-9.41	Peak	1.28	185	
9263.3	53.09	H	54	-0.91	Avg	1.28	185	Video Averaging Only
9263.3	39.9	H	54	-14.1	Avg	1.28	185	Video Averaging + Duty Cycle

FCC 15.247 and FCC Class B

Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Transmit Mode - Y-Axis
Digital Portion and Non Harmonic Emissions of the Transmitter

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected
								from 10 kHz to 9300 MHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 10 kHz to 9300 MHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Low Channel - Z-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
903.11	95.46	V	--	--	Peak	1.25	225	
903.11	91.59	V	--	--	Avg	1.25	225	Video Averaging Only
1806.22	59.76	V	--	--	Peak	1.26	125	Not in Restricted Band
1806.22	54.93	V	--	--	Avg	1.26	125	Video Averaging Only
2709.33	44.21	V	74	-29.79	Peak	1.25	150	
2709.33	37.61	V	54	-16.39	Avg	1.25	150	Video Averaging Only
3612.44	51.92	V	74	-22.08	Peak	1.29	125	
3612.44	42.69	V	54	-11.31	Avg	1.29	125	Video Averaging Only
4515.55	60.91	V	74	-13.09	Peak	1.28	150	
4515.55	50.13	V	54	-3.87	Avg	1.28	150	Video Averaging Only
5418.66	57.42	V	74	-16.58	Peak	1.26	135	
5418.66	46.81	V	54	-7.19	Avg	1.26	135	Video Averaging Only
6321.77	62.04	V	--	--	Peak	1.28	135	Not in Restricted Band
6321.77	50.76	V	--	--	Avg	1.28	135	Video Averaging Only
7224.88	54.71	V	74	-19.29	Peak	1.29	150	
7224.88	45.54	V	54	-8.46	Avg	1.29	150	Video Averaging Only
8127.99	64.33	V	74	-9.67	Peak	1.25	135	
8127.99	53.26	V	54	-0.74	Avg	1.25	135	Video Averaging Only
8128	40.07	V	54	-13.93	Avg	1.25	135	Video Averaging + Duty Cycle
9031.1	56.91	V	74	-17.09	Peak	1.35	225	
9031.1	47.39	V	54	-6.61	Avg	1.35	225	Video Averaging Only

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Low Channel - Z-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
903.11	95.74	H	--	--	Peak	1	90	
903.11	91.93	H	--	--	Avg	1	90	Video Averaging Only
1806.22	58.96	H	--	--	Peak	1.26	135	Not in Restricted Band
1806.22	53.94	H	--	--	Avg	1.26	135	Video Averaging Only
2709.33	41.49	H	74	-32.51	Peak	1.25	135	
2709.33	31.44	H	54	-22.56	Avg	1.25	135	Video Averaging Only
3612.44	49.26	H	74	-24.74	Peak	1.35	150	
3612.44	39.51	H	54	-14.49	Avg	1.35	150	Video Averaging Only
4515.55	57.86	H	74	-16.14	Peak	1.25	135	
4515.55	47.13	H	54	-6.87	Avg	1.25	135	Video Averaging Only
5418.66	59.32	H	74	-14.68	Peak	1.35	250	
5418.66	49.16	H	54	-4.84	Avg	1.35	250	Video Averaging Only
6321.77	65.64	H	--	--	Peak	1.29	125	Not in Restricted Band
6321.77	53.75	H	--	--	Avg	1.29	125	Video Averaging Only
7224.88	58.25	H	74	-15.75	Peak	1.26	135	
7224.88	48.55	H	54	-5.45	Avg	1.26	135	Video Averaging Only
8127.99	64.38	H	74	-9.62	Peak	1.28	150	
8127.99	53.04	H	54	-0.96	Avg	1.28	150	Video Averaging Only
8128	39.85	H	54	-14.15	Avg	1.28	150	Video Averaging + Duty Cycle
9031.1	59.89	H	74	-14.11	Peak	1.26	125	
9031.1	49.15	H	54	-4.85	Avg	1.26	125	Video Averaging Only

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Middle Channel - Z-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
915.09	95.14	V	--	--	Peak	1	1.25	
915.09	91.03	V	--	--	Avg	1	1.25	Video Averaging Only
1830.18	62.49	V	--	--	Peak	1.25	1.12	Not in Restricted Band
1830.18	59.42	V	--	--	Avg	1.25	1.12	Video Averaging Only
2745.27	48.49	V	74	-25.51	Peak	1.26	150	
2745.27	38.81	V	54	-15.19	Avg	1.26	150	Video Averaging Only
3660.36	45.63	V	74	-28.37	Peak	1.28	150	
3660.36	36.05	V	54	-17.95	Avg	1.28	150	Video Averaging Only
4575.45	61.22	V	74	-12.78	Peak	1.25	150	
4575.45	50.56	V	54	-3.44	Avg	1.25	150	Video Averaging Only
5490.54	60.45	V	74	-13.55	Peak	1.45	160	
5490.54	49.41	V	54	-4.59	Avg	1.45	160	Video Averaging Only
6405.63	60.86	V	--	--	Peak	1.15	150	Not in Restricted Band
6405.63	50.36	V	--	--	Avg	1.15	150	Video Averaging Only
7320.72	56.76	V	74	-17.24	Peak	1.26	150	
7320.72	49.46	V	54	-4.54	Avg	1.26	150	Video Averaging Only
8235.81	68.28	V	74	-5.72	Peak	1.28	115	
8235.81	56.93	V	54	2.93	Avg	1.28	115	Video Averaging Only
8235.8	43.74	V	54	-10.26	Avg	1.28	115	Video Averaging + Duty Cycle
9150.9	62.22	V	74	-11.78	Peak	1.45	150	
9150.9	50.63	V	54	-3.37	Avg	1.45	150	Video Averaging Only

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Middle Channel - Z-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
915.09	95.31	H	--	--	Peak	1.25	150	
915.09	92.35	H	--	--	Avg	1.25	150	Video Averaging Only
1830.18	58.05	H	--	--	Peak	1.26	150	Not in Restricted Band
1830.18	53.43	H	--	--	Avg	1.26	150	Video Averaging Only
2745.27	43.52	H	74	-30.48	Peak	1.29	155	
2745.27	34.58	H	54	-19.42	Avg	1.29	155	Video Averaging Only
3660.36	46.88	H	74	-27.12	Peak	1.25	150	
3660.36	38.11	H	54	-15.89	Avg	1.25	150	Video Averaging Only
4575.45	60.68	H	74	-13.32	Peak	1.66	135	
4575.45	49.83	H	54	-4.17	Avg	1.66	135	Video Averaging Only
5490.54	56.37	H	74	-17.63	Peak	1.58	125	
5490.54	46.21	H	54	-7.79	Avg	1.58	125	Video Averaging Only
6405.63	64.41	H	--	--	Peak	1.25	135	Not in Restricted Band
6405.63	53.03	H	--	--	Avg	1.25	135	Video Averaging Only
7320.72	58.74	H	74	-15.26	Peak	1.29	125	
7320.72	48.41	H	54	-5.59	Avg	1.29	125	Video Averaging Only
8235.81	64.39	H	74	-9.61	Peak	1.58	112	
8235.81	52.61	H	54	-1.39	Avg	1.58	112	Video Averaging Only
8235.8	39.42	H	54	-14.58	Avg	1.58	112	Video Averaging + Duty Cycle
9150.9	60.95	H	74	-13.05	Peak	1.28	135	
9150.9	49.95	H	54	-4.05	Avg	1.28	135	Video Averaging Only

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

High Channel - Z-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
926.33	93.29	V	--	--	Peak	1	125	
926.33	90.78	V	--	--	Avg	1	125	Video Averaging Only
1852.66	61.57	V	--	--	Peak	1.25	135	Not in Restricted Band
1852.66	57.48	V	--	--	Avg	1.25	135	Video Averaging Only
2778.99	50.34	V	74	-23.66	Peak	1.26	180	
2778.99	41.23	V	54	-12.77	Avg	1.26	180	Video Averaging Only
3705.32	50.66	V	74	-23.34	Peak	1.28	135	
3705.32	41.16	V	54	-12.84	Avg	1.28	135	Video Averaging Only
4631.65	58.37	V	74	-15.63	Peak	1.29	135	
4631.65	47.75	V	54	-6.25	Avg	1.29	135	Video Averaging Only
5557.98	63.32	V	74	-10.68	Peak	1.29	150	
5557.98	52.23	V	54	-1.77	Avg	1.29	150	Video Averaging Only
5558	39.04	V	54	-14.96	Avg	1.29	150	Video Averaging + Duty Cycle
6484.31	56.01	V	--	--	Peak	1.28	125	Not in Restricted Band
6484.31	45.92	V	--	--	Avg	1.28	125	Video Averaging Only
7410.64	60.66	V	74	-13.34	Peak	1.29	135	
7410.64	50.56	V	54	-3.44	Avg	1.29	135	Video Averaging Only
8336.97	66.28	V	74	-7.72	Peak	1.25	150	
8336.97	55.11	V	54	1.11	Avg	1.25	150	Video Averaging Only
8337	41.92	V	54	-12.08	Avg	1.25	150	Video Averaging + Duty Cycle
9263.3	65.21	V	74	-8.79	Peak	1.28	150	
9263.3	54.07	V	54	0.07	Avg	1.28	150	Video Averaging Only
9263.3	40.88	V	54	-13.12	Avg	1.28	150	Video Averaging + Duty Cycle

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

High Channel - Z-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
926.33	94.73	H	--	--	Peak	1	135	
926.33	90.18	H	--	--	Avg	1	135	Video Averaging Only
1852.66	59.61	H	--	--	Peak	1.25	135	Not in Restricted Band
1852.66	55.18	H	--	--	Avg	1.25	135	Video Averaging Only
2778.99	44.23	H	74	-29.77	Peak	1.35	150	
2778.99	36.08	H	54	-17.92	Avg	1.35	150	Video Averaging Only
3705.32	49.38	H	74	-24.62	Peak	1.25	175	
3705.32	39.79	H	54	-14.21	Avg	1.25	175	Video Averaging Only
4631.65	60.83	H	74	-13.17	Peak	1.26	150	
4631.65	49.15	H	54	-4.85	Avg	1.26	150	Video Averaging Only
5557.98	62.56	H	74	-11.44	Peak	1.28	150	
5557.98	51.67	H	54	-2.33	Avg	1.28	150	Video Averaging Only
6484.31	64.57	H	--	--	Peak	1.29	125	Not in Restricted Band
6484.31	53.02	H	--	--	Avg	1.29	125	Video Averaging Only
7410.64	62.11	H	74	-11.89	Peak	1.58	150	
7410.64	51.36	H	54	-2.64	Avg	1.58	150	Video Averaging Only
7410.6	38.17	H	54	-15.83	Avg	1.58	150	Video Averaging + Duty Cycle
8336.97	61.57	H	74	-12.43	Peak	1.25	135	
8336.97	53.98	H	54	-0.02	Avg	1.25	135	Video Averaging Only
8337	40.79	H	54	-13.21	Avg	1.25	135	Video Averaging + Duty Cycle
9263.3	62.47	H	74	-11.53	Peak	1.35	150	
9263.3	50.55	H	54	-3.45	Avg	1.35	150	Video Averaging Only

FCC 15.247 and FCC Class B

Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX

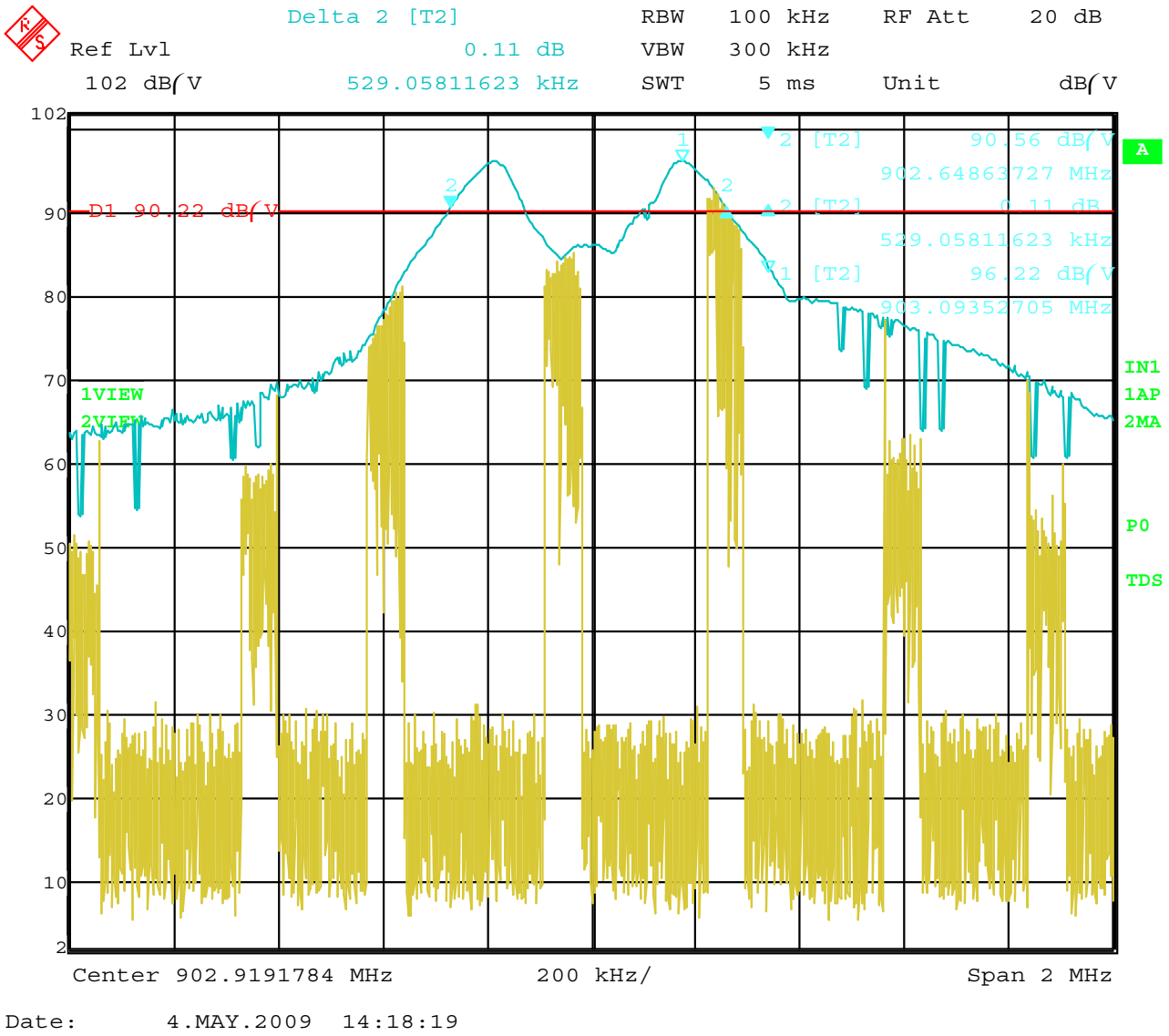
Date: 05/01/09
Labs: B and D
Tested By: Kyle Fujimoto

Transmit Mode - Z-Axis
Digital Portion and Non Harmonic Emissions of the Transmitter

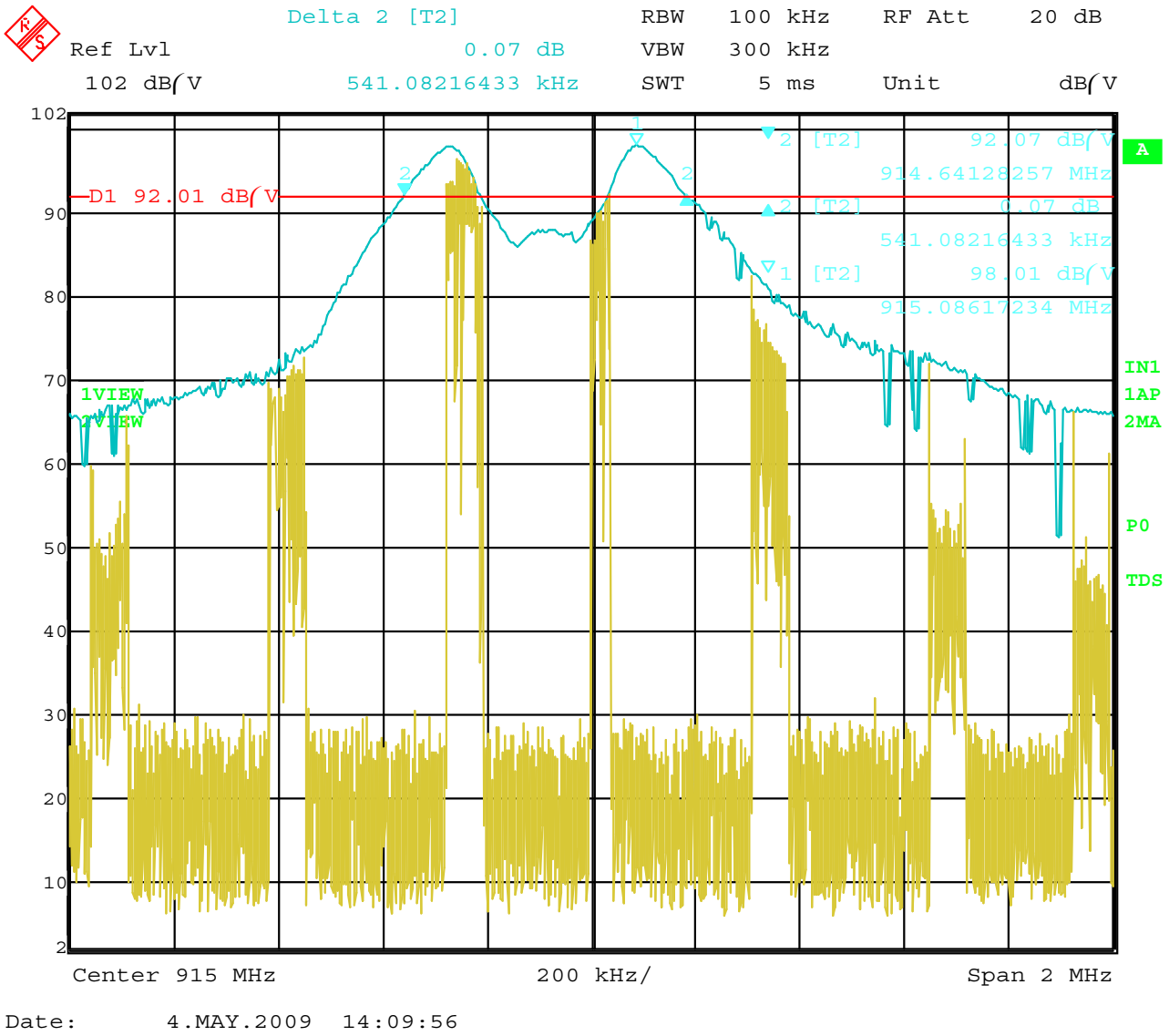
Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected
								from 10 kHz to 9300 MHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 10 kHz to 9300 MHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.

-6 dB BANDWIDTH

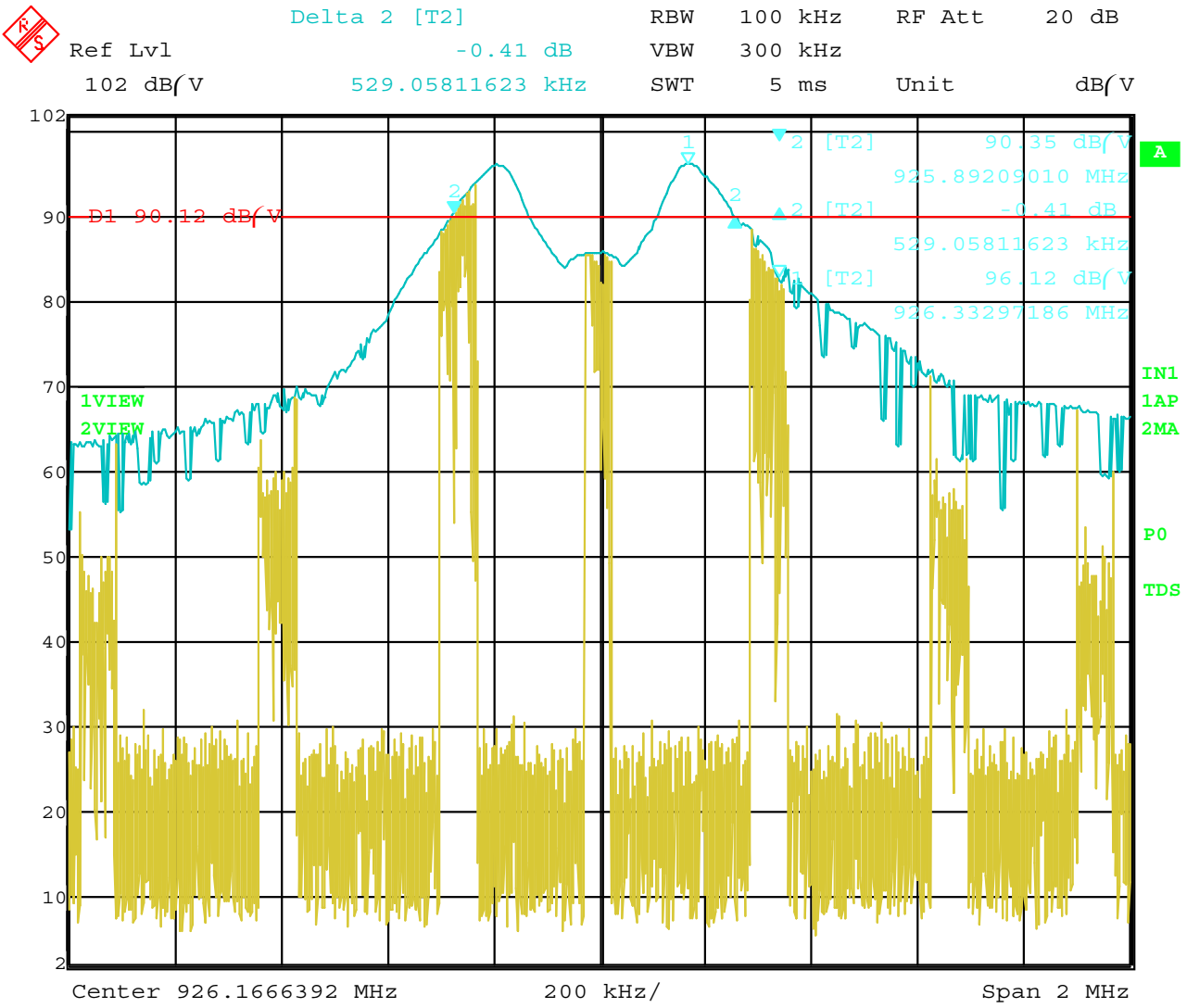
DATA SHEETS



Bandwidth 6 dB – Low Channel



Bandwidth 6 dB – Middle Channel



Date: 4.MAY.2009 13:59:59

Bandwidth 6 dB – High Channel

PEAK POWER OUTPUT

DATA SHEETS

FCC 15.247

Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX
Configuration: With Internal Antenna

Date: 05/04/09
Labs: B and D
Tested By: Kyle Fujimoto

Peak Output Power
Worst Case Axis Used Based on Peak Level Obtained for Fundmental

Freq. (MHz)	Level (dBuV)	Level (V/m)	Antenna Gain (dBi)	Numeric Gain	Power Output (Watts)	Power Output (mW)	Power Output (dBm)	Comments
903.11	96.55	0.0672202	-7.76	0.167494	0.0080932	8.09322	9.08121	Limit = 30 dBm
915.09	97.95	0.0789769	-7.76	0.167494	0.0111718	11.1718	10.4812	Limit = 30 dBm
926.33	98.54	0.0845279	-7.76	0.167494	0.0127974	12.7974	11.0712	Limit = 30 dBm

The Power in Watts is obtained by the following Formula Below:

P=[(E*D)^2]/(30*G)
P = Power in Watts
E = The Measured Maximum Field Strength in V/m
G = The Numberic Gain of the Transmitting Antenna over an Isotropic Radiator

SPECTRAL DENSITY OUTPUT

DATA SHEETS

FCC 15.247
Leap Devices, LLC
RadioPopper JrX Transmitter
Model: JrX
Configuration: With Internal Antenna

Date: 05/04/09
Lab: D
Tested By: Kyle Fujimoto

Spectral Density Test
Worst Case Axis Used Based on Peak Level Obtained for Fundmental

Freq. (MHz)	Level (dBuV)	Level (V/m)	Antenna Gain (dBi)	Numeric Gain	Power Output (Watts)	Power Output (mW)	Power Output (dBm)	Comments
903.11	87.12	0.0227	-7.76	0.167494	0.00092283	0.92283	-0.3488	Limit = +8 dBm
915.09	86.81	0.0219	-7.76	0.167494	0.00085925	0.85925	-0.6588	Limit = +8 dBm
926.33	88.33	0.02609	-7.76	0.167494	0.00121933	1.21933	0.86121	Limit = +8 dBm

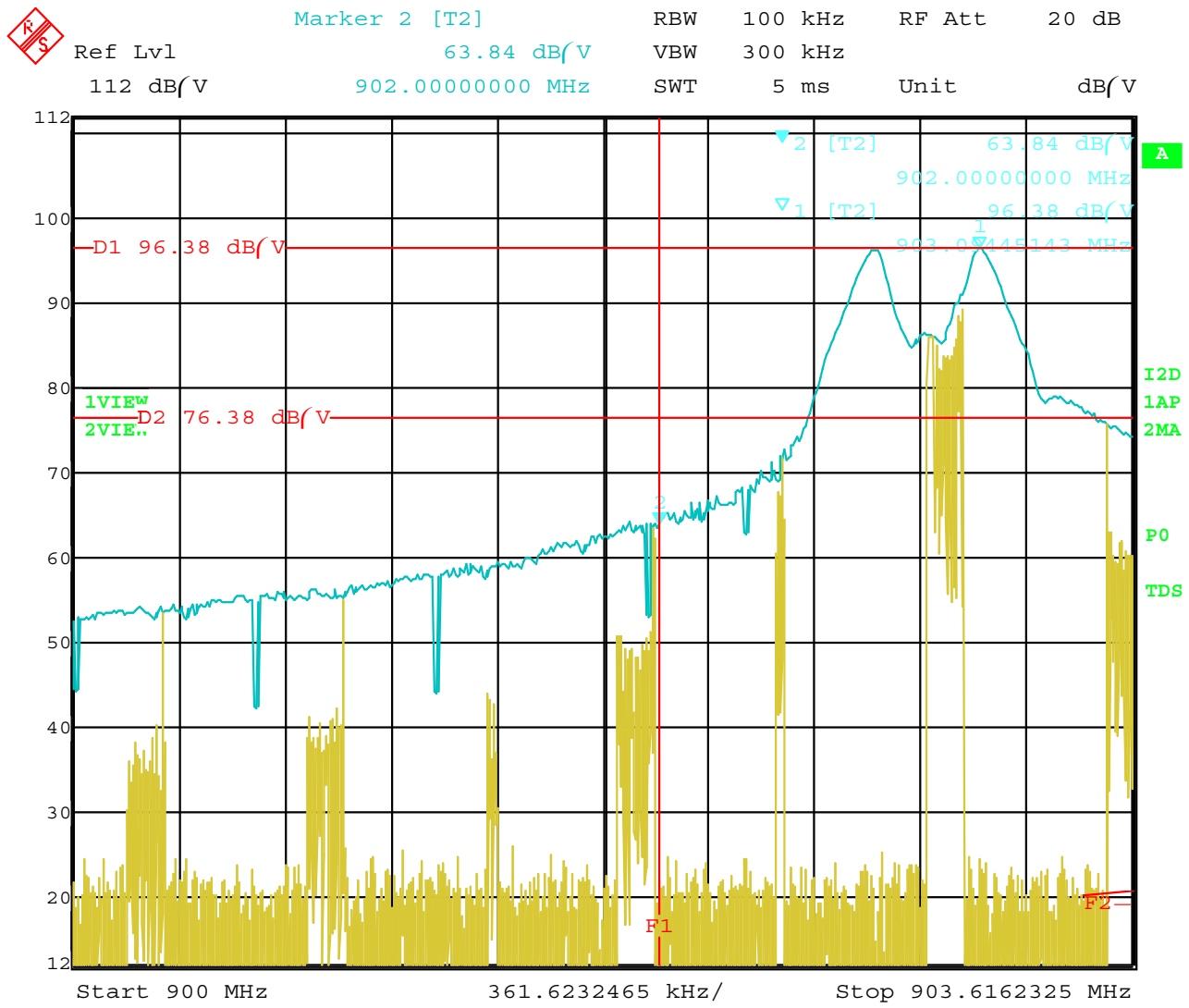
Level in dBuV obtained by maximizing fundamental emission then setting the EMI Receiver to
RBW = 3 kHz, VBW = 10 kHz, Span = 300 kHz, Sweep Time = 100 Seconds

The Power in Watts is obtained by the following Formula Below:

P=[(E*D)^2]/(30*G)
P = Power in Watts
E = The Measured Maximum Field Strength in V/m
G = The Numberic Gain of the Transmitting Antenna over an Isotropic Radiator

BAND EDGES

DATA SHEETS



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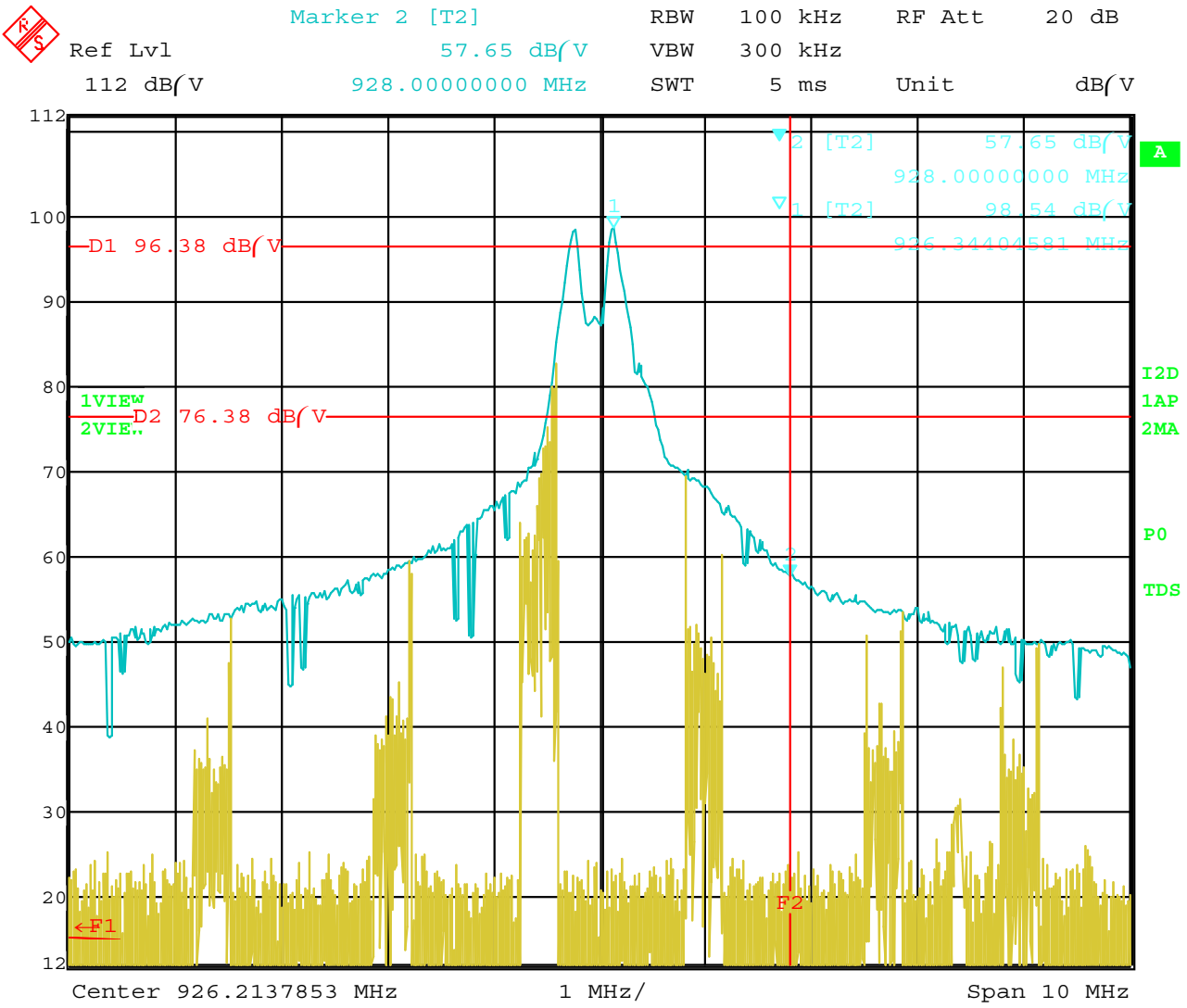
Band Edge – Low Channel – Worst Case



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Band Edge – High Channel – Worst Case